

CLOTHES-DRYING POLE, STRUCTURE RACK, DEVICE AND METHOD THEREOF**Field of the Invention**

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The invention in general relates to a clothes-drying pole, a structural rack, a pole-locking device and a method for inserting or retrieving a clothes-drying pole with wet washed clothes into/from a pipe socket for outdoor drying being carried out by an occupant in a building. A ledge-rail support by a structure rack provides for a resting, sliding and guiding for the clothes-drying pole during the executing process for assisting and conveniences in inserting or retrieving the pole into/from the pipe socket. The rack mounted on the exterior wall of a building below the pipe sockets achieves the best possible combination of convenience for the occupants and functionality, while further enhancing safety and aesthetics.

15 **Description of Related Art**

A clothes-drying pole, rack, structure, device and clothes-drying holder are in general known. For example, various types of these devices are described in GB 2305853 B, JP 10143696, US 5971170, EP 916297 A1, JP 9327597 A2, JP 9327593 A2, JP 10094697 A2, and JP 6142394 A2.

Stringent safety requirements of various types are enforced throughout all countries for the protection of occupants in a residential building. Regarding the safety requirements, parapet and balustrades walls having a safety barrier of not less than 900 mm high have to be installed at each floor opening. In general practice, a non-climbable design ranges from 1000 mm for service balconies to 1200 mm for common corridors. A general requirement for loading on the external parapet wall in an occupancy building is that the wall be able to resist a lateral outwards force or thrust of 1.0 kN/m^2 .

A typical inclined cylindrical pipe socket has a diameter of 38 mm, a thickness of 3 mm, is made of stainless steel and is embedded inside a reinforce concrete exterior building wall of 100 mm thickness. The socket remains below the top bars of the wall with sufficient concrete cover, protrudes slightly 135 mm from the wall and is inclined in an upward direction at an average angle of 12° - 15° . These sockets welded in a row together with horizontally oriented mild-steel bars are secured in the middle and lapped into adjacent concrete wall. Self-draining apparati are included in the embedded sockets to the internal ends for trapping water collected during rainy days from the short protruding socket's opening. A plate welded to the lowest end

limits the insertion length of the pole.

The inclining angle of the pipe socket ensures that the pole, when cantilevered, is held tightly, containing it within the pipe socket's internal wall and does not dislodge under normal
 5 circumstances. This anchoring method as observed with the pipe sockets in general far exceeds sufficient abilities to cantilever the clothes-drying pole.

In general, this anchoring depends on the practices of each individual occupant, the physical height of the carrier, the weight of the wet wash clothes on the pole to be maneuvered, and the
 10 depth one end of the pole to be inserted into socket to be cantilevers for outdoor drying.

A various number of 4-7 pipe sockets for poles are generally arranged from 200 mm - 250 mm apart in a row with sufficient arm movements from an adjacent window leaf or wall and below the operable casement window sash when in the inserted position. The insertion height
 15 of the pole into the socket's opening is about 850mm from outer top level of socket's opening to internal floor of a building.

Clothes drying poles available commercially of various lengths of 2100 mm – 2400 mm are made of either extruded aluminum tubing or natural bamboo. In general carry various load
 20 cantilevers from the pipe sockets for outdoor drying. An example of an extruded aluminium pole as observed having a diameter of about 25mm, a wall thickness of about 0.8mm, a general length of 2400mm, a weight of about 0.4kg has a maximum carrying capacity load of not more than 5.5kg of wet washed for outdoor drying by socket method.

25 Conventionally, clothes-drying rack by both ends support type with an open tool design with more support feature are use for newer building and the clothes drying pipe sockets method are use for outdoor clothes drying. The execution of outdoor clothes drying by poles varies with each individual occupant practice.

30 **Summary of Invention**

It is an object of the present invention to provide a clothes-drying pole, structure rack, a pole-locking device and a method thereof with the best possible combination of convenience and
 35 aesthetics. Further, the structure rack is improved in carrying abilities for outdoor drying and does not consume valuable living space. It should be attractive in appearance and desirable to current manufacturing process and, accordingly, be manufacturable from various materials.

Ideally it should provide an attachment plane that permits various sizes and shapes.

