

SUPPORT ASSEMBLYField of invention

- 5 The present invention relates to a support for supporting articles of clothing. The support is particularly suited to supporting articles of clothing in a manner which facilitates drying or airing of the clothes. It will be convenient to hereinafter describe the invention in relation to this particular application. However it should be appreciated that the support may be used to support articles other
- 10 than clothing.

Background and prior art

- 15 Various types of hangers are available for supporting articles of clothing for drying, airing or display purposes. In many countries where land is at a premium and higher population density is required, multi-storey apartment buildings are the norm. Commonly, bamboo poles are used to support clothes for drying outside apartment buildings. Hollow protrusions are usually affixed to the exterior wall of the apartment building adjacent the kitchen window for
- 20 accommodating a portion of the bamboo pole. It is necessary to lift the bamboo pole with the wet clothing out of the kitchen window and locate the pole in the protrusion. Although relatively inexpensive, the use of such of bamboo poles is inconvenient and can be dangerous. This is because when wet clothes are hung from a bamboo pole, the pole and clothing are very heavy and therefore
- 25 difficult to lift. In Singapore, for example, there have been many cases where occupants of apartment buildings have lost their balance when lifting the bamboo pole and fallen to their deaths from the kitchen window.

- 30 Another commonly used type of hanger consists of an apparatus comprising one or more strings for hanging articles of clothing. This allows an occupant to hang the clothes in the kitchen and then simply extend the strings outwards. However, in order to work properly, the strings have to extend from the inside of the kitchen window outwards. Therefore, when the string apparatus is being



used, the kitchen window needs to be kept open. This is undesirable in terms of security, as intruders can then enter through the open window.

Yet another type of hanger is described in US Patent No. 5,405,065. The
5 patent describes a portable clothes hanger to suspend articles of clothing for drying, displaying or storing purposes. However, such a hanger is not suitable for hanging clothes to dry outside apartment buildings. The arms of the hanger cannot be rotated either, relative to a fixed position, such as a kitchen window. Therefore, the end of the hanger arms remote from the
10 kitchen window are not easily accessible.

Summary of the invention

It is an object of the present invention to provide an improved support for
15 supporting articles of clothing which is convenient and safe to use, or to at least provide the public with a useful choice.

In a first aspect the invention is a support assembly for use in supporting articles of clothing, said assembly comprising or including
20 foundation means for attachment to a fixed support,
an extension member supported by and extending from the foundation means, and
a frame, in use, capable of supporting articles of clothing distally supported from the extension member and spaced from the foundation
25 means by the extension member,
wherein the distal support of the frame from the extension member involves connection means to permit, in use, rotational movement of the frame relative to, yet below, the extension member to provide the user, in use, with access to the entire frame supported from the fixed support via
30 the foundation means and extension member whilst the user is in

substantially the same access position thereto so as to associate or disassociate articles of clothing with the frame,

and wherein said connection means has a hub having one or more arms extending therefrom to the frame,

5 and wherein said hub includes an upper bearing portion and a lower bearing portion captured about an axle depending from the extension member so that the hub is rotatable relative to the axle and thus the extension member.

Preferably the foundation means includes fastener means adapted
10 to engage and thus attach the foundation means to said fixed support.

Preferably the fastener means is or includes at least one bolt and the foundation means includes a bracket (the "first bracket") having at least one aperture to receive the at least one bolt.

Preferably the fastening means further includes a bracket (the
15 "second bracket" of the foundation means) and a nut receivable by a thread on the shank of the bolt, the bolt and nut being adapted to squeeze the brackets against the fixed support respectively from the front and the rear thereof.

Preferably the extension member includes a web section and at
20 least one flange section with the web section extending substantially in the vertical direction whilst the at least one flange section extends transverse to the web section.

Preferably the connection means includes stop means for
25 selectively restricting the rotational movement of the frame relative to the extension member.

Preferably the frame is in the form of a closed form for which the one or more arms act as spokes, and which closed form is a perimeter which is substantially circular or polygonal in shape.

