April 3, 1956 E. P. D'AZZO 2,740,470

ADJUSTABLE LATERAL AWNING ARM SUPPORT WITH SINGLE PIVOT POINT

Filed Aug. 5, 1952 2 Sheets-Sheet 1

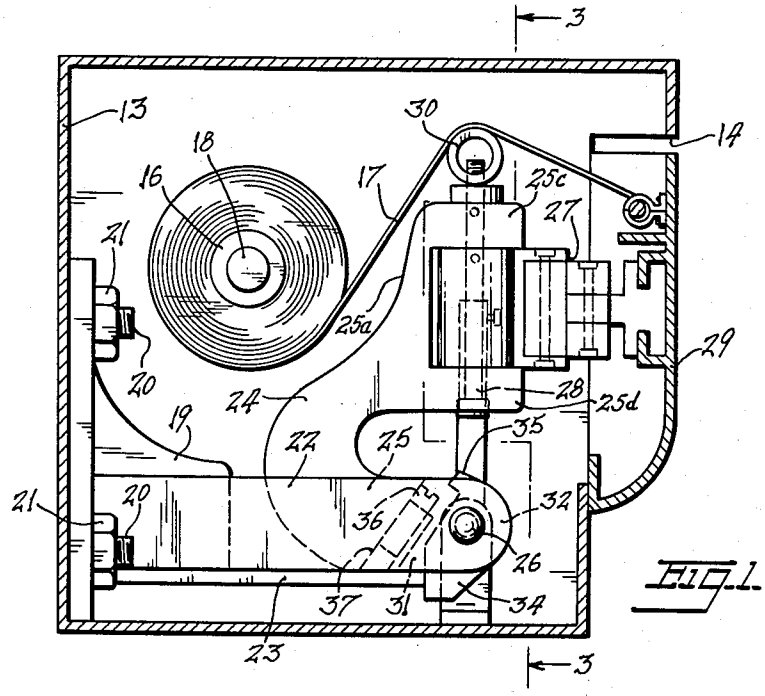


FIG. 1

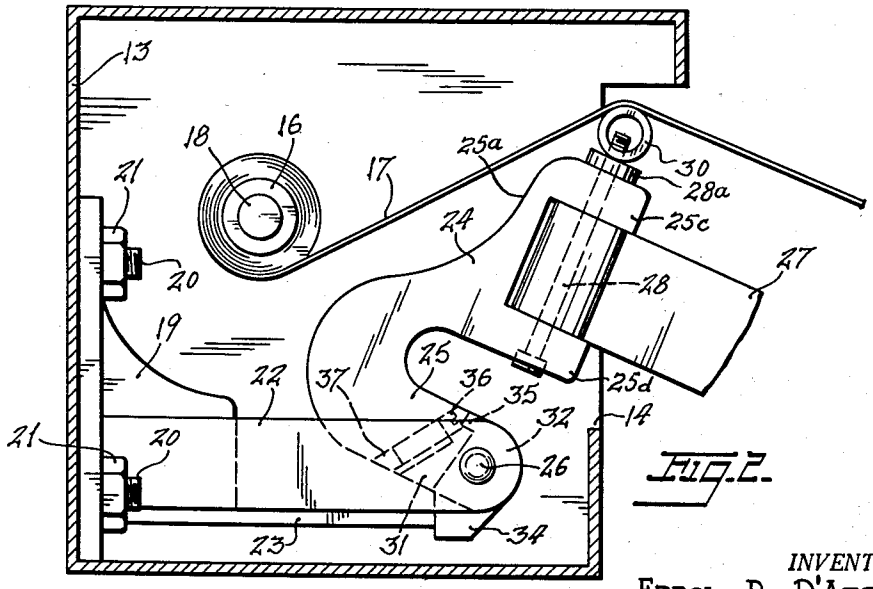


FIG. 2

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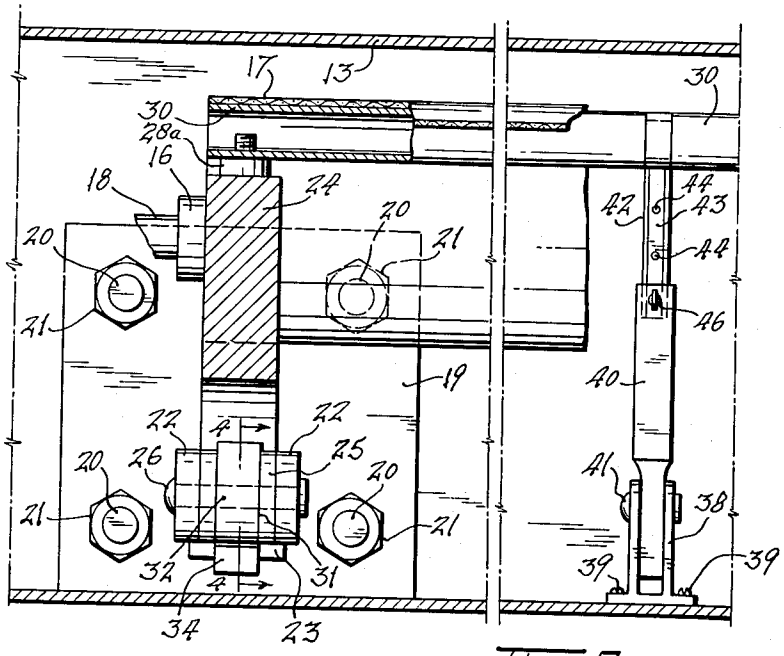


Fig. 3.

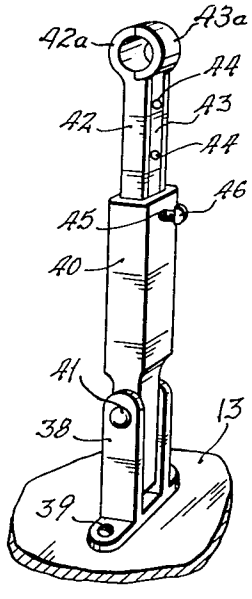


Fig. 7.

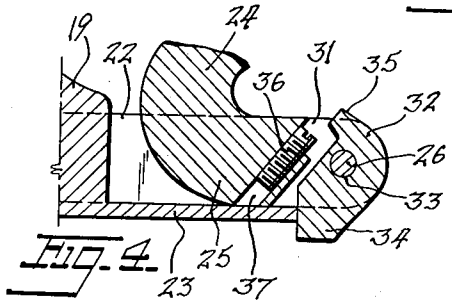


Fig. 4.

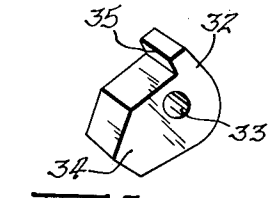


Fig. 6.

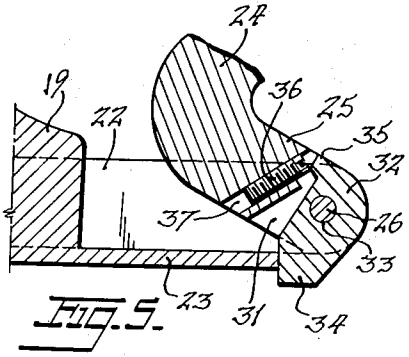


Fig. 5.

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ADJUSTABLE LATERAL AWNING ARM SUPPORT WITH SINGLE PIVOT POINT

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Application August 5, 1952, Serial No. 302,853

6 Claims. (Cl. 160—22)

This invention relates to an improved mounting for awning arms, which open forwardly, and particularly to a mounting which provides an initial rocking movement of the rear pivots of the arm, in advance of the forward opening movement of the arm and is a continuation-in-part of application Serial No. 283,274, filed April 21, 1952, now Patent No. 2,695,663, issued November 30, 1954.

