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G. H. SEVERIN
FOLDING TOWEL BAR

2,642,193

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2 Sheets-Sheet 1

FIG. 2

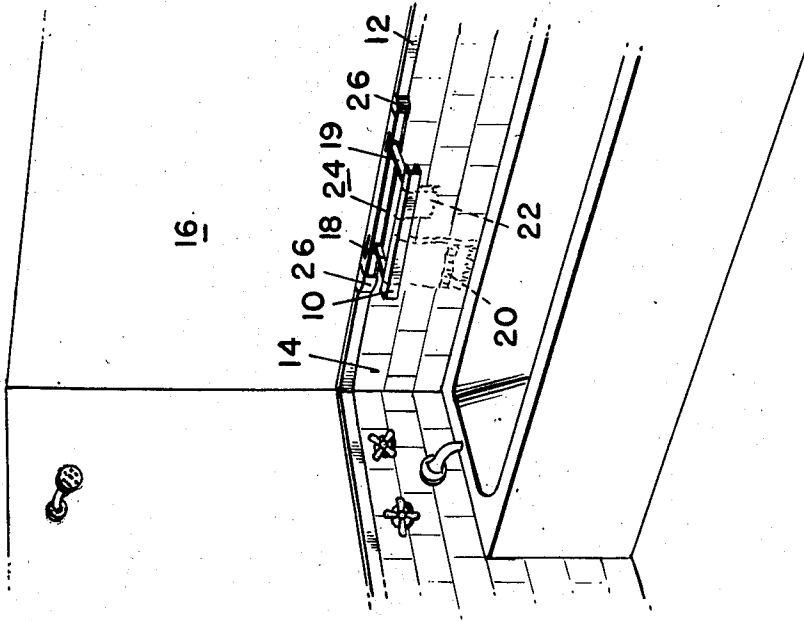
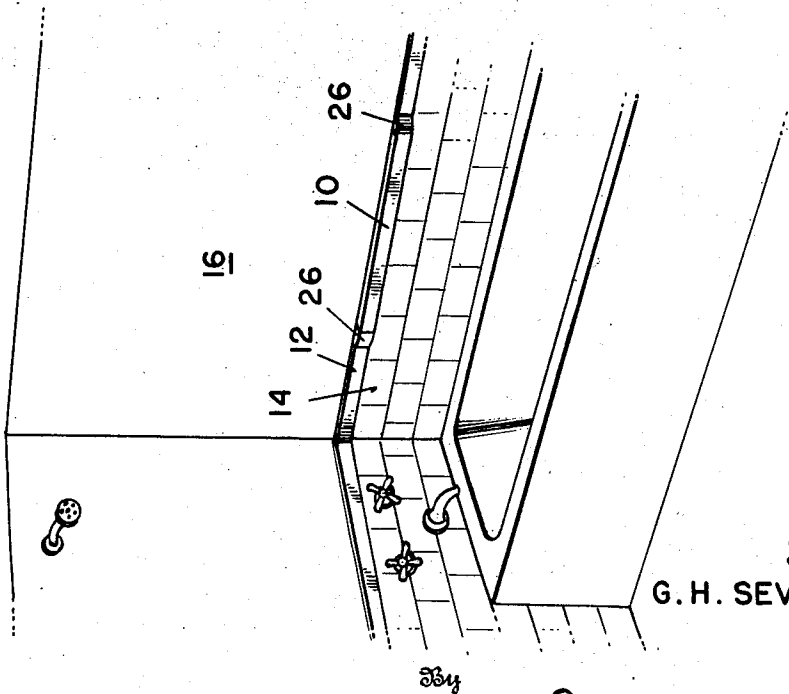