30 In another aspect the invention is a support assembly for use in supporting articles of clothing externally adjacent and proximate to a

multistory building and to be accessible by a user from a window, door or balcony of such a multistory building, said support assembly comprising or including

5 foundation means for attachment in a fixed position to or relative to said multistory building,

an extension member supported by and extending from the foundation means,

10 a frame, in use, capable of supporting articles of clothing distally supported from the extension member and spaced from the foundation means by the extension member,

wherein the distal support of the frame from the extension member involves connection means to permit, in use, rotational movement of the frame relative to, yet below, the extension member to provide the user, in use, with access to the entire frame supported from the fixed support via
15 the foundation means and extension member whilst the user is in substantially the same access position thereto so as to associate or disassociate articles of clothing with the frame.

In yet another aspect the invention is a support assembly for use in
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foundation means for attachment to a fixed support,

an extension member supported by and extending from the foundation means, and

25 a frame, in use, capable of supporting articles of clothing distally supported from the extension member and spaced from the foundation means by the extension member,

wherein the distal support of the frame from the extension member involves connection means to permit, in use, rotational movement of the frame relative to, the extension member to provide the user, in use, with
30 access to the entire frame supported from the fixed support via the foundation means and extension member whilst the user is in

substantially the same access position thereto so as to associate or disassociate articles of clothing with the frame,

and wherein said connection means has a hub having one or more arms extending therefrom to the frame,

5 and wherein said hub includes an upper bearing portion and a lower bearing portion captured about an axle depending from the extension member so that the hub is rotatable relative to the axle and thus the extension member,

and wherein the connection means includes a stop means for
10 selectively restricting the rotational movement of the frame relative to the extension member.

In still another aspect the invention is a support assembly for use in supporting articles of clothing, said assembly

15 comprising or including

foundation means for attachment to a fixed support,

an extension member supported by and extending from the foundation means, and

a frame, in use, capable of supporting articles of clothing distally
20 supported from the extension member and spaced from the foundation means by the extension member,

wherein the distal support of the frame from the extension member involves connection means to permit, in use, rotational movement of the frame relative to the extension member to provide the user, in use, with
25 access to the entire frame supported from the fixed support via the foundation means and extension member whilst the user is in substantially the same access position thereto so as to associate or disassociate articles of clothing with the frame,

and wherein the frame includes a series of hanger loops to
30 facilitate attachment of articles of clothing to the frame.

The foundation means preferably includes fastener means which engage the relatively fixed member for attaching the foundation means to the relatively fixed member. The fastener means preferably includes at least one bolt with the foundation means including a front bracket having at least one aperture to receive the at least one bolt wherein the bolt extends through the aperture and engaging the front bracket and the relatively fixed member. The foundation means preferably includes a rear bracket which is spaced from the front bracket by the relatively fixed member, the fastening means including a nut to be received by a thread on the shank of the bolt, the bolt being configured to extend between the front and rear brackets with the nut and bolt retaining both the front and rear brackets adjacent the relatively fixed member. It should be appreciated that the foundation means provides the support assembly with a relatively solid foundation from which the rest of the assembly can extend and be supported by. It should also be appreciated that the fastener means may not necessarily be in the form of a bolt and nut arrangement but rather may be in the form of a rivet or other wall fastening means.

The extension member may be in any suitable form however it is preferred that the extension member be capable of not only spacing the frame from the foundation means but also supporting the frame, particularly when loaded with wet clothes even when spaced over a relatively horizontal distance. This may be achieved by the extension member including a web section and at least one flange section with the web section extending substantially in the vertical direction to counteract the forces created by gravity acting on the extension member. It is preferred that the at least one flange section extends transverse to the web section to provide the extension member with lateral stability. Alternative arrangements for the extension member are possible. For example the extension member may be in the form of an elongate cylinder.

The connection means preferably includes a hub having one or more arms extending therefrom to the frame. The hub is preferably rotatable relative to the extension member which permits the rotational movement of the frame relative to the extension member. It should be appreciated that the rotational movement may be achieved by an alternative arrangement such as the frame moving relative to fixed arms on a roller arrangement.

The connection means preferably includes stop means for selectively restricting the rotational movement of the frame relative to the extension member.