One of the objects of the invention is the construction of a mounting for an awning arm, which includes a rocker supported for limiting swinging movement on a horizontal pivot, and a support for the rear end of the arm on this rocker, which permits pivotal motion around an upright and an initial vertical axis, the whole being so arranged that the entire awning arm will have an initial rocking movement on the awning box, which can be manually regulated to vary the downward slant or inclination of the awning arm in its open position, and which controls the direction of opening of the arm after the initial rocking movement has ceased.

Another object of the invention is to provide between the rear end of the forwardly opening awning arm and the housing box, a rocker bracket or member mounted to swing upwardly and forwardly on a horizontal axis, which is provided with an upright pivot for supporting the rear end of the awning arm, and provided with a manually adjustable stop for limiting the degree of rocking movement of the bracket, so as to control the angle of downward inclination of the awning arm in its open position, or the degree of its slanting, and to provide a canvas tensioning rod, movable with the rocker bracket, which subjects the canvas to a tightening tension, when the bracket resumes its initial position in the awning box.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

On the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a vertical sectional view through an awning arm housing box, showing the awning arm contracted, the rocker being in its initial position, seated on the box, and the canvas wound and under tension.

Fig. 2 is a similar view, showing the rocker bracket tilted upwardly and forwardly and the awning arm, shown broken away, in a forward and downwardly inclined or slanted position, with the canvas partly unwound and still under tension from the rocker bracket.

Fig. 3 is a vertical sectional view, taken on line 3—3 of Fig. 1, looking in the direction of the arrows, showing the mounting of the rocker bracket and the adjustable stop therefor, and showing the rocker bracket in closed and seated position.

Fig. 4 is a detail sectional view, taken on line 4—4 of Fig. 3, looking in the direction of the arrows, showing the mounting of the rocker bracket and the adjustable stop therefor and showing the rocker bracket in closed position.

Fig. 5 is a similar view, showing the rocker bracket in upwardly tilted forward or service position.

Fig. 6 is a detail perspective view of the stop block of the rocker bracket.

Fig. 7 is a perspective view of an adjustable split bearing rod.

The awning assembly according to the present invention, includes an awning box **13** which may be set into a suitable cavity formed in a wall over a store front or the like. Such awning boxes **13** are usually constructed of metal and at the front thereof the box has a front opening **14**.

Rotatively supported within the box **13**, there is a roller **16** to which the usual awning canvas **17** is attached along one edge so that rotation of the roller in one direction or the other will cause the awning canvas to be wound on the roller or unwound from the roller **16**. Extended from the ends of the roller **16** are the usual end aligned trunnions **18** by which the roller is rotatively supported, see particularly Fig. 3. The rotative support of the trunnions **18** or the mechanism for turning the roller **16** to wind and unwind the awning canvas **17** are not shown on the drawing, as such mechanisms are generally known in the art and form no part of the present invention.

Positioned within the box **13**, at the ends of the awning roller **16** there are brackets **19**. The brackets **19** are mounted upon the rear wall of the awning box **13** by means of suitable threaded studs **20** which extend forward from the rear wall of the box and upon which nuts **21** are threaded after the studs have been passed through suitable holes in the brackets **19**. The brackets **19** are extended forward from the rear wall of the awning box and have spaced tines **22** at the front ends thereof. Integrally formed with the bottom of each of the brackets **19**, there is a shelf portion **23**. As will be best understood from a comparison of Figs. 1 to 5, the shelf portions **23** bridge the space between the tines **22** and are stopped short of the front ends of the tines. The shelf portions **23** function as part of the stop means of the present invention as will become clear as the present description proceeds.