FIG. 1



Inventor
G. H. SEVERIN,

John D. Upham

ATTORNEY

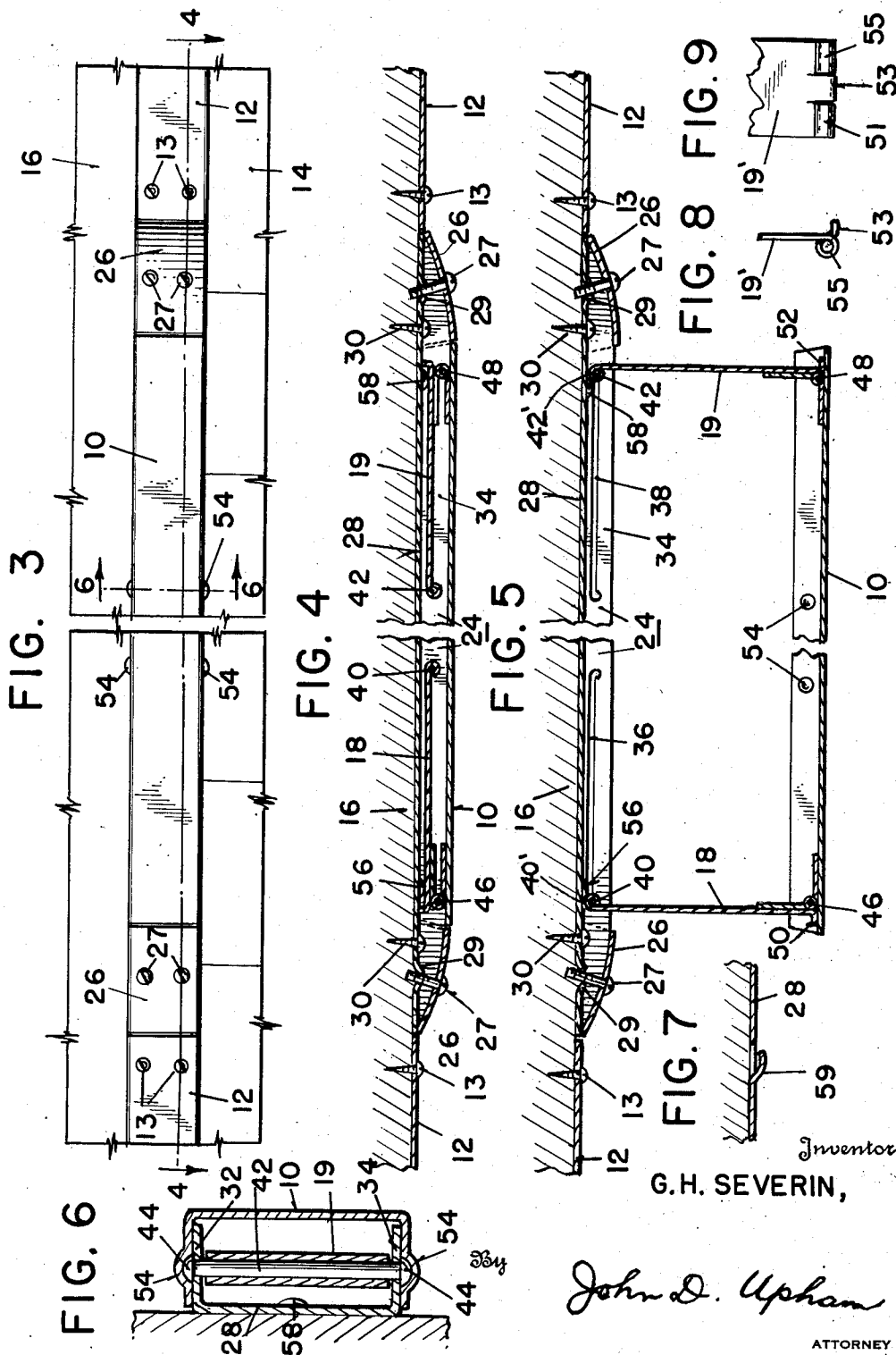
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Inventor
G. H. SEVERIN,

John D. Upham

ATTORNEY

UNITED STATES PATENT OFFICE

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FOLDING TOWEL BAR

Gordon H. Severin, Oklahoma City, Okla.