The frame is preferably in the form of a loop which is substantially circular or polygonal in shape. The frame also preferably includes a series of hanger loops to facilitate attachment of articles of clothing to the frame.

- 5 The support assembly is preferably formed from stainless steel.

It will be convenient to hereinafter describe an embodiment of the present invention with reference to the accompanying drawings which illustrate one formal support assembly incorporating the invention. The particularity of the
10 drawings and the related description is not to be understood as superseding the generality of the broad description of the invention as defined in the accompanying claims.

Brief description of the drawings

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Figure 1 illustrates a plan view of the support assembly according to a preferred embodiment of the invention.

Figure 2 illustrates a side elevation of the support assembly from the direction of
20 E2 from Figure 1.

Figure 3 illustrates another side elevation of the support assembly from the direction of E1 from Figure 1.

25 Figure 4 is a detailed sectional view of section D2 from Figure 2.

Figure 5 is a sectional view of section D1 from Figure 3.

Detailed description of preferred embodiment of the invention

Figure 1 illustrates the plan view of the support assembly or clothes hanger according to a preferred embodiment of the invention. The clothes hanger 10 illustrated includes a substantially circular loop frame 12 for hanging clothes. A number of arms preferably in the form of stainless steel plates 14 are welded to and extend from the frame 12. The plates 14 are spaced at regular intervals around the circumference of the illustrated frame. The other end of the plates 14 are welded to a hub which is obscured in Figure 1 by an extension member 13.

10 The extension member 13 is preferably made from stainless steel and extends from a foundation means 8. The foundation means 8 illustrated includes a pair of brackets 34 attached to either side of a relatively fixed wall member 30. The brackets 34 are retained in position adjacent the wall member 30 by a number of nut and bolt arrangements 36 extending through apertures in the brackets 34.

15 Referring now to Figure 2 which illustrates the extension member 13 extending from the foundation means 8. The extension member 13 illustrated includes a web 5 and a flange 7. The flange 7 provides the extension member 13 with lateral stability, whilst the web 5 enables the extension member 13 to accommodate the load produced when the frame 12 is loaded with wet clothes.

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The frame illustrated in Figure 2 includes a number of hanger loops 22 for facilitating location of the clothes on the frame 12, which loops 22 are better illustrated in Figure 5.

25 The hub illustrated in Figure 2 is attached to the extension member 13 by a nut 16. The nut engages a bolt which is obscured by rod 17 with another nut 18 engaging a lower portion of the bolt. The hub is illustrated in detail in Figure 4.

30 The support assembly is intended to be positioned adjacent a window 32. This location of the support assembly provides the user with easy access to the frame 12. This location of the support assembly 10 is best illustrated in Figure 3.

Referring now to Figure 4 which illustrates the hub attached to the extension member 13. The hub includes a bolt which is illustrated by vertical dashed lines being attached to the extension member 13 by a nut 16. The hub includes an upper bearing portion 17a and a lower bearing portion 17b with a rod portion 17 positioned between the upper bearing portion 17a and lower bearing portion 17b. The plates 14 are welded to the lower ball bearing 17b. This arrangement enables the plates 14 and frame 12 to rotate relative to the extension member 13.

Referring now to Figure 5 which illustrates in detail the hanger loops 22 formed in the frame 12. It should be understood that hanger loops 22 other than the shape illustrated may also be suitable.

It will be appreciated that the invention offers a design of a support assembly that allows a user to conveniently and safely access the frame 12 from a stationary position on the other side of a window. The design of the frame allows the support assembly to support a large number of clothes and to withstand the weight of those clothes whilst wet. The installed support assembly is a relative aesthetically pleasing alternative to existing clothes hangers.

