Nov. 30, 1954 E. P. D'AZZO 2,695,663

ADJUSTABLE LATERAL AWNING ARM WITH SINGLE PIVOT POINT

Filed April 21, 1952 2 Sheets-Sheet 1

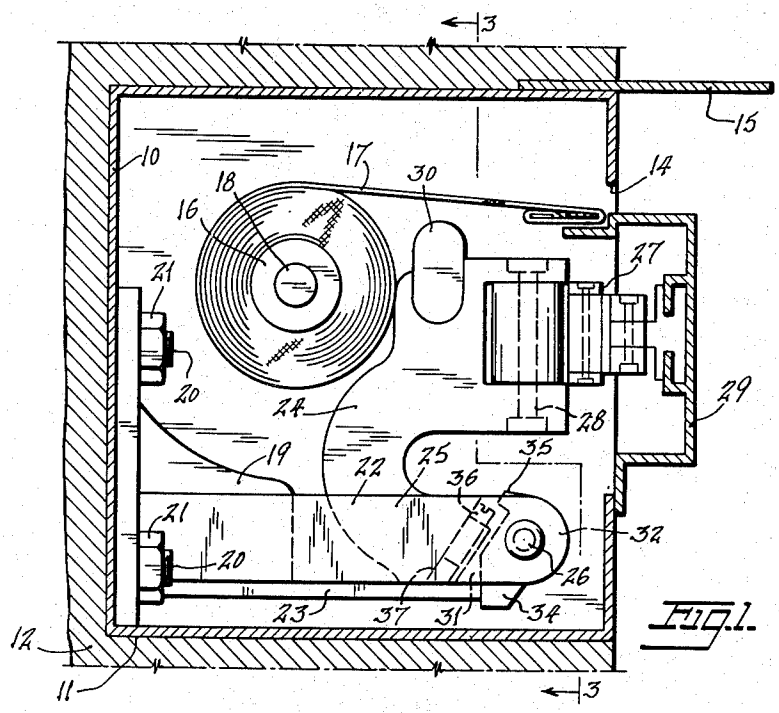


Fig. 1.

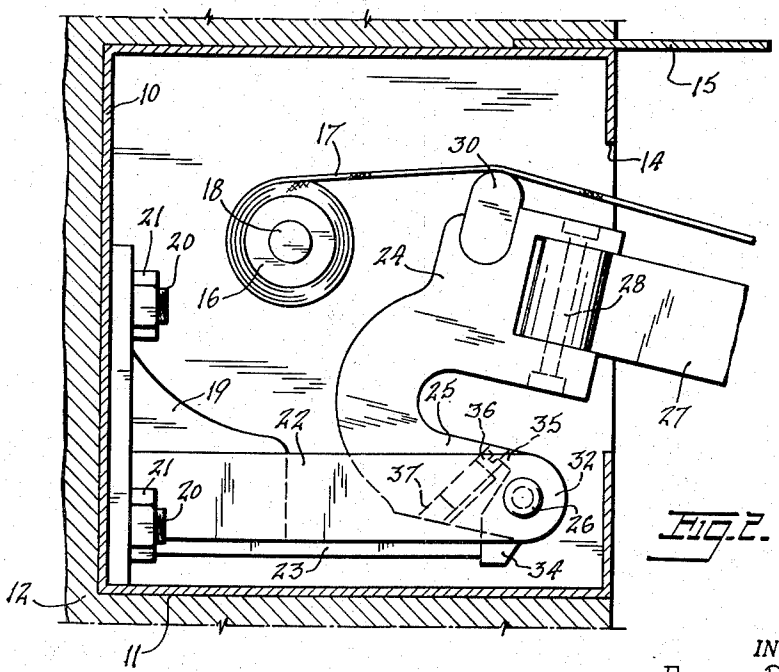


Fig. 2.

