Sept. 24, 1929. W. G. DUNN 1,729,158

BINDER DEVICE FOR AWNINGS, CURTAINS, AND THE LIKE

Filed Nov. 28, 1927

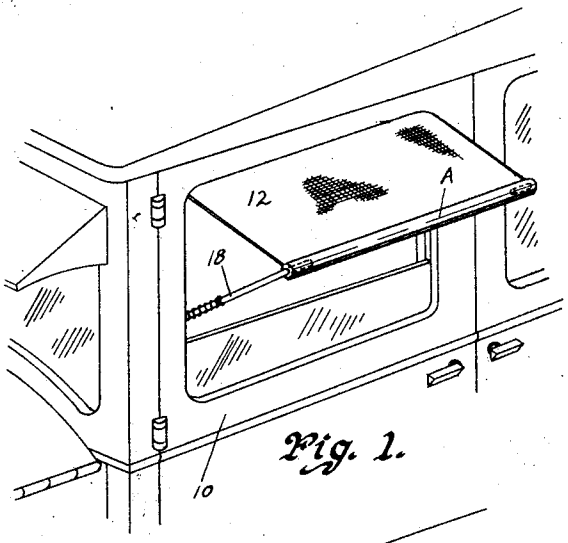


Fig. 1.

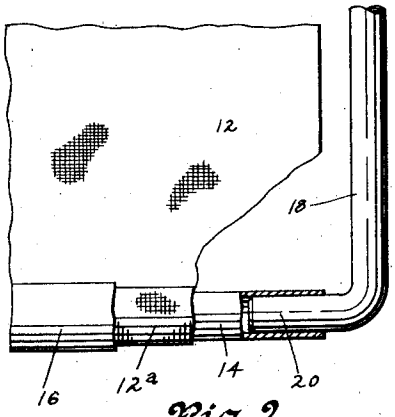


Fig. 2.

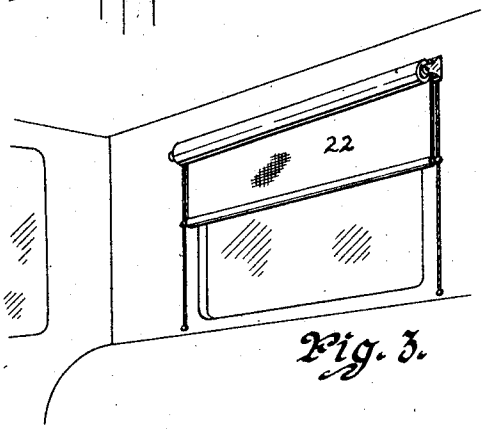


Fig. 3.

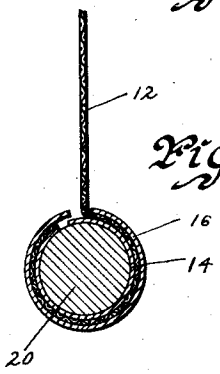


Fig. 6.

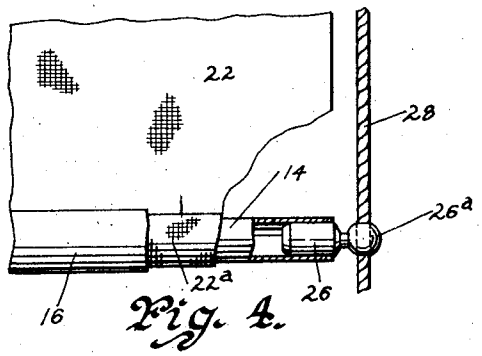


Fig. 4.

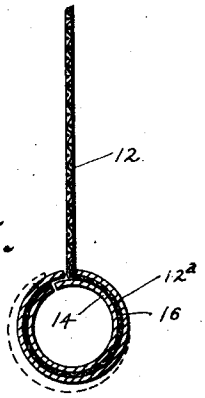


Fig. 5.