While a particular embodiment of the invention has been shown and described, it will be appreciated by those skilled in the art that changes and modifications of the present invention may be made without departing from the invention in its broadest aspects. As such, the scope of the invention should not be limited by the particular embodiment and specific construction described herein but should be defined by the appended claims and equivalents thereof. Accordingly the aim in the appended claims is to cover all such changes and modifications as fall within the spirit and scope of the invention.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A support assembly for use in supporting articles of clothing, said assembly comprising or including
 - 5 foundation means for attachment to a fixed support,
an extension member supported by and extending from the foundation means, and
a frame, in use, capable of supporting articles of clothing distally supported from the extension member and spaced from the foundation means
10 by the extension member,
wherein the distal support of the frame from the extension member involves connection means to permit, in use, rotational movement of the frame relative to, yet below, the extension member to provide the user, in use, with access to the entire frame supported from the fixed support via the foundation
15 means and extension member whilst the user is in substantially the same access position thereto so as to associate or disassociate articles of clothing with the frame,
and wherein said connection means has a hub having one or more arms extending therefrom to the frame,
20 and wherein said hub includes an upper bearing portion and a lower bearing portion captured about an axle depending from the extension member so that the hub is rotatable relative to the axle and thus the extension member.
2. A support assembly according to claim 1 wherein the foundation means
25 includes fastener means adapted to engage and thus attach the foundation means to said fixed support.
3. A support assembly according to claim 2 wherein the fastener means is or includes at least one bolt and the foundation means includes a bracket (the "first
30 bracket") having at least one aperture to receive the at least one bolt.
4. A support assembly according to claim 3 wherein the fastening means further includes a bracket (the "second bracket" of the foundation means) and a

nut receivable by a thread on the shank of the bolt, the bolt and nut being adapted to squeeze the brackets against the fixed support respectively from the front and the rear thereof.

5 5. A support assembly according to any one of the preceding claims wherein the extension member includes a web section and at least one flange section with the web section extending substantially in the vertical direction whilst the at least one flange section extends transverse to the web section.

10 6. A support assembly according to any one of the preceding claims wherein the connection means includes stop means for selectively restricting the rotational movement of the frame relative to the extension member.

15 7. A support assembly according to any one of the preceding claims wherein the frame is in the form of a closed form for which the one or more arms act as spokes, and which closed form is a perimeter which is substantially circular or polygonal in shape.

20 8. A support assembly for use in supporting articles of clothing externally adjacent and proximate to a multistory building and to be accessible by a user from a window, door or balcony of such a multistory building, said support assembly comprising or including

foundation means for attachment in a fixed position to or relative to said multistory building,

25 an extension member supported by and extending from the foundation means,

 a frame, in use, capable of supporting articles of clothing distally supported from the extension member and spaced from the foundation means by the extension member,

30 wherein the distal support of the frame from the extension member involves connection means to permit, in use, rotational movement of the frame relative to, yet below, the extension member to provide the user, in use, with access to the entire frame supported from the fixed support via the foundation

means and extension member whilst the user is in substantially the same access position thereto so as to associate or disassociate articles of clothing with the frame.

5 9. A support assembly for use in supporting articles of clothing, said assembly comprising or including

foundation means for attachment to a fixed support,

an extension member supported by and extending from the foundation means, and

10 a frame, in use, capable of supporting articles of clothing distally supported from the extension member and spaced from the foundation means by the extension member,

wherein the distal support of the frame from the extension member involves connection means to permit, in use, rotational movement of the frame relative to, the extension member to provide the user, in use, with access to the entire frame supported from the fixed support via the foundation means and extension member whilst the user is in substantially the same access position thereto so as to associate or disassociate articles of clothing with the frame,

15 and wherein the connection means includes a stop means for selectively restricting the rotational movement of the frame relative to the extension member.

10. A support assembly for use in supporting articles of clothing, said assembly comprising or including

25 foundation means for attachment to a fixed support,

an extension member supported by and extending from the foundation means, and

a frame, in use, capable of supporting articles of clothing distally supported from the extension member and spaced from the foundation means by the extension member,

30 wherein the distal support of the frame from the extension member involves connection means to permit, in use, rotational movement of the frame relative to the extension member to provide the user, in use, with access to the

entire frame supported from the fixed support via the foundation means and extension member whilst the user is in substantially the same access position thereto so as to associate or disassociate articles of clothing with the frame,

and wherein the frame includes a series of hanger loops to facilitate
5 attachment of articles of clothing to the frame.