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POLE-LOCKING DEVICE**Field of the Invention**

5 This invention is a division of Patent Application No: SG 200100074-4, filed 29/01/2001, title: Clothes-Drying Structure Rack And Method thereof (original title: Clothes-Drying Pole, Structure Rack, Device and Method Thereof).

10 The present invention relates more particularly to a pole-locking device for securing a clothes- drying pole with washed clothes inside an existing upwardly inclined pipe socket in an exterior wall of a building being carried out by an occupant.

The pole-locking device comprising two interlocking parts that can be attached to the socket and one short end portion of the inserted pole, being accommodate use by a human
15 being for latching the pole into the socket, therein prevent dislodgment and improve safety to the passers-by walking below.

Description of Related Art

20 Outdoor clothes drying socket method are generally known and prevention of the clothes-drying pole dislodging from the socket is also known, such as a holder on the socket is described in GB 2305853 B, wherein the holder opening is coated with a coating to provide a frictional grip so as to prevent inadvertent release of the pole from the holder. Other devices with a line is attached to outer end of pole is also described in GB 2 089
25 203 are also known.

Summary of Invention

30 The present invention, a pole-locking device comprising of a button-like shaped metal stud which is formed on the socket and a stud-hook which is attached on one short end portion of pole, therein allowing the stud-hook to secure into the stud when the tube is fully inserted into the 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 the pole.

35 Alternated method of further having a holder encase either to the pole or the socket 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 this

combination.

According to the present invention, wherein a process for latching in the pole into the socket comprising the steps of:

- 5 (a) lifting the fully inserted pole towards the socket's opening internal upper edge,
 (a) overlapping the stud-hook towards top portion of the button-like shaped stud,
 and

- (b) snapping pointed arc portion of the hook into the stud,
 whereby the differential distance from the internal upper edge of the socket's
 10 opening top of the lifted pole when latching in into the stud has the advantage of
 reassuring the engagement the pole confidentially in the socket even under windy weather
 conditions.

- 15 It is an object of the present invention to provide the pole-locking device to further
 enhances safety standards for passers-by walking below. It should be attractive in
 appearance and desirable to current manufacturing process and, accordingly, be
 manufacturability from various materials. Ideally it should provide an attachment plane
 that permits various sizes and shapes.

- 20 Briefly, the devices 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
 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.

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

Brief Description of the Drawings

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- Fig. 1: an exploded isometric view of an existing pipe socket on an external
 parapet wall with a pole-locking device;
 Fig. 2: a sectional detail of the pole-locking device on an external window wall;
 Fig. 3: a side elevation detail of a stud-hook on a stud before engaging;
 35 Fig. 3a: a side elevation detail of the pole in it's resting position;
 Fig. 3b: a plan view of fig. 3;
 Fig. 3c: a cross-sectional view of fig. 3;

Detailed Description of Preferred Embodiment

5 An existing inclined pipe socket **40** has a diameter of about 38 mm, a thickness of about 3 mm, is made of metal and is embedded inside a reinforce concrete exterior building wall of about 100 mm thickness. These sockets **40** remains below the top bars of the wall with sufficient concrete cover, protrudes slightly about 135 mm from the wall and is inclined in an upward direction at an average angle of 12°-15°.

10 These sockets **40** 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 **41** are included in the embedded sockets **40** to the internal ends for trapped water collected during rainy days from the short protruding socket's **40** opening. A plate **42** welded to the lowest end limits the insertion length of a clothes-drying pole **20**.

15 Commercially clothes-drying poles **20** are available at various lengths. An example of 2400mm long tube is made of extruded aluminum alloy, a diameter of about 25mm, a thin-wall of about 1mm in single hollow void shaped, and a weight of about 0.49kg and has a recommended carrying capacity load of not more than 5.5kg of washed.

20 Natural bamboo for suspension of washed for outdoors drying by the pipe socket **40** method are not recommended due to its uncontrolled overall rigidity, straightness, strength and has a tendency to fracture near the socket portion due to either excess load or strong wind drag acted on wet washed in high-rise building.

25 Various numbers of 4 to 7 sockets **40** for the poles **20** are generally arranged from 200 mm - 250 mm apart in a row with sufficient arm movements from an adjacent window leaf or wall. Install below the operable casement window sill. The insertion height of the pole **20** into the socket's **40** opening is about 920mm from outer top level of socket's **40** opening to internal finish floor level of the building.

30 The inclining angle of the socket **40** ensures that the pole **20**, when cantilevered, is held tightly, containing it within the socket's **40** internal wall and does not dislodge under normal weather circumstances.

35 As illustrated in figs. 1 to 3c, a clothes-drying pole **20** is made of cylindrical hollow extruded aluminum tube **21** has a uniform cross-section, a uniform outer diameter dimension with its coating and both ends force inserted with pointed arch shape end

stoppers **23**. 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.

5 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 **40** and a loose joint connection method of the stud-hook **24** engaging the pole **20**, allowing wind drag on the wash and to slid inwardly into the socket **40** reassure the safeness of this device not available with the prior devices.

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A metal stud **26** is made of stainless steel with a button-like shaped head and welded to the outer to outer surface of the 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**.

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As illustrated in figs. 3 to 3c 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 welded. A hand pressure is exerted on the hook **24** causing it to elongate slightly to latch into the stud **26** and vice versa to easily release from the stud **26**.

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The underside of protruding portion of button-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** reassure locking safeties.

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It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description or shown on the accompanying drawings figures shall be interpreted as illustrative only and not in a limiting sense.

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It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which as a matter of language, might be said to fall there between.

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CLAIMS

1. A pole-locking device for securing a clothes-drying pole with wet washed clothes with one of its inner end portion inside an existing upwardly inclined pipe socket being attached in an exterior wall of a building so as to project outwardly from said socket for outdoor drying, said pole-locking device comprising:

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

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

2. The pole-locking device according to claim 1, wherein said catch comprising:

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

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

3. The pole-locking device according to claims 1 or 2, wherein said catch comprising:

(a) said stud-hook of rigid material is made of metal and having agonic bend shaped means horseshoe like shaped with both ends portion for engaging into cross-section of said pole,

(b) said stud of rigid material 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 include a button-like shape head, 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.

4. The pole-locking device according to claims 3, wherein a process for latching in said pole into said socket comprising:

(a) lifting said pole towards said socket's opening internal upper edge,

(c) overlapping said stud-hook towards the top portion of said stud, and

(d) snapping pointed arc portion of said hook into said button-like head's stud, whereby the differential distance from the internal upper edge of said socket's

opening top of said lifted pole when latching into said stud reassure the engagement of the pole confidentially in the socket even under windy weather conditions.

5 5. The pole-locking device according to claims 3, wherein said stud-hook (24) further including an elastic coating (25) means coated with a polymer material, wherein both ends being un-coated from end thereof to exposed an end of said stud-hook (24) means to enable said stud-hook's (24) ends having a hook-like shaped means so as to enable said stud-hook's (24) legs to be insert into cross-section openings (27) of said pole.

10 6. The pole-locking device according to claim 2, further including a holder (not shown) encase into cross-section of said pole or said socket 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 stud-
15 hook to be enable said stud-hook to interlock into said stud.

 7. The pole-locking device according to claim 3, wherein said elastic coating means being inserted with an extruded polymer material.

20 8. The pole-locking device according to claim 3, wherein said stud-hook means being made of polymer material of sufficient strength to prevents dislodging of said pole when inserted inside of said socket.

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