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UNITED STATES PATENT OFFICE

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BINDER DEVICE FOR AWNINGS, CURTAINS, AND THE LIKE

Application filed November 28, 1927. Serial No. 236,193.

It is my object to provide a binder device of very simple, durable and inexpensive construction, peculiarly adapted for use with certain types of curtains, awnings and such devices.

More particularly, in this connection, it is my object to provide a binder structure for the lower or free edge of a curtain or shade or awning, so constructed and arranged that the flexible member is received between two resilient devices, so that by the insertion of the members into the ends of the inner resilient device, the two devices may be sprung toward each other for gripping between them the flexible member.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my binder device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of a side of an automobile body on which is installed an awning equipped with a binder device embodying my invention.

Figure 2 is a detail, sectional view of one corner of the awning illustrating the structure of the binder, parts being broken away.

Figure 3 is a perspective view of a shade or curtain having a binder embodying my invention.

Figure 4 is a detail, sectional view of one end of the binder of Figure 3, parts being broken away.

Figure 5 is a detail, transverse, sectional view of a binder before the insertion of the expanding members; and

Figure 6 is a similar view showing the position of the parts after the insertion of the expanding members.

For convenience in description, I will first describe my binder device as used in connection with an awning for an automobile or the like.

In the accompanying drawings, I have used the reference numeral 10 to indicate generally the body of an automobile, on which is shown an awning having the flexible member 12 supported perhaps on a roller not shown at its upper end and having at its lower end a binder strip A, comprising in itself and in combination with the flexible member and the end pieces my present invention.

As shown in Figures 1 to 5, this binder strip may be in different forms. It comprises generally an inner and an outer member with the awning or curtain edge gripped between them, and supporting or guide means for the ends of the binder strip.

The binder strip comprises an inner split tube or hollow cylinder 14 made of resilient material, and an outer, longitudinally split tube 16 made of resilient material.

In actual practice, the edge of the fabric or other flexible material 12 is wound around the inner split resilient tube 14 from one edge almost to the other edge thereof.

The outer cylinder 16 may be assembled in the completed binder in different ways. In practice, I preferably partially form the cylinder 16 from a sheet, and then in the factory place it in proper juxtaposition to the inner cylinder, having the edge of the flexible member 12 wound on it, and complete the shaping of the outer cylinder 16 in such manner that it is finished around the edge of the inner cylinder, and it is just the right size to cause the parts to be properly gripped together.

The outer tube may be preformed and then slipped on endwise until it receives the inner tube and the portion of the flexible strip 12 wound thereon. The parts at that stage of the construction of the binder are shown in Figure 5.

That portion of the flexible strip 12, which is wound around the inner tube 14 is indicated at 12^a.

The parts may be made of such size that the outer tube may be readily slipped on the inner tube end portion 12^a.

It will be obvious that it is then desirable that the two tubes should be frictionally gripped together. This is accomplished in a very simple and convenient way.

Where awnings of the kind shown in Figure 1 and Figure 2 are used on cars and the like, it is quite common to provide them with arms 18 pivoted on the car frame and in some

way pivoted to the free edge of the member 12.

Where my binder strip is employed, I preferably form the arms 18 with short offset ends 20, preferably slightly tapered and adapted to be forced into the ends of the tube 14. The ends 20 are of such diameter as to expand the tube 14 sufficiently to snugly grip the portion 12^a of the flexible member 12 within the tube 16. The parts are shown in Figure 6 in their positions after the insertion of the end members 20.

Where the first above described method for assembling the parts of the binder is used, the shaping of the outer tube causes it to fit the inner tube snugly enough to hold the edge of the flexible member 12 in place by the frictional grip between the tubes.

In that case, no further expansion of the tubes is necessary, although it may be desirable that there should be slight expansion of the inner tube when the members 20 are inserted into its ends, so as to cause the members 20 to be properly gripped.

It will, of course, be understood, however, that the members 20 could be connected through the inner tube or otherwise secured to the inner tube without necessarily expanding it at all.