An arm support member **24** is provided for each of the brackets **19**. Each of the arm support members **24** is formed with a downwardly and forwardly extended bar portion **25** fitted snugly between the tines **22** of the respective bracket. The bar portions **25** are pivotally supported on the brackets by means of pivot pins **26** arranged in end alignment and passed through the front ends of the tines **22** and the front ends of the bar portions **25**. In the fully retracted position of the awning assembly shown in Fig. 1, the bottoms of the bar portions **25** rearward of the pivot pins **26** rest on the top faces of the shelf portions **23**, as best shown in Fig. 4. Therefore, the shelf portions **23**, in addition to functioning as part of the stop means of the present invention, further act to limit pivotal movement of the arm support members relative to the brackets **19** in a counter clockwise direction as viewed in Figs. 1 and 2.

Pivotally supported on each of the support members **24**, there is an awning arm **27** of the collapsible type. The rear or inner ends of the awning arms **27** are fitted within cutouts formed in the top portions of the arm support members **24** and are pivotally retained therein by pivot pins **28** extended across the cutouts. Each of the awning arms **27** is constructed of pivotally connected end aligned sections and a decorative closure member **29** Fig. 1 is mounted on the outer ends of the outer sections of the arms. The closure member **29** extends the full length of the awning box and in the retracted position of the awning, the closure member **29** functions substantially to close the front opening **14** of the awning box, as shown in Fig. 1. The extended end of the

awning canvas 17 is releasably attached to the top of the closure member 29, as shown in Fig. 1 and generally known in the art.

Mounted between the tops of the arm support members 24, and secured to pivot pins 28 there is a tension rod 30 of tubular construction. The tension rod 30 extends the full length of the distance between the support members 24 and is located beneath the awning canvas 17 and the inner side of the pivot pins 26, see Fig. 1.

The construction of the awning assembly as thus far described is such that the weight of the closure member 29 and the major portion of the weight of the awning arms 27 are located on the front or outer sides of the pivot pins 26 and the combined weight is greater than the weight of the support members 24 and tension rod 30 located on the inner or rear sides of the pivot pins 26. Thus, as the roller 16 is turned to unwind the awning canvas 17, the greater weight of the closure member 29 and the arms 27 will cause the support members 24 to be tilted forward toward the front opening 14 in Fig. 2. As a result the arms 27 will be inclined downward and forward to extend themselves by the action of gravity as unwinding of the awning canvas 17 is continued and until the fully extended position of the awning arms 27 is reached. As a function of the forward pivoting of the support members 24, the tension rod 30 will also be moved forward to bear against lower surface or the bottom face of the awning canvas 17 and tension the awning canvas between the roller 16 and the closure member 29.

Stop means is provided in connection with each of the support members 24 to limit the forward pivoting of the support members and thereby relieve the awning canvas from supporting the weight of the extended awning arms 27 and the closure member 29 and to limit pressure exerted against the bottom face of the awning canvas 17 by the tension rod 30. To permit the inclusion of the stop means, the front ends of the bar portions 25 of the support members 24 are formed with inwardly extended cutouts 31 which bear the intermediate portions of the pivot pins 26. Turnably mounted on each of the pivot pins 26 within the cutouts 31 of the bar portions 25 there is an abutment member in the form of a metallic disc 32. Each disc 32 is formed with a central aperture 33, see particularly Fig. 6, for passage of the respective pivot pin 26. At its bottom, each of the discs 32 is provided with a dependent lug 34. The lugs 34 depend beneath the tines 22 of the brackets 19 to abut on the front ends of the shelf portions 23 to restrict turning movement of the discs 32 in a clockwise direction, as viewed in Figs. 1, 2, 4 and 5. Substantially over the depending lugs 34 each of the discs 32 is cut away to provide upwardly and rearwardly extended lip portions 35.

