Nov. 20, 1934. H. P. GRONBECH 1,980,991

AWNING CONSTRUCTION

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FIG. 1

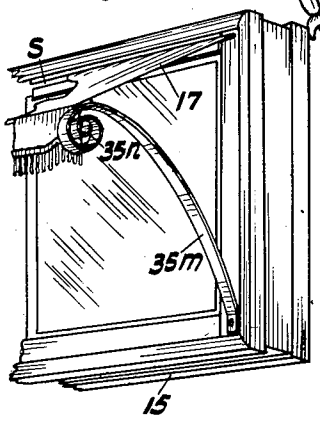
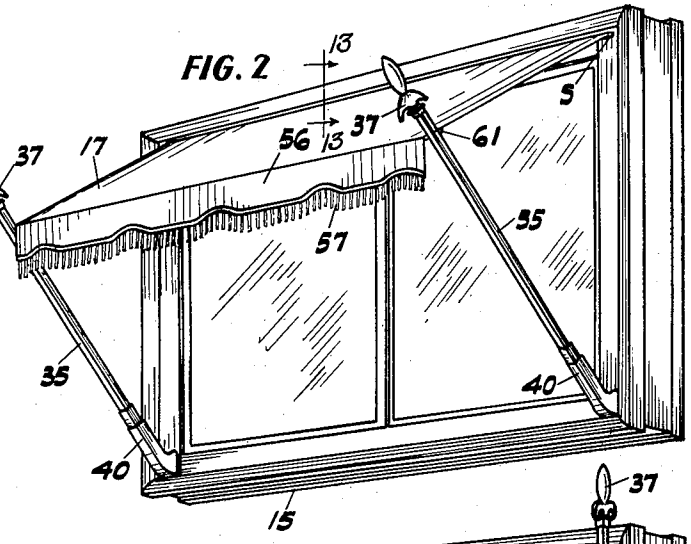


FIG. 2



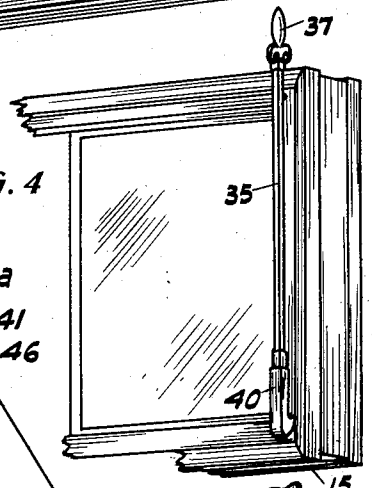
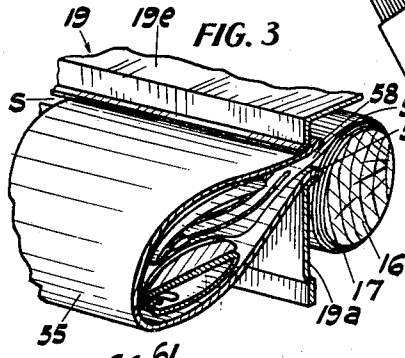
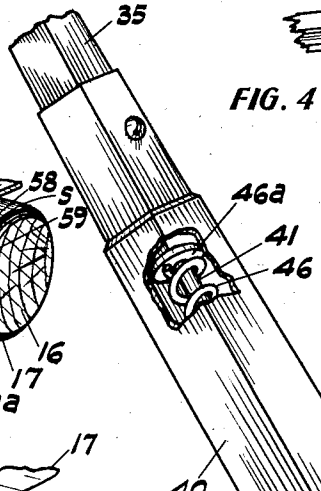