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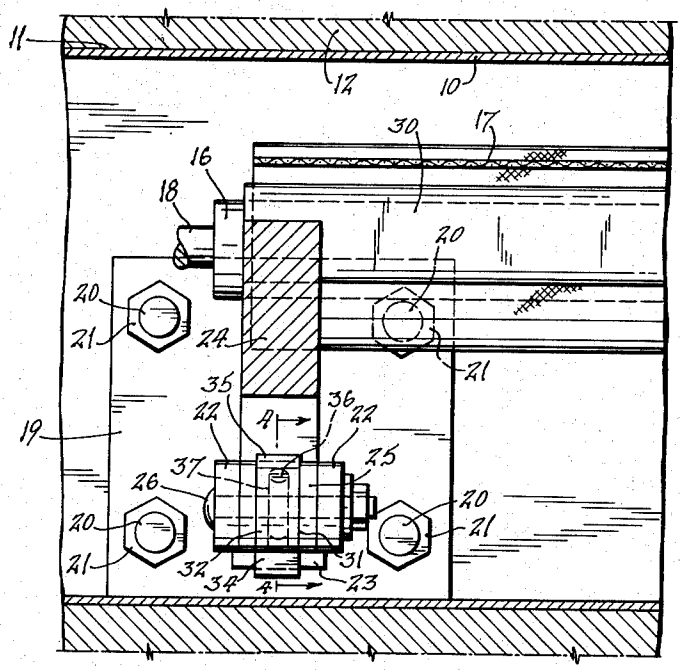


FIG. 3.

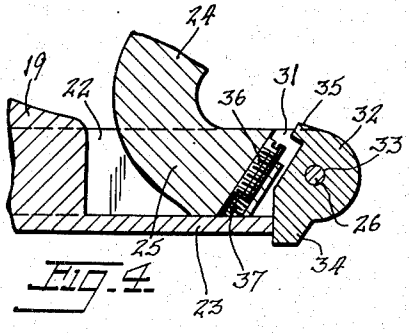


FIG. 4.

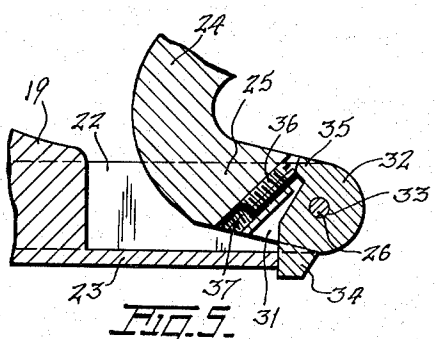


FIG. 5.

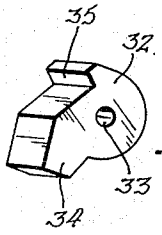


FIG. 6.

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ADJUSTABLE LATERAL AWNING ARM WITH SINGLE PIVOT POINT

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Application April 21, 1952, Serial No. 283,274

5 Claims. (Cl. 160—22)

This invention relates to new and useful improvements in awning assemblies.

More specifically, the present invention proposes certain improvements in awning assemblies to include novel stop means for relieving the awning canvas of supporting the weight of the extended awning arms and to prevent the application of excessive tensioning pressures against the awning canvas in a manner to extend the normal life of such awning canvases beyond that obtained from the awning canvases of the assemblies now in common use.

In the construction of common awning assemblies now in use, it is generally the practice to pivotally mount the extendable awning arms upon arm support members which are in turn pivotally supported within the usual awning box so that as the awning canvas is unrolled from its supporting roller the arms extend themselves out of the open front of the awning box drawing the awning canvas with them. The support members usually mount a tension bar rearward of the pivots of the support members and beneath the awning canvas so that as the support members are pivoted upward by the extension of the arms, the tensioning bar is caused to engage the bottom of the awning canvas pushing upward thereon across the complete width thereof so as to tension the awning canvas in the extended position of the arms. The prior art constructions are characterized by freedom of pivotal movement of the arm support members with the objectionable result that the awning canvas must support the entire weight of the extended awning arms and the tensioning bar exerts excessive pressures against the awning canvas.

It is the primary purpose of the present invention to provide stop means on the brackets which support the arm support members so as to limit upward pivotal movement of the support members in a manner to cause the support members to assume the function of supporting the weight of the extended awning arms and of controlling the tensioning pressure that will be exerted against the awning canvas by the tensioning bar.

As a further object, it is proposed to make the stop means adjustable for controlling the outward and downward inclination of the awning arms in their fully extended positions and for varying the amount of tensioning pressure exerted against the bottom of the awning canvas by the tension bar.

