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(54) **FOLDING COAT HANGER**

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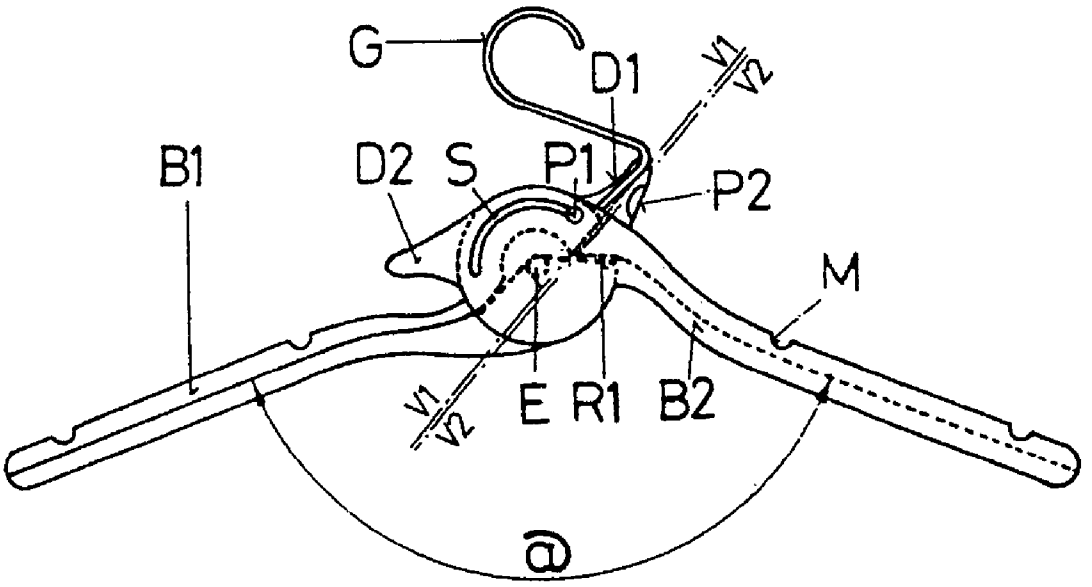
(57) **ABSTRACT**

A coat hanger has two arms joined at one of their respective ends by a joint, whereon they may rotate, which permits two use positions. In the first position, the arms are totally open adopting a suitable angle for the correct adaptation of the form of the garments to hang. In this position it has the appearance of a traditional coat hanger. In the second position, the arms, rotating in their joint, are folded back one over the other until totally coinciding, so that the size of the coat hanger is compacted reaching its minimum volume.



