May 26, 1953 I. E. WELLS 2,639,818

FOLDING CLOTHES POLE

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Fig. 1.

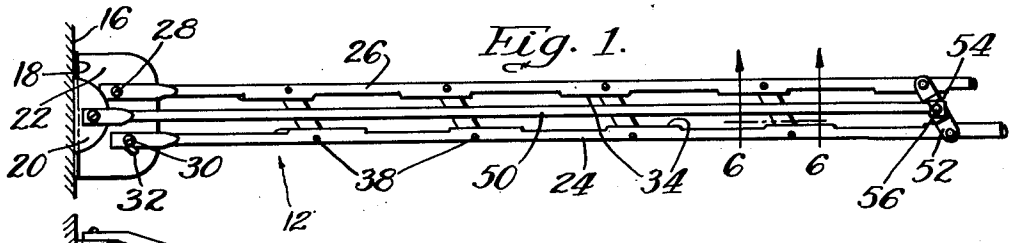


Fig. 4.

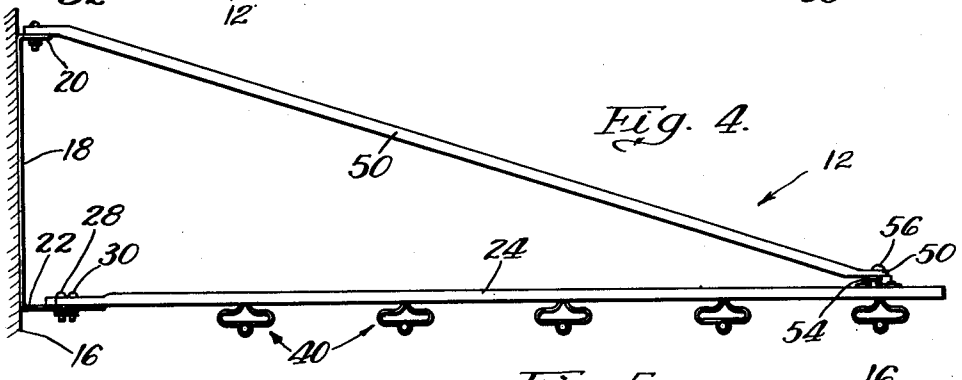
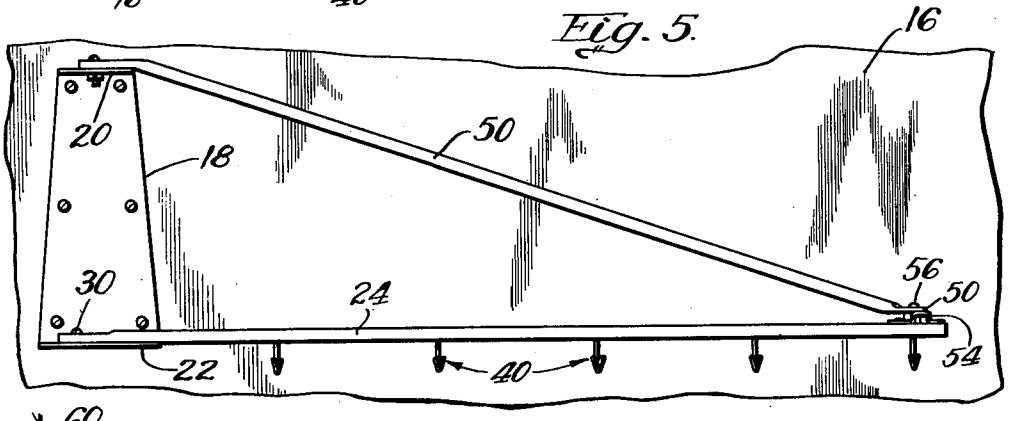


Fig. 5.



