

CANOPY APPARATUS, CLOTHES HANGING ASSEMBLY AND SYSTEM INCLUDING THE CANOPY APPARATUS AND THE CLOTHES HANGING ASSEMBLY

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Technical Field

[0001] Various embodiments generally relate to a canopy apparatus and a system including the canopy apparatus. Various embodiments also relate to a clothes hanging assembly and a system including the canopy and the clothes hanging assembly. In particular, various embodiments generally relate to a canopy apparatus suitable for use with an outdoor rack (e.g. clothes rack) commonly found outside residential buildings for hanging clothes outside the apartments of the residential buildings in some countries.

Background

[0002] Some buildings come with an outdoor rack, fixed to an outer facade of the building, for supporting at least one clothes drying pole (generally in the form of a long, rounded piece of bamboo material) on which clothes may be hung (e.g. buildings in Singapore developed by the Housing Development Board). The outdoor rack is usually installed to a wall below a window of an apartment unit of the building such that outdoor rack is accessible from the window. In order to suspend the at least one clothes drying pole over the outdoor rack, a user is required to lift the clothes drying pole by one end (e.g. proximal end portion) of the clothes drying pole and bring the clothes drying pole over and through the window while standing near an edge of the window so as to position the clothes drying pole over the outdoor rack before suspending or hanging the clothes drying pole on the outdoor rack.

[0003] However, the clothes drying pole, especially with clothes hung thereon, can be quite heavy. Thus, when lifted by the one end (i.e. the proximal end portion), the heavy clothes drying pole can pose a safety risk to both the user lifting the clothes drying pole while standing near the edge of the window as well as to a passer-by walking directly beneath the clothes drying pole.

[0004] Additionally, the existing outdoor rack is often fixed to the outer facade of the building without any shelter overhead, so as to allow as much sunlight to reach a suspended

clothes drying pole with clothes thereon, and cannot be easily removed or modified. Consequently, the utility of the conventionally available outdoor rack becomes limited to dry weather conditions only.

5 [0005] Accordingly, there is a need to provide a more versatile and effective canopy apparatus, clothes hanging assembly and/or clothes drying system which is compatible for use with the existing available outdoor rack while addressing the above issues.

Summary

10 [0006] According to various embodiments, there is provided a canopy apparatus for covering over a clothes drying pole suspended across an outdoor rack having parallel and spaced apart first and second elongated support frames. A first longitudinal end portion of the clothes drying pole may be supported in one of a row of notches or holes along the first elongated support frame and a second longitudinal end portion of the clothes drying pole may be supported in one of a row of notches along the second elongated support frames so
15 as to suspend the clothes drying pole across the first and second elongated support frames of the outdoor rack. The canopy apparatus may include a canopy sheet having opposite first and second edges. The canopy sheet may include a pair of parallel first and second sleeves extending along a surface of the canopy sheet in a direction extending perpendicularly between the opposite first and second edges of the canopy sheet. The pair of parallel first
20 and second sleeves along the surface of the canopy sheet may define a cover section of the canopy sheet between the pair of parallel first and second sleeves. The canopy apparatus may further include a first and second canopy-support-poles respectively insertable through the pair of parallel first and second sleeves to support the canopy sheet in a manner so as to spread out or fold the cover section of the canopy sheet by moving the first and second
25 canopy-support-poles laterally apart or together. Each of the first and second canopy-support-poles may be longer than a direct distance extending perpendicularly between the opposite first and second edges of the canopy sheet. The first canopy-support-pole may be inserted through the first sleeve with a first longitudinal end portion of the first canopy-support-pole extending beyond the first edge of the canopy sheet and a second longitudinal
30 end portion of the first canopy-support-pole extending beyond the second edge of the canopy sheet. The second canopy-support-pole may be inserted through the second sleeve with a first longitudinal end portion of the second canopy-support-pole extending beyond

the first edge of the canopy sheet and a second longitudinal end portion of the second canopy-support-pole extending beyond the second edge of the canopy sheet. The canopy apparatus may further include a first and second sleeve-retainers respectively attachable to the first and second canopy-support-poles in a manner so as to respectively hold the pair of parallel first and second sleeves of the canopy sheet to the first and second canopy-support-poles. The canopy apparatus may further include a first and second support-pole-to-rack restraining members respectively disposed at the first longitudinal end portion of the first canopy-support-pole and the first longitudinal end portions of the second canopy-support-pole, the first and second support-pole-to-rack restraining members may be configured to restrain the first and second canopy-support-poles respectively to the outdoor rack against longitudinal sliding movements of the first and second canopy-support-poles relative to the outdoor rack. The cover section of the canopy sheet may extend continuously across the first and second canopy-support-poles to form an uninterrupted cover with an area demarcated by the first and second canopy-support-poles and the first and second edges of the canopy sheet.

[0007] According to various embodiments, there is provided a rain-proof clothes drying system for suspending across an outdoor rack having parallel and spaced apart first and second elongated support frames. The first elongated support frame may include a row of notches or holes along its length and the second elongated support frame may include a row of notches along its length. The rain-proof clothes drying system may include the canopy apparatus according to various embodiments. The rain-proof clothes drying system may further include a clothes hanging assembly including at least one complementing clothes drying pole having a first longitudinal end portion and a second longitudinal end portion. The at least one complementing clothes drying pole may include a liquid stopper protruding from a circumferential surface of the second longitudinal end portion so as to block liquid, that comes into contact with the at least one complementing clothes drying pole between the liquid stopper and the tip of the second longitudinal end portion, from sliding towards the first longitudinal end portion. The canopy apparatus may be spreadable to suspend over the at least one complementing clothes drying pole of the clothes hanging assembly in a manner such that the cover section of the canopy sheet of the canopy apparatus covers over a length segment of the at least one complementing clothes drying pole between the liquid stopper and the first longitudinal end portion of the at least one complementing clothes drying pole.

Brief description of the drawings

[0008] In the drawings, like reference characters generally refer to the same parts throughout the different views. The drawings are not necessarily to scale, emphasis instead generally being placed upon illustrating the principles of the invention. In the following description, various embodiments are described with reference to the following drawings, in which:

FIG. 1A shows a top perspective view of a canopy apparatus 100, suspended across an outdoor rack 11, according to various embodiments;

FIG. 1B shows an isolated perspective view of a canopy sheet 120 of the canopy apparatus 100 of FIG. 1A, having a pair of first and second sleeves 121, 122, according to various embodiments;

FIG. 1C shows an isolated perspective view of a first and a second canopy-support-poles 150, 151 of the canopy apparatus 100 of FIG. 1A, according to various embodiments;

FIG. 1D shows a perspective view of the first and the second canopy-support-poles 150, 151 of FIG. 1C inserted into the pair of first and second sleeves 121, 122 of the canopy sheet 120 of FIG. 1B, according to various embodiments;

FIG. 2A shows a top perspective view of a canopy apparatus 200 having a canopy sheet 220 that includes a first flap section 230 and a second flap section 232, according to various embodiments;

FIG. 2B shows an isolated perspective view of the canopy sheet 220 of the canopy apparatus 200 of FIG. 2A, according to various embodiments;

FIG. 2C shows an isolated perspective view of a first and a second canopy-support-poles 250, 251 of the canopy apparatus 200 of FIG. 2A, having a flap-section-support-arrangement 240, according to various embodiments;

FIG. 2D shows a perspective view of the first and the second canopy-support-poles 250, 251 of FIG. 2C inserted into a pair of first and second sleeves 221, 222 of the canopy sheet of FIG. 2B, according to various embodiments;

FIG. 2E shows a perspective view of a canopy apparatus 201 having a first and a second sets of at least one transverse sleeve 245, 246 according to various embodiments;

FIG. 3A shows a top perspective view of a canopy apparatus 300, suspended on the outdoor rack 11, the canopy apparatus 300 having a canopy sheet 320 that includes a first flap section 330 with a first further sleeve 331 along a first longitudinal edge 93 of the first

flap section 330, and a second flap section 332 with a second further sleeve 333 along a second longitudinal edge 94 of the second flap section 232, according to various embodiments;

FIG. 3B shows a bottom perspective view of the canopy apparatus 300 of FIG. 3A, according to various embodiments;

FIG. 3C shows an isolated top perspective view of a canopy sheet 320 of the canopy apparatus 300 of FIG. 3A, according to various embodiments;

FIG. 3D shows an isolated bottom perspective view of the canopy sheet 320 of the canopy apparatus 300 of FIG. 3A, according to various embodiments;

FIG. 3E shows a close-up perspective view of a sleeve-retainer 352, 353 of the canopy apparatus 300, according to various embodiments;

FIG. 3F shows an isolated perspective view of a first canopy-support-pole 350 of the canopy apparatus 300 of FIG. 3A having a first and a second pole sections 80, 81 of the first canopy-support-pole 350, and a second canopy-support-pole 351 of the canopy apparatus 300 of FIG. 3A having a first and a second pole sections 82, 83 of the second canopy-support-pole 351, according to various embodiments;

FIG. 3G shows a cutaway view of the first canopy-support-pole 350 and the second canopy-support-pole 351 of FIG. 3F, according to various embodiments;

FIG. 3H shows a close-up cutaway view of the first canopy-support-pole 350 and the second canopy-support-pole 351 of FIG. 3G, according to various embodiments,

FIG. 3I shows an isolated perspective view of the first canopy-support-pole 350 and the second canopy-support-pole 351 having an anti-rotation arrangement 370 and an anti-lift arrangement 373 attached thereto, according to various embodiments;

FIG. 3J shows a perspective view of an elongate abutment element 42 of the anti-rotation arrangement 370 or the anti-lift arrangement 373 of FIG. 3I, according to various embodiments;

FIG. 3K shows an exploded side view of the elongate abutment element 42 of FIG. 3J and an elongate support element 43 of the anti-rotation arrangement 370 or the anti-lift arrangement 373, according to various embodiments;

FIG. 3L shows an assembled side view of the elongate abutment element 42 of FIG. 3J and the elongate support element 43 of the anti-rotation arrangement 370 or the anti-lift arrangement 373, according to various embodiments;

FIG. 3M shows a close-up perspective view a first cross-support member 343 and a second cross-support member 344 of a flap-section-support-arrangement 340 of the canopy apparatus 300, according to various embodiments;

FIG. 3N shows a close-up perspective view a connecting ring 10 of each of the first and the second cross-support members 343, 344 of FIG. 3M, according to various embodiments;

FIG. 3O shows a close-up perspective view of a second proximal anti-rotation member 372 of the anti-rotation arrangement 370 engaged with the first elongated support frame 12 of the outdoor rack 11, according to various embodiments;

FIG. 3P shows a close-up perspective view of a pole-restraining cable 162, 163 of a first and a second restraining members 160, 161 of the canopy apparatus 300, according to various embodiments;

FIG. 3Q shows a bottom perspective view of the first and the second canopy-support-poles 350, 351 of FIG. 3I inserted through a pair of first and second sleeves 321, 322 of the canopy sheet 320 of FIG 3C, according to various embodiments;

FIG. 3R shows a rear view of the first and the second canopy-support-poles 350, 351 of FIG. 3I inserted through a pair of first and second sleeves 321, 322 of the canopy sheet 320 of FIG 3C, according to various embodiments;

FIG. 3S shows a perspective view of a canopy apparatus 301 with the first anti-lift member 374 and the second anti-lift member 375 extending below the first and the second canopy-support-poles 350a, 351a, according to various embodiments;

FIG. 4A shows an isolated perspective view of a clothes hanging assembly 410, according to various embodiments;

FIG. 4B shows a close-up view of a complementing clothes drying pole 420 of the clothes hanging assembly 410 of FIG. 4A, according to various embodiments;

FIG. 4C shows a glider 430 of the clothes hanging assembly 410 of FIG. 4A, according to various embodiments;

FIG. 4D shows a pulley 443 of the clothes hanging assembly 410 of FIG. 4A, according to various embodiments;

FIG. 4E shows an extension coupler, according to various embodiments;

FIG. 4F shows a perspective view of the extension coupler attached to the at least one complementing clothes drying pole 420, according to various embodiments;

FIG. 4G shows a perspective view of the extension coupler attached to the at least one complementing clothes drying pole 420, according to various embodiments; and

FIG. 4H shows the at least one complementing clothes drying pole 420 secured to a main beam 14 of the outdoor rack 11, according to various embodiments.

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Detailed description

[0009] Embodiments described below in the context of the apparatus are analogously valid for the respective methods, and vice versa, as well as for a corresponding kit. Furthermore, it will be understood that the embodiments described below may be combined, for example, a part of one embodiment may be combined with a part of another embodiment.

[00010] It should be understood that the terms “on”, “over”, “top”, “bottom”, “down”, “side”, “back”, “left”, “right”, “front”, “lateral”, “side”, “up”, “down” etc., when used in the following description are used for convenience and to aid understanding of relative positions or directions, and not intended to limit the orientation of any device, or structure or any part of any device or structure. In addition, the singular terms “a”, “an”, and “the” include plural references unless context clearly indicates otherwise. Similarly, the word “or” is intended to include “and” unless the context clearly indicates otherwise.

[00011] Various embodiments generally relate to a canopy apparatus, that is capable of being suspended over (or mounted to or hung from) an outdoor rack installed outside a wall below a window of an apartment unit of a residential building, for protecting clothes suspended on a clothes drying pole on the outdoor rack from rain and dirt, while allowing Ultraviolet (UV) rays (e.g. from Sunlight) which may be used to sterilize or dry clothes. Thus, various embodiments may seek to provide a canopy apparatus which may serve as a shed to protect clothes, suspended from the outdoor rack of the apartment unit of a high-rise residential building, from rain or water droplets or dirt. The water droplets or dirt may be from a source located at a higher level of the building (e.g. an apartment unit on a higher floor).

[00012] In Singapore, one type of the outdoor rack may include a first elongated support frame having a first row of notches or holes for supporting a first longitudinal end portion (e.g. proximal end portion) of the clothes drying pole, and a second elongated support frame having a second row of notches or holes for supporting a second longitudinal end portion (e.g. distal end portion) of the clothes drying pole. The first elongated support frame and the second elongated support frame may be parallel to the wall below the window of the

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apartment unit of the residential building. Further, the first elongated support frame and the second elongated support frame may also be spaced apart in a manner with the first elongated support frame being proximal to the wall and the second elongated support frame being distal to the wall such that outdoor rack may be accessible from the window. To
 5 suspend the clothes drying pole over the outdoor rack, the user may insert at least the second longitudinal end portion of the clothes drying pole into one of the notches or holes of the second elongated support frame of the outdoor rack, as the user lifts the clothes drying pole by one end (e.g. proximal end portion or the first longitudinal end portion) of the clothes drying pole while standing near an edge of the window. The first longitudinal end portion
 10 of the clothes drying pole may then be inserted into one of the notches or holes of the first elongated support frame of the outdoor rack.

[00013] According to various embodiments, the canopy apparatus may be provided with a pair of poles (e.g. pair of canopy-support-poles, e.g. long, metal circular or rounded poles or tubes, which may include an aluminum pole or tube) and a waterproof canopy sheet
 15 suspended between the pair of poles. The waterproof canopy sheet of the canopy apparatus according to various embodiments may also be transparent or translucent to enable drying of wet clothes by allowing UV rays (e.g. from Sunlight) through. Such a transparent or translucent waterproof canopy sheet according to various embodiments may be configured to block as little Sunlight as possible, while still providing the waterproof/rainproof feature
 20 to protect the clothes. In other words, such a transparent or translucent waterproof canopy sheet according to various embodiments may prevent rain from reaching the clothes beneath the canopy sheet and yet allow as much (or most of the) Sunlight to pass through the canopy sheet to reach the clothes beneath (e.g. allowing up to, or alternatively, at least, 90% of the Sun's ultraviolet rays to pass through). Accordingly, clothes suspended under the canopy
 25 sheet of the canopy apparatus according to various embodiments may be dried and/or sterilized using Sunlight.

[00014] The canopy sheet according to various embodiments may also include a flexible (or soft) and high-tensile material (or film), which can be easily folded (e.g. rolled-up) or spread apart, while maintaining its integrity even under strong wind conditions acting on the
 30 canopy sheet when the canopy sheet is in use.

[00015] Various embodiments also seek to provide a canopy apparatus that is easy to assemble and disassemble. The pair of poles (e.g. pair of canopy-support-poles) of the canopy apparatus may be insertable into respective sleeves (e.g. long circular or tubular

sleeve holes or channels or sheaths) of the canopy sheet to assemble the canopy apparatus, or removed therefrom to disassemble the canopy apparatus. Moreover, once assembled, the pair of poles of the canopy apparatus may simply be brought together to fold or roll up the canopy sheet to reduce the size of the canopy apparatus when the canopy apparatus is not in use.

[00016] Various embodiments also seek to provide a canopy apparatus that is easy to be suspended across or hung from or mounted to an outdoor rack. According to various embodiments, a first longitudinal end portion of a first pole (e.g. first canopy-support-pole) of the canopy apparatus and a first longitudinal end portion of a second pole (e.g. second canopy-support-pole) of the canopy apparatus may be respectively insertable to two outermost notches or holes of a first elongated support frame of the outdoor rack, and a second longitudinal end portion of the first pole and a second longitudinal end portion of the second pole may be respectively insertable to two outermost notches of a second elongated support frame of the outdoor rack, for suspending a cover section (e.g. shelter part or rain-proof area) of the canopy sheet of the canopy apparatus across the outdoor rack to cover over the clothes drying pole (suspending across the outdoor rack) with clothes hung thereon. Accordingly, the process of suspending, hanging or mounting the canopy apparatus according to various embodiments may be simple and convenient.

[00017] The canopy apparatus according to various embodiments may also be light in weight, thereby improving its portability.

[00018] Various embodiments also seek to provide a canopy apparatus with safety features (e.g. at least one retraining member) that secures or fixes the canopy apparatus in position relative to the outdoor rack. Accordingly, with the safety features (e.g. at least one retraining member) of the canopy apparatus according to various embodiments, the canopy apparatus may be prevented or inhibited from dislodging from the outdoor rack even under strong wind conditions acting on the canopy sheet of the canopy apparatus. Accordingly, the safety features of the canopy apparatus ensure that the canopy apparatus would not fall off the outdoor rack, without requiring a user's intervention to hold the canopy apparatus in place. The canopy apparatus according to various embodiments is thus reliable when in use or in operation.

[00019] Various embodiments also seek to provide a canopy apparatus with a canopy sheet having flap portions. For example, the cover section of the canopy sheet may include two side or lateral flap portions. The two side or lateral flap portions may sag downwards

or may be supported by a flap-section-support-arrangement of the canopy apparatus so as to extend outwards from the cover section of the canopy sheet to extend the coverage of the canopy sheet (e.g. providing a wider or bigger waterproof shelter, or extending the rain-proof area provided by the canopy sheet beyond the space within the first pole and the second pole).