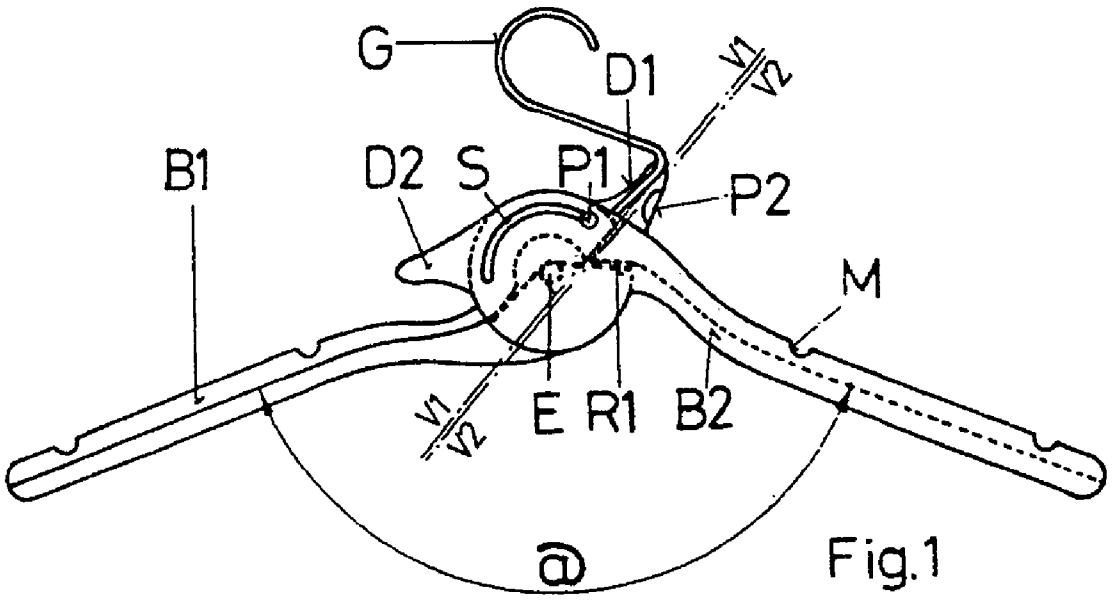


Fig.1

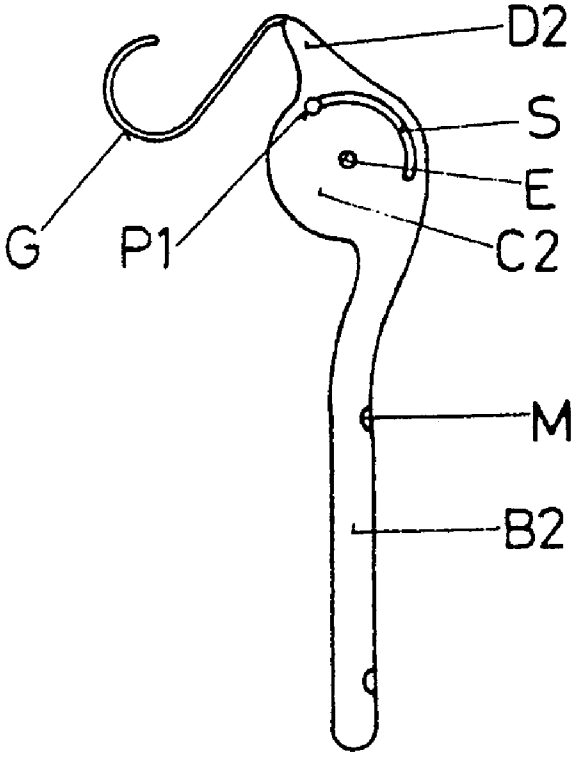


Fig.2

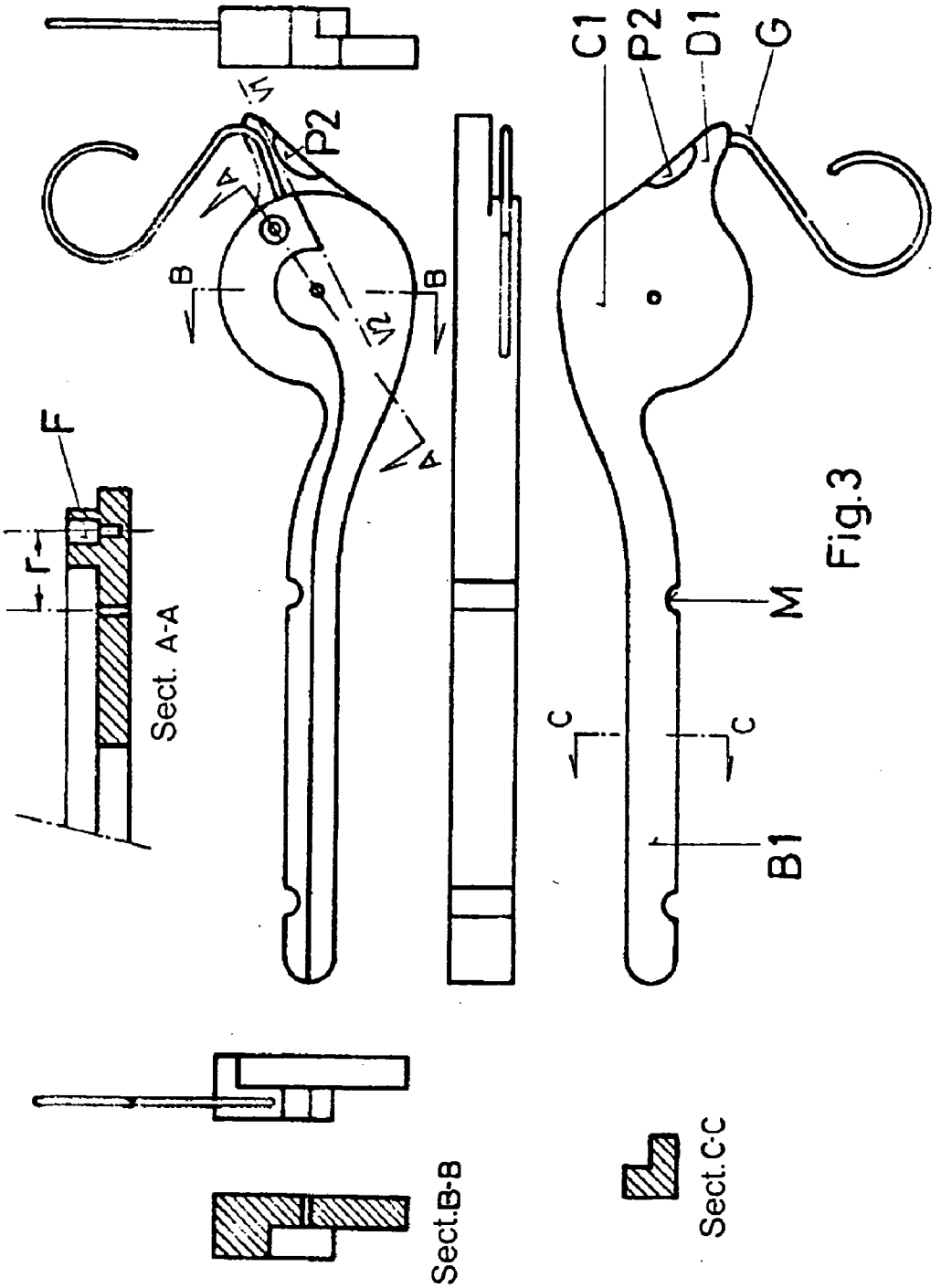


Fig.3

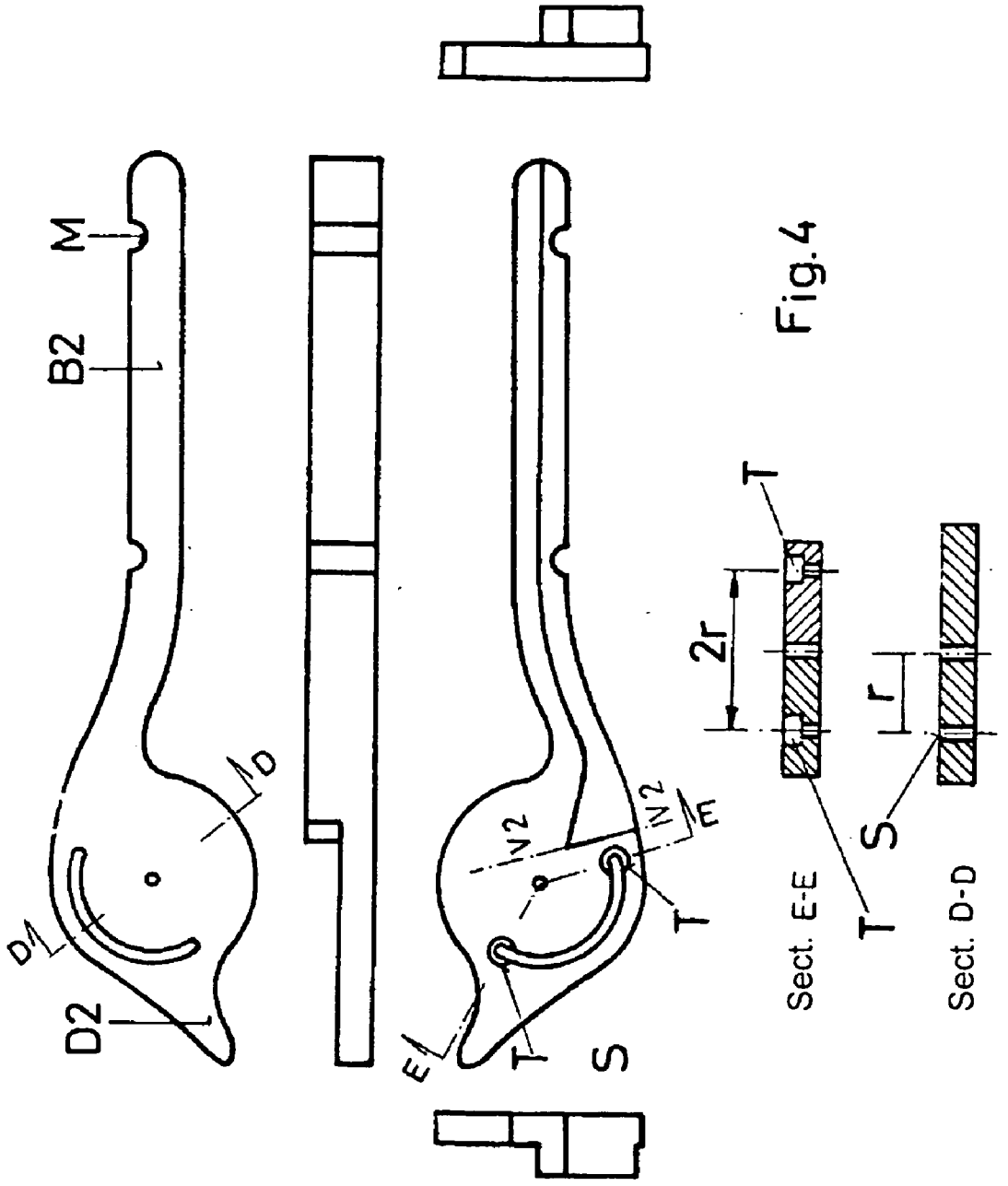


Fig.4

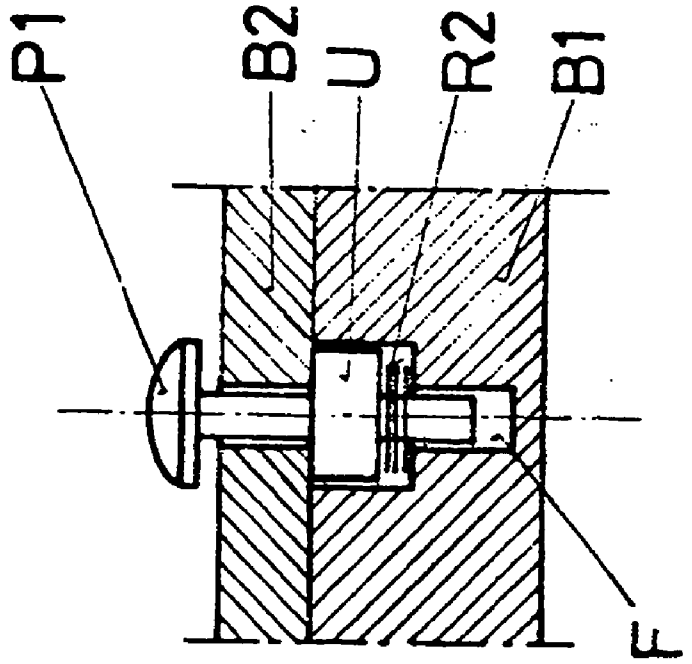


Fig.6

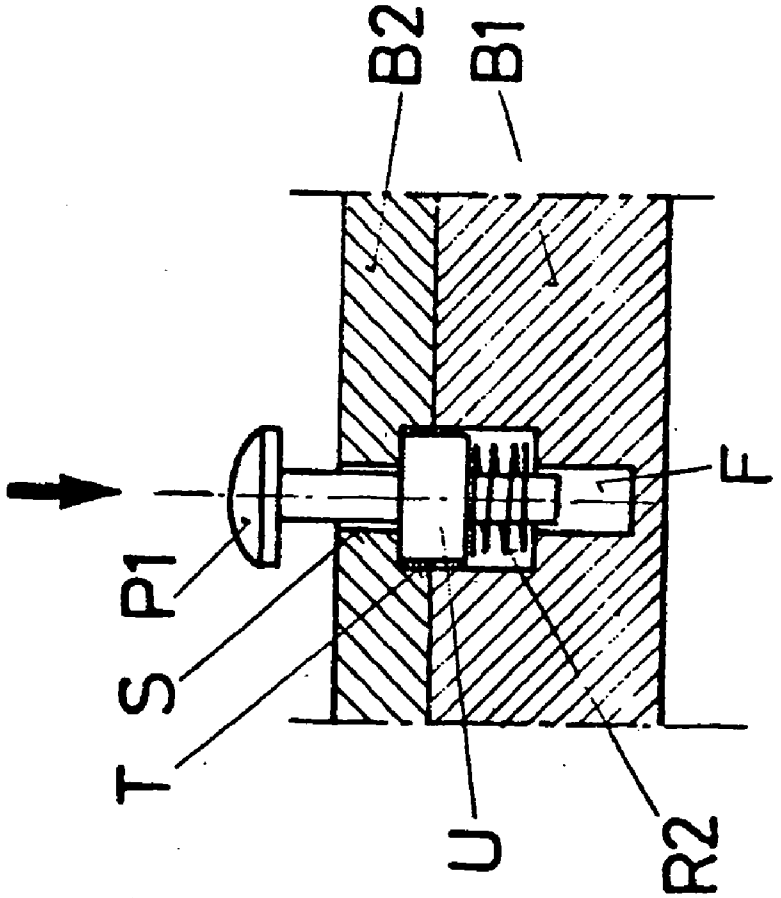


Fig.5

FOLDING COAT HANGER

[0001] The invention relates to a mechanical device for hanging items of clothing which allows a very comfortable use as well as its folding and consequent decrease in the space necessary for its storage during the periods of time in which it is not performing the specific function of holding clothes for which it has been designed.

BACKGROUND OF THE INVENTION

[0002] The existing coat hangers for clothes are formed by a rigid frame with constant shape whereon are placed the garments in order to facilitate their storage without undesirable