FIG. 3





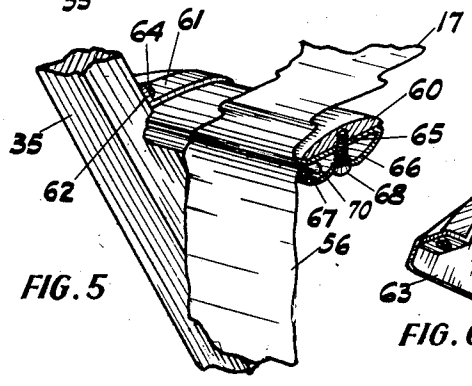


FIG. 5

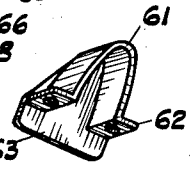


FIG. 6

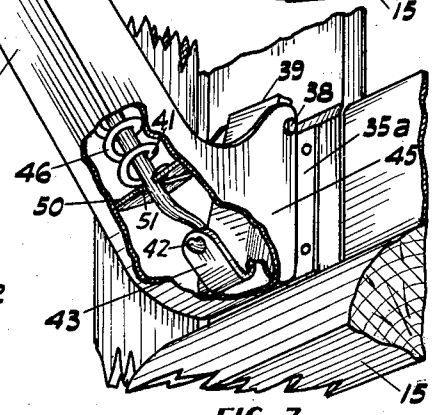


FIG. 7

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AWNING CONSTRUCTION

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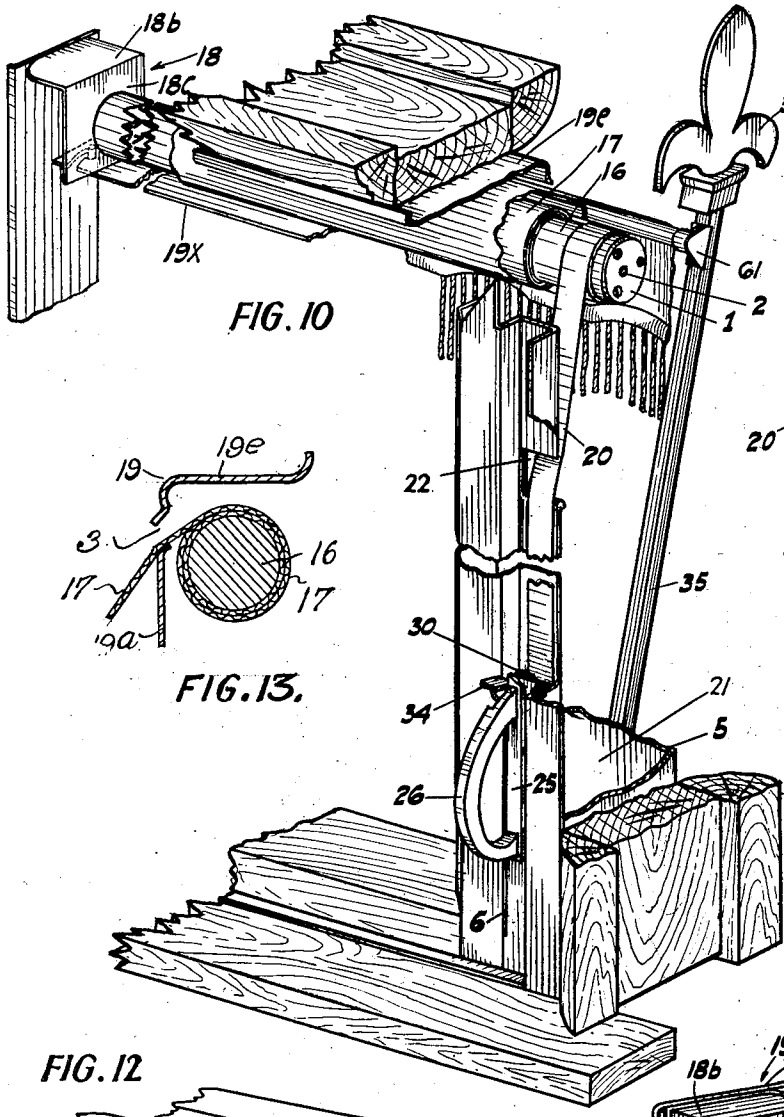


FIG. 10

FIG. 13.