According to the present invention, this is achieved by a method for inserting a clothes-drying pole carrying wet washed clothes into an upwardly inclined pipe socket embedded in an external wall of a building, the method comprising the steps of:

- 5 (a) spreading said washed clothes along the pole inside a building unit, and
- (b) carrying said pole externally to allow an end portion of the pole to be thrust inwards into an externally protruding pipe socket's opening,
- wherein the **improvement** comprises the steps of:
- 10 (c) resting said pole on a support,
- (d) sliding said pole seesawing inwardly towards the socket's wall,
- (e) guiding said maneuvering short end portion of the pole into the inclined socket's opening,
- (f) inserting said forcing short end portion of the pole towards the inward end of the pipe socket,
- 15 (g) drying said cantilevering the washed on pole and being remote to said rack, further said not being supported by the support when inserted for drying, and
- whereby said clothes-drying pole is accommodated with its end portion inside the inclined pipe socket cantilevering the pole with wet wash clothes for outdoor drying and vice versa for retrieving by the support provided.
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According, an improved clothes-drying pole made of aluminium alloy, extruded in a cylindrical in shape with an uniform design corrugated cross-section, extruded permanently with constancy wall thickness of about 1mm in one single void hollow shape, a general outer diameter of about 25mm. The corrugated surfaces of pole improved the integration of an inserted elastic holder.

- 30 The extruded corrugated permanent-mold cast aluminium tube increase its structural strength capacity and withstand better impact as compare to a similar tube of the same diameter tube.
- Both ends force inserted with pointed arc end stopper for convenience the insertion into a socket. The pole further including internal protrusion integrated into corrugated permanent-mold wall further increases the structural strength to its entire extends.

- 35 Further, according to the present invention, a clothes-drying pole is inserted with an elastic holder at least on one of its end portion being at least substantially the same length of a socket. The elastic holder provided on the end portion of the pole to be inserted into the pipe socket provides for an increased safety regarding the anchoring of the pole in the pipe socket.

The elastic holder material maintains its resilient properties providing frictional hold within the inclined pipe socket's internal wall, confining the movement and improving the containment. The elastic holder on both ends provides absorption impact for another currently use method of clothes drying by supporting both end of pole on a tool design's slot rail and maintain its resilient properties inside the slot.

Furthermore, according to another aspect of the invention, a structure rack for using on an exterior wall of a building is provided, the exterior wall having at least one pipe socket being embedded therein so as to project outwardly from said wall in an upward direction, wherein the rack comprises a clothes-drying pole accommodated with its end portion in said pipe socket.

A generally U-shaped structure rack having two supporting arms and a pole guiding ledge-rail attached with its end portions to respective end portions of said supporting arms, wherein the structure rack is mounted on said external wall of the building so that said pole guiding ledge-rail extends horizontally and at least substantially parallel to the external wall of the building in a distance bellow said clothes-drying pole when it is fully inserted with its end portion into said pipe socket.

The clothes-drying structure rack according to the present invention provides during the executing process of insertion or retrieving a resting, a guiding and a sliding support for assisting and conveniences in inserting the poles into the inclined pipe sockets. The resting and sliding movement of inserting or retrieving the pole into the pipe socket according to the invention are that of the familiar seesaw on the playground.

Using the seesaw or bascale bridge from the point of view of equilibrium theory on the poles, the structure rack's ledge rail provides the upward force, reduces the torque required on the carrying pole arm for the insertion. The pivoting arm holds the pole at the lower end portion that exerts a decreasing sturdy inward force and a convenient insertion of the pole into the inclined pipe socket opening.

According to the present invention, the structure rack is provided in a matching combination and arrangement with the typical pipe socket that achieves the best possible combination of convenience for the occupants. The support of the ledge rail, the obstructed space within the rack, the reduction of weight to be maneuvered, the reduction of unbalanced torque acting on the carrier, the reduction angles of the carrier torso in bending over and the convenient usage of the structure rack's inner rails improve the drying capacity, functionality and convenience

for outdoor drying, thus reducing user fatigue and further enhancing safety and aesthetics.

Regarding the clothes-drying device according to the invention, the structure rack preferably comprises at least one inner rail attached with its ends to the supporting arms of the structure rack and extending parallel to the pole guiding ledge-rail, wherein clothes hanger V-shaped rings are preferably fitted into grooves formed in the inner rail of the structure rack.

The inner rail may be provided with or without the multiple of V-shaped rings that are conveniently used to suspending clothes drying hangers and for long laundries and clothes having different size and shapes. The structural racks without the poles provide the supports for oversize laundries. These structure rack inner rails restrain, obstruct and avoid any tendency of slipping when bending over to insert or retrieve the clothes drying pole or laundries.