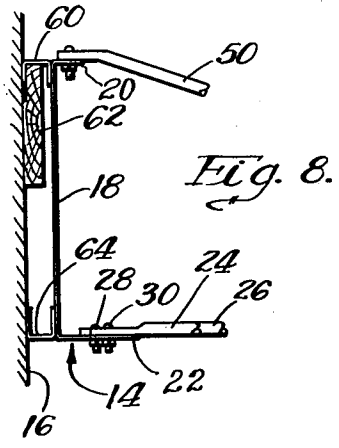


Fig. 8.

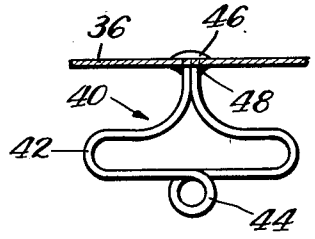


Fig. 6.

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Fig. 3.

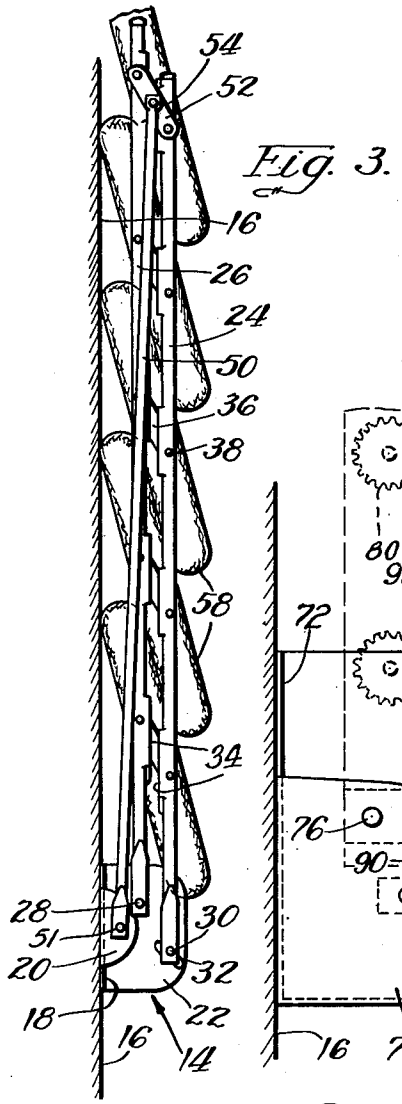


Fig. 7.

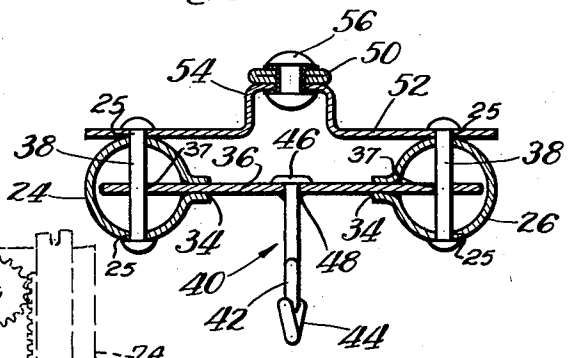


Fig. 9.