FIG. 8

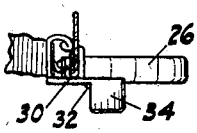


FIG. 9

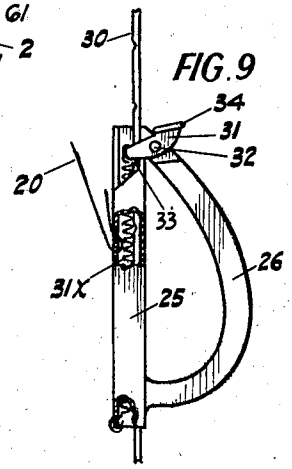


FIG. 12

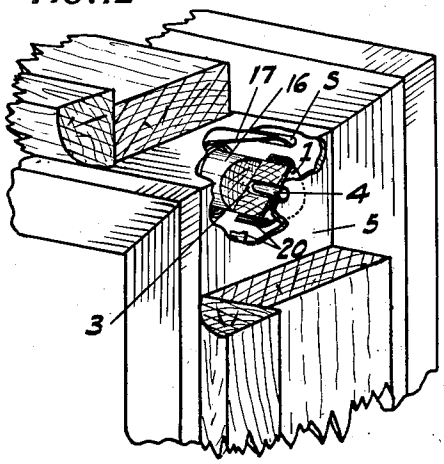
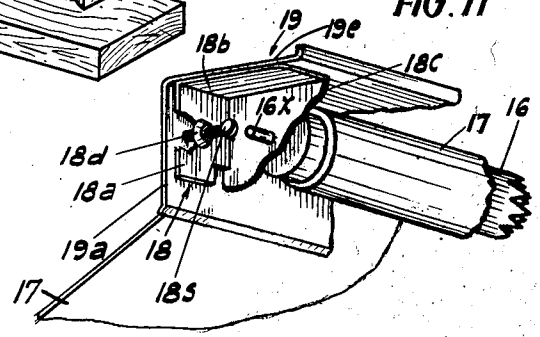


FIG. 11



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UNITED STATES PATENT OFFICE

1,980,991

AWNING CONSTRUCTION

Hans Peter Gronbech, Pacific Beach, Calif.

Application December 18, 1931, Serial No. 581,881

8 Claims. (Cl. 156—44)

This invention relates to an improved awning construction, and more particularly to an awning operable and adjustable from inside the building. Said invention is one of a group of applications filed December 18, 1931, Serial Number 581,882 and January 4, 1932, Serial Number 584,643 pertaining to window structures and awnings therefor.

An object of the invention is to provide improved means for maintaining the fabric of the awning in a uniformly stretched condition during use, thus causing it to shed rain in a more efficient manner when the awning is extended, and at the same time improving the appearance of the awning and of the building to which it is applied.

Another object of the invention is, in general, to improve and simplify the general construction of an awning, and at the same time provide an awning structure and frame therefor which can be manufactured at a relatively low cost at the factory and then readily shipped to the building and easily applied thereto. The window frame construction and screen roller adjustment which contribute to these desirable ends are in part shown in the drawings, but are not separately claimed, as they form the subject matter of other applications for patent, already alluded to.

More specifically, the invention includes, among other features, an improved spring and mounting therefore for the purpose of maintaining the fabric of the extended awning under a proper tension.

Still another important object of the invention is to provide an improved shield within which to confine the front marginal portion of the awning to conceal it completely and at the same time protect it from the weather. The shield provided for this purpose also forms a drip cap.

Other objects, advantages and features of invention will hereinafter appear.

Referring to the accompanying drawings which illustrate what is at present deemed to be a preferred embodiment of the invention,

Fig. 1 is a perspective view showing the casing of the window to which the awning is attached and including in the view an end portion of the awning. In this view the invention is shown in a different form from that disclosed in the other views.

Fig. 2 is a perspective view of the complete device showing the same in the extended condition in front of a window, the casing of which is included in the view,

Fig. 3 is a fragmental sectional perspective, showing the marginal fold of the awning in the folded up or retracted position and enclosed in a removable casing or shield provided therefor.

Fig. 4 is a fragmental perspective, this view being a reproduction of the right hand portion of Fig. 2 except that the awning is shown in the retracted position.

Fig. 5 is a sectional perspective of a fragment of the construction showing the means for attaching one of the tensioning arms to the fabric of the awning.

Fig. 6 is a perspective view of one of the clips whereby the tensioning arms are secured to the awning.

Fig. 7 is a fragmental perspective view showing the base portion of one of the operating arms and a portion of the supporting means to which it is attached.

Fig. 8 is a fragmental transversely sectioned detail of a part of the locking device.