[00020] Various embodiments also seek to provide a mechanism which enables a user to hang or remove clothes to the clothes drying pole from one end of the clothes drying pole, without requiring to lift the clothes drying pole off the outdoor rack. Various embodiments may provide a clothes hanging assembly which may include at least one clothes drying pole (or complementing clothes drying pole) that can be supported on the outdoor rack (in a similar manner to a conventional clothes drying pole), a pulley (e.g. which may be made of 304 stainless steel, may be corrosion-resistant and may resist 35kg of pressure) on the at least one clothes drying pole (or complementing clothes drying pole), and a plurality of gliders in sliding engagement with the at least one clothes drying pole (or complementing clothes drying pole) via a cable that extends around the pulley. The plurality of gliders may be configured to enable clothes to be attached thereto. According to various embodiments, a user may pull one end of the cable, which passes the pulley, to deploy the plurality of gliders, towards a second longitudinal end (e.g. distal end) of the at least one clothes drying pole (or complementing clothes drying pole), in a spaced apart manner along the at least one clothes drying pole (or complementing clothes drying pole). Once the plurality of gliders are deployed, the user may tie the one end of the cable to a fixed structure (e.g. window frame) to hold the plurality of gliders in place. The user may retract the plurality of gliders by untying the one end of the cable, and then pull another end of the cable to stack or pile the plurality of gliders (e.g. one by one) towards a first longitudinal end (e.g. proximal end) of the at least one clothes drying pole (or complementing clothes drying pole). Accordingly, the clothes hanging assembly according to various embodiments may be convenient to use and provides a labour-saving and safe environment for hanging and removing clothes from the outdoor rack.

[00021] Various embodiments also seek to provide a pole extender (e.g. auxiliary pole) that can be coupled to a main clothes drying pole (e.g. at least one complementing clothes drying pole or a conventional clothes drying pole) to lengthen the main clothes drying pole. Such a pole extender coupled to the main clothes drying pole enables a user to draw back the main clothes drying pole without having to lift the main clothes drying pole with the

pole extender completely off the outdoor rack. Accordingly, the outdoor rack can support a weight of the main clothes drying pole with the pole extender by resting the pole extender on the second elongated support frame of the outdoor rack. The pole extender may further include safety features (e.g. at least one restraining member) at a free end (e.g. distal end) of the pole extender to prevent the pole extender from slipping off the second elongated frame of the outdoor rack, as the main clothes drying pole is drawn or pulled towards a user standing near the edge of the window. The pole extender thus has the characteristics of increasing efficiency (by supporting the weight of the main clothes drying pole as the user is lifting) as well as adding safety to the use (e.g. installation and removal) of a main clothes drying pole on an outdoor rack. Moreover, the pole extender according to various embodiments may be coupled to the main clothes drying pole in a simple manner by way of a pole coupler, and is thus convenient to use.

[00022] Various embodiments also seek to provide a rain-proof clothes drying system which includes a combination of the canopy apparatus and the clothes hanging assembly, according to various embodiments. The rain-proof clothes drying system according to various embodiments may thus also include the pole extender, and may provide the advantages of the canopy apparatus, the clothes hanging assembly and the pole extender listed above.

[00023] The following examples pertain to further embodiments:

[00024] Example 1 is a canopy apparatus for covering over a clothes drying pole suspended across an outdoor rack having parallel and spaced apart first and second elongated support frames, wherein a first longitudinal end portion of the clothes drying pole may be supported in one of a row of notches or holes along the first elongated support frame and a second longitudinal end portion of the clothes drying pole may be supported in one of a row of notches along the second elongated support frames so as to suspend the clothes drying pole across the first and second elongated support frames of the outdoor rack. The canopy apparatus may include a canopy sheet having opposite first and second edges, wherein the canopy sheet includes a pair of parallel first and second sleeves extending along a surface of the canopy sheet in a direction extending perpendicularly between the opposite first and second edges of the canopy sheet, wherein the pair of parallel first and second sleeves along the surface of the canopy sheet defines a cover section of the canopy sheet between the pair of parallel first and second sleeves. The canopy apparatus may further include a first and second canopy-support-poles respectively insertable through the pair of

parallel first and second sleeves to support the canopy sheet in a manner so as to spread out or fold the cover section of the canopy sheet by moving the first and second canopy-support-poles laterally apart or together, wherein each of the first and second canopy-support-poles may be longer than a direct distance extending perpendicularly between the opposite first and second edges of the canopy sheet, wherein the first canopy-support-pole may be inserted through the first sleeve with a first longitudinal end portion of the first canopy-support-pole extending beyond the first edge of the canopy sheet and a second longitudinal end portion of the first canopy-support-pole extending beyond the second edge of the canopy sheet, and wherein the second canopy-support-pole may be inserted through the second sleeve with a first longitudinal end portion of the second canopy-support-pole extending beyond the first edge of the canopy sheet and a second longitudinal end portion of the second canopy-support-pole extending beyond the second edge of the canopy sheet. The canopy apparatus may further include a first and second sleeve-retainers respectively attachable to the first and second canopy-support-poles in a manner so as to respectively hold the pair of parallel first and second sleeves of the canopy sheet to the first and second canopy-support-poles. The canopy apparatus may further include a first and second support-pole-to-rack restraining members respectively disposed at the first longitudinal end portion of the first canopy-support-pole and the first longitudinal end portions of the second canopy-support-pole, the first and second support-pole-to-rack restraining members being configured to restrain the first and second canopy-support-poles respectively to the outdoor rack (e.g. the first elongated support frame of the outdoor rack) against longitudinal sliding movements of the first and second canopy-support-poles relative to the outdoor rack, wherein the cover section of the canopy sheet extends continuously across the first and second canopy-support-poles to form an uninterrupted cover with an area demarcated by the first and second canopy-support-poles and the first and second edges of the canopy sheet.

[00025] In example 2, the subject matter of example 1 may optionally include that wherein the opposite first and second edges of the canopy sheet are parallel with each other.

[00026] In example 3, the subject matter of example 1 or example 2 may optionally include that wherein the canopy sheet includes a transparent polyolefin film.

[00027] In example 4, the subject matter of any one of examples 1 to 3 may optionally include that wherein the canopy sheet further includes a first and second flap sections respectively extending laterally outward from the pair of parallel first and second sleeves in opposite directions away from the cover section.

[00028] In example 5, the subject matter of example 4 may optionally include a flap-section-support-arrangement including a first pair of support branches extending sideway from the first canopy-support-pole to support the first flap section for forming a first cover extension adjoining a first border of the cover section along the first canopy-support-pole and a second pair of support branches extending sideway from the second canopy-support-pole to support the second flap section for forming a second cover extension adjoining a second border of the cover section along the second canopy-support-pole.

[00029] In example 6, the subject matter of example 5 may optionally include that wherein the first pair of support branches may be parallel with each other, and wherein the second pair of support branches may be parallel with each other.

[00030] In example 7, the subject matter of example 5 or example 6 may optionally include that wherein the first pair of support branches includes a first pair of rod members couplable to the first canopy-support-pole in a spaced apart manner with the first pair of rod members being coplanar with the first canopy-support-pole and with the first pair of rod members extending away from the cover section, and wherein the second pair of support branches includes a second pair of rod members couplable to the second canopy-support-pole in a spaced apart manner with the second pair of rod members being coplanar with the second canopy-support-pole and with the second pair of rod members extending away from the cover section.

[00031] In example 8, the subject matter of any one of examples 5 to 7 may optionally include that wherein the first flap section includes a first further sleeve extending along the surface of the canopy sheet within the first flap section, wherein the second flap section includes a second further sleeve extending along the surface of the canopy sheet within the second flap section, and wherein the first and second further sleeves may be extending in a direction parallel with the pair of parallel first and second sleeves.

[00032] In example 9, the subject matter of example 8 may optionally include that wherein the flap-section-support-arrangement further includes a first cross-support member connected to the first pair of support branches between free end portions of the first pair of support branches and extending through the first further sleeve, and a second cross-support member connected to the second pair of support branches between free end portions of the second pair of support branches and extending through the second further sleeve.

[00033] In example 10, the subject matter of any one of examples 1 to 9 may optionally include that wherein the first pole-to-rack restraining member includes one or a combination

of (i) a first pole-restraining cable with a first end of the first pole-restraining cable fixedly attached to the first longitudinal end portion of the first canopy-support-pole or (ii) a first-pole-restraining transverse insert member insertable across the first longitudinal end portion of the first canopy-support-pole, and wherein the second pole-to-rack restraining member
 5 includes one or a combination of (i) a second pole-restraining cable with a first end of the second pole-restraining cable fixedly attached to the first longitudinal end portion of the second canopy-support-pole or (ii) a second-pole-restraining transverse insert member insertable across the first longitudinal end portion of the second canopy-support-pole.

[00034] Example 11 is a rain-proof clothes drying system for suspending across an
 10 outdoor rack having parallel and spaced apart first and second elongated support frames, wherein the first elongated support frame includes a row of notches or holes along its length and the second elongated support frame includes a row of notches along its length. The rain-proof clothes drying system may include the canopy apparatus of any one of examples 1 to 10. The rain-proof clothes drying system may further include a clothes hanging assembly
 15 including at least one complementing clothes drying pole having a first longitudinal end portion and a second longitudinal end portion, wherein the at least one complementing clothes drying pole includes a liquid stopper protruding from a circumferential surface of the second longitudinal end portion so as to block liquid, that comes into contact with the at least one complementing clothes drying pole between the liquid stopper and the tip of the
 20 second longitudinal end portion, from sliding towards the first longitudinal end portion, wherein the canopy apparatus may be spreadable to suspend over the at least one complementing clothes drying pole of the clothes hanging assembly in a manner such that the cover section of the canopy sheet of the canopy apparatus covers over a length segment of the at least one complementing clothes drying pole between the liquid stopper and the
 25 first longitudinal end portion of the at least one complementing clothes drying pole.

[00035] In example 12, the subject matter of example 11 may optionally include that wherein the clothes hanging assembly includes: a plurality of gliders slidably fitted to the at least one complementing clothes drying pole in a manner so as to be slidable along the at least one complementing clothes drying pole, wherein each of the plurality of gliders
 30 includes a glider body in sliding engagement with the at least one complementing clothes drying pole, and a deployable and retractable cable mechanism disposed on the at least one complementing clothes drying pole, wherein the deployable and retractable cable mechanism includes a deployable cable drawable in a first direction to deploy and straighten

a segment of the deployable cable parallel with the at least one complementing clothes drying pole and retractable in a second direction to withdraw the segment of the deployable cable towards the first longitudinal end portion of the at least one complementing clothes drying pole, wherein the plurality of gliders may be respectively fixed to the segment of the deployable cable in a longitudinally spaced apart manner so as to enable deploying and distributing the plurality of gliders along the at least one complementing clothes drying pole lengthwise when the segment of the deployable cable may be deployed and straightened to be parallel with the at least one complementing clothes drying pole and enable piling the plurality of gliders towards the first longitudinal end portion of the at least one complementing clothes drying pole to stack together when the segment of the deployable cable may be withdrawn towards the first longitudinal end portion of the at least one complementing clothes drying pole.

[00036] In example 13, the subject matter of example 12 may optionally include that wherein the glider body includes a main ring and an auxiliary ring interlocked with the main ring.

[00037] In example 14, the subject matter of any one of examples 12 to 13 may optionally include that wherein the deployable and retractable cable mechanism includes a pulley disposed adjacent to the liquid stopper on a side of the liquid stopper opposite the tip of the second longitudinal end portion, wherein an end portion of the deployable cable may be fixed to the first longitudinal end portion of the at least one complementing clothes drying pole and the deployable cable runs from the first longitudinal end portion of the at least one complementing clothes drying pole through the pulley and back to the first longitudinal end portion of the at least one complementing clothes drying pole, and wherein the segment of the deployable cable may be a length of the deployable cable measured from a point of the deployable cable that may be fixed to the first longitudinal end portion of the at least one complementing clothes drying pole to the pulley when the deployable cable may be straightened.

[00038] In example 15, the subject matter of example 14 may optionally include that wherein the deployable and retractable cable mechanism includes a plurality of guide rings disposed along the at least one complementing clothes drying pole to guide the deployable cable to run alongside the at least one complementing clothes drying pole in a parallel manner.

[00039] In example 16, the subject matter of any one of examples 11 to 15 may optionally include that wherein the clothes hanging assembly further includes a complementing-clothes-drying-pole-to-rack restraining member disposed at the first longitudinal end portion of the at least one complementing clothes drying pole for restraining the at least one complementing clothes drying pole to the first elongated support frame of the outdoor rack against longitudinal sliding movements of the at least one complementing clothes drying pole relative to the first elongated support frame of the outdoor rack.

[00040] In example 17, the subject matter of example 16 may optionally include that wherein the complementing-clothes-drying-pole-to-rack restraining member includes one or a combination of a complementing-clothes-drying-pole restraining cable with a first end of the complementing-clothes-drying-pole restraining cable fixedly attached to the first longitudinal end portion of the at least one complementing clothes drying pole or a complementing-clothes-drying-pole restraining transverse insert member insertable across the first longitudinal end portion of at least one complementing clothes drying pole.

[00041] In example 18, the subject matter of any one of examples 11 to 17 may optionally include that wherein the clothes hanging assembly includes an extension pole coupleable to the second longitudinal end portion of at least one complementing clothes drying pole in an end-to-end manner, via an extension coupler.

[00042] In example 19, the subject matter of example 18 may optionally include that wherein the at least one complementing clothes drying pole and the extension pole may be arranged in a telescopic manner, and wherein the extension coupler includes a coupling bolt inserted transversely across the at least one complementing clothes drying pole and the extension pole within an overlapping zone thereof so as to interlock the at least one complementing clothes drying pole and the extension pole.

[00043] In example 20, the subject matter of example 19 may optionally include that wherein the at least one complementing clothes drying pole includes a series of through-holes and the extension pole includes at least one through-holes, for the coupling bolt to be inserted through one of the series of through-holes of the at least one complementing clothes drying pole and the at least one through-hole of the extension pole so as to interlock the at least one complementing clothes drying pole and the extension pole.

[00044] In example 21, the subject matter of any one of examples 18 to 20 may optionally include that wherein the clothes hanging assembly further includes a anti-fall restraining

cable with a first end of the anti-fall restraining cable attached to the second longitudinal end portion of the at least one complementing clothes drying pole via the extension coupler.

[00045] Example 22 is a clothes hanging assembly for suspending across an outdoor rack having parallel and spaced apart first and second elongated support frames, wherein the first elongated support frame includes a row of notches or holes along its length and the second elongated support frame includes a row of notches along its length. The clothes hanging assembly may include a clothes drying pole having a first longitudinal end portion and a second longitudinal end portion, a plurality of gliders slidably fitted to the clothes drying pole in a manner so as to be slidable along the clothes drying pole, wherein each of the plurality of gliders includes a glider body in sliding engagement with the clothes drying pole, and a deployable and retractable cable mechanism disposed on the clothes drying pole, wherein the deployable and retractable cable mechanism includes a deployable cable drawable in a first direction to deploy and straighten a segment of the deployable cable parallel with the clothes drying pole and retractable in a second direction to withdraw the segment of the deployable cable towards the first longitudinal end portion of the clothes drying pole, wherein the plurality of gliders may be respectively fixed to the segment of the deployable cable in a longitudinally spaced apart manner so as to enable deploying and distributing the plurality of gliders along the clothes drying pole lengthwise when the segment of the deployable cable may be deployed and straightened to be parallel with the clothes drying pole and enable piling the plurality of gliders towards the first longitudinal end portion of the clothes drying pole to stack together when the segment of the deployable cable may be withdrawn towards the first longitudinal end portion of the clothes drying pole.

[00046] In example 23, the subject matter of example 22 may optionally include that wherein the clothes hanging assembly includes a liquid stopper protruding from a circumferential surface of the second longitudinal end portion of the clothes drying pole so as to block liquid, that comes into contact with the clothes drying pole between the liquid stopper and the tip of the second longitudinal end portion, from sliding towards the first longitudinal end portion of the clothes drying pole.

[00047] In example 24, the subject matter of example 22 or example 23 may optionally include that wherein the glider body includes a main ring and an auxiliary ring interlocked with the main ring.

[00048] In example 25, the subject matter of example 23 or example 24 may optionally include that wherein the deployable and retractable cable mechanism includes a pulley

disposed adjacent to the liquid stopper on a side of the liquid stopper opposite the tip of the second longitudinal end portion of the clothes drying pole, wherein an end portion of the deployable cable may be fixed to the first longitudinal end portion of the clothes drying pole and the deployable cable runs from the first longitudinal end portion of the clothes drying pole through the pulley and back to the first longitudinal end portion of the clothes drying pole, wherein the segment of the deployable cable may be a length of the deployable cable measured from a point of the deployable cable that may be fixed to the first longitudinal end portion of the clothes drying pole to the pulley when the deployable cable may be straightened.

10 **[00049]** In example 26, the subject matter of example 25 may optionally include that wherein the deployable and retractable cable mechanism includes a plurality of guide rings disposed along the clothes drying pole to guide the deployable cable to run alongside the clothes drying pole in a parallel manner.

15 **[00050]** In example 27, the subject matter of any one of examples 23 to 26 may optionally include that the clothes hanging assembly further includes a clothes-drying-pole-to-rack restraining member (e.g. similar to the complementing-clothes-drying-pole-to-rack restraining member) disposed at the first longitudinal end portion of the clothes drying pole for restraining the clothes drying pole to the first elongated support frame of the outdoor rack against longitudinal sliding movements of the clothes drying pole relative to the first elongated support frame of the outdoor rack.

20 **[00051]** In example 28, the subject matter of example 27 may optionally include that wherein the clothes-drying-pole-to-rack restraining member includes one or a combination of a clothes-drying-pole restraining cable with a first end of the clothes-drying-pole restraining cable fixedly attached to the first longitudinal end portion of the clothes drying pole or a clothes-drying-pole restraining transverse insert member insertable across the first longitudinal end portion of the clothes drying pole.

25 **[00052]** In example 29, the subject matter of any one of examples 23 to 28 may optionally include that the clothes hanging assembly includes an extension pole coupleable to the second longitudinal end portion of the clothes drying pole in an end-to-end manner, via an extension coupler.

30 **[00053]** In example 30, the subject matter of example 29 may optionally include that wherein the clothes drying pole and the extension pole may be arranged in a telescopic manner, and wherein the extension coupler may include a coupling bolt inserted transversely

across the clothes drying pole and the extension pole within an overlapping zone thereof so as to interlock the clothes drying pole and the extension pole.

[00054] In example 31, the subject matter of example 30 may optionally include that wherein the clothes drying pole may include a series of through-holes and the extension pole
5 may include at least one through-holes, for the coupling bolt to be inserted through one of the series of through-holes of the clothes drying pole and the at least one through-hole of the extension pole so as to interlock the clothes drying pole and the extension pole.

[00055] In example 32, the subject matter of examples 19 to 31 may optionally include that wherein the clothes hanging assembly further includes an anti-fall restraining cable with
10 a first end of the anti-fall restraining cable attached to the second longitudinal end portion of the clothes drying pole via the extension coupler.

[00056] Example 33 is a clothes hanging assembly for suspending across an outdoor rack having parallel and spaced apart first and second elongated support frames, wherein the first elongated support frame includes a row of notches or holes along its length and the second
15 elongated support frame includes a row of notches along its length. The clothes hanging assembly may include a clothes drying pole having a first longitudinal end portion and a second longitudinal end portion, and an extension pole coupleable to the second longitudinal end portion of the clothes drying pole in an end-to-end manner, via an extension coupler.

[00057] In example 34, the subject matter of example 33 may optionally include that
20 wherein the clothes drying pole and the extension pole may be arranged in a telescopic manner, and wherein the extension coupler may include a coupling bolt inserted transversely across the clothes drying pole and the extension pole within an overlapping zone thereof so as to interlock the clothes drying pole and the extension pole.

[00058] In example 35, the subject matter of example 34 may optionally include that
25 wherein the clothes drying pole may include a series of through-holes and the extension pole may include at least one through-holes, for the coupling bolt to be inserted through one of the series of through-holes of the clothes drying pole and the at least one through-hole of the extension pole so as to interlock the clothes drying pole and the extension pole.