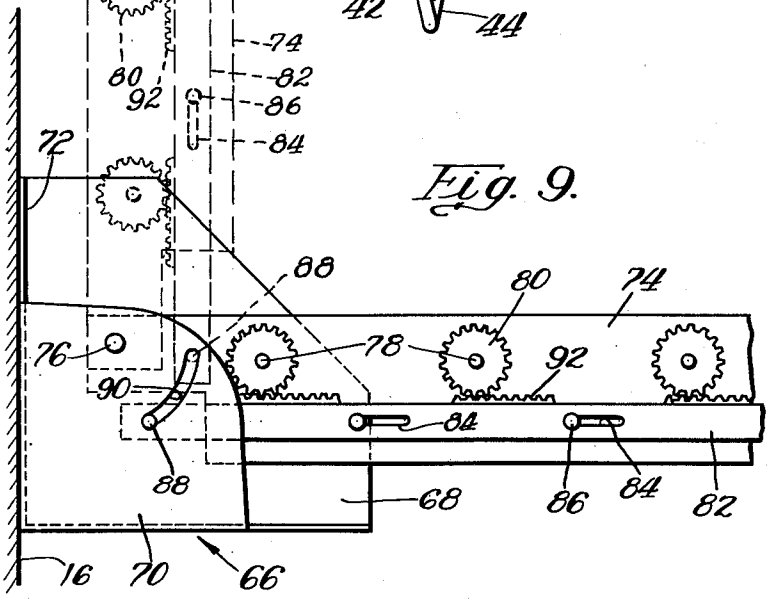
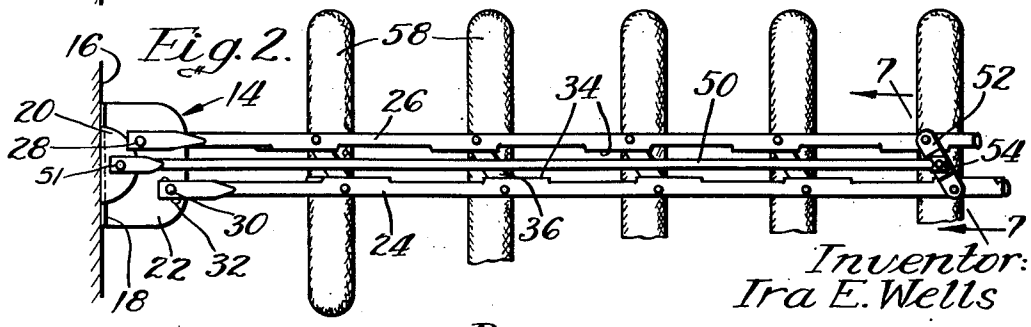


Fig. 2.



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FOLDING CLOTHES POLE

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6 Claims. (Cl. 211—96)

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The present invention relates to a folding clothes rod or clothes pole for a closet which can be extended to position for hanging and removing garments, and folded back against the wall of the closet.

An object of the invention is, therefore, the provision of a folding clothes pole which is capable of holding a quantity of clothes and can be folded into a compact position when not in use.

Another object of the invention is the provision of a folding clothes pole which supports a number of suits or garments in substantially parallel relation with each other when the pole is positioned for hanging and removing garments, and retains the garments in the same relative positions when folded back against the wall.

A further object is the provision of a clothes pole which prevents garments from being unnecessarily wrinkled.

Another object of the invention is the provision of such a folding clothes pole which is simple in design resulting in an article economical to manufacture.

A still further object of the invention is the provision of such a folding clothes pole which can be secured to a wall in any position and in a modified form which can be hooked onto a rail often provided on walls in closets.

Still another object is the provision of a simple and strong folding clothes pole which will support a large number of garments.

With these and other objects in view, my invention consists in the construction, arrangement, and combination of the various parts of my device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, wherein:

Figure 1 is a plan view of the device of my invention shown secured to a wall and in position extending outwardly from the supporting wall;

Figure 2 is a view similar to Figure 1, but showing garments hung thereon;

Figure 3 illustrates the device swung against the wall and the positions of the garments in such position of the device;

Figure 4 is a side elevation of the device, extended out from the wall;

Figure 5 is a side elevation of the device folded against the wall;

Figure 6 is an enlarged detail view of one of the hook means for suspending the garments;

Figure 7 is an enlarged sectional view taken on line 7—7 of Figure 2;

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Figure 8 is an illustration of a modified form of bracket for securing the device to a wall; and

Figure 9 is a plan view of a portion of a modified form of device.

Referring now in detail to the drawings, and particularly to the embodiment illustrated in Figures 1 to 7 inclusive, the device as a whole is indicated by the numeral 12 and includes a supporting bracket 14 adapted to be secured to a supporting wall 16. The bracket 14 is preferably of stamped sheet metal with appropriate reinforcing ribs, although it may be made of other material as well. The bracket comprises an upstanding main portion 18 having a plurality of holes for the insertion of screws for securing the bracket to the wall. The upper end of the main portion 18 is provided with a horizontal overturned portion 20 and a larger lower horizontal overturned portion 22.