Fig. 9 is a side elevation of the structure shown in Fig. 8.

Fig. 10 is a perspective view of the general construction of the awning, parts being broken away to contract the view and small fragments only of the building being shown.

Fig. 11 is a perspective sectional detail showing one end portion of the awning roller and adjacent parts.

Fig. 12 is a perspective sectional detail showing the other end portion of the awning roller and adjacent parts.

Figure 13 is a detailed vertical section in the plane 13—13 of Figure 2.

Referring in detail to the drawings, a window casing 15 is shown in the upper portion of which is mounted the awning roller 16 upon which the fabric 17 of the awning winds and unwinds. Said roller is provided with a trunnion pin 16x in one end, which is shown in Fig. 11, said pin having its bearing in an adjustable clip or bracket plate 18. The other end of said roller 16 is provided with a steel end plate 1 shown in Fig. 10. Through its center is a hole 2 leading to a somewhat larger bore 3 (Fig. 12) in the end of the roller 16. When said roller is placed in position in its housing the pivoted end is slipped on the trunnion pin 4 which is welded or riveted to the upright frame member 5.

As well shown in Figs. 10 and 12, a steel tape 20 has one of its ends secured to and extending around the roller 16 near its end. Said steel tape is led down within the opening 21 provided by the upright frame member 5 for some distance below the roller and is then conducted out through a suitable opening 22. After passing through this

opening 22, said steel tape is led down to an operating device 25, within the building, which is provided with a handle portion 26.

Said operating device 25 also operates as a locking device to maintain the awning retracted to the desired extent against the opposition of the spring urged extending means described later. By preference and as shown, the locking means which has just been referred to consists of a rack or toothed member 30 with which cooperates the catch or dog 31 which is attached by a pivot pin 32 to the upper portion of the handle 26. Said dog 31 is provided with a nose or tooth 33 and with a flanged end portion 34 which forms a suitable finger-hold or operating surface for the thumb. Dog 31 is retracted by means of spring 31*x*. The member 30 also cooperates with the handle 26 to form a guide therefor.

Each of the operating arms 35 has its upper end portion attached to the outer edge of the awning fabric 17, for example by means of a clip 61, said operating arm being provided above this point with an ornamental spear point 37. Adjacent its lower end, each arm 35 is secured by a pivot pin 38 to an attaching bracket 39 which has a small margin 35*a* bent outward 90° to the sides of the brackets. Their margins fit flat on the casing and are riveted to the outer face of the lower corner portion of the casing at respective sides of the window.

Each arm 35 is provided with a somewhat enlarged tubular base portion 40, within which is housed a rod 41 which is provided with a head 46*a*. The lower end of said rod is provided with a hook 42 whereby it is secured in an eye of the toe plate 43. Said toe plate is in turn detachably secured to the lower edge of the bracket 39 fitted within the pivoted offset base portion 45, of the tubular section 40, of the pivoting arm 35. Around said rod 41 is coiled a compression spring 46. The tubular portion 40 is provided with a rest plate 50 having therethrough a slot 51 which receives the lower portion of the rod 41. When said arm 35 swings outwardly and inwardly the lower portion of said rod 41 moves back and forth to a limited extent within said slot 51. The lower end of the spring 46 rests upon the plate 50 above the slotted portion thereof, and the upper end of said spring abuts the head 46*a*. The spring 46 is put in compression when it is installed between the head 46*a* and the plate 50. The resiliency of the spring acting upon the plate tends to swing the arm 35 outwardly about its pivotal axis. Maximum compression is placed in the spring when the arm 35 is retracted to the position shown in Fig. 4. In the latter view the heel of the base portion 45 is farthest away from the flanges 35*a* when the awning is fully extended, the heels of the base portion abut the flanges as shown in Figs. 2 and 7.