[00059] In example 36, the subject matter of any one of examples 33 to 35 may optionally
30 include that wherein the clothes hanging assembly further includes an anti-fall restraining cable with a first end of the anti-fall restraining cable attached to the second longitudinal end portion of the clothes drying pole via the extension coupler.

[00060] In example 37, the subject matter of any one of examples 33 to 36 may optionally include that wherein the clothes hanging assembly may include a liquid stopper protruding from a circumferential surface of the second longitudinal end portion of the clothes drying pole so as to block liquid, that comes into contact with the clothes drying pole between the liquid stopper and the tip of the second longitudinal end portion, from sliding towards the first longitudinal end portion of the clothes drying pole.

[00061] FIG. 1A shows a top perspective view of a canopy apparatus 100, suspended across an outdoor rack 11, according to various embodiments;

[00062] FIG. 1B shows an isolated perspective view of a canopy sheet 120 of the canopy apparatus 100 of FIG. 1A, having a pair of first and second sleeves 121, 122, according to various embodiments;

[00063] FIG. 1C shows an isolated perspective view of a first and a second canopy-support-poles 150, 151 of the canopy apparatus 100 of FIG. 1A, according to various embodiments; and

[00064] FIG. 1D shows a perspective view of the first and the second canopy-support-poles 150, 151 of FIG. 1C inserted into the pair of first and second sleeves 121, 122 of the canopy sheet 120 of FIG. 1B, according to various embodiments.

[00065] As shown in FIG. 1A, there is provided an outdoor rack 11 having a first and a second elongated support frames 12, 16. A clothes drying pole 7 may be suspended across the outdoor rack 11. As shown, the outdoor rack 11 may include a row of notches or holes 13 along the first elongated support frame 12, and a row of notches or holes 17 along the second elongated frame 16. As shown, the first elongated support frame 12 may be parallel and spaced apart from the second elongated frame 16. Further, the first elongated support frame 12 may include a first face 1 and a second face 2 opposite the first face 1 of the first elongated support frame 12, and the second elongated support frame 16 may include a first face 3 facing the second face 2 of the first elongated support frame 12 and a second face 4 opposite the first face 3 of the second elongated support frame 16. A first longitudinal end portion of the clothes drying pole 7 may be supported in one of the row of notches or holes 13 along (e.g. along a length of) the first elongated support frame 12 and a second longitudinal end portion of the clothes drying pole 7 may be supported in one of the row of notches or holes 17 along (e.g. along a length of) the second elongated support frames 16 so as to suspend the clothes drying pole 7 across the first and the second elongated support frames 12, 16 of the outdoor rack 11.

[00066] According to various embodiments, there is provided the canopy apparatus 100 (or a canopy kit) for covering over the clothes drying pole 7 suspended across the outdoor rack 11. According to various embodiments, a first longitudinal end portion 51 of the first canopy-support-pole 150 and a first longitudinal end portion 53 of the second canopy-support-pole 151 of the canopy apparatus 100 may be respectively insertable to two (e.g. two outermost) notches or holes 13 of the first elongated support frame 12 of the outdoor rack 11 for suspending the canopy sheet 120 (e.g. cover section 124) the canopy apparatus 100 across the outdoor rack 11 to cover over the clothes drying pole 7. According to various embodiments, similarly, a second longitudinal end portion 52 of the first canopy-support-pole 150 and a second longitudinal end portion 54 of the second canopy-support-pole 151 of the canopy apparatus 100 may be respectively insertable to two (e.g. two outermost) notches or holes 17 of the second elongated support frame 16 of the outdoor rack 11 for suspending the canopy sheet 120 (e.g. cover section 124) the canopy apparatus 100 across the outdoor rack 11.

[00067] Here, for convenience of illustration and discussion, the outdoor rack 11 is shown as having both the first and the second elongated frames 12, 16. However, the present invention is not limited to use for or with such an outdoor rack 11 having both the first and the second elongated frames 12, 16 and can be used for or with other outdoor racks, for example, having only the first elongated support frame 12. Further, the outdoor rack 11 may also have more than two elongated frames 12, 16. For example, the outdoor rack 11 may have two or three or more elongated frames 12, 16.

[00068] According to various embodiments, the canopy apparatus 100 may include the canopy sheet 120. The canopy sheet may include a first edge (e.g. first lateral edge or border) 21 and a second edge (e.g. second lateral edge or border) 22 that is opposite the first edge 21. According to various embodiments, the first and second edges 21, 22 of the canopy sheet 120 may be parallel (e.g. substantially parallel) with each other.

[00069] According to various embodiments, the canopy sheet 120 may include the first sleeve 121 and the second sleeve 122. According to various embodiments, the first sleeve 121 and the second sleeve 122 may be extending along a surface (e.g. underneath/bottom/downward-facing surface) 123 of the canopy sheet 120 in a direction extending perpendicularly between the opposite first and second edges 21, 22 (e.g. parallel edges) of the canopy sheet 120. According to various embodiments, the first sleeve and the

second sleeve 121, 122, extending along the surface 123 of the canopy sheet 120, may be parallel with each other.

[00070] According to various embodiments, each of the first sleeve and the second sleeve 121, 122 may be, but is not limited to being, a unitary and continuous (i.e. unbroken) sleeve.

5 According to various embodiments, each of the first sleeve and the second sleeve, being a unitary and continuous sleeve, may extend from the first edge 21 of the canopy sheet to the second edge 22 of the canopy sheet across an entire length perpendicularly extending between the opposite first and second edges 21, 22 so as to abut or adjoin both the first edge 21 and the second edge 22 of the canopy sheet 120. Accordingly, according to various
10 embodiments, each of the first sleeve 121 and the second sleeve 122, being a unitary and continuous sleeve, may have a length that is equal (e.g. substantially equal) to a direct distance between the opposite first and second edges 21, 22 of the canopy sheet 120. According to various other embodiments, each of the first sleeve and the second sleeve 121, 122, being a unitary and continuous sleeve, may have a length that is shorter than the direct
15 distance between the opposite first and second edges 21, 22 of the canopy sheet 120.

[00071] According to various embodiments, the first and the second sleeves 121, 122 along the surface 123 of the canopy sheet 120 may define the cover section 124 of the canopy sheet 120, between the first and the second sleeves 121, 122. According to various
20 embodiments, the cover section 124 of the canopy sheet 120 may be adapted to cover over (e.g. protect) the clothes drying pole 7 from rain when the canopy apparatus 120 is suspended on the outdoor rack 11 over the clothes drying pole 7. According to various embodiments, the cover section 124 may be composed of or may include a flexible material such that the cover section 124 may be spread out or folded (e.g. rolled-up). According to
25 various embodiments, the flexible material of the cover section 124 may include a property of being water-resistant or waterproof (e.g. impermeable to a liquid). According to various embodiments, the flexible material of the cover section 124 may further include a property of being transparent or semi-translucent so as to permit radiation (e.g. UV rays, from sunlight) to pass through the transparent or semi-translucent flexible material of the cover
30 section 124. According to various embodiments, the cover section 124 may be composed of or may include a polymer material (e.g. polyolefin, polyethylene, polyester, polytetrafluoroethylene etc.), a composite material (e.g. nylon and polyester), or any other suitable material including any one or more of the properties mentioned above.

[00072] With reference to FIG. 1A and FIG. 1C, according to various embodiments, the cover section 124 of the canopy sheet 120 of the canopy apparatus 100 may be extending continuously across the first and the second canopy-support-poles 150, 151 to form an uninterrupted cover with an area 125 demarcated by the first and the second canopy-support-poles 150, 151 and the first and the second edges 21, 22 of the canopy sheet 120. In other words, according to various embodiments, the cover section 124 of the canopy sheet 120 may include an unbroken surface, that is free of any gap, aperture, hole, split, break, discontinuity, or spacing etc., between the first and the second canopy-support-poles 150, 151 and between the first and the second edges 21, 22 of the canopy sheet 120. Accordingly, according to various embodiments, the cover section 124 of the canopy sheet 120 may be configured to be waterproof such that a liquid is impermeable through the cover section 124 of the canopy sheet 120 of the canopy apparatus 100 within an entire (or gross or complete) area 125 demarcated by the first and the second canopy-support-poles 150, 151 and by the first and the second edges 21, 22 of the canopy sheet 120.

[00073] According to various embodiments, the cover section 124, the first sleeve 121 and the second sleeve 122 of the canopy sheet 120 may be formed of a unitary piece of material. For example, a unitary piece of material may be pleated at two opposite end regions of the unitary piece of material to form the first and the second sleeves 150, 151 with the cover section 124 therebetween. According to various other embodiments, the first sleeve and the second sleeve 150, 151 may be components which are initially separate from the cover section 124, and connected to the cover section 124 (e.g. by adhesive, or any other suitable connection means that ensures the cover section 124 is maintained as an uninterrupted cover).

[00074] According to various embodiments, the canopy apparatus 100 may further include the first canopy-support-pole 150 and the second canopy-support-pole 151 for supporting the canopy sheet 120 in a spread out (or stretched) or folded manner. According to various embodiments, the first canopy-support-pole 150 may be insertable through the first sleeve 121 of the canopy sheet 120, and the second canopy-support-pole 151 may be insertable through the second sleeve 122 of the canopy sheet 120. Accordingly, the first and the second canopy-support-poles 150, 151 respectively inserted through the first and the second sleeves 121, 122 may support the canopy sheet 120 in a spread out or folded manner. For example, the canopy sheet 120 (e.g. the cover section 124) may be spread out by moving the first and the second canopy-support-poles 150, 151 laterally apart (or away from each

other), or may be folded by moving the first and the second canopy-support-poles 150, 151 together (or towards each other). According to various embodiments, each of the first and the second canopy-support-poles 150, 151 may be longer than a direct distance extending perpendicularly between the opposite first and second edges 21, 22 (e.g. parallel edges) of the canopy sheet 120 (and/or longer than the first and the second sleeves 121, 122 of the canopy sheet 120 respectively). Accordingly, when the first canopy-support-pole 150 is inserted through the first sleeve 121, the first longitudinal end portion 51 of the first canopy-support-pole 150 may be extending beyond the first edge 21 of the canopy sheet 120 (and/or beyond a first end of the first sleeve 121) and a second longitudinal end portion 52 of the first canopy-support-pole 150 may be extending beyond the second edge 22 of the canopy sheet 120 (and/or beyond a second end of the first sleeve 121). Further, when the second canopy-support-pole 151 is inserted through the second sleeve 122, a first longitudinal end portion 53 of the second canopy-support-pole 151 may be extending beyond the first edge 21 of the canopy sheet 120 (and/or beyond a first end of the second sleeve 122) and a second longitudinal end portion 54 of the second canopy-support-pole 151 may be extending beyond the second edge 22 of the canopy sheet 120 (and/or beyond a second end of the second sleeve 122).

[00075] According to various embodiments, the first and the second canopy-support-poles 150, 151 may be composed of or may include a wood material, a bamboo material, a metal material (e.g. aluminium, stainless steel, or metal alloy), a composite material (e.g. carbon fibre), or any other suitable material (e.g. having a property of being rigid).

[00076] According to various embodiments, the canopy apparatus 100 may further include a first sleeve-retainer 152 and a second sleeve-retainer 153 respectively attachable to the first canopy-support-pole 150 and the second canopy-support-pole 151, for holding (or securing) the first and the second sleeves 121, 122 of the canopy sheet 120 to the first and the second canopy-support-poles 150, 151 respectively. According to various embodiments, the first sleeve-retainer 152 may be attached to the first canopy-support-pole 150 after the first canopy-support-pole 150 is inserted through the first sleeve 121 such that the first sleeve 121 may be held between the first sleeve-retainer 152 and the first canopy-support-pole 150. According to various embodiments, the second sleeve-retainer 153 may be attached to the second canopy-support-pole 151 after the second canopy-support-pole 151 is inserted through the second sleeve 122 such that the second sleeve 122 may be held between the second sleeve-retainer 153 and the second canopy-support-pole 151. According

to various embodiments, each of the first and the second sleeve-retainers 152, 153 may include any one or a combination of a clamp, a bracket, a clip, a buckle (e.g. plastic buckle), an adhesive, a nut and bolt assembly, a cable, or any other suitable fastener for holding (or securing) the first and the second sleeves 121, 122 of the canopy sheet 120 to the first and the second canopy-support-poles 150, 151 respectively. According to various embodiments, each of the first and the second sleeve-retainers 152, 153 may, additionally or alternatively, be a respective snug-fit (or tight-fit) joint between the first sleeve 121 and the first canopy-support-pole 150, and/or between the second sleeve 122 the second canopy-support-pole 151. For example, according to various embodiments, the first and the second sleeves 121, 122 may be sized to snugly (e.g. tight-fittingly) receive the first and second canopy-support-poles 150, 151 respectively therethrough.

[00077] According to various embodiments, each of the first and the second sleeves 121, 122 may have an opening (e.g. circular or tubular opening for receiving a clothes drying pole) having a diameter of approximately 3 cm or larger.

[00078] As shown in FIG. 1D, the first sleeve-retainer 152 of the canopy apparatus 100 may include a clip (e.g. plastic clip), and the second sleeve-retainer 153 of the canopy apparatus may include a clip. According to various embodiments, the canopy apparatus 100 may include two sleeve-retainers 152 for attaching the first sleeve 121 to the first canopy-support-poles 150 and two sleeve-retainers 153 for attaching the second sleeve 122 to the second canopy-support-poles 151.

[00079] According to various embodiments, each of the first and the second sleeve-retainers 152, 153 may include an opening (e.g. slit) 89 (as shown in FIG. 1D) that permits or enables the cover section 124 to be maintained as an uninterrupted cover (i.e. with an area 125 demarcated by the first and the second canopy-support-poles 150, 151 and the first and the second edges 21, 22 of the canopy sheet 120). Thus, as shown in FIG. 1D, each of the first and the second pair of clips may include a respective opening (e.g. slit) 89 that permits or enables the cover section 124 to be maintained as an uninterrupted cover. In other words, the first and the second sleeve-retainers 152, 153 may respectively hold (or secure) the first and the second sleeves 121, 122 of the canopy sheet 120 to the first and the second canopy-support-poles 150, 151 without puncturing or penetrating the cover section 124 of the canopy sheet 120 so as to ensure that the cover section 124 of the canopy sheet 120 is free of any gap, aperture, hole, split, break, discontinuity, or spacing etc.

[00080] According to various embodiments, the canopy apparatus may further include a first support-pole-to-rack restraining member 160 disposed at the first longitudinal end portion 51 of the first canopy-support-pole 150, and a second support-pole-to-rack restraining member 161 disposed at the first longitudinal end portion 53 of the second canopy-support-pole 151. According to various embodiments, the first and the second support-pole-to-rack restraining members 160, 161 may be configured to restrain the first and the second canopy-support-poles 150, 151 to the outdoor rack 11 (e.g. to the first elongated support frame 12 of the outdoor rack 11) against longitudinal sliding movements of the first and the second canopy-support-poles 150, 11 relative to the outdoor rack 11 (e.g. to the first elongated support frame 12 of the outdoor rack 11) (e.g. along a direction perpendicular towards and/or away the first elongated support frame 12 / second elongated support frame 16 or along the longitudinal axes of the first and the second canopy-support-poles 150, 151 with respect to the first elongated support frame 12). According to various embodiments, each of the first and the second support-pole-to-rack restraining members 160, 161 may include any one or a combination of a cable, a wire, a hook, a transverse insert member (e.g. a bolt, a screw, a pin, a shaft etc.), or any other suitable fastener for restraining the first and the second canopy-support-poles 150, 151 to the first elongated support frame 12 of the outdoor rack 11. Here, for convenience of illustration and discussion, the first and the second support-pole-to-rack restraining members 160, 161 are described as being connectable to the first elongated support frame 12 of the outdoor rack 11. However, various embodiments are not limited to the first and second support-pole-to-rack restraining members 160, 161 restraining the first and the second canopy-support-poles 150, 151 to the outdoor rack 11 and can restrain the first and the second canopy-support-poles 150, 151 to another fixed structure, for example, a window frame of the window of the apartment unit of the building.

[00081] With reference to FIG. 1C and FIG. 1D, according to various embodiments, the first pole-to-rack restraining member 160 of the canopy apparatus 100 may include a first pole-restraining cable 162, and the second pole-to-rack restraining member 161 of the canopy apparatus 100 may include a second pole-restraining cable 163 (e.g. metal cable, which may include a stainless steel cable). As shown, according to various embodiments, a first end 63 of the first pole-restraining cable 162 may be secured or fixedly attached or joined to the first longitudinal end portion 51 of the first canopy-support-pole 150 (e.g. directly to the first canopy-support-pole 150 or to a first sleeve-retainer 152), and a first end

65 of the second pole-restraining cable 163 may be secured or fixedly attached or joined to the first longitudinal end portion 53 of the second canopy-support-pole 151 (e.g. directly to the second canopy-support-pole 151 or to a second sleeve-retainer 153). According to various embodiments, a second end 64 of the first pole-restraining cable 162 (i.e. opposite the first end 63 of the first pole-restraining cable 162) and a second end 66 of the second pole-restraining cable 163 (i.e. opposite the first end 65 of the second pole-restraining cable 163) may be wound around or tied or secured or fastened to the first elongated support frame 12 of the outdoor rack 11 to restrain the first and the second canopy-support-poles 150, 151 of the canopy apparatus 100 against longitudinal sliding movement relative to the outdoor rack 11 (e.g. in a direction towards the second elongated support frame 16).

[00082] With reference to FIG. 1C and FIG. 1D, according to various embodiments, the first pole-to-rack restraining member 160 may include a first pole-restraining hook 164 connected or attached to the second end 64 of the first pole-restraining cable 162, and the second pole-to-rack restraining member 161 may include a second pole-restraining hook 165 (e.g. metal hook, which may include a stainless steel hook) connected or attached to the second end 66 of the second pole-restraining cable 163. According to various embodiments, the first and the second pole-restraining hooks 164, 165 may be hooked on to the first elongated support frame 12 of the outdoor rack 11 (or another fixed structure e.g. of the building). Accordingly, according to various embodiments, once the first and the second pole-restraining cables 162, 163 are wound around or tied or secured or fastened to the first elongated support frame 12 of the outdoor rack 11, the first and the second pole-restraining hooks 164, 165 may be hooked on to the first elongated support frame 12 to prevent or prohibit the first and the second pole-restraining cables 162, 163 from becoming untied or loosened.

[00083] With reference to FIG. 1C and FIG 1D, the first pole-to-rack restraining member 160 may include at least one first-pole-restraining transverse insert member 166, and the second pole-to-rack restraining member 161 may include at least one second-pole-restraining transverse insert member 167. According to various embodiments, the at least one first-pole-restraining transverse insert member 166 and the at least one second-pole-restraining transverse insert member 167 may be respectively insertable across the first longitudinal end portion 51 of the first canopy-support-pole 150 and the first longitudinal end portion 53 of the second canopy-support-pole 151. According to various embodiments, the inserted at least one first-pole-restraining transverse insert member 166 and the inserted

at least one second-pole-restraining transverse insert member 167 may serve as a respective obstruction or stopper or limiter against longitudinal sliding movements of the first and the second canopy-support-poles 150, 151, in a direction away from the second elongated support frame 16 and towards the first elongated support frame 12 (e.g. in a direction backwards or towards a user), by bearing against the second face 2 of the first elongated support frame 12. Accordingly, according to various embodiments, each of the first-pole-restraining transverse insert member 166 and the second-pole-restraining transverse insert member 167 may perform a limiting function by limiting (or shortening) a respective amount or limiting a respective length of the first longitudinal end portion 51 of the first canopy-support-pole 150 and the first longitudinal end portion 53 of the second canopy-support-pole 151 which may be inserted into/through a respective notch or hole 13 of the first elongated support frame 12 of the outdoor rack 11. In operation, according to various embodiments, the first-pole-restraining transverse insert member 166 and the second-pole-restraining transverse insert member 167 (e.g. limiting bolts) may be respectively inserted across the first longitudinal end portion 51 of the first canopy-support-pole 150 and the first longitudinal end portion 53 of the second canopy-support-pole 150, before the first longitudinal end portion 51 of the first canopy-support-pole 150 and the first longitudinal end portion 53 of the second canopy-support-pole 151 are inserted (or fitted) into the respective notch or hole 13 of the first elongated support frame 12 of the outdoor rack 11. According to various embodiments, each of the first-pole-restraining transverse insert member 166 and the second-pole-restraining transverse insert member 167 may include, but is not limited to, a bolt, a screw, a pin, a shaft etc.

