May 28, 1957 H. L. BARTHOLOMEW 2,793,388

AWNING HINGE

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Fig. 1

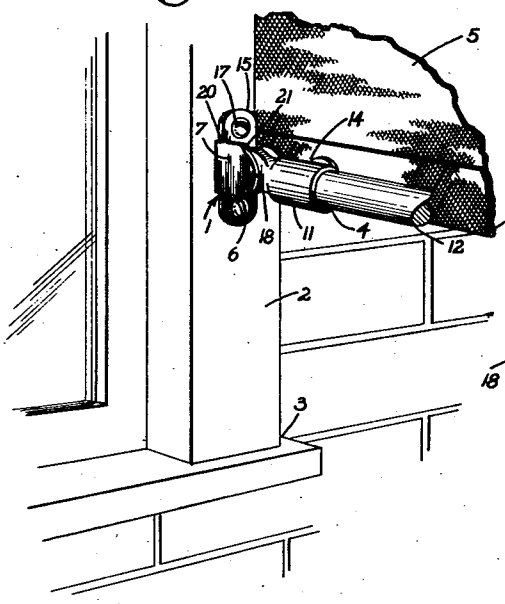


Fig. 2.

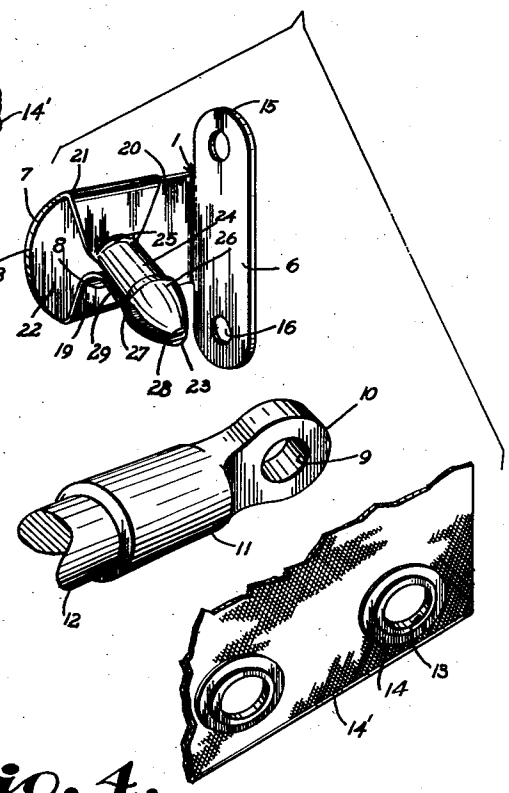


Fig. 3.

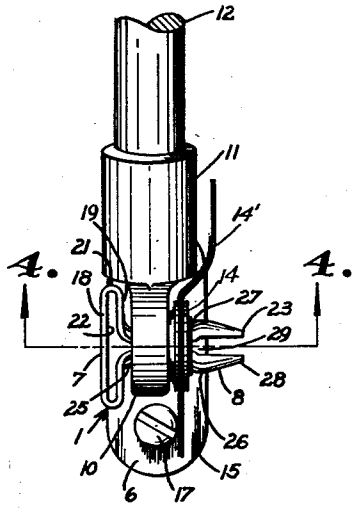
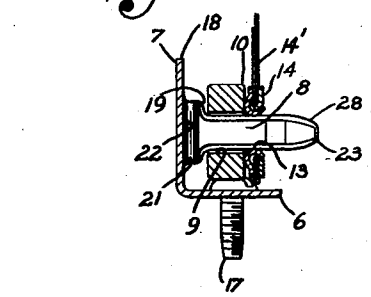


Fig. 4.



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AWNING HINGE

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2 Claims. (Cl. 16—171)

This invention relates to hinge members and more particularly to a novel hinge and pin structure for mounting rod ends of awning frames.

It has been common practice in the mounting of canvas awnings and the like to pivotally mount the lower ends of the side rods of the awning frame on the side members of the window frame by means of a hinge having spaced apertured ears extending from a plate with bolts or cotter pins extending through the apertured ears and serving as hinge pins and also extending through grommets in the canvas to retain the inner lower end of the canvas at the hinge. With such structure, it is difficult to install and remove the awnings due to the necessity of the operator to support himself in the window opening and also manipulate tools for applying or removing the bolts or cotter pins. Also, in such structure there is substantial play between the parts allowing the parts to vibrate and make noise. The separable parts of such structures also result in loss of parts during installation and removal of the awnings and frequently the bolts or cotter pins become disengaged requiring expensive trips for the replacing of same.