The bracket plate or clip 18 consists of three corner plates, an attaching plate 18*a*, a top plate 18*b* and a bearing plate 18*c*, the latter plate receiving the trunnion 16*x*. The plate 18*a* is provided with a thickened portion or boss 18*d* through which extends a screw threaded aperture to receive an adjusting screw 18*s*. The inner end of said screw 18*s* abuts against the downwardly extending portion 19*a* of the housing 19 in order that by adjusting said screw the position of the adjacent end portion of the roller 16 may be varied to cause the fabric of the awning to wind evenly thereupon. Said clip 18 is slidable between the upper wall 19*c* and the lower wall or plate 19*x* of the housing shown in Figs. 10 and 11, and, is held against the portion 19*a* thru the medium of the awning wound around the roller, the awning at all times being kept taut thru the agency of the spring 46 and the parts cooperating therewith which tend to swing the arms, to which the awning is fastened, outwardly.

A sheet metal shield 55 is provided as a means for housing and protecting the front marginal flap 56 of the awning together with the fringe 57 of said flap. Said shield 55 is of a horseshoe shape as viewed in cross section, having at one margin a slightly deflected lip 58 and at its other margin a bent over or more angular lip 59. When said shield 55 has been slipped over the flap 56 together with its fringe 57, the lips of said shield may then be sprung close to each other and inserted within the slot *s* as shown in Fig. 3 from the inside of the building. When the shield is in this position it protects the entire front marginal portion of the awning, the shield at the same time forms a drip cap adapted to direct the rain away from the surface of the building.

A binding strip 60 is used as a supporting means for the front portion of the fabric of the awning, one end of said strip being secured to one of the arms 35 and the other end of the strip being adjusted to the opposite arm 35. The securing means just mentioned consists of a U-shaped clip 61 having an apertured attaching flange 62 at each side thereof and having at one end a body flange 63 adapted to abut against the adjacent outer end of the binding strip 60. Screws 64 extend through the apertured flanges 62 and into the upper portions of the arms 35 in order to secure the binding strip in place. The awning proper is secured to the binding strip by means of a doubled over resilient strip consisting of a body portion 65 which abuts against the flat side of the binding strip 60 and a clamping portion 66 the free end portion of which is provided with an inwardly directed lip 67. Said resilient strip is secured at intervals to the binding strip 60 by means of screws 68 which extend through both the parts 65 and 66 of said strip thereby clamping the lip 67 thereof against a small loop or fold 70 of the awning proper, said loop 70 being located between the flap 56 and the body portion of the awning proper.

This awning may be adjusted entirely from the interior of the building to any desired extent of projection in front of the window. Or, if the occupant wishes to keep it entirely out of sight when not in use, the main part of the awning is not only retracted into the housing but the front flap thereof together with its fringe portion is enclosed within the protecting shield provided therefor.

No wooden strip over the window is necessary, but the awning is assembled and installed in the frame unit, a perfect working condition being thereby assured before it is shipped to the building.

In the modification shown in Fig. 1, the resilient swinging arm 35*m* is provided at its upper end with a spirally curled portion 35*n* the end of which is secured in any suitable manner to the outer marginal portion of the awning proper. The resiliency of the arm 35*m* takes the place of the spring 46 provided to urge the arm 35 outwardly in the form of the invention first described, in order to keep the awning proper in a properly stretched condition, and the screw 18*s* of the roller bracket firmly pressed against the plate 19*a*, so that as the screw is adjusted in the bracket the lateral movement of the bracket 18 *a*, *b*, *c*, to and from the plate 19*a*, and conse-

quently the end of the roller journalled therein, may be properly regulated.

In the operation of the device the operator grasps the handle 26 to which the tape 20 is secured and by pressure of the thumb upon the pawl 34 disengages the same from the notched portion of the rack 30. The handle member may then be moved either upwardly or downwardly to extend or retract the awning proper as desired. The upward movement of the handle member is augmented by the force of the springs 46 which tends to swing the arms 35 outwardly thereby extending the awning proper and winding an additional amount of tape 20 upon the roller. When the awning is thus adjusted as desired the operator releases pressure upon the pawl 34 and allows it to retain the parts in the adjusted position.

In the modified form shown in Fig. 1 the general resiliency of the arm 35*m* and its spiral portion 35*n* tends to extend the awning in opposition to the traction applied upon the steel tape 20 by means of the handle 26. The handle member 26 is guided in its movements by having a portion thereof extend thru the slot 6 and curled so as to abut on the inside face of the member 30 upon which it is mounted as seen in Fig. 8.