[00084] With reference to FIG. 1C and FIG 1D, the first pole-to-rack restraining member 160 may include a further first-pole-restraining transverse insert member 168, and the second pole-to-rack restraining member 161 may further include a further second-pole-restraining transverse insert member 169. According to various embodiments, the further first-pole-restraining transverse insert member 168 and the further second-pole-restraining transverse insert member 169 may be respectively insertable across the first longitudinal end portion 51 of the first canopy-support-pole 150 and the first longitudinal end portion 53 of the second canopy-support-poles 151. According to various embodiments, the further first-pole-restraining transverse insert member 168 and the further second-pole-restraining transverse insert member 169 may be respectively inserted across the first longitudinal end portion 51 of the first canopy-support-pole 150 and the first longitudinal end portion 53 of

the second canopy-support-pole 151 after the first longitudinal end portion 51 of the first canopy-support-pole 150 and the first longitudinal end portion 53 of the second canopy-support-pole 151 are inserted (or fitted) into a respective notch or hole 13 of the first elongated support frame 12 of the outdoor rack 11. The inserted further first-pole-restraining transverse insert member 168 and the inserted further second-pole-restraining transverse insert member 169 may then serve as an obstruction or stopper or limiter against longitudinal sliding movements of the first and the second canopy-support-poles 150, 151 in a direction towards the second elongated support frame 16 and away from the first elongated support frame 12 (e.g. in a direction forward and away from the user), by bearing against the first face 1 of the first elongated support frame 12. Accordingly, according to various embodiments, each of the further first-pole-restraining transverse insert member 168 and the further second-pole-restraining transverse insert member 169 may perform an anti-slip function, whereby the further first-pole-restraining transverse insert member 168 and the further second-pole-restraining transverse insert member 169 respectively prevents the first and the second canopy-support-poles 150, 151 from slipping out (or falling off) of the respective notches or holes 13 of the first elongated support frame 12. According to various embodiments, each of the further first-pole-restraining transverse insert member 168 and the further second-pole-restraining transverse insert member 169 may include, but is not limited to, a bolt, a screw, a pin, a shaft etc.

[00085] According to various embodiments, each of the first-pole-restraining transverse insert member 166 and the second-pole-restraining transverse insert member 167 and each of the further first-pole-restraining transverse insert member 168 and the further second-pole-restraining transverse insert member 169 may include, but is not limited to, a retractable protrusion (e.g. inwardly retractable ball or spring press-pin). According to various embodiments, the retractable protrusion may be positioned along the first longitudinal end portion 51 of the first canopy-support-pole 150 and/or the first longitudinal end portion 53 of the second canopy-support-pole 151. Thus, according to various embodiments, the retractable protrusion may be protruded or extending from the first and/or the second canopy-support poles 150, 151 to perform the limiting function and/or anti-slip function as described above.

[00086] FIG. 2A shows a top perspective view of a canopy apparatus 200 having a canopy sheet 220 that includes a first flap section 230 and a second flap section 232, according to various embodiments;

[00087] FIG. 2B shows an isolated perspective view of the canopy sheet 220 of the canopy apparatus 200 of FIG. 2A, according to various embodiments;

[00088] FIG. 2C shows an isolated perspective view of a first and a second canopy-support-poles 250, 251 of the canopy apparatus 200 of FIG. 2A, having a flap-section-support-arrangement 240, according to various embodiments;

[00089] FIG. 2D shows a perspective view of the first and the second canopy-support-poles 250, 251 of FIG. 2C inserted into a pair of first and second sleeves 221, 222 of the canopy sheet of FIG. 2B, according to various embodiments; and

[00090] According to various embodiments, there is provided the canopy apparatus 200 (or canopy kit), similar to the canopy apparatus 100 of FIG. 1A to FIG. 1D, for covering over the clothes drying pole 7 suspended across the outdoor rack 11. According to various embodiments, the canopy apparatus 200 may contain all the features and/or limitations of the canopy apparatus 100 of FIG. 1A to FIG. 1D. In the following, the canopy apparatus 200 is described with like reference characters generally referring to the same or corresponding parts/features of the canopy apparatus 100 of FIG. 1A to FIG. 1D. The description of the parts/features made with respect to canopy apparatus 100 is also applicable with respect to canopy apparatus 200.

[00091] According to various embodiments, the canopy apparatus 200 may, similar to the canopy apparatus 100 of FIG. 1A to FIG. 1D, include the canopy sheet 220 having the first and the second sleeves 221, 222, between a first edge 23 and a second edge 24 of the canopy sheet 220, and a cover section 224 (e.g. uninterrupted cover) between the first and the second sleeves 221, 222.

[00092] According to various embodiments, the canopy apparatus 200 may, similar to the canopy apparatus 100 of FIG. 1A to FIG. 1D, include the first and the second canopy-support-poles 250, 251 respectively insertable into the first and the second sleeves 221, 222 for supporting the canopy sheet 220 in a manner so as to be capable of being spread out (or stretched) or folded.

[00093] According to various embodiments, the canopy apparatus 200 may, similar to the canopy apparatus 100 of FIG. 1A to FIG. 1D, include a first and a second sleeve-retainers 252, 253 for holding (or securing) the first and the second sleeves 221, 222 of the canopy sheet 220 to the first and the second canopy-support-poles 250, 251 respectively.

[00094] According to various embodiments, the canopy apparatus 200 may, similar to the canopy apparatus 100 of FIG. 1A to FIG. 1D, include the first and the second support-pole-

to-rack restraining members 160, 161 for restraining the first and the second canopy-support-poles 250, 251 to the first elongated support frame 12 of the outdoor rack 11 against longitudinal sliding movements of the first and the second canopy-support-poles 250, 251 relative to the first elongated support frame 12 of the outdoor rack 11 (e.g. along a direction
 5 towards and/or away the second elongated support frame 16). As shown, according to various embodiments, the first and the second support-pole-to-rack restraining members 160, 161 of the canopy apparatus 200 may respectively be disposed on a first longitudinal end portion 55 of the first canopy-support-pole 250 and a first longitudinal end portion 57 of the second canopy-support-pole 251. Further, as shown, according to various
 10 embodiments, the first support-pole-to-rack restraining member 160 of the canopy apparatus 200 may, similar the canopy apparatus 200, include, but is not limited to, the first pole-restraining cable 162, the first pole-restraining hook 164, and the first-pole-restraining transverse insert member 166. Further, as shown, according to various embodiments, the second support-pole-to-rack restraining member 161 of the canopy apparatus 200 may,
 15 similar the canopy apparatus 200, include, but is not limited to, the second pole-restraining cable 163, the second pole-restraining hook 165, and the second-pole-restraining transverse insert member 167.

[00095] With reference to FIG. 2A and FIG 2B, according to various embodiments, the canopy sheet 220 of the canopy apparatus of 200 may further include the first flap section
 20 230 and the second flap section 232. As shown, the first and the second flap sections 230, 232 of the canopy sheet 220 of the canopy apparatus 200 may extend laterally outward from the first and the second sleeves 221, 222, respectively, in opposite directions away from the cover section 224. According to various embodiments, the first and the second flap sections 230, 232 may extend in a continuous manner, from the cover section 224, such that a first
 25 border 25 between the first flap section 230 and the cover section 224 as well as a second border 26 between the second flap section 232 and the cover section 224 is a continuous and uninterrupted border (i.e. free of any gap, aperture, hole, split, break, discontinuity, or spacing etc.), between the first edge 23 and the second edge 24 of the canopy sheet 220. According to various embodiments, the first and the second flap sections 230, 232 may be
 30 composed of or may include the same material as the cover section 224. Accordingly, according to various embodiments, the first and the second flap sections 230, 232 may be composed of or may include a flexible material such that each of the first and the second flap sections 230, 232 may be spread out or folded. According to various embodiments, the

flexible material of the first and the second flap sections 230, 232 may include a property of being water-resistant or waterproof (e.g. impermeable to a liquid). According to various embodiments, the flexible material of the first and the second flap sections 230, 232 may further include a property of being transparent or semi-translucent so as to permit radiation (e.g. UV rays, from sunlight) to pass through the transparent or semi-translucent flexible material of the first and the second flap sections 230, 232. According to various embodiments, the first and the second flap sections 230, 232 may be composed of or may include a polymer material (e.g. polyolefin, polyethylene, polyester, polytetrafluoroethylene etc.), a composite material (e.g. nylon and polyester), or any other suitable material including any one or more of the properties mentioned above.

[00096] According to various embodiments, each of the first and the second flap sections 230, 232 may have a same length as the cover section 224, measured along a direction extending perpendicularly between the opposite first and second edges 23, 24 (e.g. parallel edges) of the canopy sheet 220. According to various embodiments, each of the first and the second flap sections 230, 232 may have a same width as the cover section 224, measured along a direction extending parallel with the opposite first and second edges 23, 24 (e.g. parallel edges) of the canopy sheet 220. According to various other embodiments, each of the first and the second flap sections 230, 232 may have a different width from the cover section 224, measured along the direction extending parallel with the opposite first and second edges 23, 24 (e.g. parallel edges) of the canopy sheet 220.

[00097] According to various embodiments, the canopy apparatus 200 may further include the flap-section-support-arrangement 240 for supporting the first flap section 230 and the second flap section 232 of the canopy sheet 220 in a spread out (e.g. fully or partially spread out) manner.

[00098] Referring to FIG. 2C and FIG. 2D, according to various embodiments, the flap-section-support-arrangement 240 may include a first pair of support branches 241 extending sideways from the first canopy-support-pole 250 of the canopy apparatus 200 to support the first flap section 230. Accordingly, the first flap section 230, supported by the first pair of support branches 241, may form a first cover extension 31 adjoining the first border 25 of the cover section 224 along the first canopy-support-pole 250 of the canopy apparatus 200. According to various embodiments, the flap-section-support-arrangement 240 may further include a second pair of support branches 242 extending sideways from the second canopy-support-pole 251 to support the second flap section 232. Accordingly, the second flap

section 232, supported by the second pair of support branches 242, may form a second cover extension 33 adjoining the second border 26 of the cover section along the second canopy-support-pole 251 of the canopy apparatus 200.

[00099] According to various embodiments, the first pair of support branches 241 may
 5 respectively be extending outwards from an outer circumferential surface of the first canopy-support-pole 250 and along a longitudinal plane of the first canopy-support-pole 250. Accordingly, the first pair of support branches 241 may lie in the same longitudinal plane of the first canopy-support-pole 250 and extending outwards from two spaced apart points along an intersection line between the longitudinal plane and the outer circumferential
 10 surface of the first canopy-support-pole 250. Hence, the first pair of support branches 241 and the first canopy-support-pole 250 may be coplanar. According to various embodiments, the second pair of support branches 242 may respectively be extending outwards from an outer circumferential surface of the second canopy-support-pole 251 and along a longitudinal plane of the second canopy-support-pole 251. Accordingly, the second pair of
 15 support branches 242 may lie in the same longitudinal plane of the second canopy-support-pole 251 and extending outwards from two spaced apart points along an intersection line between the longitudinal plane and the outer circumferential surface of the second canopy-support-pole 251. Hence, the second pair of support branches 242 and the second canopy-support-pole 251 may be coplanar.

[000100] According to various embodiments, the first pair of support branches 241 may
 20 be parallel with each other, and the second pair of support branches 242 may be parallel with each other. According to various embodiments, the first pair of support branches 241 may include a first pair of rod members (e.g. first pair of bolts 271) couplable to the first canopy-support-pole 250. According to various embodiments, the first pair of rod members
 25 may be spaced apart with each other when coupled to the first canopy-support-pole 250. Further, according to various embodiments, the first pair of rod members of the first pair of support branches 241 may be coplanar with each other, and may each be extending (or extend) in a respective direction away from the cover section 224. According to various embodiments, the second pair of support branches 242 may include a second pair of rod
 30 members (e.g. second pair of bolts 272) couplable to the second canopy-support-pole 251. According to various embodiments, the second pair of rod members may be spaced apart with each other when coupled to the second canopy-support-pole 251. Further, according to various embodiments, the second pair of rod members of the second pair of support branches

242 may be coplanar with each other, and may each be extending (or extend) in a respective direction away from the cover section 224. According to various embodiments, each of the first pair of support branches 241 and each of the second pair of support branches 242 may be in the form of a rod-like structure including, but is not limited to, a bolt, a screw, a pin, a shaft etc. As shown in FIG. 2C, the first pair of support branches 241 may include a first pair of bolts 271, and the second pair of support branches 242 may include a second pair of bolts 272. Each bolt 271, 272 may have a bolt head (e.g. a M6 x 100 long bolt having a hexagonal head).

[000101] According to various embodiments, each of the first and the second canopy-support-poles 250, 251 may include a respective pair of grooves 86 (or slots or keyhole slots). Accordingly, the first and the second pair of bolts 271, 272 may respectively be coupleable to the respective pair of grooves 86 (or slots or keyhole slots) on the first and the second canopy-support-poles 250, 251. According to various embodiments, each groove 86 (or slot or keyhole slot) may include an opening having a first portion 87 of the opening sized to receive the bolt head therethrough and a second portion 88 of the opening sized to hold the bolt head in place (or sized to prevent or obstruct the respective bolt head from sliding therethrough). In other words, according to various embodiments, the second portion 88 of the opening may be smaller than first portion 87 of the opening. For example, according to various embodiments, the first portion 87 of the opening may include a circular shape having a diameter that is substantially equal to or larger than a diameter of the respective bolt head, and the second portion 88 of the opening may include an elongated slit having a width that is smaller or shorter than the diameter of the first portion 87 of the opening, in turn, smaller or shorter than the diameter of the respective bolt head. According to various embodiments, each groove 86 (or slot or keyhole slot) may be a V-shaped groove, or any other suitably-shaped groove that is sized to enable the respective bolt head to be inserted therein a first portion 87 of the groove 86 and subsequently moved to and held in place by a second portion 88 of the groove 86. Thus, to couple the first and the second pair of bolts 271, 272 (of the first and the second pair of support branches 241, 242) to the respective pair of grooves 86 (or slots or keyhole slots) on the first and the second canopy-support-poles 250, 251, a respective bolt head of a respective bolt of the first and the second pair of bolts 271, 272 may be directed towards and inserted into a first portion 87 of an opening of a respective groove 86. Once inserted, the respective bolt may be slid or moved laterally into or towards the second portion 88 of the opening of the respective groove 86.

Once at the second portion 88 of the opening, the second portion 88 of the opening may hold the respective bolt head in place, with the remaining portion of the respective bolt extending outwards from the opening as a respective support branch 241, 242.

[000102] With reference to FIG. 2B and FIG. 2C, according to various embodiments, the first flap section 230 of the canopy sheet 220 may include a first further sleeve 231 extending along a surface (e.g. underneath/bottom/downward-facing surface) 32 of the canopy sheet 220 within the first flap section 230, and the second flap section 232 of the canopy sheet 220 may include a second further sleeve 233 extending along a surface (e.g. underneath/bottom/downward-facing surface) 34 of the canopy sheet 220 within the second flap section 232. Accordingly, the first and the second further sleeve 231, 233 may respectively be positioned adjacent to the first or the second sleeve 221, 222 at an outer side of the first or the second sleeve 221, 222. In other words, the first and the second sleeves 221, 222 may be positioned between the first and the second further sleeves 231, 233, according to various embodiments. According to various embodiments, the first and second sleeves 221, 222 may be parallel with each other, and the first and the second further sleeves 231, 233 may be parallel with the first and the second sleeves 221, 222. Accordingly, according to various embodiments, the first sleeve 221, the second sleeve 222, the first further sleeve 231, and the second further sleeve 233 of the canopy apparatus 200 may all extend along a same (e.g. substantially same) direction (e.g. along a direction extending perpendicularly between the opposite first and second edges 23, 24 of the canopy sheet).

[000103] According to various embodiments, each of the first further sleeve 231 and the second further sleeve 233 may have a length that is shorter than the direct distance extending perpendicularly between the opposite first and second edges 23, 24 of the canopy sheet 220. According to various embodiments, the length of each of the first further sleeve 231 and the second further sleeve 233 may be shorter than the length of each of the first sleeve 221 and the second sleeve 222. According to various other embodiments, the length of each of the first further sleeve 231 and the second further sleeve 233 may be the same as the length of each of the first sleeve 221 and the second sleeve 222.

[000104] According to various embodiments, the first further sleeve 231 may be located or positioned between the first canopy-support-pole 250 (or the first sleeve 221) and a first longitudinal edge (or border) 91 of the first flap section 230 that is furthest away from the first canopy-support-pole 250 (or the first sleeve 221), with the first further sleeve 231 being a distance away from the first longitudinal edge 91. According to various embodiments, the

second further sleeve 233 may be located or positioned between the second canopy-support-pole 251 (or the second sleeve 222) and a second longitudinal edge (or border) 92 of the second flap section 232 that is furthest away from the second canopy-support-pole 251 (or the second sleeve 222), with the second further sleeve 233 being a distance away from the second longitudinal edge 92. According to various embodiments, the distance of the first further sleeve 231 away from the first longitudinal edge 91 may be the same as the distance of the second further sleeve 231 away from the second longitudinal edge 92. According to various other embodiments, the distance of the first further sleeve 231 away from the first longitudinal edge 91 may be the different from the distance of the second further sleeve 231 away from the second longitudinal edge 92. According to various embodiments, the first and the second longitudinal edges (or borders) 91, 92 of the first and the second flap sections 230, 232 may be parallel with each other.

[000105] According to various embodiments, the flap-section-support-arrangement 240 may further include a first cross-support member 243 and a second cross-support member 244. Each of the first and the second cross-support members 243, 244 may include, but is not limited to, a rope (e.g. substantially taut rope), a cable (e.g. substantially taut cable, which may include a plastic or metal cable), a rigid wire, a rigid rod, a shaft, or a beam etc. According to various embodiments, the first cross-support member 243 may be inserted through the first further sleeve 231, so as to extend through and lie within the first further sleeve 231. The first cross-support member 243, extending through the first further sleeve 231, may be connected to the first pair of support branches 241 between free end portions of the first pair of support branches 241, to support the first flap section 231 forming the first cover extension 31. According to various embodiments, the second cross-support member 244 may be inserted through the second further sleeve 233, so as to extend through and lie within the second further sleeve 233. The second cross-support member 244, extending through the second further sleeve 233, may be connected to the second pair of support branches 242 between free end portions of the second pair of support branches 242, to support the second flap section 232 forming the second cover extension 33.