A pair of bars or arms 24 and 26 are secured to the lower portion 22 of the bracket at pivot points 28 and 30, respectively, by means of bolts and nuts, the arms then being pivoted for swinging movement in a common horizontal plane. The arms 24 and 26 are pivoted at different distances from the upstanding portion 18 of the bracket, the pivot point 28 being closer to the upstanding portion than the point 30. Preferably, the pivot point 28 is fixed in the lower portion 22 of the bracket, and the bolt forming the pivot point 30 is inserted through a slot 32 formed in the lower portion 22. The slot 32 is preferably a curved slot disposed in a position which is diagonal with respect to the bolt 28 and the upright portion 18 of the bracket, that is, it is directed away from both the bolt 28 and the upright portion of the bracket.

The arms 24 and 26 may be of any preferred construction and material, such as metal tubing, and each is provided with a plurality of horizontally disposed slots 34 spaced at intervals along the length of the arms. These slots may be openings spread in the seams of the tubing, as seen clearly in Figure 7. The slots 34 in the arms 24 and 26 are arranged in pairs, one of each pair being in one of the arms, and a plurality of cross links 36 are inserted in the respective pairs of slots 34. The links 36 are pivotally secured in the slots 34 by means of rivets 38 inserted through holes 25 in the respective arms and extending through holes 37 in the links 36. The holes in the links are sufficiently large to permit the links to pivot freely on the rivets. If preferred, bolts instead of the rivets 38 may be employed and threaded into one wall of the tubing forming the arms.

The slots 34 in each pair are relatively arranged so that the links 36 are disposed at a slight angle with respect to the perpendicular relatively to the arms for a purpose which will be explained later.

Secured to each of the links 36 is a hook supporting means in the form of an eye indicated at 40 which may be formed of bent wire. The hook means 40 includes an enlarged flat horizontal loop 42 and a lower smaller eyelet 44 for accommodating different sizes of hooks usually provided on different types of garment hangers. The ends of the wire forming the hook means or eye 40 are inserted through a central opening in the respective link 36 after which the upper ends of the wire are peened over on the upper surface of the link, as indicated at 46 (Figure 6), and a quantity of solder 48 is applied to the wire and undersurface of the link for securing the hook means 40 against rotation in the link. It is the purpose of the arrangement described above that the hook means 40 will be guided by the movement of the link 36.

A reinforcing rod or brace means 50 is secured at one end thereof to the upper turned-over portion 20 of the bracket and at the other end to a specially constructed link 52 illustrated best in Figure 7. The link 52 is positioned on top of the arms 24 and 26, preferably over the outermost link 36, and secured in position by the same rivets 38 which secure the outermost link. The link 52 is free to pivot on the rivets 38. The central portion of the link 52 is offset upwardly as shown at 54, and to this offset portion the outer end of the reinforcing rod 50 is pivotally secured by means of a rivet 56. The offset portion 54 supports the rod 50 and rivet 56 upwardly out of interference with the arms 24 and 26 in the folding movements of the latter. The rod 50 is also free to pivot about its point of securement 51 with the turned-over portion 20 of the bracket.

Figures 2 and 3 illustrate coats or other garments 58 on hangers suspended in the hook means 40.

Figure 8 illustrates a slightly modified form of bracket for securing the device to a wall. The usual bracket 14, as described above, is provided with a down-turned hook portion 60 at the top of the back side of the upright portion 18, which may be secured thereto as by means of spot welding. A guard rail 62 is often supplied and secured to the supporting wall 16. The hook 60 can be hooked in back of the rail 62 and thus eliminate the necessity for screws threaded into the wall. In order to support the bracket 14 in true vertical position, a spacer 64 is secured to the bottom of the back side of the upright portion 18, which bears against the wall and retains the bracket and the whole device in normal position with respect to the wall.