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7 Claims. (Cl. 211-123)

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This invention relates to folding towel bars and like articles. In one of its specific aspects it relates to an improved folding rack adapted for installation on bathroom or kitchen wall in conjunction with and as part of a wainscot trim. The invention in another specific aspect relates to a unitary structure readily adapted for acting as a rack for holding towels or other articles, yet easily folded in a compact and completely unobtrusive manner against the wall whenever desired.

Folding racks of various forms have long been used in the household and elsewhere. However, such racks have often been unsightly, cumbersome and unstable, or of such complicated structure as to make their cost prohibitive. In any event, the racks have borne little relationship, either functionally or artistically, to the wall structures to which they are attached. Accordingly, there is yet a great need for a simple rack adjusted to modern ideas of decoration and construction. Such a rack forms the subject of my invention.

An object of this invention is to provide an improved folding rack suitable for holding washcloths, bath towels, dish towels and the like.

Another object of the invention is to provide a towel bar or similar article for attachment to a wall, which can be readily folded into a very compact form against the wall so that it protrudes but very little from the wall.

Another object is to provide a towel bar or the like which is an integral part of the wall construction.

A further object is to provide a decorative wainscot trim for bathroom or kitchen, having a folding rack forming a part thereof.

Yet another object is to provide a rack construction wherein a single element forms an article supporting means when the rack is opened and an enclosing means or housing when the rack is closed.

A still further object is to form a folding towel bar in a very simple and economical manner from sheet metal.

Another object is to construct a folding rack with a minimum of moving parts, having a simple mode of operation, and having perfect rigidity in the open position.

Further objects and advantages of the invention will be apparent from the accompanying disclosure and discussion.

One preferred modification of my invention is illustrated in the accompanying drawings, in which like numerals are used to designate like parts throughout. Figures 1 and 2 show the

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towel bar in closed and open positions, respectively, mounted as part of the wainscot trim in a bathroom. Figure 3 is a front, or elevation, view of the towel bar, which view is the same in either closed or open position. Figure 4 is a cross-sectional view of the bar or rack when closed, taken along a horizontal plane indicated by the line 4-4 in Figure 3. Figure 5 is a similar cross-sectional view of the rack in the open position, taken along the same horizontal plane indicated by line 4-4 in Figure 3. Figure 6 is an enlarged vertical cross-section of the closed rack taken along a vertical plane normal to the length of the rack and indicated by line 6-6 in Figure 3. Figure 7 is a detail view in horizontal cross-section showing a friction catch which is an alternative construction for catch 53 shown in the other figures. Figure 8 is a detail view in horizontal cross-section showing a hinge construction made from the end of the supporting arm 19 and which is an alternative for hinge 43 shown in the other figures. Figure 9 is a detail of the arm end hinge of Figure 8 as seen from the inside of the rack.

In the drawings, numeral 10 designates an elongated horizontal sheet metal channel element of any desired length, which serves both as the actual towel bar when the rack is opened and as a housing for other elements of the unit when closed. This channel element preferably is of the same width as, and forms a part of, the trim strip 12 which surmounts the tile or other material forming the wainscot 14 of the wall 16 upon which the towel bar and trim are mounted. The trim is fastened to the wall in conventional manner, as by nails or screws 13, and may serve to hold the wainscot if the latter is made of wall-board, linoleum, or the like. As shown in Figure 2, when open the bar element 10 stands out from and parallel with the wall, supported by two sheet metal arms 18 and 19 which in the open position are vertical to the wall and to the bar, so that a towel 20 and washrag 22, or any other object, may be hung thereupon. Arms 18 and 19 are supported at the wall by a channel member or base 24 the back of which is attached directly to the wall and the standing edges of which are slotted as described below. As shown in Figure 1, when the rack is closed the element 10 lies tightly against the wall and forms an enclosed housing for folded arms 18 and 19 and supporting member 24. If desired, visual continuity between element 10 and the other portions 12 of the trim may be provided by end pieces 26 of the same width as strips 12 and bar 10. These end pieces