The objects of the present invention are to provide an awning hinge which overcomes the above-related difficulties; to provide an awning hinge and pin structure adapted to be formed of a single blank of flat spring metal; to provide an awning hinge and pin structure with spring tongues forming a bifurcated post or pin with ribs or shoulders thereon which cooperate to retain rod ends and awning grommets thereon with substantially no vibration; and to provide a unitary awning hinge and pin structure which is economical to manufacture, efficient in operation, and easy to use in installing and removing awnings with a minimum or no tools.

In accomplishing these and other objects of the present invention, I have provided improved details of structure, the preferred form of which is illustrated in the accompanying drawing, wherein:

Fig. 1 is a partial perspective view of an awning and window frame with an awning side frame connected to the hinge embodying the features of the present invention.

Fig. 2 is a disassembled perspective view of the awning hinge, side rod end and grommet portion of the awning.

Fig. 3 is a front elevation of the awning hinge with the side frame and awning grommet assembled thereon.

Fig. 4 is a sectional view through the hinge taken on the line 4—4, Fig. 3.

Referring more in detail to the drawings:

1 designates an awning hinge and pin structure adapted to be mounted on a side member 2 of a window frame 3 for hingedly supporting the side frame 4 of an awning 5 located at the respective window.

The awning hinge and pin structure is preferably formed of a single blank of suitable flat spring metal and when shaped generally consists of a base plate 6, extension or side member 7 and bifurcated spring post or pin 8, said pin or post being adapted to extend through an

aperture 9 of an eye member 10 on a rod end 11 secured to an awning side frame rod 12, said pin or post also being adapted to extend through the innermost aperture 13 of a pair of suitable grommets 14 in the inner lower portion of the side 14' of the awning. It has been found in usual practice that the openings 9 of the rod ends are slightly oversize and the openings 13 of grommets are slightly undersize relative to the dimension used to designate same.

The base plate 6 of the hinge and pin structure is preferably an elongate flat member having rounded ends 15 with apertures 16 adjacent the ends for receiving fastening devices 17 such as screws utilized in fastening the hinge and pin structure to the side member 2 of the window frame with the rearward face of said base plate 6 engaging same. The plate 6 has a lateral extension or side member extending forwardly from one side thereof and bent outwardly to a position substantially 90 degrees from the plane of the plate 6. The outer end 18 of the extension or side member 7 is preferably rounded as illustrated in Fig. 2. The extension or side member is narrower than the length of the base plate 6 and its side edges 20 are preferably substantially equally spaced from the ends thereof.

Arms 19 extend from the side edges 20 of the side member 7 intermediate the length thereof and are bent as at 21 to overlie the face 22 of the side member adjacent the base plate 6 whereby said arms have resiliency in their connection with the side member. The ends of the arms form spring tongues 23 which are bent substantially at right angles to the arms and formed to provide arcuate outer surfaces 24 thereon of slightly less than semi-cylindrical shape, the tongues 23 cooperating to form the bifurcated spring post or pin 8. The forming and bending of the tongues 23 and arms 21 is preferably such that the juncture therebetween will provide an abutment 25. The outer portions of the tongues 23 are offset outwardly as at 26 to provide rounded retaining ribs or shoulders 27 spaced from the abutment 25 a distance substantially corresponding to the thickness of the eye 10 and grommet 14. The portions of the tongues adjacent the free ends thereof are tapered as at 28 to facilitate insertion into the openings 9 and 13. The tongues 23 are spaced as at 29 whereby said tongues can be bent towards each other; however, the normal resiliency and shape of the tongues and arms 21 are such that they tend to spread the free ends of the tongues whereby the surfaces 24 are slightly larger than the diameter of the opening 9 and when engaged in the opening 13 of the grommet 14 of the semi-cylindrical portions 24 will define a post or pin slightly smaller than the opening 9 whereby the eye 10 may easily pivot thereon. The hinge and pin structure are such that the axis of the post or pin is parallel to the plane of the base plate 6 and the same structure may be used on both sides of the window frame.