When the arms 24 and 26 are extended outright as illustrated in Figures 1 and 2, the hook means 40 are arranged in positions nearly perpendicular to the supporting wall. In such position of the hook means 40, the clothes hangers supporting the garments 58 are in a position nearly parallel with the supporting wall. The arms 24 and 26 can then be swung counterclockwise, from the position of Figure 2 to the position of Figure 3, against the supporting wall. In the latter position, the clothes hangers and garments 58 are retained nearly in their original position which is nearly parallel with the supporting wall, and when the arms are swung to the wall, the

garments assume a position which is generally parallel with the wall but varying from such true position due to the thickness of the various garments. One edge of the garment will bear against the wall and the other edge is spaced from the wall a distance equal to the thickness of the adjacent garment. For all practical purposes, the garments can be referred to as parallel with the wall when the arms are swung against the wall.

The bolts which provide the pivot points 28 and 30 for the arms 24 and 26, are positioned as described above for accommodating the swinging motion of the arms. The horizontal spacing of the points 28 and 30 in the direction parallel with the wall is determined by the spacing of the arms 24 and 26 which in turn is determined by the links 36. The difference in distances of the points 28 and 30 from the upright portion 18, or from the wall, is determined by the thickness of the arms 24 and 26 so that the arms will fit together, or nest, when swung against the wall, that is, the arm 26 is disposed outwardly from the arm 24 with respect to the wall when the arms are swung thereagainst. This distance is also affected by the links 36 which, although they fold generally into the arms 24 and 26, they may still slightly affect the practical spacing of the arms. In addition, the quantity of clothes or garments hung on the device affects the spacing between the arms 24 and 26 when they are swung against the wall and, for the latter reason, the slot 32 is provided. At times, it may be necessary that the arms 24 and 26 be spaced more widely apart than at other times, and this discrepancy is also accommodated for by the slot 32. The slots 34 in the arms 24 and 26, it will be noted, are quite long to accommodate the swinging motion of the links 36.

The links 36, when the arms are extended outwardly from the wall, as noted above, are disposed at a slight angle with respect to the arms. When the arms are swung against the wall, they rotate through approximately 90 degrees. The angular disposition of the links permits such swinging of the links, so that when the arms are swung against the wall the links assume an angle in the opposite direction with respect to the arms, but in substantially their original parallel position with respect to the wall.

It will be understood that the pivot points 28 and 30 can be reversed with appropriate change in the length of the arms 24 and 26, so that the arms can be swung in the opposite direction. Also, slots 32 could be provided for both pivot points 28 and 30 so that the arms could be swung in either direction.

Referring now to Figure 9, the device here shown operates in essentially the same manner as the device illustrated in Figures 1 to 7, although the present construction is somewhat different. In the present instance, a wall 16 is shown supporting a bracket 66. The bracket 66 comprises a lower horizontal plate 68 and an upper horizontal plate 70 joined together by a vertical portion 72 by which the bracket is secured to the wall. An arm 74 is pivoted at 76 by any convenient means such as a rivet in the bottom plate 68 or a post secured between both plates 68 and 70. The arm 74 may be supported at its outer end by a supporting rod similar to the rod 50 in the previous embodiment, or it may have bearing support through a substantial vertical extent on a post. Additional views of this embodiment are eliminated since it may be

constructed similarly to the previous form with respect to retaining it in horizontal position. The arm 74 is free to swing in a horizontal plane and form a position extending perpendicular to the wall as shown in full lines in Figure 9, to a position parallel with the wall as shown in dotted lines therein.

A plurality of hook means similar to the hook means 40 are suspended at points 78 at spaced intervals in the arm 74 and arranged for swiveling movement therein. The hook means are positioned below the arm 74, and have stems extending through and above the arm, where pinions 80 are secured thereto, one pinion to each hook means.