[000106] According to various embodiments, the flap-section-support-arrangement 240 (e.g. at least the first and the second support branches 241, 242 of the flap-section-support-arrangement 240) may be oriented in a manner that supports the first and the second cover extensions 31, 33 in a non-inclined manner (about a longitudinal axis of the first and the second canopy-support-poles 250, 251, respectively) with respect to a planar surface (or a

horizontal plane) of the spread out (or stretched) cover section 224 of the canopy sheet 220. Accordingly, according to various embodiments, the first and the second cover extensions 31, 33, supported by the flap-section-support-arrangement 240, may be spread out substantially along a same plane (i.e. coplanar) as the cover section 224. According to various other embodiments, the flap-section-support-arrangement 240 (e.g. at least the first and the second support branches 241, 242 of the flap-section-support-arrangement 240) may be oriented in a manner that supports the first and the second cover extensions 31, 33 in an inclined manner (about a longitudinal axis of the first and the second canopy-support-poles 250, 251, respectively) with respect to the planar surface (or the horizontal plane) of the spread out (or stretched) cover section 224. Accordingly, according to various embodiments, the first and the second cover extensions 31, 33, supported by the flap-section-support-arrangement 240, may be positioned or oriented in an inclined manner (i.e. forming an angle) with respect to the planar surface (or the horizontal plane) of a spread out (or stretched) cover section 224. For example, each of the first and the second cover extensions 31, 33 may form an angle between 1° to 60° with respect to the planar surface (or the horizontal plane) of the cover section 224.

[000107] According to various other embodiments, the first and the second flap sections 230, 232 may be positioned or oriented in a substantially perpendicular manner (i.e. inclined manner) with respect to the planar surface (or the horizontal plane) of a spread out (or stretched) cover section 224 (as shown in FIG. 2E). In other words, the first and the second flap sections 230, 232 may extend substantially vertically with respect to the cover section 224. For example, according to various embodiments, the first and the second flap sections 230, 232 may be unsupported by (or disconnected from) the flap-section-support-arrangement 240, as shown in FIG. 2E.

[000108] With reference to FIG 2C and FIG 2D, according to various embodiments, each of the first and the second sleeve-retainers 252, 253 of the canopy apparatus 200 may further include a through-hole for a respective support branch of the first or the second pair of support branches 241, 242 to extend therethrough. As shown in FIG. 2C, according to various embodiments, the canopy apparatus 200 may include at least one fastener 8 that is attachable to the respective support branch of the first or the second pair of support branches 241, 242 with the first or the second sleeve-retainer 252, 253, to hold (or secure) the first or the second sleeve-retainer 252, 253 to the first or second canopy-support-pole 250, 251. For example, as shown, according to various embodiments, the first sleeve-retainer 252 of the

canopy apparatus 200 may include a first pair of clips, and the second sleeve-retainer 253 of the canopy apparatus 200 may include a second pair of clips. Further, each of the first and the second pair of clips may include a respective through-hole 18, 19 for a respective support branch (e.g. bolt) of the first or the second pair of support branches 241, 242 to extend through the respective through-hole 18, 19. With the respective support branch (e.g. a bolt) extending through the respective through-hole 18, 19, the fastener 8 (e.g. nut on the bolt) may hold (or secure) each clip to the respective first or second canopy-support-pole 250, 251.

[000109] FIG. 2E shows a perspective view of a canopy apparatus 201 having a first and a second sets of at least one transverse sleeves 245, 246 according to various embodiments. As shown, according to various embodiments, the canopy sheet 220 of the canopy apparatus 200 may further include a first set of at least one transverse sleeve 245 extending perpendicularly from the first sleeve 221 along the first flap section 230 o, and a second set of at least one transverse sleeve 246 extending perpendicularly from the second sleeve 222 along the second flap section 232. According to various embodiments, the first pair of support branches 241 of the flap-section-support-arrangement 240 may be inserted through the first set of at least one transverse sleeves 245 so as to support the first flap section 230 for forming the first cover extension 31. According to various embodiments, the second pair of support branches 242 of the flap-section-support-arrangement 240 may be inserted through the second set of at least one transverse sleeves 246 so as to support the second flap section 232 for forming the second cover extension 32

[000110] According to various embodiments, the canopy sheet 220 of the canopy apparatus 200 may include the first and second further sleeve 231, 233 (as shown in FIG. 2A, 2B, 2D), or the first and second sets of at least one transverse sleeves 245, 246 (as shown in FIG. 2E), or both the the first and second further sleeve 231, 233 (as shown in FIG. 2A, 2B, 2D) and the first and second sets of at least one transverse sleeves 245, 246 (as shown in FIG. 2E) such that the first and second cross-support member 243, 244 may be respectively inserted through the first and second further sleeve 231, 233 (as shown in FIG. 2A, 2D), or the first and second pair of support branches 241, 242 may be inserted through the first and second sets of at least one transverse sleeves 245, 246 (as shown in FIG. 2E), or the first and second cross-support member 243, 244 may be respectively inserted through the first and second further sleeve 231, 233 and the first and second pair of support branches 241, 242 may be inserted through the first and second sets of at least one transverse sleeves

245, 246 so as to support the first and second flap section 230, 232 for forming the first and second cover extension 31, 32.

[000111] FIG. 3A shows a top perspective view of a canopy apparatus 300, suspended on the outdoor rack 11, the canopy apparatus 300 having a canopy sheet 320 that includes a first flap section 330 with a first further sleeve 331 at a first longitudinal edge 93 of the first flap section 330, and a second flap section 332 with a second further sleeve 233 at a second longitudinal edge 94 of the second flap section 232, according to various embodiments;

[000112] FIG. 3B shows a bottom perspective view of the canopy apparatus 300 of FIG. 3A, according to various embodiments;

[000113] FIG. 3C shows an isolated top perspective view of a canopy sheet 320 of the canopy apparatus 300 of FIG. 3A, according to various embodiments;

[000114] FIG. 3D shows an isolated bottom perspective view of the canopy sheet 320 of the canopy apparatus 300 of FIG. 3A, according to various embodiments;

[000115] FIG. 3E shows a close-up perspective view of a sleeve-retainer 352, 353 of the canopy apparatus 300, according to various embodiments;

[000116] FIG. 3F shows an isolated perspective view of a first canopy-support-pole 350 of the canopy apparatus 300 of FIG. 3A having a first and a second pole sections 80, 81 of the first canopy-support-pole 350, and a second canopy-support-pole 351 of the canopy apparatus 300 of FIG. 3A having a first and a second pole sections 82, 83 of the second canopy-support-pole 351, according to various embodiments;

[000117] FIG. 3G shows a cross-sectional view of the first canopy-support-pole 350 and the second canopy-support-pole 351 of FIG. 3F, according to various embodiments;

[000118] FIG. 3H shows a close-up cross-sectional view of the first canopy-support-pole 350 and the second canopy-support-pole 351 of FIG. 3G, according to various embodiments,

[000119] FIG. 3I shows an isolated perspective view of the first canopy-support-pole 350 and the second canopy-support-pole 351 having an anti-rotation arrangement 370 and an anti-lift arrangement 373 attached thereto, according to various embodiments;

[000120] FIG. 3J shows a perspective view of an elongate abutment element 42 of the anti-rotation arrangement 370 or the anti-lift arrangement 373 of FIG. 3I, according to various embodiments;

[000121] FIG. 3K shows a side view of the elongate abutment element 42 of FIG. 3J and an elongate support element 43 of the anti-rotation arrangement 370 or the anti-lift arrangement 373, according to various embodiments;

[000122] FIG. 3L shows an exploded side view of the elongate abutment element 42 of FIG. 3J and the elongate support element 43 of the anti-rotation arrangement 370 or the anti-lift arrangement 373, according to various embodiments;

[000123] FIG. 3M shows a close-up perspective view a first cross-support member 343 and a second cross-support member 344 of a flap-section-support-arrangement 340 of the canopy apparatus 300, according to various embodiments;

[000124] FIG. 3N shows a close-up perspective view a connecting ring 10 of each of the first and the second cross-support members 343, 344 of FIG. 3M, according to various embodiments;

[000125] FIG. 3O shows a close-up perspective view of a second proximal anti-rotation member 372 of the anti-rotation arrangement 370 engaged with the first elongated support frame 12 of the outdoor rack 11, according to various embodiments;

[000126] FIG. 3P shows a close-up perspective view of a pole-restraining cable 162, 163 of a first and a second restraining members 160, 161 of the canopy apparatus 300, according to various embodiments;

[000127] FIG. 3Q shows a bottom perspective view of the first and the second canopy-support-poles 350, 351 of FIG. 3I inserted through a pair of first and second sleeves 321, 322 of the canopy sheet 320 of FIG 3C, according to various embodiments; and

[000128] FIG. 3R shows a rear view of the first and the second canopy-support-poles 350, 351 of FIG. 3I inserted through a pair of first and second sleeves 321, 322 of the canopy sheet 320 of FIG 3C, according to various embodiments.

[000129] According to various embodiments, there is provided the canopy apparatus 300 (or canopy kit), similar to the canopy apparatus 200 of FIG. 2A to FIG. 2E, for covering over the clothes drying pole 7 suspended across the outdoor rack 11. According to various embodiments, the canopy apparatus 300 may contain all the features and/or limitations of the canopy apparatus 100 of FIG. 1A to FIG. 1D and/or the canopy apparatus 200 of FIG. 2A to FIG. 2E. In the following, the canopy apparatus 300 is described with like reference characters generally referring to the same or corresponding parts/features of the canopy apparatus 100 of FIG. 1A to FIG. 1D and/or the canopy apparatus 200 of FIG. 2A to FIG.

2E. The description of the parts/features made with respect to canopy apparatus 100 and/or canopy apparatus 200 is also applicable with respect to canopy apparatus 300.

[000130] According to various embodiments, the canopy apparatus 300 may, similar to the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 100 of FIG. 1A to FIG. 1D, include the canopy sheet 320 having the first and the second sleeves 321, 322 and a cover section 324 between the first and the second sleeves 321, 322.

[000131] According to various embodiments, the canopy apparatus 300 may, similar to the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 100 of FIG. 1A to FIG. 1D, include the first and the second canopy-support-poles 350, 351 respectively insertable into the first and the second sleeves 321, 322 for supporting the canopy sheet 320 in a spread out (or stretched) or folded manner.

[000132] According to various embodiments, the canopy apparatus 300 may, similar to the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 100 of FIG. 1A to FIG. 1D, further include a first sleeve-retainer 352 (e.g. one or more sleeve-retainers 352) and a second sleeve-retainer 353 (e.g. one or more sleeve-retainers 353) respectively attachable to the first canopy-support-pole 350 and the second canopy-support-pole 351, for holding (or securing) the first and the second sleeves 321, 322 of the canopy sheet 320 to the first and the second canopy-support-poles 350, 351 respectively. According to various embodiments, the first sleeve-retainer 352 may be attached to the first canopy-support-pole 350 after the first canopy-support-pole 350 is inserted through the first sleeve 321 such that the first sleeve 321 may be held between the first sleeve-retainer 352 and the first canopy-support-pole 350. According to various embodiments, the second sleeve-retainer 353 may be attached to the second canopy-support-pole 351 after the second canopy-support-pole 351 is inserted through the second sleeve 322 such that the second sleeve 322 may be held between the second sleeve-retainer 353 and the second canopy-support-pole 351. According to various embodiments, each of the first and the second sleeve-retainers 352, 353 may include any one or a combination of a clamp, a bracket, a clip, a buckle (e.g. plastic buckle) etc. As shown, according to various embodiments, the canopy apparatus 300 may include three sleeve retainer 352 for holding the first sleeve 321 to the first canopy-support-pole 350, and three sleeve retainer 353 for holding the second sleeve 322 to the second canopy-support-pole 351.

[000133] As shown in FIG. 3E, each sleeve support 352, 353 may be in the form of a slit tube having a tubular body 9a and a longitudinal slit 9b along a length of the tubular body

9a. According to various embodiments, each sleeve support 352, 353 may include an opening (e.g. through-hole) 9c for a respective support branch of a flap-section-support-arrangement 340 to extend therethrough. According to various embodiments, each of the first and the second sleeves 321, 322 may include a respective side aperture (or through-
5 hole) along a respective sleeve-wall for a respective support branch 341, 342 to extend therethrough. For example, each of the first and the second sleeves 321, 322 may be deliberately cut or punctured or penetrated (e.g. using a cutting or penetrating tool) along the respective sleeve-wall to create one or more side apertures for one or more respective support branches 341, 342 to extend therethrough. Accordingly, according to various
10 embodiments, the first and the second sleeve-retainers 352, 353 may be respectively attached to the first and the second canopy-support-poles 350, 351 after the first and the second canopy-support-poles 350, 351 are respectively inserted through the first and the second sleeves 321, 321, the first and the second sleeve-retainers 352, 353 may thus serve or function as a protective covering over the one or more side apertures of the first and the
15 second sleeves 321, 321 to protect the one or more side apertures against or from enlarging (or propagating in size) and/or against the first and the second sleeves 321, 322 tearing from an edge defining the one or more side apertures.

[000134] According to various embodiments, the canopy apparatus 300 may, similar to the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 100 of FIG.
20 1A to FIG. 1D, include the first and the second support-pole-to-rack restraining members 160, 161 for restraining the first and the second canopy-support-poles 350, 351 to the first elongated support frame 12 of the outdoor rack 11 against longitudinal sliding movements of the first and the second canopy-support-poles 350, 351 relative to the first elongated support frame 12 of the outdoor rack 11 (e.g. along a direction towards and/or away the
25 second elongated support frame 16) (e.g. as shown in FIG. 3P, described later).

[000135] Referring to FIG. 3F to 3H, the first canopy-support-pole 350 of the canopy apparatus 300 may include the first and the second pole sections 80, 81 which may be detachably connected to each other to form the first canopy-support-pole 350, and the second canopy-support-pole 351 may include the first and the second pole sections 82, 83
30 which may be detachably connected to each other to form the second canopy-support-pole 351. For example, according to various embodiments, each of the first canopy-support-pole section 80, 81 may be respectively joined to the second canopy-support-pole section 82,83 in a telescopic manner (e.g. one canopy-support-section is received in another hollow

canopy-support-section), with a transverse insert member 84 (e.g. bolt, screw, pin, shaft etc.) holding the first 80, 82 canopy pole section and the second canopy-support-pole section 81, 83 together. Accordingly, with each of the first and the second canopy-support-poles 350, 351 including a respective first canopy-support-pole section 80, 82 and a respective second canopy-support-pole section 81, 83 that form each of the first and the second canopy-support-poles 350, 351, the first and the second canopy-support-poles 350, 351 may be disassembled and stowed in a compact (or small) space.

[000136] According to various embodiments, the canopy sheet 320 of the canopy apparatus 300 may, similar to the canopy apparatus 200 of FIG. 2A to FIG. 2E, further include the first flap section 330 and the second flap section 332. The first and the second flap sections 330, 332 of the canopy sheet 320 may, similar to the first and the second flap sections 230, 232 of the canopy sheet 220 of the canopy apparatus 200, extend laterally outward from the first and the second sleeves 321, 322 in opposite directions away from the cover section 324 of the canopy sheet 320.

[000137] According to various embodiments, the canopy apparatus 300 may, similar to the canopy apparatus 200 of FIG. 2A to FIG. 2E, include the flap-section-support-arrangement 340 configured to spread out the first flap section 330 and the second flap section 332 of the canopy sheet 320. According to various embodiments, the flap-section-support-arrangement 340 may, similar to the flap-section-support-arrangement 240 of the canopy apparatus 200 of FIG. 2A to FIG. 2E, include a first plurality of support branches 341 extending sideway from the first canopy-support-pole 350 to support the first flap section 330. Accordingly, the first flap section 330, supported by the first plurality of support branches 341 may form a first cover extension 37 adjoining a first border 27 of the cover section 324 along the first canopy-support-pole 350 of the canopy apparatus 300. According to various embodiments, the flap-section-support-arrangement 340 may, similar to the flap-section-support-arrangement 240, further include a second plurality of support branches 342 extending sideway from the second canopy-support-pole 351 to support the second flap section 332. Accordingly, the second flap section 332, supported by the second plurality of support branches 342 may form a second cover extension 38 adjoining a second border 28 of the cover section 324 along the second canopy-support-pole 351 of the canopy apparatus 300. According to various embodiments, the first plurality of support branches 341 may respectively be extending outwards from an outer circumferential surface of the first canopy-support-pole 350 and along a longitudinal plane of the first canopy-support-pole

350. Accordingly, the first plurality of support branches 341 may lie in the same longitudinal plane of the first canopy-support-pole 350 and extending outwards from two spaced apart points along an intersection line between the longitudinal plane and the outer circumferential surface of the first canopy-support-pole 350. Hence, the first plurality of support branches
 5 341 and the first canopy-support-pole 350 may be coplanar. According to various embodiments, the second plurality of support branches 342 may respectively be extending outwards from an outer circumferential surface of the second canopy-support-pole 351 and along a longitudinal plane of the second canopy-support-pole 351. Accordingly, the second plurality of support branches 342 may lie in the same longitudinal plane of the second
 10 canopy-support-pole 351 and extending outwards from two spaced apart points along an intersection line between the longitudinal plane and the outer circumferential surface of the second canopy-support-pole 351. Hence, the second plurality of support branches 342 and the second canopy-support-pole 351 may be coplanar.

[000138] According to various embodiments, the first plurality of support branches 341
 15 may be parallel with each other, and the second plurality of support branches 342 may be parallel with each other. As shown in FIG. 3F and FIG. 3G, the first plurality of support branches 341 may include three support branches (e.g. rod members), and the second plurality of support branches 342 may include another three support branches (e.g. rod members). As shown in FIG. 3E, when the first and the second canopy-support poles 350,
 20 351 of the canopy apparatus 300 are respectively inserted through the first and the second sleeves 321, 322, each support branch (e.g. rod member) may extend from the first or the second canopy-support poles 350, 351 via the opening 9 on a side of each sleeve-retainer 352, 353.

[000139] According to various embodiments, the first plurality of support branches 341
 25 may, similar to the first pair of support branches 241, be spaced apart with each other. Further, according to various embodiments, the first plurality of support branches 341 may be coplanar with each other, and may each be extending (or extend) in a respective direction away from the cover section 324. According to various embodiments, the second plurality of support branches 342 may, similar to the second pair of support branches 242, be spaced
 30 apart with each other. Further, according to various embodiments, the second plurality of support branches 342 may be coplanar with each other, and may each be extending (or extend) in a respective direction away from the cover section.

[000140] With reference to FIG. 3H, each support branch of the first and the second plurality of support branches 341, 342 may include a branch assembly 345. The branch assembly 345 may include a first bolt 346 (e.g. M5 x 25 bolt), a second bolt 348 (e.g. M5 x 250 long headless bolt), and a coupling nut 347 (e.g. M5 x 30 connecting nut) which may be threaded/connected at one end to the first bolt 346 and threaded/connected at another end to the second bolt 348 to join/couple the first nut 347 to the second nut 348. According to various embodiments, one or more of a further nut 377, a screw cap 378 (e.g. cap or cover) etc. may be attached to a free end portion of the second bolt 348 in a manner so as to cover the free end portion of the second bolt 348 (e.g. to prevent the further nut 377 from becoming loose).