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26 are also channels but their front surfaces are preferably curved to provide a smooth transition from the ends of channel 10 which jut out from the wall somewhat to the ends of trim 12 which lie close against the wall; the sides or standing edges of the channels 26 are thereby given an essentially triangular shape, the hypotenuse being curved (as shown) or straight as desired. Screws 27 may be used to hold end pieces 26 in place. The entire rack is usually made of sheet metal, such as 24-gauge polished stainless steel or 0.049-inch aluminum sheet.

Particular reference is now made to Figure 5, wherein details of the rack in the opened position may be readily seen. Support or base 24 takes the form of an elongated channel having a back portion 28 of slightly less width than channel bar 10, which is fastened to the wall by screws 30, and which has integral top and bottom flanges or standing edges 32 (see Figure 6) and 34, respectively, running the entire length and projecting out from the wall a short distance, say one-half inch. Each of the two standing edges or flanges is provided with two slots, 36 and 38, one being in the left portion and the other being in the right portion of the flange. The slots in the top and bottom flange are opposite each other and in directly analogous positions.

Vertical rod or pin 40 slides in slots 36, and vertical rod or pin 42 slides in slots 38, each rod being provided on each end with rivet or other heads 44, preferably rounded, to hold the rods in the slots. The inner ends of arms 18 and 19 are folded around rods 40 and 42 at 40' and 42', respectively, so that the arms are firmly attached to the rods. As will be apparent from Figure 6, the heads 44 of the rods slide on the outside, and the ends of the arms 18 and 19 slide on the inside, of the slots in top and bottom standing edges 32 and 34 of supporting channel 24, preventing any appreciable vertical play of the rods.

The arms 18 and 19 are attached near their outer ends to bar element 10 by way of pin hinges 46 and 48, respectively. These hinges may be attached to the arms and the bar by any suitable means, such as by riveting or spot welding, the latter being preferred. An alternative hinge construction is shown in Figures 8 and 9 and discussed below. An important feature of the rack construction is found in the extreme outer ends 50 and 52 of arms 18 and 19, respectively, which ends are bent outward at right angles to the arms so that when the rack is open the bent ends bear against the inner surface of bar 10 and thus hold the rack perfectly rigid. On the other hand, these ends are sufficiently short that they barely touch, or avoid touching, the back part 28 of base 24 when the rack is in folded position, as will be seen in Figure 4.

Operation of the rack may be understood by referring to Figures 4 and 5 together. As shown in Figure 4, when closed pins 40 and 42 and the inner ends of arms 18 and 19 are at the ends of slots 36 and 38 nearest the center of the rack. Arms 18 and 19 lie parallel to the wall and within base channel 24, and surrounding all as a cover is the channel-shaped bar element 10 which fits snugly around the slightly smaller channel 24. The cover 10 is held firmly in place by snap action of dimples 54, raised on its upper and lower surfaces, over the rod ends 44. To open the rack, bar element 10 is pulled away from the wall and the rods 40 and 42 carrying the inner ends of arms 18 and 19 are slid to the outer ends of the slots 36 and 38, respectively.

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These rods 40 and 42, or rather the ends 40' and 42' of the arms which are bent around them, are locked in place by being forced into the extreme positions in the ends of the slots over friction catches 56 and 58, respectively, which may take the form of dimples raised in the back portion 28 of base 24. The cooperative action of friction catches 56 and 58 holding the arms at the ends of the slots, and bent ends 50 and 52 of the arms bearing against bar 10, serves to maintain the rack rigidly in the open position. Closing is readily effected by the opposite operation of forcing the inner ends of the arms across the friction catches 56 and 58 toward the center of the rack, and pressing bar 10 toward the wall until it snaps into closed position.