deformations occurring in the object stored. These devices have the drawback of their inconvenient handling when one is trying to hang clothes which are not open and which, in consequence, make it necessary to introduce the coat hanger through the space of the neckline or from underneath the garment, forcing the user, in both cases, to perform difficult manoeuvres. On the other hand, the constancy of its shape and size mean that, when it is not being used for its specific function, its lack of versatility is manifest, which does not allow them to modify one and reduce another in benefit of an easier handling and better use of the available space; for example, on trips during the time they remain in suitcases. The invention presented aims to cover these failings and may be included within the devices used to procure the rational organization of things, in this case items of clothing in general.

DESCRIPTION OF THE INVENTION

[0003] The solution proposed with the present invention consists of a coat hanger whose two arms are joined at one of their respective ends by a joint, whereon they may rotate, which permits two use positions; in the first of them, the arms are totally open adopting a suitable angle for the correct adaptation of the form of the garments to hang, in this position it has the appearance of a traditional coat hanger; in the second position, the arms, rotating in their joint, are folded back one over the other until totally coinciding, so that the size of the invention is compacted reaching its minimum volume.

[0004] The invention is described by an embodiment which should be understood as a non-limitative example and, to help towards the better understanding of its constitution, advantages and operation, figures will be used, made out of scale, which complement this description referred to by the numbers and letters indicated therein.

BRIEF DESCRIPTION OF THE FIGURES

[0005] FIG. (**1**) represents the invention when it is in the position of extended arms or open, typical of the specific use for which it has been designed;

[0006] FIG. (**2**) represents it in the position of folded arms or closed, wherein it offers its minimum volume and which is that adopted for its storage when it is not acting as a coat hanger;

[0007] FIGS. (**3**) and (**4**) represent the plan, elevation, views and sections which define the configuration, structure and constitution of each of the arms of the invention; finally,

[0008] FIG. (**5**) and FIG. (**6**) describe the system used to block and unblock, respectively, the relative movement of the arms.