In a preferred embodiment of the present invention, a pole-locking device having a stud is formed on the pipe socket, and a stud-hook is attached to the pole for catching into the stud when the tube is inserted into the pipe socket. The stud-hook may be horseshoe like shaped with both ends having anchor-like legs so as to force inserted into the cross-section of pole. Alternated method of further having a holder encase to the pole is equally recommended (not shown) with the stud-hook's legs attach on the holder and the stud form to the socket interlocking them when placed adjacently or vice versa.

The additional feature of a stud-hook attached to the aluminium tube that catches into the button-like shaped metal stud. The lifting of the fully inserted pole when latching in into stud and the protruding portion of head from stud has the advantage of securely engaging the pole in the pipe socket, the stud-locking device locking method thereby preventing any dislodging thereof even under windy weather conditions.

According to the present invention, various types of permanent anchoring methods for specifically designed mounting methods with different plane surfaces commonly encountered in the building industries are provided. These structure racks are to be economically feasible, long lasting, and structurally strong and relatively trouble free in operation.

According to the present invention, the structure racks may be provided with a substantially aesthetical pleasing structural appearance and be made of a mixture configuration of materials: metals, reinforced concrete, woods and plastics together with its individual anti-corrosion protection coatings and its final finishing coatings.

Further, the structure rack members may be provided with an aesthetic structure design so that all members are integral or separate mixture configurations of shapes and sizes: round, bar, open section, semi-section, tubes, flats shape and connected or associated with its adjacent elements in different manner.

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The structure rack according to the invention may be installed externally below the socket wall project horizontally, across the pipe sockets wall, from above the pipe sockets ceiling, from adjacent walls, internally and all of the above with or without the pipe sockets.

10 Preferably, the structure rack is secured to the exterior building wall by embedding an end portion of its supporting arms directly into the exterior wall. This construction method is not fully recommended due to the difficulties during construction, transportation, obstruction and any minor adjustment are likely not satisfactory after installation.

15 A better alternatively by method, according to the present invention, a mounting plate is structurally mounted by anchorage bar or like and being embedded inside the wall during casting of wall. Accuracy is well maintains and adjustment could be easily resolved after constructed. The remaining fabrication of the rack complete off the site and later stage installation are more appropriate and recommended in most construction.

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The structure rack according to the invention provides by its supporting and guiding function for a safe insertion of the clothes-drying pole into the pipe socket, thereby increasing the safety standards for outdoor clothes-drying. While the advantages of the invention are fully realized by the structure rack comprising the pole guiding ledge rail and the inner rail, it
25 should be understood that the clothes-drying pole itself realizes some of the advantages of the inventive idea.

Briefly, the pole and structure rack that are constructed in accordance with the principles of the present invention are essential for the effective use and admit the advantages that are not
30 available with the prior devices. These together with other objects and advantages, which will become subsequently apparent, are treated in the detailed description, reference to the drawings throughout forming the important part of this invention.

In order to understand the object of the present invention, the detailed description of the
35 invention set forth below is to be read in conjunction with the following drawings.

Brief Description of the Drawings

- Fig. 1: an exploded isometric view of the pipe sockets with a designated completed assembly, clothes-drying poles and partial section detail of a parapet wall;
- 5 Fig. 2: a plan view of fig. 1;
- Fig. 3: a cross sectional view of fig. 1;
- Fig. 4: an exploded isometric view of the pipe socket with the designated completed assembly rack and the pole;
- Fig. 5: a detail cross-sectional view of fig. 4;
- 10 Fig. 5a: an elevation view of mounting bracket of fig. 5;
- Fig. 6: a side elevation detail of a stud-hook on the stud before engaging;
- Fig. 6a: a side elevation detail of a pole in it's resting position;
- Fig. 6b: a plan view of fig. 6;
- Fig. 6c: a cross-sectional view of fig. 6;
- 15 Fig. 7: an enlarged cross-section detail of the tube and its elastic holder;
- Fig. 7a: an insertion portion elevation detail of the tube and its end stopper;
- Fig. 7b: an elevation detail of the V-shaped ring; and
- Fig. 7c: an enlarged cross sectional detail of fig. 7b.