Stops are provided within the cutouts 31 of the arm support member 24 to abut the lip portions 35 of the discs 32 and restrict pivotal movement of the arm support members 24 in a clockwise direction, as viewed in Figs. 1 and 2. The stops of the arm support members 24 comprise set screws 36 threaded into downwardly and rearwardly extended internally threaded holes 37 formed in the bar portions 25 of the arm support members 24 at the inner ends of the cutouts 31, see particularly Figs. 4 and 5. In the pivoted positions of the arm support member 24 relative to the brackets 19, the top ends of the set screws 36 abut the lip portions 35 of the discs 32 holding the support members against further pivotal movement relative to the brackets.

It will now be apparent that with the set screws 36 abutting the lip portions 35 the downward inclination of the awning arms 27 will be controlled and the full weight of the awning arms and the closure member 29 will be supported by the support members 24 rather than by the awning canvas 17. In addition, pressures exerted by the tension rod 30 against the bottom face of the awning canvas 17 will be controlled by the adjusted position of the set screws 36 relative to the bar portions 25 of the arm support member 24. At no time when the set screws are properly adjusted will the tension rod 30 push up on the awning canvas 17 to draw inward on the closure member 29 moving the awning arms 27 slightly toward their collapsed position.

The tension rod or bar 30 is supported between its ends by means of the split bearing which is carried by the post 42. This post is rectangular in cross section and is slidable in a rectangular hollow casing 40, the lower end of which is pivotally supported in the bifurcated bracket 38, by the pin 41, the bracket 38 being attached to the bottom wall of the housing box 13 by means of the screws or rivets 39.

The vertical post 42 is formed with a longitudinal channel or groove which receives the bar 43, which is formed with a series of longitudinally spaced apart holes 44, in any one of which the screw or pin 46 may be inserted through the wall of the casing 40. The upper end of the post 42 is formed with a C-shaped bearing 42*a*, and the upper end of the bar 43 is formed with a mating C-shaped bearing 43*a*. The post 42 is also formed with longitudinally spaced holes mating the holes 44 of the bar 43, so that the two bearings may be secured in alignment and the post adjusted to provide the correct support for the shaft or rod to prevent its sagging under the weight of the canvas rolled on it.

In its initial position the support member or rocker bracket 24 is in the position shown in Fig. 1, seated on the bottom wall of the awning box 13, and in its elevated and open position, this rocker bracket is tilted upwardly and forwardly of its bottom horizontal pivot 26, so that the awning arm 27 is tilted or slanted forwardly and downwardly from the rocker bracket and the awning box 13.

This action develops from the construction of the rocker bracket and its mounting. The rocker bracket or support member 24, is provided with a C-shaped lower arm 25, which has a free swinging fit between the tines or jaws 22 of the base and stationary bracket 19, and the rocker bracket also has an integral upper arm 25*a*, which is bifurcated to provide an upper bearing 25*c* and a lower bearing 25*d*, between which the rear end of the awning arm 27 is disposed and held in place by means of the pivot or shaft 28, the upper end of which is engaged by the nut 28*a*. The upper end of this shaft projects to receive the tubular tension rod 30. In its closed position the vertical shaft or pivot 28 is supported directly over the horizontal shaft or pivot 26, on which the rocker bracket swings.

When the awning arm is lowered by unwinding the canvas 17, the rocker brackets 24 will tilt upwardly and forwardly, to assume the positions shown in Fig. 2, when further tilting or movement is prevented by the action of the adjustable screw 36 against the stop lug 35. The bracket 24 swings on the block which carries this lug, and is always in proper rotative relation thereto. The awning arm swings with the rocker brackets, first upwardly and forwardly, and then downwardly at the slant or inclination predetermined by the adjustment of the screws 36.

It is seen, therefore, that my invention provides an initial upwardly and forwardly swinging of the rear ends of the awning arm, to establish the angle of opening of the awning arm, which continues to open at the angle thus established by the adjustment of the rocking movement of the rocker brackets. Moreover, the degree of adjustment of the angle of downward and forward inclination may be varied to fine or narrow precision limits, by the operation of the screws 36, so that any desired angle of opening of the awning arm may be obtained and maintained through the period of any

adjustment and during repeated operations of the awning arm.