DETAILED DESCRIPTION OF AN EMBODIMENT

[0009] The invention consists, FIGS. (**1**) and (**2**) of two arms (B**1**) and (B**2**) articulated between one another by a shaft (E) which traverses them; the arms have an elongated shape, relatively large, which widens at the end wherein they are articulated, adopting an appreciably circular shape, (C**1**) and (C**2**) which, in turn, is distorted having a smaller protruding elongation or "lug" (D**1**) and (D**2**). Each arm functions as an intermobile lever where the arm of resistance is the elongation (B**1**) and (B**2**), wherefrom the garment to hang is placed, the arm of power is the lug (D**1**) and (D**2**) and the support point is the shaft (E). By acting simultaneously on the lugs (D**1**) and (D**2**) with antagonistic forces of suitable value, we will achieve that the arms (B**1**) and (B**2**) open or close increasing or decreasing the angular distance which separates them; arm (B**1**) has a graduated section which extends to the vertical plane V**1**-V**1**, FIGS. (**1**) and (**3**) and a cylindrical housing, to facilitate its practical embodiment, non-though (F), FIGS. (**3**), (**5**) and (**6**) with two different diameters; arm (B**2**) also has a graduated section which is extended until the vertical plane V**2**-V**2**, FIGS. (**1**) and (**4**); the graduations of the arms (B**2**) and (B**1**) are such that when they rotate on the common shaft (E) whereon they are articulated, they are coupled in the form that is generally called "half woods" without them being able to exceed, in their rotation, the position wherein their silhouettes are exactly coincident being, at this time, the angular aperture between them of zero degrees; in the same way, when the arms rotate, opening themselves, they can only do this until the vertical planes V**1**-V**1** and V**2**-V**2** of their respective graduations come up against one another; the position of these vertical planes thus determines the maximum angular aperture of @ degrees that the arms (B**1**) and (B**2**) may have between one another; coaxially mounted on the shaft (E) and between the arms (B**1**) and (B**2**), FIG. (**1**), a blade spring (R**1**) is provided, wherein the straight extensions of the ends of the steel wire which constitutes it are applied against the graduations of the respective arms forcing them to remain elastically open with their maximum angular opening @; in the area of the circular widening corresponding to the arm (B**2**) there is a slot (S), FIGS. (**1**), (**2**), (**4**), (**5**) and (**6**) constituted by a sector of circular crown of angular aperture @ whose average radius (r) coincides exactly with the distance between the turn axis (E) and the shaft of the cylindrical housing (F), FIGS. (**3**), (**4**), (**5**) and (**6**); the ends of this sector of circular crown are finished with different cylindrical notch-cuts, to facilitate its practical embodiment, not through (T), FIGS. (**4**) and (**5**); in the cylindrical housing (F) of the arm (B**1**), FIGS. (**5**) and (**6**), is mounted a sliding rod (U), cylindrical to facilitate its embodiment, which has three differentiated portions: the intermediate has a greater diameter than the ends and may, at will, be totally retracted within the housing (F) made in the arm (B**1**), FIG. (**6**) or partially occupying part of it and all of one of the notch-cuts (T) made in the arm (B**2**) FIG. (**5**); in the first case the arms (B**1**) and (B**2**) have the freedom to move one rotating with respect to the other, in the second case, as the rod (U) remains between them its relative movement is impeded; depending on whether this situation has occurred with one or another of the notch-cuts (T) the arms of the coat hanger would have remained blocked

in the respective positions of "fully open" or "fully closed"; one of the ends of smaller diameter of the rod (U) traverses the slot (S) and its extension takes the form of a button (P1) whilst the other end, entering in the corresponding hollow of the housing (F), acts as guide of the rod and as locator of a torsion spring (R2) which is also housed in (F) and which works by compression constantly pushing the rod (U) against the arm (B2); whilst the rod (U), pressed by the spring (R2), is in an intermediate area of the slot (S) the arms (B1) and (B2) can freely open or close, but if the angular separation between them took the value of any of its possible end positions (0° or @°) the spring (R2), would push the rod (U) forcing its middle part to be positioned between one of the notch-cuts (T) and the housing (F) so that the possibilities of relative movement between both arms would be blocked.