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Detailed Description of Preferred Embodiment

As illustrated in figs. 1 to 3, a generally U-shaped structure rack of the invention is shown which comprises three main parts: a ledge-rail 31, two supporting arms 32 in form of L-shaped and an inner rail 33. These assembled members; generally designated 30 are made of stainless steel. Fish-tail thin rectangular mounting plates 36 are made of stainless steel and are vertically orientated in a hand-free clearance distance below the pipe sockets, perpendicularly embedded and partially inside the concrete wall and protruding externally for parallel attachment of the L-shaped supporting arms 32. The mounting plates 36 have an embedded portion which is inserted with top and bottom horizontal orientated mild-steel bars 37, welded joint 54 together and lapped into an adjacent concrete wall. External wall ends and the mounting plates 36 are sealed by sealant 43 to absorb structural rack and thermal movements.

The arms 32 welded in a convenient distance from the wall are parallel with the plates 36 and welded joint 51 at all sides. The arms 32 projecting horizontally outward and inclining upward are welded to the ledge-rail 31 which extends horizontally and parallel to the concrete wall in a distance below an aluminum tube 21 of the poles 20, when fully inserted into the pipe socket

40, without supporting the same. The top ends of arms 32 are chamfered inward perpendicularly to the lower half of the ledge-rail 31 and joint-welded 52 together. The top edges of arms 32 are rounded below the pipe socket to avoid any sharp abrasion of the human hand during the executing process.

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Inner rails 33 and 34 are situated at clothes drying hanger hooked distances, and the rail 34 is located between inner rail 33 and ledge-rail 31. Both rails 33 and 34 are provided in parallel to the wall and perpendicularly welded to the arms 32 upper portion and horizontally to the ledge-rail 31. The rails 33 and 34 are sealed on its both ends and joint-welded 52, and are
10 inserted into the arms 32 openings 33a and joint-welded 52 together. The rails 33 and 34 shortly protrude from arms 32 to maximize the strength of the rail 33 and stiffen the overall structure rack 30.

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As illustrated in fig. 2, the relationship of the assembled members 30 is perpendicular and parallel with the pipe sockets 40 wall. The distance from the inner wall to the ledge-rail 31 provided like an additional over-stretched arm supporting the poles 20 during their insertion into the pipe sockets 40, is within the safe distance of a similar wide casement window handle. The first or last pole 20 on the ledge-rail 31 allowing a clear pole executing process position determines the minimum length of the ledge-rail 31. All ends of ledge-rail 31, inner
20 rails 33 and 34 are covered with stainless steel end plates and joint-welded 52 together. All types of welding joints are grinded and finally polished.

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Regarding the above-mentioned welding joints it should be noted that these joints can be made by stud welding 50, longitudinal-fillet welding 51, square welding 52, double-J welding 53 or spot-welding 54.

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Figs 4 to 5a show another embodiment of the structure rack according to the invention. In this embodiment of the invention the structure rack is not embedded in the concrete wall, but is mounted on the concrete wall by means of a mounting plate.

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Referring now specifically to Figs. 4 - 5a, the structure rack of the present invention is constructed and mounted in conjunction with the existing sockets 40 in a concrete wall. Mounting plates in form of mounting brackets 38 with their openings 39 & 39a and the "Tongue and Groove" mechanical joint slot opening 47 with chamfered edges on both sides
35 perpendicularly connect the vertical front portion of the L-shaped supporting arms 32 and welded joint 53 together. The grind flushes to receive a backing washer 46 for the mounting wall. The mounting brackets 38 with the structural rack 30 are slot fitted into the existing pipe

sockets 40 and secured by stainless steel anchorage bolts and nuts 45. Tensile loading anchorage bolts and nuts 45 are beside the upper portion of the arm 32 and shear loading anchorage bolt and nut 45 are below the arms 32.

5 The socket 40 and the brackets 38 are joint-welded 51 together and anchorage bolts and nuts are joint-welded 54 to prevent detachment. The distance between each arm 32 is structurally designed to withstand any tendency of slippage when bending over to execute the insertion of poles 30 into the sockets 40 and retrieve or hang the clothes hanger. The rest of the members shown are similar to those in Figs. 1 to 3.

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As illustrated in figs. 6 - 7a, an improved clothes-drying pole 20 made of cylindrical hollow extruded aluminum tube 21 has a uniform cross-section, corrugated permanent mold cast wall with internal protrusion 28 along its entire length, and a uniform outer diameter dimension with its coating.