In Figures 3 and 4, I have shown the same binder device used in connection with a curtain or shade 22. The free edge of the curtain or shade 22 is wound on a tube 14, such as has already been described, the portion of the member 22 wound around that tube being indicated at 22^a in Figure 4.

The tube 16 is installed in position in some suitable way, as has already been described.

The curtain structure shown in Figures 3 and 4, however does not have the arms 18. I use instead members 26 which are inserted into the ends of the tube 14 and serve the same purpose as the end members 20. The ends of the binder strip are thus properly closed and the binder strip is given a good appearance and the strip is connected with a guide or support.

In the particular structure shown in Figures 3 and 4, the members 26 are provided with heads or knobs 26^a, which may be slidably mounted on guide cords 28.

It is quite a difficult problem sometimes to provide a satisfactory binder means for the free edge of an awning or curtain, especially those of the kind used on automobiles, where simplicity and economy are very desirable.

I have in the present structure provided a binder which can be made of split resilient tubes that are manufactured by a simple process and at low cost.

The work of assembling the tubes with relation to each other and the edge of the curtain or awning is simple and easy and rapid.

When the parts are assembled in the position shown in Figure 5, all that is necessary to complete the binder device in such manner as to thoroughly grip the edge of the curtain or awning is to insert the expander members. These may be simple plugs or they may form part of the arms 18, as shown in Figures 1 and 2, or may be formed integral with the guide members 26^a, as shown in Figure 3.

If it is desirable to release the flexible member 12 or the member 22, it will be seen that the disassembling of the parts is almost as easy and as quickly done as the assembling. The expander members are withdrawn and the outer cylinder 16 may be slid off endwise, and the end of the awning easily removed. This is a feature of considerable importance because it makes it possible to use the same binder strip with a new flexible member 12 or 22, after such flexible member has become worn or torn or otherwise unusable.

With binder strips ordinarily used, it is impossible to take off the binder strip without destroying it.

My binder strip can be removed and used over and over again.

By using the tube for the interior member, I am able to provide a means whereby the ends of the arms 18 may be forced into the tube in such manner that they will be gripped thereby. This is thus afforded a simple and convenient means for connecting the arms 18 with the cylinder 14. In the same way, the use of the tube in the form of the device shown for instance in Figure 4, affords a convenient means for connecting the guide member 26^a with the cylinder 14.

It has already been noted that the tube 16 can be made of such size as to slip onto the inner member lengthwise or may be shaped around the inner member in the manufacture of the device.

In some cases it is desirable after the tube 16 has been shaped around the inner member to either expand the inner member in the manner already described or contract the tube 16 to increase the frictional grip between the tube 16 and the parts received therein.

Changes may be made in the details of the construction and arrangements of my binder device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:—

1. In a binder strip adapted for use with awnings, a longitudinally split resilient tube adapted to have the end of the awning wound around it, a second longitudinally split resilient tube of substantially the same length but of greater diameter adapted to receive the first tube with the awning portion wound thereon, and expander members for projecting into the ends of the inner smaller tube for expanding it for causing the edge of the

curtain to be gripped between the respective tubes.

2. A binder for awnings, comprising an inner split resilient tube adapted to have wound on it the edge of such awning, a second split resilient tube for receiving said first tube with the awning edge wound thereon, and means for expanding the first tube for causing the awning edge to be gripped between said tubes.

3. In a structure of the class described, the combination of a pair of telescoping split resilient tubes, a flexible member having one edge wound around the inner of said tubes and projecting through the split in the outer of said tubes, and means for springing the inner tube for causing it to frictionally grip the edge of said flexible member against the other of said tubes.

4. In a device of the class described, a flexible member, a cylindrical element around which one edge of said flexible member is wound, a second hollow split cylindrical element receiving said first element and the portion of the flexible member wound thereon, and means for springing the inner element for causing it to grip the edge of the flexible member between it and the second element.

Des Moines, Iowa, November 1, 1927.

WILLIAM G. DUNN.