[000141] With reference to FIG. 3F, 3G and 3H, according to various embodiments, each of the first and the second canopy-support-poles 350, 351 may include a set of branch-insertion-and-support through-holes 97 for receiving each support branch (e.g. branch assembly 345) of the first and the second plurality of support branches 341, 342. As shown, the first canopy-support pole 350 may include three branch-insertion-and-support through-holes 97, and the second canopy-support pole 351 may include another three branch-insertion-and-support through-holes 97. Referring to FIG. 3H, each branch-insertion-and-support through-hole 97 may be extending transversely across the first and/or the second canopy-support-poles 350, 351. According to various embodiments, each branch-insertion-and-support through-hole 97 may have a first opening 98 that is larger (e.g. has a wider diameter) than a second opening 99 opposite the first opening 98. The first opening 98 and the second opening 99 may be coaxial. For example, the first opening 98 may be sized to receive the first bolt 346 entirely (i.e. including a bolt head of the first bolt 346), and the second opening 99 may be sized to be smaller (e.g. narrower) than a largest width (or a diameter) of the bolt head of the first bolt 346 so as to obstruct the bolt head of the first bolt 346 from passing through the second opening 99.

[000142] Accordingly, the first bolt 346 may be inserted into the branch-insertion-and-support through-holes 97 from the first opening 98 such that the threaded portion of the first bolt 346 is extending outward from the second opening 99, with the bolt head of the first bolt 346 obstructed or blocked by the second opening and with the bolt head of the first bolt 346 positioned within the canopy-support-pole 350, 351 (e.g. at an inward-facing side of the second opening 99). The coupling nut 347 may then be screwed onto the threaded portion of the first bolt 346 (e.g. threaded to the exposed region of the first bolt 346 that is extending

away from the second opening 99), at one end of the coupling nut 347, to secure (e.g. fix) the first bolt 346 to the canopy-support-pole 350, 351 with a wall portion of the canopy-support-pole 350, 351 surrounding the second opening 99 being sandwiched or clamped between the coupling nut 347 and the bolt head of the first bolt 346. Thereafter, the second
 5 bolt 348 may be threaded to the other end of the coupling nut 347 to form the branch assembly 345, which is secured to and extending from the canopy-support-pole 350, 351.

[000143] According to various embodiments, the canopy sheet 320 of the canopy apparatus 300 may, similar to the canopy apparatus 200 of FIG. 2A to FIG. 2E, further include the first further sleeve 331 extending along the canopy sheet 320 within the first flap
 10 section 330, and the second further sleeve 333 extending along the canopy sheet 320 within the second flap section 332. With reference to FIG. 3C and 3D, according to various embodiments, the first further sleeve 331 may be located or positioned at or substantially near the first longitudinal edge (or border) 93 of the first flap section 330, and the second further sleeve 333 may be located or positioned substantially at or substantially near the
 15 second longitudinal edge (or border) 94 of the second flap section 332. In other words, according to various embodiments, the first further sleeve 331 may be extending along the first longitudinal edge (or border) 93 of the first flap section 330, and the second further sleeve 333 may be extending along the second longitudinal edge (or border) 94 of the second flap section 331.

[000144] According to various embodiments, the flap-section-support-arrangement 340 may further include the first cross-support member 343 and the second cross-support member 344. Each of the first and the second cross-support members 343, 344 may include, but is not limited to, a rope (e.g. substantially taut rope), a cable (e.g. substantially taut cable, which may include a plastic or metal cable), a rigid wire, a rigid rod, a shaft, or a beam etc.
 25 According to various embodiments, the first cross-support member 343 may be inserted through the first further sleeve 331, so as to extend through and lie within the first further sleeve 331. The first cross-support member 343, extending through the first further sleeve 331, may be connected to the first plurality of support branches 341 between free end portions of the first plurality of support branches 341, to support the first flap section 331
 30 forming the first cover extension 37. According to various embodiments, the second cross-support member 344 may be inserted through the second further sleeve 333, so as to extend through and lie within the second further sleeve 333. The second cross-support member 344, extending through the second further sleeve 333, may be connected to the second plurality

of support branches 342 between free end portions of the second second plurality of support branches 342, to support the second flap section 332 forming the second cover extension 38.

[000145] As shown in FIG. 3M and FIG. 3N, according to various embodiments, each of
 5 the first and the second cross-support member 343, 344 may include at least one rigid beam segments 15 and at least one connecting ring 10 (e.g. hoop etc.). The connecting ring may be configured to adjoin or connect to a free end portion of a respective support branch of the first and the second support branches 341, 242. For example, a respective connecting ring 10 (e.g. hoop) may be looped around the free end portion of a respective support branch
 10 341, 342 between the further nut 377 and the screw cap 378. Accordingly, according to various embodiments, the further nut 377 and the screw cap 378 may be used to secure the respective connecting ring 10 to the free end portion of the respective support branch 341, 342. Hence, the respective connecting ring 10 may be sandwiched or clamped between the further nut 377 and the screw cap 378 so as to be secured at the free end portion of the
 15 respective support branch 341, 342. According to various embodiments, each of the first and the second cross-support member 343, 344 may include a plurality of rigid beam segments 15 joint together in an alternating manner with a connecting ring 10 therebetween each pair of adjacent beam segments. For example, according to various embodiments, each of the first and the second cross-support member 343, 344 may include two rigid beam
 20 segments 15 and three connecting rings 10 joint together in an alternating manner. According to various other embodiments, each of the first and the second cross-support member 343, 344 may include two rigid beam segments 15 and three connecting rings 10 joint together in an alternating manner.

[000146] According to various embodiments, the canopy apparatus 300 may, similar to
 25 the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 100 of FIG. 1A to FIG. 1D, further include the first support-pole-to-rack restraining member 160, of the canopy apparatus of 100, disposed at a first longitudinal end portion 59 of the first canopy-support-pole 350 of the canopy apparatus 300, and the second support-pole-to-rack restraining member 161, of the canopy apparatus of 100, disposed at the first longitudinal
 30 end portion 61 of the second canopy-support-pole 351 of the canopy apparatus 300. According to various embodiments, the first and second support-pole-to-rack restraining members 160, 161 of the canopy apparatus 300 may be configured to restrain the first and the second canopy-support-poles 350, 351 of the canopy apparatus 300 to the outdoor rack

11 (e.g. to the first elongated support frame 12 of the outdoor rack 11) against longitudinal sliding movements (e.g. in a direction/directions towards and/or away the second elongated support frame 16) of the first and the second canopy-support-poles 350, 351 relative to the outdoor rack 11 (e.g. to the first elongated support frame 12 of the outdoor rack 11).

5 According to various embodiments, each of the first and the second support-pole-to-rack restraining members 160, 161 of the canopy apparatus 300 may include any one or a combination of a cable, a hook, a transverse insert member (e.g. bolt, screw, pin, shaft etc.), or any other suitable means of restraining the first and the second canopy-support-poles 350, 351 of the canopy apparatus 300 to the first elongated support frame 12 of the outdoor rack 11.

[000147] With reference to FIG. 3I and FIG. 3P, according to various embodiments, the canopy apparatus 300 may further include an anti-rotation arrangement 370 that is attachable (or attached) to each of the first and the second canopy-support-poles 350, 351. According to various embodiments, the anti-rotation arrangement 370 may include a first proximal anti-rotation member 371 that is attachable (or attached) to the first longitudinal end portion 59 of the first canopy-support-pole 350 and a second proximal anti-rotation member 372 that is attachable (or attached) to the first longitudinal end portion 61 of the second canopy-support-pole 351. According to various embodiments, each of the first proximal anti-rotation member 371 and the second proximal anti-rotation member 372 may include (or be in the form of) an elongate abutment element 42. As shown, according to various embodiments, the elongate abutment element 42 of the first proximal anti-rotation member 371 and/or the second proximal anti-rotation member 372 may extend or may be extending parallel (e.g. substantially parallel) with the first and the second canopy-support-poles 350, 351 respectively. According to various embodiments, the anti-rotation arrangement 370 may be directly and fixedly attached (e.g. via a fastener, or forming an integral/monolithic piece e.g. via a molding process) to the first and the second canopy-support poles 350, 351, respectively, in a manner such that each of the first proximal anti-rotation member 371 and the second proximal anti-rotation member 372 of the anti-rotation arrangement 370 is immovable relative to the respective first and the second canopy-support poles 350, 351 and is integral with the respective first and the second canopy-support poles 350, 351. According to various other embodiments, each of the first proximal anti-rotation member 371 and the second proximal anti-rotation member 372 of the anti-rotation arrangement 370 may be fixedly attached to the first and the second canopy-support poles

350, 351, respectively, via a respective extension piece 376. According to various embodiments, the extension piece 376 may include an elongate support 43, such as a rod, a shaft, a bolt, or any other suitable extension piece. Accordingly, according to various embodiments, the anti-rotation arrangement 370 may include the elongate support element
 5 43 (i.e. of extension piece 376) extending perpendicularly (e.g. substantially perpendicularly) from each of the first and the second canopy-support-poles 350, 351, respectively, and with a respective elongate abutment element 42 (i.e. of the first proximal anti-rotation member 371 and/or the second proximal anti-rotation member 372) at a tip portion of 51 the elongate support element 43.

10 **[000148]** According to various embodiments, each of the first proximal anti-rotation member 371 and the second proximal anti-rotation member 372 of the anti-rotation arrangement 370 may serve as a stopper against (e.g. bear against) a side wall of a notch 13 of the first elongated support frame 12 (see FIG. 30), thereby inhibiting each of the first and the second canopy-support-poles 350, 351 from rotating about its longitudinal axis (or
 15 rotating about each sleeve 321, 322). According to various embodiments, when the canopy apparatus 300 is in use (e.g. suspended cross or hung from or mounted to the outdoor rack 11), each of the first proximal anti-rotation member 371 and the second proximal anti-rotation member 372 may be placed in respective notches 13 along the first elongated support frame 12 of the outdoor rack 11 together with the respective first longitudinal end
 20 portion 59 of the first canopy-support-pole 350 and the first longitudinal end portion 61 of the second canopy-support-pole 351. According to various embodiments, each of the first proximal anti-rotation member 371 and the second proximal anti-rotation member 372 may be respectively extending parallel with respect to the first and/or the second canopy-support-poles 350, 351 above the canopy sheet 320 (and above the first and/or the second canopy-support-poles 350, 351).
 25

[000149] According to various embodiments, the first proximal anti-rotation member 371, being the elongate abutment element 42 extending parallel with the first canopy-support-pole 350, may be attached to the first canopy-support-pole 350 via the extension piece 376 so as to form a U-shaped bracket. Further, according to various embodiments, the second
 30 proximal anti-rotation member 372, being the elongate abutment element 42 extending parallel with the second canopy-support-pole 351, may be attached to the second canopy-support-pole 351 via the extension piece 376 so as to form another U-shaped bracket.

[000150] With reference to FIG. 3I, according to various embodiments, the canopy apparatus 300 may further include an anti-lift arrangement 373 that is attachable (or attached) to each of the first and the second canopy-support-poles 350, 351. According to various embodiments, the anti-lift arrangement 373 may include a first anti-lift member 374 that is attachable (or attached) to the second longitudinal end portion 60 of the first canopy-support-pole 350 and a second anti-lift member 375 that is attachable (or attached) to the second longitudinal end portion 62 of the second canopy-support-pole 351. According to various embodiments, each of the first anti-lift member 374 and the second anti-lift member 375 may include (or be in the form of) the elongate abutment element 42 (refer to FIG. 3J).

As shown, according to various embodiments, the elongate abutment element 42 of first anti-lift member 374 and/or the second anti-lift member 375 may extend or may be extending parallel (e.g. substantially parallel) with the first and the second canopy-support-poles 350, 351 respectively. According to various embodiments, each of the first anti-lift member 374 and the second anti-lift member 375 may be fixedly attached to the first and the second canopy-support poles 350, 351, respectively, via a respective extension piece 379. According to various embodiments, the extension piece 379 may include the elongate support element 43 (see FIG. 3L), such as a rod, a shaft, a bolt, or any other suitable extension piece. Accordingly, according to various embodiments, the anti-lift arrangement 373 may include the elongate support element 43 (i.e. of extension piece 379) extending perpendicularly (e.g. substantially perpendicularly) from each of the first and the second canopy-support-poles 350, 351, respectively, and with a respective elongate abutment element 42 (i.e. of the first anti-lift member 374 and/or the second anti-lift member 375) at a respective second longitudinal end portion (e.g. distal end portion) of the elongate support element 43.

[000151] According to various embodiments, the first anti-lift member 374, being the elongate abutment element 42 extending parallel with the first canopy-support-pole 350, may be attached to the first canopy-support-pole 350 via the extension piece 379 so as to form a U-shaped bracket. Further, according to various embodiments, the second anti-lift member 375, being the elongate abutment element 42 extending parallel with the second canopy-support-pole 351, may be attached to the second canopy-support-pole 351 via the extension piece 379 so as to form another U-shaped bracket. According to various embodiments, when the canopy apparatus 300 is in use (e.g. suspended cross or hung from or mounted to the outdoor rack 11), each of the first anti-lift member 374 and the second

anti-lift member 375 may be respectively extending parallel with respect to the first and/or the second canopy-support-poles 350, 351 below the canopy sheet 320 (and below the first and/or the second canopy-support-poles 350, 351). Each U-shaped bracket formed may be fitted over (or hooked over) the second elongated frame 16 (e.g. lower portion or lower half of the second elongated frame 16) of the outdoor rack 11 (not shown) to respectively hold the first and/or the second canopy-support poles 350, 351 in place (e.g. to prevent the canopy apparatus 300 from lifting upwards under strong wind blowing upwards against the canopy sheet 320). For example, the first anti-lift member 374 and the second anti-lift member 375 may be arranged to hold the first and the second canopy-support-poles 350, 351, at the second longitudinal end portions 60, 62, to the second elongated frame 16, to the second elongated frame 16 of the outdoor rack 11 such that the second longitudinal end portions 60, 62 of the first and the second canopy-support-poles 350, 351 are prevented or inhibited from being lifted (or blown) out of the respective notches 17 along the second elongated support frames 16 under strong winds moving in an upward direction to push upwards against a bottom-facing surface of the canopy sheet 320.

[000152] According to various embodiments, the extension piece 376 of the anti-rotation arrangement 370 and the extension piece 379 of the anti-lift arrangement 373 of each of the first and the second canopy-support poles 350, 351 may form an angle of between 90° to 180°, or 120° to 150°, or 130° to 140°. For example, the angle between the the extension piece 376 of the anti-rotation arrangement 370 and the extension piece 379 of the anti-lift arrangement 373 of each of the first and the second canopy-support poles 350, 351 may be 135° (see FIG. 3S). According to various embodiments, the extension piece 379 of the anti-lift arrangement 373 of each of the first and the second canopy-support poles 350, 351 may extend downwards and perpendicularly to the cover section 324 of the canopy sheet 320 of the canopy apparatus 300. According to various embodiments, the extension pieces 376 of the anti-rotation arrangement 370 and the extension pieces 379 of the anti-lift arrangement 373 of each of the first and the second canopy-support poles 350, 351 may be proximal to the respective first longitudinal end portion 59, 61 of the first and the second canopy-support poles 350, 351. Accordingly, each of the first and second proximal anti-rotation members 371, 372 and the first anti-lift member 374 and the second anti-lift member 375 may be extending from the respective extension pieces 376, 379 in a direction away from respective the first longitudinal end portion 59, 61 of the first and the second canopy-support poles 350, 351 in a manner such that the respective free ends of the first and second proximal anti-

rotation members 371, 372 and the first anti-lift member 374 and the second anti-lift member 375 may be directed towards the second longitudinal end portions 60, 62 of the first and the second canopy-support poles 350, 351.

[000153] As shown, with reference to FIG. 3J to FIG. 3L, each elongate abutment element 42 (i.e. of any one or both of the anti-rotation arrangement 370 or the anti-lift arrangement 373) may include a flat metal (e.g. stainless steel) sheet or plate. As shown, the abutment element 42 (e.g. flat metal sheet or plate) may define at least one through-hole 45 (e.g. two through-holes). Further, as shown, each elongate support element 43 (i.e. of any one or both of the anti-rotation arrangement 370 or the anti-lift arrangement 373) may include at least one bolt 46 (e.g. two bolts), and may further include at least one nut 47 (e.g. two pairs of nuts) and/or at least one cap 48 (e.g. at least two screw caps/covers). According to various embodiments, the at least one bolt 46 may be inserted or bolted across the at least one through-hole 45, and thereafter secured to the elongate abutment element 42 with a pair of nuts 47 threaded or tightened to the at least one bolt 46 from a top and a bottom face of the elongate abutment element 42 to secure the at least one bolt 46 to the elongate abutment element 42 (e.g. flat metal sheet or plate). Further, the at least one cap 48 may cap on to a free end or tip of the at least one bolt 46 to prevent one of the nuts 47 (e.g. the nut 47 on the top face of the elongate abutment element 42) from slipping off or becoming loose easily.

[000154] With reference to FIG. 3P, according to various embodiments, each of the first and the second restraining members 160, 161 of the canopy apparatus may include a first and a second pole-restraining cables 162, 163 fixed at one end to the canopy sheet 320 and fixed at another end to the first longitudinal end portion 59 of the first canopy support pole 350 and the first longitudinal end portion 61 of the second canopy support pole 351, respectively. Accordingly, each of the first and the second pole-restraining cables 162, 163 may form a hoop which may be looped around the first elongated support frame 12 for restraining the first and the second canopy-support-poles 350, 351 against longitudinal sliding movements relative to the first elongated support frame 12 of the outdoor rack 11.

[000155] FIG. 3S shows a perspective view of a canopy apparatus 301 with the first anti-lift member 374 and the second anti-lift member 375 extending below the first and the second canopy-support-poles 350a, 351a, according to various embodiments.

[000156] According to various embodiments, there may be provided the canopy apparatus 301 (or canopy kit), similar to the canopy apparatus 300 of FIG. 3A to FIG. 3R, for covering over the clothes drying pole 7 suspended across the outdoor rack 11. According to various

embodiments, the canopy apparatus 301 may contain all the features and/or limitations of the canopy apparatus 100 of FIG. 1A to FIG. 1D and/or the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 300 of FIG. 3A to FIG. 3R. In the following, the canopy apparatus 301 is described with like reference characters generally referring to the same or corresponding parts/features of the canopy apparatus 100 of FIG. 1A to FIG. 1D and/or the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 300 of FIG. 3A to FIG. 3R. The description of the parts/features made with respect to canopy apparatus 100 and/or canopy apparatus 200 and/or canopy apparatus 300 is also applicable with respect to canopy apparatus 301.

10 **[000157]** According to various embodiments, the canopy apparatus 301 may, similar to the canopy apparatus 300 of FIG. 3A to FIG. 3R and/or the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 100 of FIG. 1A to FIG. 1D, include the canopy sheet 320a having the first and the second sleeves 321a, 322a and the cover section 324a between the first and the second sleeves 321a, 322a.

15 **[000158]** According to various embodiments, the canopy apparatus 301 may, similar to the canopy apparatus 300 of FIG. 3A to FIG. 3R and/or the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 100 of FIG. 1A to FIG. 1D, include the first and the second canopy-support-poles 350a, 351a respectively insertable into the first and the second sleeves 321a, 322a for supporting the canopy sheet 320a in a spread out (or stretched) or folded manner.

20 **[000159]** According to various embodiments, the canopy apparatus 301 may, similar to the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 100 of FIG. 1A to FIG. 1D, include the first and the second sleeve-retainers 152, 153 for holding (or securing) the first and the second sleeves 321a, 322a of the canopy sheet 320a to the first and the second canopy-support-poles 350a, 351a respectively.