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Both ends of the tube 21 are forcedly inserted with pointed arch shape end stoppers 23. The end portions of the tube 21 inserted into the socket 40 are inserted with an elastic holder 22 that remains adhered to the outer surface to the tube 21. The elastic holder 22 offers frictional grip to prevent any inadvertent release of the pole 20 during the insertion process. The elastic holder 22 maintains its resilient properties providing additional frictional hold within the inclined socket's wall and improving the containment of the pole 20.

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A stud-hook 24 made of stainless steel rod, horseshoe-like shaped with both ends having hook-like shaped anchor legs and having an elastic coating 25 on the exposed surface, offers both pleasing finishes and elastic surface properties. The legs of the hook 24 are forcedly inserted into the openings 27 at the lower half portion of the pole 20 near the socket 40 opening. The inclining socket and maintaining a loose joint connection method allow wind drag on the wash and prevents dislodging even under windy weather condition.

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30 A metal stud 26 is made of stainless steel with a button-like shaped head and stud-welded 50 to the outer to outer surface of the pipe socket 40 near to its opening. The height of the stud 26 is determined when the pole 20 is inserted fully to the limit insertion plate 42, near the self-drainage apparatus 41 in the embedded portion and lowest end of socket 40. The pole 20 is raised fully to the inner upper edge of the socket's opening, and the hook 24 is overlapped into the socket's opening, thus determining the height of the metal stud 26 to be stud-welded 50. A hand pressure is exerted on the hook 24 causing it to elongate slightly to latch in stud 26 and vice versa to easily release from the stud 26. The underside of protruding portion of button-

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like head stud 26 prevents inadvertent release under windy weather condition. The raised and rested distance from the inner upper edge of the socket 40 opening to the rested tube 21 top edges, this differential distance and any minor movement away from the limit insertion plate 42 and the weight of hook 40 itself ensure locking safeties.

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As illustrated in figs. 7b and 7c, the lower end part of rail 34 has parallel grooves 44 cut for the positioning fitting of multiple closed ends V-shaped rings 35, which are joint-welded 51 together. The rings 35 are made of stainless steel cylindrical rods and are forcedly bent to a V-shape for tighter containment of the rings 25 slots fitted into the grooves 44 and are
10 conveniently spaced out accordingly. The lowest convoluted portions of ring 35 allow tighter containment and top upper portion wide space as provided convenient the hooking of a cloth hanger's hook.

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Accordingly, the versatility and usefulness of the poles and structure racks are increased by its own ability. The foregoing has been shown, described and illustrative only of the principles of the invention. Further, since numerous modifications and changes readily will occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described.

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CLAIMS

1. A conventional method for outdoor clothe drying by inserting a clothe-drying pole carrying wet washed clothe into an upwardly externally protruded inclined pipe socket embedded in an exterior wall of a building being carried out by an occupant in a building,
5 comprising of known and the steps of:

(a) an existing pole said made of aluminium alloy, extruded cylindrical in shape with single round void hollow extruded shape, an outer diameter of about 25mm, an average weight of 0.4kg, a general length of 2100mm – 2400mm, both ends inserted with a plastic end
10 cap,

(b) an existing pipe socket partially embedded structurally inside a external load-bearing wall, normally in a laundry or kitchen service area, made of stainless steel having a outer diameter of 38mm, a constancy wall thickness of 3mm, inclined at 12° - 25°, a protruding externally of 135mm from the wall, a general height of 850mm from inside a
15 building, arrange in a row of 4 – 7 numbers, placed at 200mm – 250mm apart, and

(c) spreading said suspending washed clothe along the pole inside a building unit,

(d) carrying said maneuvering pole externally to allow an short end portion of the pole to be thrust inwards into said socket, and

(e) drying said inserting fully the short end portion of said pole inside said socket for
20 outdoor drying,

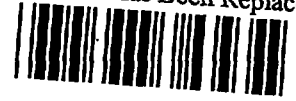
wherein the **improvement or new** comprises of:

(f) as **improvement**, an pole said made of aluminium alloy, extruded cylindrical with uniform cross-section corrugated shaped permanent-mold cast along its entire length, a single void hollow shape, a constancy wall thickness of about 1mm, a outer diameter of about
25 25.4mm, both ends of the pole with force inserted pointed-arc shaped end stoppers, and