[0010] According to the aforementioned, the following effects are achieved:

[0011] If we consider as initial the position of the coat hanger when its arms are closed, the spring (R1) would try to open it but the locking produced by the rod (U) would prevent it and the unblocking would only occur on pressing the button (P1) after which the arms of the coat hanger would go, automatically, to the position of maximum aperture; said position will be attained, without the possibility of being exceeded, when planes V1-V1 and V2-V2 of the respective graduations of the arms (B1) and (B2) come to the limit; at that time, the blocking caused by the locking of the rod (U) would come into operation, which must occur to prevent that the weight of the clothes hanging closes the arms of the coat hanger, since the spring (R1) by itself, would not be capable of keeping them open; in any case, to come out of the end positions of the coat hanger, closed or open, it is necessary to act on the unblocking button (P1).

[0012] The possible existence of a second unblocking button (P2) is planned, whose organization is not described or claimed, housed in the "lug" (D1) of the arm (B1) which would improve the ergonomics of the coat hanger; the respective "lugs" of the arms (B1) and (B2) have the object of physically facilitating the closure of the coat hanger so that it achieves its approximation using the thumbs and index finger of the hand; for this same purpose, the hook (G) whereby the coat hanger is hung has a special curve so that the path of the fingers during each approximation of the "lugs" is not hindered; each of the arms of the coat hanger have notches (M) made to prevent the garments provided with simple straps from coming off it due to slipping; all the component parts of the invention have their protuberances and corners smoothed by fillets and have a fine surface finish to prevent possible undesired catching which may damage the fabric of the garments to hang.

[0013] The invention is not strictly limited to the embodiment illustrated but it comprises any other variant of embodiment.

[0014] The materials whose use is foreseen for the construction of the invention are those typically used in mechanical or fine cabinet making works.

1: Improved folding coat hanger, wherein it is constituted by two arms whose outer silhouettes are appreciably coincident and symmetrical and are articulated by a turn axis which is traversed by its ends; each of the arms has an elongated shape which narrows in the area surrounding the turn axis of the joint, adopting an appreciably circular shape, which is also distorted in a minor protruding elongation; the first arm has a graduated section and a non-through cylindrical housing with two different diameters; the second arm also has a graduated section which corresponds, in negative, to that of the first and has a slot constituted by a sector of circular crown whose average radius coincides exactly with the distance between the turn axis of the joint and the shaft of the cylindrical housing made in the first arm; the ends of the sector of circular crown are finished with different non-through cylindrical notch-cuts; in the proximities of the joint, in its appreciably circular area, the graduations of each of the arms are sharply cut finishing in different vertical planes; coaxially mounted with the turn axis whereon are articulated the arms there is a blade spring whose straight extensions of the ends of the steel wire which constitutes it are applied against the respective graduations of the arms; in the cylindrical housing made in the first arm there is a sliding rod, also cylindrical, which has three differentiated portions: the intermediate has a greater diameter than the ends; one of the ends of smaller diameter traverses the groove in the form of sector of circular crown and its extension takes the form of a button whilst the intermediate portion and the other end of smaller diameter, are coupled in the corresponding hollows of the cylindrical housing of the first arm; in the same housing, coaxially mounted with the rod and around one of its ends of smaller diameter there is a torsion spring which works by compression; the hook whereby the coat hanger hangs has a special curvature; each of the arms of the coat hanger have notches made and all the component parts of the invention have their protuberances and corners smoothed by fillets.

2: Improved folding coat hanger according to claim **1**, wherein it has a button whose detailed organization is not described or claimed, which is housed in the minor protruding elongation existing in the appreciably circular area of the first arm.

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