25 **[000160]** According to various embodiments, the canopy apparatus 301 may, similar to the canopy apparatus 300 of FIG. 3A to FIG. 3R and/or the canopy apparatus 200 of FIG. 2A to FIG. 2E and/or the canopy apparatus 100 of FIG. 1A to FIG. 1D, include the first and the second support-pole-to-rack restraining members 160, 161 for restraining the first and the second canopy-support-poles 350a, 351a to the first elongated support frame 12 of the outdoor rack 11 against longitudinal sliding movements of the first and the second canopy-support-poles 350a, 351a relative to the first elongated support frame 12 of the outdoor rack 11 (e.g. along a direction towards and/or away the second elongated support frame 16)

[000161] According to various embodiments, the canopy apparatus 301 may, similar to the canopy apparatus 300 of FIG. 3A to FIG. 3R and/or the canopy apparatus 200 of FIG. 2A to FIG. 2E, include the first flap section 330a and the second flap section 332a.

[000162] According to various embodiments, the canopy apparatus 301 may, similar to the canopy apparatus 300 of FIG. 3A to FIG. 3R, include the flap-section-support-arrangement 340 configured to spread out the first flap section 330a and the second flap section 332a of the canopy sheet 320a. According to various embodiments, the flap-section-support-arrangement 340 of the canopy apparatus 301 may, similar to the flap-section-support-arrangement 340 of the canopy apparatus 300 of FIG. 3A to FIG. 3R, include a first plurality of support branches 341 and a second plurality of support branches 342.

[000163] According to various embodiments, the canopy sheet 320a of the canopy apparatus 301 may, similar to the canopy sheet 320 of the canopy apparatus 300 of FIG. 3A to FIG. 3R, include the first further sleeve 331a extending along the canopy sheet 320a within the first flap section 330a, and the second further sleeve 333a extending along the canopy sheet 320a within the second flap section 332a.

[000164] According to various embodiments, the flap-section-support-arrangement 340 of the canopy apparatus 301 may, similar to the flap-section-support-arrangement 340 of the canopy apparatus 300 of FIG. 3A to FIG. 3R, include the first cross-support member 343 and the second cross-support member 344. According to various embodiments, the first cross-support member 343 may be inserted through the first further sleeve 331a, so as to extend through and lie within the first further sleeve 331a. The first cross-support member 343, extending through the first further sleeve 331a, may be connected to the first plurality of support branches 341 of the canopy apparatus 301 between free end portions of the first plurality of support branches 341, to support the first flap section 331a. According to various embodiments, the second cross-support member 344 may be inserted through the second further sleeve 333a, so as to extend through and lie within the second further sleeve 333a. The second cross-support member 344, extending through the second further sleeve 333a, may be connected to the second plurality of support branches 342 of the canopy apparatus 301 between free end portions of the second second plurality of support branches 342, to support the second flap section 332.

[000165] According to various embodiments, the canopy apparatus 301 may, similar to the canopy apparatus 300 of FIG. 3A to FIG. 3R further include an anti-rotation arrangement 370 that is attachable (or attached) to each of the first and the second canopy-support-poles

350a, 351a. According to various embodiments, the anti-rotation arrangement 370 may include a first proximal anti-rotation member 371 that is attachable (or attached) to a first longitudinal end portion 67 of the first canopy-support-pole 350a and a second proximal anti-rotation member 372 that is attachable (or attached) to the first longitudinal end portion
 5 69 of the second canopy-support-pole 351a.

[000166] According to various embodiments, the canopy apparatus 301 may, similar to the canopy apparatus 300 of FIG. 3A to FIG. 3R further include an anti-lift arrangement 373 that is attachable (or attached) to each of the first and the second canopy-support-poles 350a, 351a. Each of the first anti-lift member 374 and the second anti-lift member 375 may be
 10 fixedly attached to the first and the second canopy-support poles 350a, 351a, respectively, via the respective extension piece 379, at a second longitudinal end portion 68 of the first canopy-support-pole 350a and a second longitudinal end portion 70 of the second canopy-support-pole 351a. The first anti-lift member 374 may be attached to the first canopy-support-pole 350a via the extension piece 379 so as to form a U-shaped bracket. Further,
 15 according to various embodiments, the second anti-lift member 375 may be attached to the second canopy-support-pole 351a via the extension piece 379 so as to form another U-shaped bracket. As shown, each of the first anti-lift member 374 and the second anti-lift member 375 of the canopy apparatus 301 may be extending parallel with respect to the first and/or the second canopy-support-poles 350a, 351a below the first and/or the second
 20 canopy-support-poles 350a, 351a. Accordingly, each U-shaped bracket formed may be fitted over (or hooked over) the second elongated frame 16 (e.g. lower portion or lower half of the second elongated frame 16) of the outdoor rack 11 (not shown) to respectively hold the first and/or the second canopy-support poles 350a, 351a in place (e.g. to prevent the canopy apparatus 301 from lifting upwards under strong wind conditions blowing upwards
 25 against the canopy sheet 320a).

[000167] FIG. 4A shows an isolated perspective view of a clothes hanging assembly 410, according to various embodiments;

[000168] FIG. 4B shows a close-up view of a complementing clothes drying pole 420 of the clothes hanging assembly 410 of FIG. 4A, according to various embodiments;

30 **[000169]** FIG. 4C shows a glider 430 of the clothes hanging assembly 410 of FIG. 4A, according to various embodiments; and

[000170] FIG. 4D shows a pulley 443 of the clothes hanging assembly 410 of FIG. 4A, according to various embodiments.

[000171] According to various embodiments, there is provided a clothes hanging assembly 410. According to various embodiments, the clothes hanging assembly 410 may include at least one complementing clothes drying pole 420 having a first longitudinal end portion (e.g. proximal/tail end portion) 71 and a second longitudinal end portion (e.g. distal end portion) 72. The first longitudinal end portion 71 of the at least one complementing clothes drying pole 420 may be supported in one of the row of notches or holes 13 along the first elongated support frame 12 of the outdoor rack 11 (not shown), and the second longitudinal end portion 72 of the at least one complementing clothes drying pole 420 may be supported in one of the row of notches 17 along the second elongated support frames 16 of the outdoor rack 11 (not shown), so as to suspend the at least one complementing clothes drying pole 420 across the first and the second elongated support frames 12, 16 of the outdoor rack 11.

[000172] According to various embodiments, each of the at least one complementing clothes drying pole 420 may include a first complementing-clothes-drying-pole section and a second complementing-clothes-drying-pole section which may be joined (or assembled) together to form the at least one complementing clothes drying pole 420 (similar to FIG. 3F and FIG. 3G) (not shown). For example, according to various embodiments, each of the first and the second complementing-clothes-drying-pole section may be a respective section of the at least one complementing clothes drying pole 420 that is shorter than an overall length of the at least one complementing clothes drying pole 420. According to various embodiments, the first complementing-clothes-drying-pole section and the second complementing-clothes-drying-pole section may be coupleable to each other in an end-to-end manner, via a pole coupler (similar to extension coupler 426 shown in FIG. 4F and FIG. 4G as an example), to form the at least one complementing clothes drying pole 420. According to various embodiments, the pole coupler may include a collar (e.g. that receives the first complementing-clothes-drying-pole section from one side/opening of the collar, and receives the second complementing-clothes-drying-pole section from an opposite side/opening of the collar), a clamp, a bolt and nut assembly, a screw etc., or any other suitable coupler. According to various embodiments, the first complementing-clothes-drying-pole section and the second complementing-clothes-drying-pole section may be arranged in a telescopic manner. Further, according to various embodiments, the pole coupler may include or may be a coupling bolt inserted transversely across the first complementing-clothes-drying-pole section and the second complementing-clothes-drying-

pole sections within an overlapping zone thereof so as to interlock the first complementing-clothes-drying-pole section and the second complementing-clothes-drying-pole section. According to various embodiments, the first complementing-clothes-drying-pole section may include a series of first through-holes and the second complementing-clothes-drying-pole section may include a series of second through-holes, for the coupling bolt to be inserted through a pair of aligned first through-hole and second through-hole so as to interlock the first complementing-clothes-drying-pole section and the second complementing-clothes-drying-pole section (similar to that as shown in FIG. 4F and FIG. 4G as an example). According to various other embodiments, the first and the second complementing-clothes-drying-pole sections may include a respective flange which may be brought together, with the respective flanges directed towards each other, and secured to each other via a bolt, a screw, a rivet etc. across the respective flanges.

[000173] According to various embodiments, each of the at least one complementing clothes drying pole 420 may include a liquid stopper 421 on the at least one complementing clothes drying pole 420 for obstructing a flow of a liquid (e.g. preventing a liquid from sliding across the liquid stopper 421) along the at least one complementing clothes drying pole 420. According to various embodiments, the liquid stopper 421 may include or may be, but is not limited to or being, a protruding member or a portion of the at least one complementing clothes drying pole 420. For example, according to various embodiments, the liquid stopper 421 may include an annular ring having an inner diameter that is the same as a diameter of the at least one complementing clothes drying pole 420 and an outer diameter that is larger than the diameter of the at least one complementing clothes drying pole 420. According to various embodiments, the liquid stopper 421 may be protruding from a circumferential surface of the second longitudinal end portion 72 of the at least one complementing clothes drying pole 420 so as to block a liquid, that comes into contact with the at least one complementing clothes drying pole 420 between the liquid stopper 421 and the tip of the second longitudinal end portion 72, from sliding towards the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420. According to various other embodiments, the liquid stopper 421 may include a recess formed on the at least one complementary clothes drying pole 420. For example, the recess may be a circumferential groove.

[000174] According to various embodiments, the clothes hanging assembly may further include a complementing-clothes-drying-pole-to-rack restraining member 460. The

complementing-clothes-drying-pole-to-rack restraining member 460 may be similar or identical to the first and the second support-pole-to-rack restraining members 160, 161 (described above), and may be disposed at the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420. According to various embodiments, the

5 complementing-clothes-drying-pole-to-rack restraining member 460 may be configured to restrain the at least one complementing clothes drying pole 420 to the first elongated support frame 12 of the outdoor rack 11 against longitudinal sliding movements of the at least one complementing clothes drying pole 420 relative to the first elongated support frame 12 of the outdoor rack 11 (e.g. along a direction towards and/or away the second elongated support

10 frame 16). According to various embodiments, the complementing-clothes-drying-pole-to-rack restraining member 460 may include a complementing-clothes-drying-pole-to-rack restraining member 190. The complementing-clothes-drying-pole-to-rack restraining member 190 may, similar or identical to the first and the second support-pole-to-rack restraining members 160, 161 (described above), be any one or a combination of a cable, a

15 wire, a hook, a transverse insert member (e.g. a bolt, a screw, a pin, a shaft etc.), or any other suitable fastener for restraining at least one complementing clothes drying pole 420 to the first elongated support frame 12 of the outdoor rack 11 (or to another fixed structure, for example, a window frame of a building).

[000175] According to various embodiments, the clothes hanging assembly 410 may

20 further include a deployable and retractable cable mechanism 440, disposed on the at least one complementing clothes drying pole 420, for distributing or piling (e.g. stacking) a plurality of gliders 430 of the clothes hanging assembly 410.

[000176] According to various embodiments, the deployable and retractable cable mechanism 440 may include a deployable cable 441 which is drawable in a first direction

25 to deploy and straighten a segment 442 of the deployable cable 441 parallel with the at least one complementing clothes drying pole 420 and which is retractable in a second direction to withdraw the segment 442 of the deployable cable 441 towards the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420.

[000177] With reference to FIG. 4A and FIG. 4D, according to various embodiments, the

30 deployable and retractable cable mechanism 440 may include a pulley 443 disposed adjacent to the liquid stopper 421. According to various embodiments, the pulley 443 may be disposed on a side of the liquid stopper 421 opposite (e.g. facing away from) the tip of the second longitudinal end portion 72. According to various other embodiments, the pulley

443 may be disposed on a side of the liquid stopper 421 facing the tip of the second longitudinal end portion 72. According to various embodiments, an end portion 78 of the deployable cable 441 may be fixed to the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420. According to various embodiments, the deployable
5 cable 441 may run from the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420 and through the pulley 443 and back to the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420. According to various embodiments, the segment 442 of the deployable cable 441 may be a length of the deployable cable 441 measured from a point 78 of the deployable cable 441
10 that is fixed to the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420 to the pulley 443, when the deployable cable 441 is straightened.

[000178] According to various embodiments, the deployable and retractable cable mechanism 440 may include a retractable reel (not shown) (e.g. in lieu of the pulley 443) for extending the deployable cable 441 from the retractable reel (e.g. when the deployable
15 cable 441 is pulled in a direction away from the retractable reel) or reeling in the deployable cable 441 (e.g. via a spring mechanism in the retractable reel when there is no external force, from human intervention, acting on the deployable cable 441). The retractable reel may be disposed adjacent to the liquid stopper 421, similar to where the pulley 443 may be disposed. Accordingly, according to various embodiments, a first end portion of the deployable cable
20 441 may be fixed to the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420 and a second end portion of the deployable cable 441 may be fixed to the retractable reel, with an overall length of the deployable cable 441 being longer than a distance between a point on the deployable cable 441 that is fixed to the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420 and a position of
25 the retractable reel. Accordingly, when the deployable and retractable cable mechanism 440 includes the retractable reel, the segment 442 of the deployable cable 441 may be a length of the deployable cable 441 measured from the point on the deployable cable 441 that is fixed to the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420 to the position of the retractable reel, when a maximum amount of deployable cable
30 441 is fully reeled in while the deployable cable 441 is fixed to the first longitudinal end portion 71.

[000179] According to various embodiments, the clothes hanging assembly 410 may further include the plurality of gliders 430. The plurality of gliders 430 may be slidingly

fitted to or may be in sliding engagement with the at least one complementing clothes drying pole 420 in a manner so as to be slidable along the at least one complementing clothes drying pole 420. According to various embodiments, the plurality of gliders 430 may be configured such that clothes may be hung or attached thereto (e.g. directly, or via a hanger).

5 **[000180]** As shown in 4C, according to various embodiments, each of the plurality of gliders 430 may include a glider body 431 configured to be in sliding engagement with the at least one complementing clothes drying pole 420. According to various embodiments, each of the plurality of gliders 430 may include a main ring 434 and an auxiliary ring 432 (e.g. for hooking a clothes hanger thereon) interlocked with the main ring 434. Accordingly,
 10 a hole axis of each auxiliary ring 432 may be substantially perpendicular to a longitudinal direction along or longitudinal axis of the at least one complementing clothes drying pole 420. According to various embodiments, the main ring 434 of the glider 430 may be fitted over the at least one complementing clothes drying pole 420 such that the at least one complementing clothes drying pole 420 is inserted through the main ring 434 of the glider
 15 430 in order for the glider 430 to be slidable along the at least one complementing clothes drying pole 420. According to various embodiments, the plurality of gliders 430 may be respectively fixed to the segment 442 of the deployable cable 441 in a longitudinally spaced apart manner. For example, as shown in FIG. 4C, according to various embodiments, the glider body 431 of each of the plurality of gliders 430 may further include an anchor element
 20 436 having an aperture 85 (e.g. an eyelet, a hoop, a loop etc.) for fixing (e.g. anchoring or secure) the glider 430 to the segment 442 of the deployable cable 441. For example, according to various embodiments, the deployable cable 441 may be threaded through the aperture 85 to form a knot at the anchor element 436 (e.g. a knot around the aperture 85 of the anchor element 436) so as to fix (e.g. anchor or secure) the glider body 431 to the
 25 deployable cable 441. As shown, according to various embodiments, the anchor element 436 may be connected to the glider body 431 via a swivel joint 437 that enables the glider body 431 to swivel about the swivel joint 437 (e.g. about a vertical axis across the glider body 431).

[000181] Accordingly, according to various embodiments, with the plurality of gliders
 30 430 respectively fixed to the segment 442 of the deployable cable 441 in the longitudinally spaced apart manner, the plurality of gliders 430 may be deployed and distributed along the at least one complementing clothes drying pole 420 lengthwise when the segment 442 of the deployable cable 441 is deployed and straightened to be parallel with the at least one

complementing clothes drying pole 420. Further, according to various embodiments, the plurality of gliders 430 may be piled (e.g. piled one glider at a time) towards the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420 to stack together when the segment 442 of the deployable cable 441 is withdrawn towards the

5 first longitudinal end portion 71 (e.g. in a direction towards a user) of the at least one complementing clothes drying pole 420. Accordingly, with the clothes hanging assembly 410 including the deployable and retractable cable mechanism 440, a user of the clothes hanging assembly 410 may attach or remove clothes to the at least one complementing clothes drying pole 420 of the clothes hanging assembly 410 without having or needing to

10 lift the at least one complementing clothes drying pole 420 off the outdoor rack 11 or without needing to stretch outwards from a window to reach clothes hung a distance away from the window. Accordingly, the clothes hanging assembly 410 with the deployable and retractable cable mechanism 440 provides a safe means (or mode) of hanging or removing clothes on or from the outdoor rack 11.

15 **[000182]** According to various embodiments, the deployable and retractable cable mechanism 440 may further include a plurality of guide rings 444 disposed along the at least one complementing clothes drying pole 420 to guide the deployable cable 441 to run alongside the at least one complementing clothes drying pole 420 in a parallel manner. According to various embodiments, the plurality guide rings 444 may be arranged alongside

20 the complementing clothes drying pole 420, in a straight (e.g. linear) path along the complementing clothes drying pole 420. Accordingly, the plurality guide rings 444 may be aligned with each other so as to guide the deployable cable 441 to run along the straight path.

[000183] According to various embodiments, the deployable and retractable cable

25 mechanism 440 may include at least two guide rings 444.

[000184] FIG. 4E shows an extension coupler, according to various embodiments;

[000185] FIG. 4F shows a perspective view of the extension coupler attached to the at least one complementing clothes drying pole 420, according to various embodiments;

[000186] FIG. 4G shows a perspective view of the extension coupler attached to the at

30 least one complementing clothes drying pole 420, according to various embodiments; and

[000187] FIG. 4H shows the at least one complementing clothes drying pole 420 secured to a main pole 14 of the outdoor rack 11, according to various embodiments.

[000188] According to various embodiments, the clothes hanging assembly 410 may further include the extension pole 424 (e.g. auxiliary rod) couplable to the second longitudinal end portion 72 of the at least one complementing clothes drying pole 420 so as to extend the overall length of the at least one complementing clothes drying pole 420.

5 According to various embodiments, the overall length of the extended complementing clothes drying pole 420 with the extension pole 424 may be longer than a direct distance between the first elongated support frame 12 and the second elongated support frame 16 of the outdoor rack 11. Accordingly, the extension pole 424 may be configured to extend beyond the second elongated support frame 16, in a direction away from the first elongated support frame 12, as well as to provide a plurality of fulcrum points, along a length of the extension pole 424, between the extension pole 424 and the second elongated support frame 12, for the at least one complementing clothes drying pole 420 with the extension pole 424 to pivot about each of the plurality of fulcrum points when the at least one complementing clothes drying pole 420 is drawn (or slid or moved) towards a user (e.g. in a direction towards the first elongated support frame 12 and the user). Accordingly, with the extension pole 424, a weight of the at least one complementing clothes drying pole 420 may be supported (e.g. partially supported) by the extension pole 424 resting on the second elongated support frame 12 of the outdoor rack 11, as a user moves or brings in the at least one complementing clothes drying pole 420 towards the user. In other words, the user need not lift the at least one complementing clothes drying pole 420 completely (or entirely) off the outdoor rack 11, as the user shifts or moves the at least one complementing clothes drying pole 420 indoors.