The lower pivot shaft 26 of the rocker bracket 24 is usually in a horizontal plane, and the upper pivot shaft 28 is in a vertical plane when the rocker bracket is seated or in its initial closed position, and as the rocker bracket is tilted upwardly and forwardly the pivot shaft 28 swings forwardly to assume a non-vertical position, but always remains above the lower horizontal pivot shaft 26.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reversed to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In an awning assembly having a box including a front opening and within which a roller is rotatively supported with an awning canvas rolled thereon, brackets mounted within the box at the ends of the roller and having spaced forwardly extended tines, arm support members pivotally mounted between the tines of said brackets, collapsible arms pivotally carried by said support members and with which one edge of the awning canvas is connected, said canvas being extendable through the front opening as it is unwound from the roller, extension of said arms through the front opening of the box causing said support members to pivot forward toward the opening, a tension rod extended between said support members beneath the awning canvas and above the pivots of said support members and movable forwardly with said support members engaging and tensioning the awning canvas in the extended positions of said arms, and stop means for limiting forward pivoting of said support members relieving the awning canvas of supporting the weight of the extended arms, and means between the support members pivotally connected with the box and the tension rod additionally to support the tension rod.

2. In an awning assembly having a box including a front opening and within which a roller is rotatively supported with an awning canvas rolled thereon, brackets mounted within the box at the ends of the roller and having spaced forwardly extended tines, arm support members pivotally mounted between the tines of said brackets, collapsible arms pivotally carried by said support members and with which one edge of the awning canvas is connected, said canvas being extendable through the front opening as it is unwound from the roller, extension of said arms through the front opening of the box causing said support members to pivot forward toward the opening, a tension rod extended between said support members beneath the awning canvas and above the pivots of said support members and movable forwardly with said support members engaging and tensioning the awning canvas in the extended positions of said arms, and stop means for limiting forward pivoting of said support members relieving the awning canvas of supporting the weight of the extended arms, and means between the support members pivotally connected with the box and the tension rod additionally to support the tension rod, said tension rod supporting means including a bracket secured to the box and a hollow casing member pivotally connected to the bracket and a clamp associated with said casing.

3. In an awning assembly having a box including a front opening and within which a roller is rotatively supported with an awning canvas rolled thereon, brackets mounted within the box at the ends of the roller and having spaced forwardly extended tines, arm support members pivotally mounted between the tines of said brackets, collapsible arms pivotally carried by said support members and with which one edge of the awning canvas is connected, said canvas being extendable through the front opening as it is unwound from the roller, extension of said arms through the front opening of the box causing said support members to pivot forward toward the opening, a tension rod extended between said support members beneath the awning canvas and above the pivots of said support members and movable forwardly with said support members engaging and tensioning the awning canvas in the extended positions of said arms, and stop means for limiting forward pivoting of said support members relieving the awning canvas of supporting the weight of the extended arms, and means between the support members pivotally connected with the box and the tension rod additionally to support the tension rod, said tension rod supporting means including a bracket secured to the box and a hollow casing member pivotally connected to the bracket and a clamp associated with said casing, said clamp having two coacting members and a series of aligned openings through one of said members, the other member having an opening therein and a pin slidably extending therethrough and through one of said pairs of aligned openings in the coacting clamp member.

4. The combination of claim 1, wherein said support members include cut-out sections, discs mounted in said cut-out sections and stops adjustably mounted within said cut-out sections and abutting said discs to restrict pivotal movement of said arm support members.

5. The combination of claim 4 wherein said stops comprise set screws and internally threaded holes extending rearwardly and downwardly receiving said screws.

6. The combination of claim 5 wherein said discs are provided with a lip portion engaged by said screws and depending lugs to restrict movement of said discs in a clockwise direction.

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