The invention further proposes providing awning assemblies with an adjustable stop means of the type described which is simple and durable, which is effective for its intended purposes and which can be included in awning assemblies without materially increasing the manufacturing costs thereof.

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 acompanying drawings forming a material part of this disclosure:

Fig. 1 is a sectional diagrammatic view of an awning assembly constructed in accordance with the present invention.

Fig. 2 is a view similar to Fig. 1, but illustrating the position of the parts when the awning is extended.

Fig. 3 is a partial longitudinal sectional view of the awning box taken substantially on the line 3—3 of Fig. 1.

Fig. 4 is a partial vertical sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a view similar to Fig. 4, but illustrating the position of the part when the awning is extended.

Fig. 6 is a perspective view of the abutment member forming part of the stop means of the present invention.

The awning assembly, according to the present invention, includes an awning box **10** set into a suitable cavity **11** formed in a wall **12** over a store front or the like. Such awning boxes **10** are usually constructed of metal and at the front thereof the box has a front opening **14**. A flashing **15** extends from the front of the box **10** above the top thereof to function to prevent rain and snow from entering the front opening **14** during inclement weather.

Rotatively supported within the box **10**, 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 **10**, 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 **10** 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 forwardly 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 associated 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 counterclockwise 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** 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 to substantially 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**, there is a tension bar **30**. The tension bar **30** extends the full length of the distance between the support members **24** and is located beneath the awning canvas **17** on the inner side of the pivot pins **26**, see Fig. 1.

The construction of the awning assembly as thus far described is substantially conventional, with the exception of the shelf portions **23** of the brackets **19**. The assembly 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 bar **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 upward to the position shown 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 upward and forward pivoting of the support members **24**, the tension bar **30** will also be moved upward and forward to bear rigidly against 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 upward and 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 the pressure which will be exerted against the bottom face of the awning canvas **17** by the tension bar **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 associated 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 clock-wise 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 **37** 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 bar **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 should the adjustment of the set screws be such that the tension bar **30** would 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 in which event the awning canvas **17** would again support the full weight of the closure member **29** and the awning arms **27** notwithstanding the inclusion of the stop means of the present invention.

Adjustments of the set screws **36** relative to the bar portions **25** of the arm support members **24** can be effected only in the fully extended position of the awning assembly. In the fully extended position, the awning arms **27** at each end of the awning assembly are pushed upward pivoting the support members **24** back to the position shown in Fig. 1. Using a right angular screw driver, the slotted tops of the set screws **36** can be reached through the front opening **14** of the awning box **10** and turned thereby to be extended or retracted by the set screws as may be necessary.

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 reserved 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 respectively pivotally mounted at their bottoms between the tines of said brackets, collapsible arms pivotally carried by said support members and to which one edge of the awning canvas is attached, said canvas being movable through the front opening and extendable as it is unwound from the roller, extension of said arms through the front opening of the box causing said support members to pivot upward slightly, a tension bar extended between said support members beneath the awning canvas and rearward of the pivots of said support members and movable upwardly with said support members and engaging and tensioning the awning canvas in the extended positions of said arms, and stop means limiting upward pivoting of said support members relieving the awning canvas of supporting the full weight of the extended arms and thereby preventing the tension bar from exerting excessive tensioning pressure on the awning canvas, said stop means comprising discs, said arms support members having bar portions at their bottoms positioned between said tines and formed with inwardly extended cutouts within which said discs are mounted concentric with the pivot axes of said support members, means restraining said discs against rotation in the direction in which said arm support members pivot when said arms are being extended, a lip portion formed on each disc, and a stop member on each bar portion to engage said lip portion and restraining pivoting of the associated bar portion.

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 respectively pivotally mounted at their bottoms between the tines of said brackets, collapsible arms pivotally carried by said support members and to which one edge of the awning canvas is attached, said canvas being movable through the front opening and extendable as it is unwound from the roller, extension of said arms through the front opening of the box causing said support members to pivot upward slightly, a tension bar extended between said support members beneath the awning canvas and rearward of the pivots of said support members and movable upwardly with said support members and engaging and tensioning the awning canvas in the extended positions of said arms, and stop means limiting upward pivoting of said support members relieving the awning canvas of supporting the full weight of the extended arms and thereby preventing the tension bar from exerting excessive tensioning pressure on the awning canvas, said stop means comprising discs, said arm support members having bar portions at their bottoms positioned between said tines and formed with inwardly extended cutouts within which said discs are mounted concentric with the pivot axes of said support members, means restraining said discs against rotation in the direction in which said arm support members pivot when said arms are being extended, a lip portion formed on each disc, and a stop member on each bar portion to engage said lip portion and restraining pivoting of the associated bar portion, said stop members being adjustable to control the downward inclination of said arms in their extended positions and the tension exerted by said tension bar against the bottom of the awning canvas.