A preferred form of friction catch is shown in Figure 7, in which a spring-action metal tongue 59 is cut or stamped out of the back part 28 of base 24. This tongue takes the place of dimple or dimples 58 shown in Figures 4, 5 and 6, and is bent so that as the rack is moved into open position the rod 42 having the end of arm 19 wrapped around it slides over the tongue and finally snaps into tight engagement with the end of the tongue. This end is curved inward toward the base 28 sufficiently, however, to allow the rod 42 to be easily forced over it when closing the rack. A similar but oppositely disposed tongue is substituted for dimple 56. A single friction catch is adequate for each arm, as shown by element 58 in Figure 6, although a plurality may of course be used.

Figures 8 and 9 show a preferred hinge construction for the outer ends of arms 18 and 19. Rather than using a complete pin-hinge as shown in Figures 4 and 5, a part of each hinge is preferably formed from the end of the arm itself. Thus, the outer end of arm 19' is divided by two longitudinal cuts into three parallel portions, two of which, 51 and 55, are wrapped inwardly around the hinge pin (not shown) while the middle one 53 is bent outwardly at a right angle to perform the function of end 52 (Figure 5) by bearing against bar element 10 when the rack is in open position. The end of arm 18 is similarly formed to provide part of the hinge 46. Ordinarily a separate piece of metal is used for the other part of each hinge for attachment to channel 10, since striking a tongue or the like out of its front surface for use in forming the remainder of the hinge would detract from the appearance. Alternatively, the hinge pins may be extended through holes in the upper and lower standing edges of channel 10 and provided with enlarged heads such as pins 40 and 42, though again this detracts from the appearance of the simple outer surfaces of the towel bar.

The channel making up base 24 is preferably longer than the channel which constitutes the rack element 10, so that its ends extend sufficiently beyond element 10 to allow easy access of a screwdriver to screws 30 which fasten base 24 to the wainscot and/or wall. While screws 27 which hold the end pieces may also serve to fasten the base 24 to the wall, it is preferred that they be sheet metal screws or bolts which engage in tapped dimples 29 raised in the back 28 of base 24. Rather than being a plane surface, the lower part of back 28 of base 24 may be partly offset away from the wall so that it will fit over the top edge of a wall-board or linoleum wainscot and hold it on the wall while the upper part of 28 will fit against the wall itself. In such case the trim itself is usually made up of an offset-type

base to which is attached an outer decorative strip.

The rack or bar element 10 may be any convex form, so long as it provides an enclosure for the balance of the mechanism when closed; for that matter, the invention broadly contemplates any form of towel supporting bar to be carried by the arms, such as a simple strip without the enclosing sides although this is much less preferred. The bar 10, though usually made of the same metal as the rest of the rack, may be fabricated from synthetic resins or other plastic material, wood, etc., in order to correspond with the trim 12 or otherwise harmonize with any decorative scheme. To this end a continuous decorative design or shape of any kind may be formed on the front surface of both the trim and the rack.

Numerous other modifications of the preferred structure of my rack disclosed herein will be apparent to one skilled in the art without departing from the invention in its broader aspects.

I claim:

1. A folding rack comprising an elongated base adapted for attachment to a wall, an elongated rack member adapted to lie parallel and close to said base in closed position and parallel to and spaced from said base in open position, a pair of rack-supporting arms hinged to said rack member one near each end and each arm at its inner end being slidably attached to said base so that the inner ends of said arms slide toward each other when said rack member is pushed toward said base and away from each other when same is pulled away from said base, each arm not exceeding one-half the length of said rack and their inner ends sliding within opposite halves of said base whereby when said rack is closed the arms lie between and parallel to said rack and base, catches for positioning the inner ends of said arms on said base in open position at a distance from each other equal to their distance on said rack member so that the arms are parallel to each other and perpendicular to the base and rack, and means for preventing angular motion between arms and rack when in open position.