(g) as **new**, an elastic holder said pole is inserted at least on one of its end, thereof said providing frictional grip when maneuvering said pole, further said providing frictional hold when inserted inside said socket's internal wall, and

(h) as **improvement method**, an improved method for providing a guiding support for
30 the insertion or retrieving of a clothes-drying pole into/from said socket, said socket being embedded partially inside a wall, wherein said guiding support extends horizontally and at least substantially parallel to said socket's wall in a distance, wherein said guiding support is ledge-rail, comprising the steps of:

(1) resting said placing said pole on said ledge-rail,
35 (2) sliding said pole on said rail seesawing inwardly towards said socket's wall,
(3) guiding said maneuvering short end portion of said pole into said socket's opening,



(4) inserting said forcing short end portion of said pole towards the inward end of said socket, and

(5) drying said cantilevering the washed on said pole for outdoor clothe drying and being remote to said rail means not being supported by said rail when inserted inside said socket,

(I) as new, as according to claim 1(h), wherein said ledge-rail being incorporated into a structure rack, thereof providing the resting, sliding and guiding of said pole into/from the said socket for outdoor clothes drying, comprising:

(a) a plurality of elongated supporting members said supporting arms,

(b) a ledge-rail, and

(c) a plurality of elongated mounting elements said mounting bracket,

(j) a structure rack according to claims 1 (I), further including at least a elongated supporting elements said inner-rail, within said to accommodate inadvertent fall of one human being when carrying-out outdoor clothe drying and for suspending clothe or likes,

(k) a structure rack according to claims 1(I) & 1(j), further including a multiple of elongated core-elements said V-shaped rings for clothe hangers, thereof said convenience the occupant and standardized suspension of clothe hangers from a point of view for overall facade of a building,

(m) as new, a clothes-drying structure rack according to claims 1(I) & 1(j), a clothes-drying structure rack (not shown) without said socket on the external wall or being omitted, and

(n) as new, a pole-locking device said pole for latching in said pole to said socket even under windy weather condition,

whereby said structure rack mounted on the external wall of a building below said socket achieves the best possible combination of convenience for the occupants and functionality, while further enhance safety and aesthetics.

2. The pole according to claim 1(f) as **improvement**, further including at least one internal protrusion (28) being mold-cast together of said pole's rib form by the corrugated shape, saliently towards center of said pole, thereof further increases the overall structural strength capacity.

3. The elastic holder according to claim 1(g) as **new**, wherein said elastic means its resilient material causing it to resist compression and tensional spring back when integrally form to said pole, wherein said integrally means form to the corrugated permanent-mold cast convoluted surfaces of said pole of a predetermined thickness and a uniform outer diameter dimension, wherein said integrally means encase or surround.



4. The elastic holder according to claim 3, wherein said elastic means being made of polymer materials, said elastic being extruded.

5 5. The elastic holder according to claim 3, wherein said pole is inserted said elastic holder to both ends at least substantially the same length said socket, means provides containment on another conventional method of outdoor clothe drying said both ends support clothes-drying rack with a tool design's railing on a ledge, whereby said holder absorb the slotting impact of said pole into the tool design's slot, thereof provides frictional hold inside the slot.

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6. The structure rack as according to claim 1(I) and claim as new, wherein said structure rack comprising:

(a) a plurality of supporting arms of rigid materials of sufficient size to support said ledge-rail horizontally and at least substantially parallel to a socket's wall within said ledge-rail providing the resting, sliding and guiding of said pole into/from the socket,

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(b) a ledge-rail of rigid materials of sufficient size said to accommodate slidably surface of said pole, further said to accommodate inadvertent fall of at least one human being normal action-reaction force when standing inside a building separate by said socket's parapet wall,

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(c) a plurality of mounting bracket of rigid materials of sufficient size said to accommodate attachment said arms and said structurally mounted to a external wall so as to able to support said designated completed assembly rack, and

(d) means for attaching said rack at integralable angle to support said ledge-rail said horizontally orientated near said socket's wall said at spaced location,

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7. The structure rack according to claims 1(j) & 6, further including at least a inner rail for suspending clothes or likes, comprising:

(a) at least a elongated core-elements of rigid material of sufficient size to accommodate inadvertent fall of at least one human being normal action-reaction force when standing inside a building separate by said socket's parapet wall, and

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(b) means for attaching said rail to supporting arm at least substantially perpendicular and at least substantially parallel with said ledge-rail.