A rack bar 82 is supported on the arm 72 by means of a plurality of elongated slots 84 adapted to slide over pins 86 secured in the arm. The rack bar 82 is substantially parallel with the arm 74, and the inner end of the bar 82 is provided with a pin 88 extending into an arcuate slot 90. The slot 90 may be formed in the upper plate 70 in the bracket and is disposed so that a straight line drawn through its ends is substantially at a 45 degree angle with respect to the wall. The rack bar 82 is provided with a plurality of groups of teeth 92, forming racks, each group being positioned for engagement with one of the pinions 80. The slots 84 and pins 86, being at spaced intervals, retain the bar 82 in position for constant engagement of the rack means 92 with the pinions 80.

When the arm 74 of Figure 9 is positioned as shown in full lines, coats or other garments may be suspended therefrom by the hook means, whereby the coats or garments are arranged substantially parallel with the supporting wall. When the arm 74 is swung against the supporting wall 16, the rack bar 82 is retained by means of the slot 90 from moving the full extent that it would move if it were not for the slot 90 or, in other words, the full extent it would move if fixedly secured to the arm 74. The slot 90 may be so shaped, proportioned, and positioned as to control the relative movement between the rack bar 82 and the arm 74, in such a manner that the relative movement is such as to rotate the pinions 80 the desired extent. It will be understood that the pinions 80 and the hook means rotate with respect to the arm 74, but they do not rotate with respect to the wall, and they thereby retain their positions with respect to the wall in such a manner that the garments hung thereon remain substantially parallel with the wall in all positions of the arm 74.

Since the arm 72 swings through a 90° angle, it is evident that the pinions 80 and hook means supported thereby also rotate approximately 90°; the pinions 80 have such a circumference with respect to the desired relative movement between the rack bar 82 and the arm 74, that the pinions rotate substantially a quarter turn, or 90°.

In the position shown in full lines in Figure 9, it will be noted that the pin 88 on the rack bar 82 is closer (in a projected distance longitudinally of the arm 74) to the pinions on the arm than is the pivot point 76; and when the arm 74 is rotated to the position shown in dotted lines, or parallel with the wall, the pin 88 is farther away (in a projected distance longitudinally of the arm 74) from the pinions 80 than is the pivot point 76. This illustration manifests the relative motion between the rack bar 82 and arm 74, which causes rotation of the pinions 80 and the hook means with respect to the arm 74.

It will be seen from the foregoing that a large number of garments can be suspended from the device and brought out to the center of the closet for hanging clothes and removing them. After the device is not in use, it can be swung against the wall leaving the main part of the interior of the closet free and unobstructed. It will also be obvious that a number of such devices can be provided in a closet and when swung back out of the way a great number of clothes can be supported while still leaving the main part of the closet unobstructed.

While I have herein shown and described certain preferred embodiments of my invention, manifestly they are susceptible of modification and rearrangement of the parts without departing from the spirit and scope thereof. I do not, therefore, wish to be understood as limiting my invention to the precise forms herein disclosed, except as I may be so limited by the appended claims.

I claim as my invention:

1. A clothes pole construction comprising, in combination, a bracket having a front and rear side, the rear side of the bracket having hook means adjacent the top thereof and spacing means adjacent the bottom thereof, the front side of the bracket having upper and lower horizontal extensions adjacent the top and bottom thereof respectively, a pair of arms pivoted in said lower horizontal extension at horizontally spaced points and adapted to swing in a common horizontal plane, a plurality of links at spaced intervals along the length of said arm and having their ends pivoted in respective arms, hook means on the links adapted to support garment hangers, and brace means pivoted in said upper horizontal extension and secured to the swinging end of said arms.