[000189] According to various embodiments, the extension pole 424 may be couplable to the second longitudinal end portion 72 of the at least one complementing clothes drying pole 420 in an end-to-end manner, via an extension coupler 426. According to various embodiments, the extension coupler 426 may include a shaft collar (e.g. that receives the complementing clothes drying pole 420 from one side/opening of the shaft collar, and receives the extension pole 424 from an opposite side/opening of the shaft collar), a clamp, a bolt and nut assembly, a screw etc., or any other suitable coupler for securing the extension pole 424 to the at least one complementing clothes drying pole 420.

[000190] With reference to FIG. 4G, according to various embodiments, the extension coupler 424 may include a coupling bolt. Accordingly, according to various embodiments, the at least one complementing clothes drying pole 420 and the extension pole 424 may be

arranged in a telescopic manner with the coupling bolt inserted transversely across the at least one complementing clothes drying pole 420 and the extension pole 424 within an overlapping zone thereof so as to interlock the at least one complementing clothes drying pole 420 and the extension pole 424. According to various embodiments, the at least one complementing clothes drying pole 420 may include a series of through-holes 422 and the extension pole 424 may include at least one through-hole 425, for the coupling bolt to be inserted through one of the series of through-hole 422 of the at least one complementing clothes drying pole 420 and (e.g. that is aligned with) the at least one through-hole 425 of the extension pole 424 so as to interlock the at least one complementing clothes drying pole 420 and the extension pole 424.

[000191] According to various other embodiments, the at least one complementing clothes drying pole 420 and the extension pole 424 may include a respective flange (not shown) which may be brought together, with the respective flanges directed towards each other, and secured to each other via a bolt, a screw, a rivet etc. across the respective flanges.

[000192] With reference to FIG. 4F and FIG. 4G, according to various embodiments, the extension pole 424 may include an extension-pole-to-rack stopper 450. According to various embodiments, the extension-pole-to-rack stopper 450 may include at least one protrusion 451 extending outwardly from a free end portion 90 (e.g. distal end portion or second longitudinal end portion) of the extension pole 424. As shown, according to various embodiments, the extension pole 424 may include two protrusions 451 extending outwardly from the free end portion 90 of the extension pole 424. The two protrusions 451 are shown in FIG. 4G as two parallel bolts. However, each protrusion of the extension-pole-to-rack stopper 450 may include any other protruding member (e.g. annular ring(s), pin(s), transverse insert members(s) which are insertable across the extension pole 424). According to various embodiments, at least one protrusion 451 of the extension-pole-to-rack stopper 450 may be configured to perform an anti-slip function by bearing against the second face 4 of the second elongated support frame 16 of the outdoor rack 11. According to various embodiments, when the extension-pole-to-rack stopper 450 includes a pair of protrusions 451 extending outwardly from the free end portion 90 of the extension pole 424, the pair of protrusions 451 (e.g. pair of parallel bolts spaced 1-2 cm apart) may be positioned on the extension pole or configured to straddle across the second elongated support frame 16 therebetween the pair of protrusions 451 to keep or hold the at least one complementing

clothes drying pole 420 with the extension pole 424 in a fixed position relative to the second elongated support frame 16 of the outdoor rack 11.

[000193] With reference to FIG. 4F and 4G, the clothes hanging assembly 410 may further include a complementing-clothes-drying-pole-to-rack anti-fall arrangement 452. According to various embodiments, the complementing-clothes-drying-pole-to-rack anti-fall arrangement 452 may include an anti-fall restraining cable 452a fixed at one end to the extension pole 424, with a free end which may be wound around or tied or secured or fastened to the outdoor rack 11 to hold the at least one complementing clothes drying pole 420 with the extension pole 424 in the event that the at least one complementing clothes drying pole 420 with the extension pole 424 becomes or is dislodged from the outdoor rack 11. The outdoor rack 11 may include a main beam (e.g. ref. 14 in FIG. 1A and FIG. 4H) extending perpendicularly between the first and second elongated support frames 12, 16 of the outdoor rack 11. According to various embodiments, the anti-fall restraining cable 452a may be wound or looped around the main beam 14. As shown, according to various embodiments, the anti-fall restraining cable 452a may be fixed at one end to the extension pole 424 and a length portion or segment of the anti-fall restraining cable 452a towards the opposite end may be looped over the main beam 14 such that an eyelet 452b at the other end of the anti-fall restraining cable 452a may be slidably fitted over the length portion or segment of the anti-fall restraining cable 452a. Accordingly, the loop formed by the anti-fall restraining cable 452a may be slidable along the main beam 14. According to various other embodiments (not shown), the anti-fall restraining cable 452a may be fixed at both ends to the extension pole 424. For example, the anti-fall restraining cable 452a may be fixed at one end to the extension pole 424 and another end of the anti-fall restraining cable 452a may include an eyelet which may be secured or coupled to the extension pole 424 (e.g. by connecting the eyelet to a bolt inserted across or extending from the extension pole 424) after looping over the main beam 14. Accordingly, the anti-fall restraining cable 452a may form a hoop for winding or looping over the main beam 14 for restraining the at least one complementing clothes drying pole 420 with the extension pole 424 to hold the at least one complementing clothes drying pole 420 with the extension pole 424 in the event that the at least one complementing clothes drying pole 420 with the extension pole 424 becomes or is dislodged from the outdoor rack 11.

[000194] According to various other embodiments, the anti-fall restraining cable 452a may be fixed at any one or both ends to any one or a combination of (i) the extension pole

424, (ii) the at least one complementing clothes drying pole 420, or (iii) extension coupler 424.

[000195] According to various embodiments, there may be provided a rain-proof clothes drying system which may include the canopy apparatus 100, 200, 201, 300 or 301 and the clothes hanging assembly 410 as described above. For example, within the rain-proof clothes drying system, the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420 may be supported in one of the row of notches or holes 13 along the first elongated support frame 12 of the outdoor rack 11 and the second longitudinal end portion 72 of the at least one complementing clothes drying pole 420 may be supported in one of the row of notches 17 along the second elongated support frame 16 of the outdoor rack 11 so as to suspend the at least one complementing clothes drying pole 420 across the first and the second elongated support frames 12, 16 of the outdoor rack. Further, within the rain-proof clothes drying system, the first longitudinal end portion 51, 55, 59 of the first canopy-support-pole 150, 250, 350 and the first longitudinal end portion 53, 57, 61 of the second canopy-support-pole 151, 251, 351 of the canopy apparatus 100, 200 or 300 are respectively insertable to two outermost notches or holes 13 of the first elongated support frame 12 of the outdoor rack 11, and the second longitudinal end portion 52, 60 of the first canopy-support-pole 150, 250, 350 and the second longitudinal end portion 54, 62 of the second canopy-support-pole 151, 251, 351 of the canopy apparatus 100, 200, 201, 300, or 301 are respectively insertable to two outermost notches or holes 17 of the second elongated support frame 16 of the outdoor rack 11 for suspending the cover section 124, 224, 324 of the canopy sheet 120, 220, 320 of the canopy apparatus 100, 200, 201, 300 or 301 across the outdoor rack 11 to cover over the at least one complementing clothes drying pole 420.

[000196] According to various embodiments, the canopy apparatus 100, 200, 201, 300 or 301 of the rain-proof clothes drying system may be spreadable to suspend over the at least one complementing clothes drying pole 420 of the clothes hanging assembly 410 of the rain-proof clothes drying system in a manner such that the cover section 124, 224, 324 of the canopy sheet 120, 220, 320 of the canopy apparatus 100, 200, 201, 300 or 301 covers over a length segment of the at least one complementing clothes drying pole 420 between (or from) the liquid stopper 421 and (or towards) the first longitudinal end portion 71 of the at least one complementing clothes drying pole 420.

[000197] Various embodiments generally provide a canopy apparatus that may serve as a protective shed, against rain and dirt, over the clothes drying pole 7 or a complementing clothes drying pole 420.

5 **[000198]** The canopy apparatus according to various embodiments may also enable sterilizing and drying of clothes, hung on a clothes drying pole 7 or a complementing clothes drying pole 420, by allowing UV rays from Sunlight to pass through the shed.

[000199] The canopy apparatus according to various embodiments may be relatively lightweight, and may be easy and convenient to assemble or disassemble for stowing in a compact space.

10 **[000200]** Various embodiments also generally provide a clothes hanging assembly that is convenient to use and provides a labour-saving and safe environment for hanging and removing clothes from an outdoor rack.

[000201] Various embodiments also generally provide a secure canopy apparatus and clothes hanging assembly with restraining members that prevents the canopy apparatus and
15 the clothes hanging assembly from falling or sliding off the outdoor rack.

[000202] Various embodiments also generally provide a rain-proof clothes drying system which may include the canopy apparatus and the clothes hanging assembly, and having the above-mentioned advantages of the canopy apparatus and the clothes hanging assembly.

20 **[000203]** While the invention has been particularly shown and described with reference to specific embodiments, it should be understood by those skilled in the art that various changes, modification, variation in form and detail may be made therein without departing from the scope of the invention as defined by the appended claims. The scope of the invention is thus indicated by the appended claims and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced.

CLAIMS

1. A canopy apparatus for covering over a clothes drying pole suspended across an outdoor rack having parallel and spaced apart first and second elongated support frames, wherein a first longitudinal end portion of the clothes drying pole is supported in one of a row of notches or holes along the first elongated support frame and a second longitudinal end portion of the clothes drying pole is supported in one of a row of notches along the second elongated support frames so as to suspend the clothes drying pole across the first and second elongated support frames of the outdoor rack, the canopy apparatus comprising:

a canopy sheet having opposite first and second edges, wherein the canopy sheet comprises a pair of parallel first and second sleeves extending along a surface of the canopy sheet in a direction extending perpendicularly between the opposite first and second edges of the canopy sheet, wherein the pair of parallel first and second sleeves along the surface of the canopy sheet defines a cover section of the canopy sheet between the pair of parallel first and second sleeves;

a first and second canopy-support-poles respectively insertable through the pair of parallel first and second sleeves to support the canopy sheet in a manner so as to spread out or fold the cover section of the canopy sheet by moving the first and second canopy-support-poles laterally apart or together, wherein each of the first and second canopy-support-poles is longer than a direct distance extending perpendicularly between the opposite first and second edges of the canopy sheet, wherein the first canopy-support-pole is inserted through the first sleeve with a first longitudinal end portion of the first canopy-support-pole extending beyond the first edge of the canopy sheet and a second longitudinal end portion of the first canopy-support-pole extending beyond the second edge of the canopy sheet, and wherein the second canopy-support-pole is inserted through the second sleeve with a first longitudinal end portion of the second canopy-support-pole extending beyond the first edge of the canopy sheet and a second longitudinal end portion of the second canopy-support-pole extending beyond the second edge of the canopy sheet;

a first and second sleeve-retainers respectively attachable to the first and second canopy-support-poles in a manner so as to respectively hold the pair of parallel first and second sleeves of the canopy sheet to the first and second canopy-support-poles; and

a first and second support-pole-to-rack restraining members respectively disposed at the first longitudinal end portion of the first canopy-support-pole and the first longitudinal end portion of the second canopy-support-pole, the first and second support-pole-to-rack restraining members being configured to restrain the first and second canopy-support-poles respectively to the outdoor rack against longitudinal sliding movements of the first and second canopy-support-poles relative to the outdoor rack,

wherein the cover section of the canopy sheet extends continuously across the first and second canopy-support-poles to form an uninterrupted cover with an area demarcated by the first and second canopy-support-poles and the first and second edges of the canopy sheet.

2. The apparatus as claimed in claim 1, wherein the opposite first and second edges of the canopy sheet are parallel with each other.

3. The apparatus as claimed in claim 1 or claim 2, wherein the canopy sheet comprises a transparent polyolefin film.

4. The apparatus as claimed in any one of claims 1 to 3, wherein the canopy sheet further comprises a first and second flap sections respectively extending laterally outward from the pair of parallel first and second sleeves in opposite directions away from the cover section.

5. The apparatus as claimed in claim 4, further comprising:

a flap-section-support-arrangement comprising a first pair of support branches extending sideways from the first canopy-support-pole to support the first flap section for forming a first cover extension adjoining a first border of the cover section along the first

canopy-support-pole and a second pair of support branches extending sideway from the second canopy-support-pole to support the second flap section for forming a second cover extension adjoining a second border of the cover section along the second canopy-support-pole.

6. The apparatus as claimed in claim 5,

wherein the first pair of support branches are parallel with each other, and

wherein the second pair of support branches are parallel with each other.

7. The apparatus as claimed in claim 5 or claim 6,

wherein the first pair of support branches comprises a first pair of rod members couplable to the first canopy-support-pole in a spaced apart manner with the first pair of rod members being coplanar with the first canopy-support-pole and with the first pair of rod members extending away from the cover section, and

wherein the second pair of support branches comprises a second pair of rod members couplable to the second canopy-support-pole in a spaced apart manner with the second pair of rod members being coplanar with the second canopy-support-pole and with the second pair of rod members extending away from the cover section.

8. The apparatus as claimed in any one of claims 5 to 7,

wherein the first flap section comprises a first further sleeve extending along the surface of the canopy sheet within the first flap section,

wherein the second flap section comprises a second further sleeve extending along the surface of the canopy sheet within the second flap section, and

wherein the first and second further sleeves are extending in a direction parallel with the pair of parallel first and second sleeves.

9. The apparatus as claimed in claim 8, wherein the flap-section-support-arrangement further comprises:

a first cross-support member connected to the first pair of support branches between free end portions of the first pair of support branches and extending through the first further sleeve, and

a second cross-support member connected to the second pair of support branches between free end portions of the second pair of support branches and extending through the second further sleeve.

10. The apparatus as claimed in any one of claims 1 to 9,

wherein the first pole-to-rack restraining member comprises one or a combination of a first pole-restraining cable with a first end of the first pole-restraining cable fixedly attached to the first longitudinal end portion of the first canopy-support-pole or a first-pole-restraining transverse insert member insertable across the first longitudinal end portion of the first canopy-support-pole, and

wherein the second pole-to-rack restraining member comprises one or a combination of a second pole-restraining cable with a first end of the second pole-restraining cable fixedly attached to the first longitudinal end portion of the second canopy-support-pole or a second-pole-restraining transverse insert member insertable across the first longitudinal end portion of the second canopy-support-pole.

11. A rain-proof clothes drying system for suspending across an outdoor rack having parallel and spaced apart first and second elongated support frames, wherein the first elongated support frame includes a row of notches or holes along its length and the second elongated support frame includes a row of notches along its length, the system comprising:

the canopy apparatus as claimed in any one of claims 1 to 10; and

a clothes hanging assembly comprising at least one complementing clothes drying pole having a first longitudinal end portion and a second longitudinal end portion,

wherein the at least one complementing clothes drying pole comprises a liquid stopper protruding from a circumferential surface of the second longitudinal end portion so as to block liquid, that comes into contact with the at least one complementing clothes drying pole between the liquid stopper and the tip of the second longitudinal end portion, from sliding towards the first longitudinal end portion,

wherein the canopy apparatus is spreadable to suspend over the at least one complementing clothes drying pole of the clothes hanging assembly in a manner such that the cover section of the canopy sheet of the canopy apparatus covers over a length segment of the at least one complementing clothes drying pole between the liquid stopper and the first longitudinal end portion of the at least one complementing clothes drying pole.

12. The system as claimed in claim 11, wherein the clothes hanging assembly comprises:

a plurality of gliders slidably fitted to the at least one complementing clothes drying pole in a manner so as to be slidable along the at least one complementing clothes drying pole, wherein each of the plurality of gliders comprises a glider body in sliding engagement with the at least one complementing clothes drying pole, and

a deployable and retractable cable mechanism disposed on the at least one complementing clothes drying pole, wherein the deployable and retractable cable mechanism comprises a deployable cable drawable in a first direction to deploy and straighten a segment of the deployable cable parallel with the at least one complementing clothes drying pole and retractable in a second direction to withdraw the segment of the deployable cable towards the first longitudinal end portion of the at least one complementing clothes drying pole,

wherein the plurality of gliders is respectively fixed to the segment of the deployable cable in a longitudinally spaced apart manner so as to enable deploying and distributing the plurality of gliders along the at least one complementing clothes drying pole lengthwise when the segment of the deployable cable is deployed and straightened to be parallel with the at least one complementing clothes drying pole and enable piling the plurality of gliders towards the first longitudinal end portion of the at least one

complementing clothes drying pole to stack together when the segment of the deployable cable is withdrawn towards the first longitudinal end portion of the at least one complementing clothes drying pole.

13. The system as claimed in claim 12, wherein the glider body comprises a main ring and an auxiliary ring interlocked with the main ring.

14. The system as claimed in any one of claims 11 to 13,

wherein the deployable and retractable cable mechanism comprises a pulley disposed adjacent to the liquid stopper on a side of the liquid stopper opposite the tip of the second longitudinal end portion,

wherein an end portion of the deployable cable is fixed to the first longitudinal end portion of the at least one complementing clothes drying pole and the deployable cable runs from the first longitudinal end portion of the at least one complementing clothes drying pole through the pulley and back to the first longitudinal end portion of the at least one complementing clothes drying pole,

wherein the segment of the deployable cable is a length of the deployable cable measured from a point of the deployable cable that is fixed to the first longitudinal end portion of the at least one complementing clothes drying pole to the pulley when the deployable cable is straightened.

15. The system as claimed in claim 14, wherein the deployable and retractable cable mechanism comprises a plurality of guide rings disposed along the at least one complementing clothes drying pole to guide the deployable cable to run alongside the at least one complementing clothes drying pole in a parallel manner.

16. The system as claimed in any one of claims 11 to 15, wherein the clothes hanging assembly further comprising:

a complementing-clothes-drying-pole-to-rack restraining member disposed at the first longitudinal end portion of the at least one complementing clothes drying pole for restraining the at least one complementing clothes drying pole to the first elongated support frame of the outdoor rack against longitudinal sliding movements of the at least one complementing clothes drying pole relative to the first elongated support frame of the outdoor rack.

17. The system as claimed in claim 16, wherein the complementing-clothes-drying-pole-to-rack restraining member comprises:

one or a combination of a complementing-clothes-drying-pole restraining cable with a first end of the complementing-clothes-drying-pole restraining cable fixedly attached to the first longitudinal end portion of the at least one complementing clothes drying pole or a complementing-clothes-drying-pole restraining transverse insert member insertable across the first longitudinal end portion of the at least one complementing clothes drying pole.

18. The system as claimed in any one of claims 11 to 17,

wherein the clothes hanging assembly comprises an extension pole coupleable to the second longitudinal end portion of the at least one complementing clothes drying pole in an end-to-end manner, via an extension coupler.

19. The system as claimed in claim 18,

wherein the at least one complementing clothes drying pole and the extension pole are arranged in a telescopic manner, and

wherein the extension coupler comprises a coupling bolt inserted transversely across the at least one complementing clothes drying pole and the extension pole within an overlapping zone thereof so as to interlock the at least one complementing clothes drying pole and the extension pole.

20. The system as claimed in claim 19,

wherein the at least one complementing clothes drying pole comprises a series of through-holes and the extension pole comprises at least one through-hole, for the coupling bolt to be inserted through one of the series of through-holes of the at least one complementing clothes drying pole and the at least one through-hole of the extension pole so as to interlock the at least one complementing clothes drying pole and the extension pole.

21. The system as claimed in any one of claims 18 to 20,

wherein the clothes hanging assembly further comprises an anti-fall restraining cable with a first end of the anti-fall restraining cable attached to the second longitudinal end portion of the at least one complementing clothes drying pole via the extension coupler.