8. The structure rack according to claims 1(I) & 6, wherein said supporting arm being terminated before a wall and thereof to allow to be enable means to be able exposed for attachment for said mounting plate or said mounting bracket being replaced by said mounting plate, wherein said mounting plate comprising:

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(a) a plurality of elongated elements of rigid material of sufficient size to accommodate one portion inside a wall and opposite portion exposed to accommodate said one end of supporting arms and to structurally support said designated complete assembly rack,

5 (b) a plurality of anchorage elements of sufficient size to accommodate said one portion of said elongated elements inside the wall, further said structurally anchor, and

(c) means for attaching adjacently or parallels on one of its portion to said arms, whereby said one portion of said mounting plate embedded inside in the wall structurally and said opposite portion exposed for parallel attachment of said arms, thereof providing structural support for said designated completed assembly rack.

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9. The structure rack according to claims 1(I) – (j), 6 & 7, wherein said structure rack comprising:

(a) a plurality of supporting arms is made of metal and of a elongated plate shape and has a further increasing in its spatial complexity and of sufficient size and includes means for joining comprises ends, wherein each end comprises joins means attachment to a respective wall and said ledge-rail,

(b) a ledge-rail is made of metal and of a elongated cylindrical shape and has a further increasing in its spatial complexity and of sufficient size and includes means for joining said supporting arm at respective portion and a slidably surface for said pole,

20 (c) a plurality of mounting bracket is made of metal and of a elongated plate shape and has a further increasing in its spatial complexity and of sufficient size and includes means for joining said supporting arm at its surface and attachment mean structurally connected to the wall for supporting said designated complete assembly rack, and

(d) at least a inner rails is made of metal and of a elongated cylindrical shape and has a further increasing in its spatial complexity and of sufficient size and includes means for insertion and attachment to said supporting arm at respective portion.

10. The structure rack according to claims 1(I) – (j), 6 – 9, wherein said structure rack in **combination** of known, improved and new comprising of:

30 (a) as **known**, at least one of existing said socket (40) being embedded in an exterior wall of the building so as to project outwardly from the wall in an upward incline direction,

(b) as **improvement**, a clothes-drying pole (20) with elastic holder (22) inserted on one its end portion to be inserted into said socket (40), and

(c) as **new**, a generally U-shaped designated completed assembly rack (30) having,

35 (1) a plurality of said supporting arms (32), wherein said metal is steel plate and of L- shaped, said vertically and perpendicularly orientated to the wall, said situated below said sockets (40), one of its end portion said mounting end being broadest so as to enable to attach



to said mounting brackets (38), said mounting end of said arms (32) projecting horizontally outward and inclining upward, said top ends of arms (32) are chamfered inward perpendicularly to lower half portion of said ledge-rail (31) and attach together, further said mounting end being broadest of arms (32) is perpendicularly attach to center of said bracket (38) for mounting to said socket's (40) wall, wherein said the bottom portion of said mounting end acclivity upwards, agonic turn and chamfered inward towards lower half portion of ledge-rail (31), wherein said arms including openings (32a), said bellow edge of projecting horizontal outward vertical surface for insertion of said inner rail (33), openings mean extends through, within said rail (33) being parallel and horizontally orientated to said ledge-rail (31) and perpendicularly to said arms (32), further said rail (33) being place in-between the wall and said ledge-rail (31),

(2) a ledge-rail (31), wherein said metal is steel and of cylindrical uniform cross-section pipe and having both ends sealed, said ledge-rail (31) are parallel and horizontally to said socket's (40) wall, said ledge-rail (31) are remote to the wall and remote below inserted said pole (40), the minimum distance of said ledge-rail (31) is determined by the first and last of said poles (20) with sufficient distance to maneuvered said pole into said socket's opening,

(3) a plurality of said mounting brackets (38), wherein said metal is steel plate of rectangular shaped, said rectangular facial central portion of said bracket (38) for attachment for said arms (32), further said an opening (39) formed said a diameter matching the outer diameter of said socket (40), and where said socket (40) extends through said opening (39), further said including openings (39a) formed said near both vertical sides and below said arms (32), within said having a diameter matching anchorage bolts (45) for structurally supporting said designated completed assembly rack (30), and

(4) at least a inner rail (33), wherein said metal is steel and of cylindrical uniform cross-section pipe and having both ends sealed, wherein said horizontally and being parallel orientated to said ledge-rail (31) and remote below inserted said pole, said rail (33) inserted perpendicularly into vertical surface of arms (32) with a short protrusion and form to said arms (32), further said arm's opening (32a) for insertion of said rail (33) is provided at projecting horizontally outward near top portion of said arms (32), thereof said being situated conveniently for suspending clothes or hangers from inside the building.