2. A clothes pole construction comprising, in combination, a bracket adapted for mounting on a wall and having a front and rear side, the rear side of the bracket having hook means adjacent the top thereof and spacing means adjacent the bottom thereof, the front side of the bracket having upper and lower horizontal extensions adjacent the top and bottom thereof respectively, a pair of arms, one of said arms being pivoted in said lower horizontal extension at a fixed point, said lower horizontal extension having a slot therein, the other one of said arms having pivot means for pivotally mounting the same in said slot, said slot being disposed in a direction that said pivot means is slidable therein toward and away from said fixed pivot and toward and from the supporting wall, said arm being swingable in a common horizontal plane, a plurality of links at spaced intervals along the length of said arm and having their ends pivoted in respective arms, hook means on the links adapted to support garment hangers, and brace means pivoted in said upper horizontal extension and secured to the swinging end of said arms.

3. In a device of the character described, a bracket adapted for mounting on a wall, a first arm pivotally mounted on said bracket, a plurality of members pivotally mounted on said arm and angularly disposed to a vertical plane through the axis of the pivot of said first arm, brace means non-parallel to said first arm and pivotally mounted at one end on said bracket and pivotally connected at the other end to said first arm, the axes of the pivotal connections

of said first arm and said brace means to said bracket being laterally displaced from each other, a second arm parallel to said first arm and having said plurality of members pivotally connected at spaced intervals thereto, said second arm being operative to cause said plurality of members to pivot simultaneously as said first arm is pivoted, whereby said angular disposition of said members to said plane through the axis of the pivot of said first arm is substantially maintained, said second arm being pivoted on a movable pivot in engagement with said bracket, and said bracket having a slot therein within which said movable pivot is positioned for movement therealong as said arms and brace means are pivoted.

4. In a device of the character described, a bracket adapted for mounting on a wall, a first arm pivotally mounted on said bracket, a plurality of parallel members pivotally mounted on said arm and angularly disposed to a vertical plane through the axis of the pivot of said first arm, brace means non-parallel to said first arm and pivotally mounted at one end on said bracket and pivotally connected at the other end to said first arm, a second arm parallel to said first arm and having said plurality of members pivotally connected at spaced intervals thereto, said second arm being operative to cause said plurality of parallel members to pivot simultaneously as said first arm is pivoted, whereby said angular disposition of said parallel members with respect to said plane through the axis of the pivot of said first arm is substantially maintained, said second arm being pivoted on a movable pivot in engagement with said bracket, and said bracket having a slot therein within which said movable pivot is positioned for movement therealong as said arms and brace means are pivoted.

5. In a device of the character described, a bracket adapted for mounting on a wall, a first arm pivotally mounted on said bracket, a plurality of parallel links pivotally mounted on said first arm and extending transversely from said arm, said links being angularly disposed to a vertical plane through the axis of the pivot of said first arm, and means for substantially maintaining said angular disposition of said links to said plane through the axis of the pivot of said first arm as said first arm is pivoted, said means comprising a brace non-parallel to said first arm and pivoted at one end to one of said links and at the other end to the bracket at a point vertically and horizontally spaced from the pivot

of the first arm on the bracket, a second arm parallel to the first arm and having said links pivotally connected thereto, said second arm being pivoted on a movable pivot in engagement with said bracket, and means on said bracket cooperating with said movable pivot to provide movement of the pivot of said second arm relative to the pivot of said first arm as the first arm is pivoted.

6. In a device of the character described, a bracket adapted for mounting on a wall, a first arm pivotally mounted on said bracket, a plurality of parallel links pivotally mounted on said first arm and extending transversely from said arm, said links being angularly disposed to a vertical plane through the axis of the pivot of said first arm, means for substantially maintaining said angular disposition of said links to said plane through the axis of the pivot of said first arm as said first arm is pivoted, said means comprising a brace non-parallel to said first arm and pivoted at one end to one of said links and at the other end to the bracket at a point vertically and horizontally spaced from the pivot of the first arm on the bracket, a second arm parallel to the first arm and having said links pivotally connected thereto, said second arm being pivoted on a movable pivot in engagement with said bracket, means on said bracket cooperating with said movable pivot to provide movement of the pivot of said second arm relative to the pivot of said first arm as the first arm is pivoted, and hook means secured to said links at a region between said arms.

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