2. A folding rack for towels and like articles which comprises an elongated channel-shaped base adapted for horizontal attachment to a wall with the standing edges perpendicular to and extending out from said wall, each standing edge having two slots in line running lengthwise therein, the slots in the lower standing edge being disposed exactly opposite the corresponding slots in the upper edge, two rack-supporting arms each having its inner end sliding within a set of said slots and being of about the same length as said slots, an elongated rack element hingedly attached to the outer ends of said arms at a distance equal to the distance between the outer ends of slots in said base and so that neither arm can make an angle of more than 90° with said rack, catches for holding the arms at the outer ends of the slots and parallel to each other when the rack is opened by pulling the rack element away from the base but allowing release of the arms when the rack is closed so that the inner arm ends will slide toward the inner ends of the slots and allow the rack element to be moved close to the base to be parallel to the base and the arms, and catches for holding the rack in closed position.

3. An improved wainscot trim adapted for in-

stallation on a wall to hold a wainscot material to the wall and having as an integral part thereof a folding towel rack which aids the holding of the wainscot to the wall and in its closed position acts as a continuation of the trim, which comprises a horizontal trim strip, a horizontal base strip between two pieces of said strip, means for fastening said base strip and two pieces of trim strip to a wall along the top edge of a sheet of wainscot material to hold same to the wall, said base strip being slightly narrower than the trim strip, a pair of arms having their inner ends slidably attached to said base strip, an outer rack element comprising a channel of the same width as said trim strip and of a length of the same order as said base strip and having the two sides of the channel extending horizontally inward toward the wall, hinges attached near the ends of said rack element with each hinge also attached to the outer end of one of said arms, the hinge attachments being such as to allow any angle of 90° or less but no greater between each arm and the rack, catches to prevent the inner ends of said arms from sliding farther apart on said base strip than the distance of said hinges on the rack and for holding said arms at their maximum distance apart so that the rack when opened is rigidly parallel to the base strip, and means permitting said inner ends of said arms to slide toward each other said rack element is pushed toward said base strip so that on pushing same against the wall the arms lie flat between the base and the rack element and the latter completely surrounds the arms and base strip and forms a continuation of the two pieces of trim strip.

4. A wainscot trim and rack according to claim 3 in which said base strip is longer than said rack channel element and is fastened to the wall by screws passing through its ends which project beyond the ends of said rack channel, and in which separate end channels of curved front surface and essentially triangular sides are positioned between the ends of said rack channel and said pieces of trim strip.

5. A folding rack which comprises an elongated sheet metal channel base adapted for attachment to a wall and having a flat back portion and two narrow horizontal sides or flange portions integral therewith protruding from the wall above and below the said back portion, each said flange portion containing a pair of correspondingly located guide slots symmetrically positioned in the right and left part and running lengthwise of said flange portion, an elongated article-supporting channel bar made similarly to said base channel without said slots but oppositely positioned and sufficiently wider so that its sides or flange portions are adapted to fit over the flange portions of said base and enclose same, a pair of sheet metal supporting arms hinged near the outer ends of said bar and having ends bent at a right angle to engage the inner surface of said bar when perpendicular thereto, a pair of pins each slidably positioned in upper and lower corresponding slots on the right and left parts respectively of said flange portions of said base and each having the inner end of one of said supporting arms attached thereto, each said arms being of about the same length as a slot whereby when closed the pins and inner ends of said arms lie in the center-most part of said slots with the arms and base enclosed by front and sides of said article-supporting channel bar and when opened the pins and inner ends of said arms lie in the

extremities of said slots and said bar is supported by said arms parallel to and at a distance from said base.

6. A rack according to claim 5 in which a protuberance is struck from the flat back portion of said base near the outer end of each set of slots so that the pin and arm end must be forced over it on opening the rack whereby it holds same from sliding in the slots.

7. A rack according to claim 6 in which said protuberance is a tongue, having its end pointing toward the outer end of the slots and curved toward said base sufficiently to allow the pin and arm end to be forced back across it on closing the rack.

GORDON H. SEVERIN.

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