11. The structure rack according to claim 1(I) – (j), 6 - 9, wherein said structure rack without said socket or said socket being omitted and claims as a new clothes-drying structure rack (not shown), wherein said ledge-rail and said inner rails are at least substantially parallel with each other below the coping of parapet wall, thereof said clothes-drying structure rack having said achieves the best possible combination of convenience for the occupants and functionally, further enhance safety and aesthetics of said clothes-drying structure rack for



outdoor clothes drying.

12. The inner rail according to claims 10 & 11, further including a multiple of V-shaped ring for suspending cloth hangers being carried out by an occupant in a building for outdoor clothe drying comprising:

(a) a multiple of agonic bent core-elements of rigid material of sufficient size to accommodate cloth hangers and conveniently spaced apart for the hooking of clothe hanger's hook, and

(b) means for attaching said one portion of the core-element to said inner rail outer surface.

13. The structure rack according to claims 12, wherein said V-shaped rings (35) is made of metal and of cylindrical uniform shape and a further increasing in its spatial complexity and of sufficient size, wherein said form to a V-shaped, said both ends portion bent said closed-ends so as to enable to attach to said rail (33), attach mean slot fitted into said grooves (44) and form together with said lower half portion of said rail (33), and said being parallelism to said rail (33),

14. The pole-locking device for securing the inserted pole for preventing dislodging as according to claim 1(n) as new, comprising:

(a) a catch comprising two interlocking parts that can be attached to opposite ends of a socket and said pole to accommodate use by a human being for latching in said pole to said socket, and

(b) securing means preventing said pole from dislodging when engage.

15. The pole-locking device according to claim 14, wherein said catch comprising:

(a) said stud-hook is made of rigid material of sufficient size and having agonic bend shaped, wherein said both ends having attaching means comprising joins, and

(b) said stud is made of rigid material and having a cylindrical uniform cross-section shape and has a further increasing in its spatial complexity and of sufficient size to accommodate engagement at its top end portion for stud-hook and a base portion for attaching.

16. The pole-locking device according to claims 14 & 15, wherein said catch comprising:

(a) said stud-hook is made of metal and having agonic bend shaped means horseshoe like shaped (24),



(b) said stud is made of metal and being form to said socket outer diameter near its opening, said being vertically orientated to top end portion of said stud, said stud has a head, said button-like shape head (26), wherein said head having a boarder base to said stud, thereof said stud salient on said socket external surface for adjacent interlocking of said stud-hook, and

(c) interlocking means prevents said pole from disengaging from said stud.

17. The stud-locking device according to claims 16, wherein a process for latching in said pole into said socket for preventing dislodging even under windy weather condition comprising:

(a) lifting said pulling said pole towards said socket's opening internal upper edge, (a) overlapping said turning said stud-hook towards the top portion of said stud, and (b) snapping said pushing downward said pointed arc portion of said hook into said button-like head's stud,

whereby said differential distance from the internal upper edge of said socket's opening to top of said pole and further said any minor movement away from a limit insertion plate (42), thereof ensure locking devices safeness.

18. The pole-locking device according to claims 16, wherein said stud-hook (24) further including elastic coating (25) means coated with a polymer material, wherein both ends being un-coated from end thereof to exposed an end of said hook means to enable said hook ends having a hook-like shaped means so as to enable said hook legs said insert into cross-section openings (27) of said pole.

19. The pole-locking device according to claims 14 & 15, further including a holder (not shown) said inserted into cross-section of said pole for attaching, wherein said holder means a cylindrical shape element of rigid material of sufficient size, a predetermined thickness and a uniform outer diameter to accommodate legs of said hook to be enable said hook to interlock into said socket, wherein said inserted means being encase or surround.

20. The pole-locking device according to claim 18, wherein said elastic coating means being inserted with a polymer material said being extruded.

21. The pole-locking device according to claim 16, wherein stud-hook means being made of polymer material of sufficient strength to prevents dislodging of said pole when inserted inside said socket.