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 respectively pivotally mounted at their bottoms between the tines of said brackets, collapsible arms pivotally carried by said support members and to which one edge of the awning canvas is attached, said canvas being movable through the front opening and extendable as it is unwound from the roller, extension of said arms through the front opening of the box causing said support members to pivot upward slightly, a tension bar extended between said support members beneath the awning canvas and rearward of the pivots of said support members and movable upwardly with said support members and engaging and tensioning the awning canvas in the extended positions of said arms, and stop means limiting upward pivoting of said support members relieving the awning canvas of supporting the full weight of the extended arms and thereby preventing the tension bar from exerting excessive tensioning pressure on the awning canvas, said stop means comprising discs, said arm support members having bar portions at their bottoms positioned between said tines and formed with inwardly extended cutouts within which said discs are mounted concentric with the pivot axes of said support members, means restraining said discs against rotation in the direction in which said arm support members pivot when said arms are being extended, a lip portion formed on each disc, and a stop member on each bar portion to engage said lip portion and restraining pivoting of the associated bar portion, said disc restraining means comprising a depending lug on each disc, and shelf portions on the bottom faces of said brackets and against the front ends of which said lugs abut.

4. 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 respectively pivotally mounted at their bottoms between the tines of said brackets, collapsible arms pivotally carried by said support members and to which one edge of the awning canvas is attached, said canvas being movable through the front opening and extendable as it is unwound from the roller, extension of said arms through the front opening of the box causing said support members to pivot slightly, a tension bar extended between said support members beneath the awning canvas and rearward of the pivots of said support members and movable upwardly with said support members and engaging and tensioning the awning canvas in the extended positions of said arms, and stop means limiting upward pivoting of said support members relieving the awning canvas of supporting the full weight of the extended arms and thereby preventing the tension bar from exerting excessive tensioning pressure on the awning canvas, said stop means comprising discs, said arm support members having bar portions at their bottoms positioned between said tines and formed with inwardly extended cutouts within which said discs are

mounted concentric with the pivot axes of said support members, means restraining said discs against rotation in the direction in which said arm support members pivot when said arms are being extended, a lip portion formed on each disc, and a stop member on each bar portion to engage said lip portion and restraining pivoting of the associated bar portion, said disc restraining means comprising a depending lug on each disc, and shelf portions on the bottom faces of said brackets and against the front ends of which said lugs abut, said shelf portions being extended across the spaces between the tines of said brackets at the bottom thereof to provide a rest for said arm support members.

5. 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 respectively pivotally mounted at their bottoms between the tines of said brackets, collapsible arms pivotally carried by said support members and to which one edge of the awning canvas is attached, said canvas being movable through the front opening and extendable as it is unwound from the roller, extension of said arms through the front opening of the box causing said support members to pivot upward slightly, a tension bar extended between said support members beneath the awning canvas and rearward of the pivots of said support members and movable upwardly with said support members and engaging and tensioning the awning canvas in the extended positions of said arms, and stop means limiting upward pivoting of said support members relieving the awning canvas of supporting the full weight of the extended arms and thereby preventing the tension bar from exerting excessive tensioning pressure on the awning canvas, said stop means comprising discs, said arm support members having bar portions at their bottoms positioned between said tines and formed with inwardly extended cutouts within which said discs are mounted concentric with the pivot axes of said support members, means restraining said discs against rotation in the direction in which said arm support members pivot when said arms are being extended, a lip portion formed on each disc, and a stop member on each bar portion to engage said lip portion and restraining pivoting of the associated bar portion, said stop members comprising adjustable set screws mounted on the bar portions of said arm support members, the top ends of said set screws abutting said lip portions of said discs in the pivoted positions of said arm support members.

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