In using a hinge and pin structure constructed and formed as described, the base plate 6 is secured flat against the side members 2 of the window frame by means of fastening devices 17 and in position to be in alignment with the rod end 11 of the side rods of the awning frame, the side members 7 being substantially in vertical planes, whereby the spring post or pin extends substantially horizontal therefrom. Then when the upper portion of the awning is secured to the window frame the opening 9 of the rod end is engaged with the tapered end of the spring post or pin 8 and force is applied to the side rod to force the rod end toward the side member 7 over the outwardly offset portion of the spring tongues whereby the portions 24 of the spring post or pin 8 extend through the opening 9. Then the opening 13 in the grommet 14 is engaged over the tapered end of the spring post or pin 8 and force applied thereto to force the grommet over the

offset portion or shoulder of the spring tongues. The outer side of the grommet will then be engaged with the shoulder 27 and the opposite side of the eye 10 of the rod end engaged with the abutment 25 whereby the shoulder and abutment cooperate to substantially retain the eye and grommet against endwise movement on the spring post or pin 8, yet permitting the eye of the rod end to pivot thereon.

In removing the awning the canvas is grasped to pull the grommet 14 from the pin 8. If the spring pressure exerted by the spring tongues is too great to manually pull the grommet therefrom a screw driver or the like may be used to pry the grommet over the rounded shoulders 27. Normally manual pressure on the rod 11 may be utilized to force the eye 10 from the spring post or pin 8 but if the spring tension is too great a screw driver or the like may also be utilized in removing the eye from the pin 8. The hinge and pin structure remain in place on the window frame for mounting the awning when it is again installed there being no separable pieces to get lost during storage.

It is believed obvious I have provided a hinge and pin structure that is economical to manufacture, efficient in operation and easily utilized for installing and removing awnings therefrom.

What I claim and desire to secure by Letters Patent is:

1. An awning hinge structure for removably mounting awning members having bearing openings therein and comprising, a base plate having a rear face adapted to engage a window frame, a side member on the base plate at one side edge thereof and extending forwardly from the base plate, arms extending from opposed sides of the side member and then turned inwardly to overlie the face of the side member adjacent the base plate, spaced spring tongues on said arms and extending therefrom substantially in perpendicular relation to the side member, said tongues being arcuate in cross section and cooperating to form a substantially cylindrical bifurcated post normally of a size substantially corresponding to the size of the bearing opening in an awning member to be mounted thereon, said tongues and arms having resiliency tending to spread the free ends of the tongues, and laterally enlarged portions on said tongues forming rounded shoulders between the arms and free ends and spaced from the arms a distance sufficient to mount an awning

member between the side member and shoulders, the spacing between the tongues being such that the tongues are movable toward each other in sleeving an awning member thereon whereby the enlarged portions pass through the bearing openings, the spring tension of the tongues and arms cooperating with the shoulders to spread same and limit end play of the awning member while permitting hinging action thereof.

2. An awning hinge structure for removably mounting awning frame ends and awning grommets which have openings therein of substantially the same size comprising, a base plate having a rear face adapted to engage a window frame, a side member on the base plate at one side edge thereof and extending forwardly from the base plate in substantially perpendicular relation thereto, and arms extending from opposed sides of the side member and then turned inwardly to overlie the face of the side member adjacent the base plate, said arms terminating in spaced spring tongues extending therefrom substantially in perpendicular relation to the side member, the juncture of the tongues and arms providing an abutment, said tongues being arcuate in cross section and cooperating to form a substantially cylindrical bifurcated post with the spacing between the tongues such that said tongues are moved toward each other in sleeving the frame end and grommet thereon, the free end portions of the tongues being tapered to facilitate sleeving an awning frame end and grommet onto the bifurcated post, said tongues having laterally extending offset portions between the arms and free ends to form rounded shoulders spaced from said juncture a distance sufficient to mount an awning frame end and awning grommet between the side member and shoulders, said tongues and arms having resiliency tending to spread the free ends of the tongues whereby the spring tension of the tongues cooperates with the abutment and shoulders to form a snug fit in the awning grommet and limit end play of the awning frame end while permitting hinging action thereof.

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