I claim:

1. In an awning mechanism, comprising a roller, awning fabric wound thereon, operating arms pivoted below said roller opposite the ends thereof and having their free ends swinging to and from the roller, means urging the free ends of the arms away from the roller, a binder strip connecting said arms adjacent their free ends and having the end of the awning fabric connected thereto, and means to adjust said roller to parallelism with said binder strip.

2. In an awning mechanism, comprising a roller, awning fabric wound thereon, operating arms pivoted below said roller opposite the ends thereof and having their free ends swinging to and from the roller, means urging the free ends of the arms away from the roller, a binder strip connecting said arms adjacent their free ends and having the end of the awning fabric connected thereto, a bearing for one end of the roller in which the roller may pivot to swing at its other end to and from the binder strip, and means to adjust the remaining end of the roller to bring the roller into parallelism with the binder strip.

3. In an awning mechanism, comprising a roller, awning fabric wound thereon, operating arms pivoted below said roller opposite the ends thereof and having their free ends swinging to and from the roller, means urging the free ends of the arms away from the roller, a binder strip connecting said arms adjacent their free ends and having the end of the awning fabric connected thereto, a bearing for one end of the roller in which the roller may pivot to swing at its other end to and from the binder strip, a bearing for the remaining end of said roller, and means to adjust said bearing and move the roller into parallelism with the binder strip.

4. In an awning mechanism, comprising a roller, awning fabric wound thereon, operating arms pivoted below said roller opposite the ends thereof and having their free ends swinging to and from the roller, means urging the free ends of the arms away from the roller, a binder strip connecting said arms adjacent their free ends and having the end of the awning fabric connected thereto, a bearing for one end of the roller in which the roller may pivot to swing at its other end to and from the binder strip, a bearing for the remaining end of said roller, a bracket whereon said bearing is mounted and having a vertical portion between the roller and the bearing strip, and a screw passing through the last mentioned bearing and engaging against the vertical portion of the bracket whereby to adjust the roller to parallelism with the binder strip.

5. In an awning mechanism, comprising a roller, awning fabric wound thereon, operating arms pivoted below said roller opposite the ends thereof and having their free ends swinging to and from the roller, means urging the free ends of the arms away from the roller, a binder strip connecting said arms adjacent their free ends and having the end of the awning fabric connected thereto, a bearing for one end of the roller in which the roller may pivot to swing at its other end to and from the binder strip, means to adjust the remaining end of the roller to bring the roller into parallelism with the binder strip, and means at the first mentioned end of the roller to effect rotation of the roller in a direction to wind the fabric on the roller.

6. In an awning mechanism, comprising a roller, awning fabric wound thereon, operating arms pivoted below said roller opposite the ends thereof and having their free ends swinging to and from the roller, means urging the free ends of the arms away from the roller, a binder strip connecting said arms adjacent their free ends and having the end of the awning fabric connected thereto, a bearing for one end of the roller in which the roller may pivot to swing at its other end to and from the binder strip, a bearing for the remaining end of said roller, means to adjust said bearing and move the roller into parallelism with the binder strip, and means at the first mentioned end of the roller to effect rotation of the roller in a direction to wind the fabric on the roller.

7. In an awning mechanism, comprising a roller, awning fabric wound thereon, operating arms pivoted below said roller opposite the ends thereof and having their free ends swinging to and from the roller, means urging the free ends of the arms away from the roller, a binder strip connecting said arms adjacent their free ends and having the end of the awning fabric connected thereto, a bearing for one end of the roller in which the roller may pivot to swing at its other end to and from the binder strip, a bearing for the last mentioned end of said roller, a bracket whereon said bearing is mounted and having a vertical portion between the roller and the bearing strip, a screw passing through the last mentioned bearing and engaging against the vertical portion of the bracket whereby to adjust the roller to parallelism with the binder strip, and means at the first mentioned end of the roller to effect rotation of the roller in a direction to wind the fabric on the roller.

8. In an awning structure, a support, a roller mounted upon said support adapted to have an awning wound thereupon, the mounting means for said roller comprising a bearing located at each end thereof, and an adjusting screw for one of said bearings to regulate the position of such bearings with relation to the support.

HANS PETER GRONBECH.