Oct. 18, 1932. A. J. SCHMIEDESKAMP 1,882,982

ROLLING SCREEN RETAINING MEANS

Filed Nov. 25, 1930

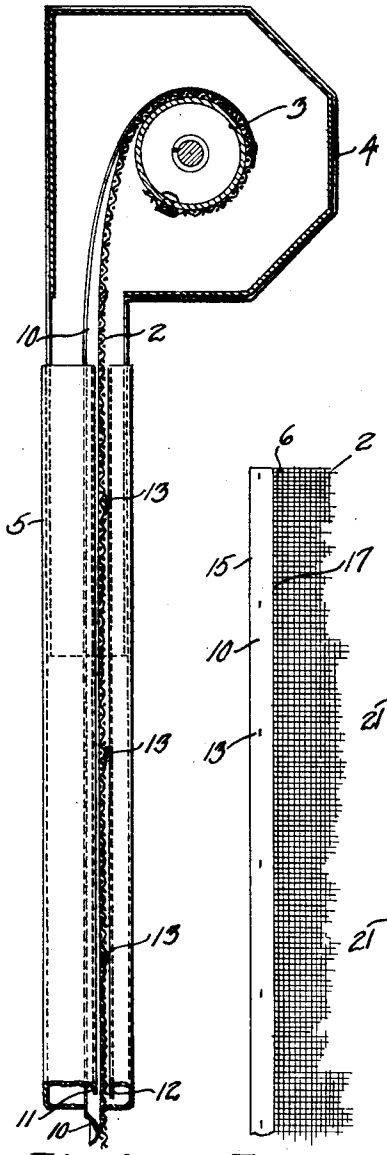

Fig. 1

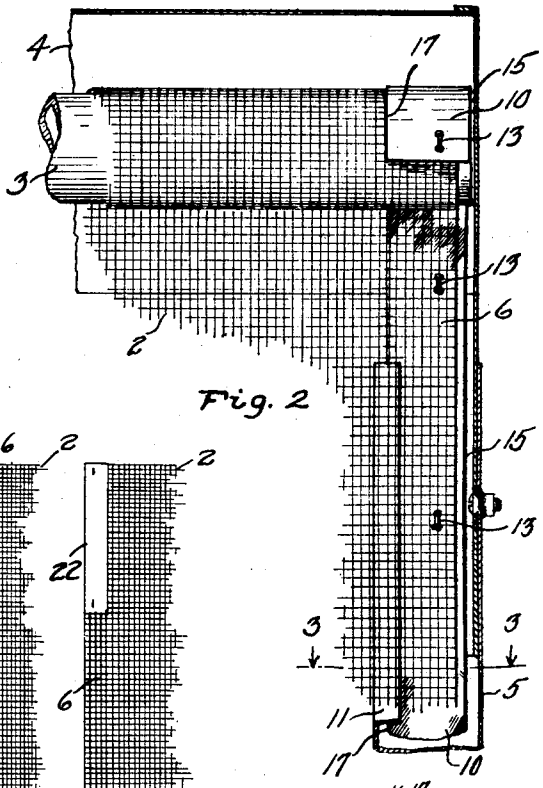

Fig. 2

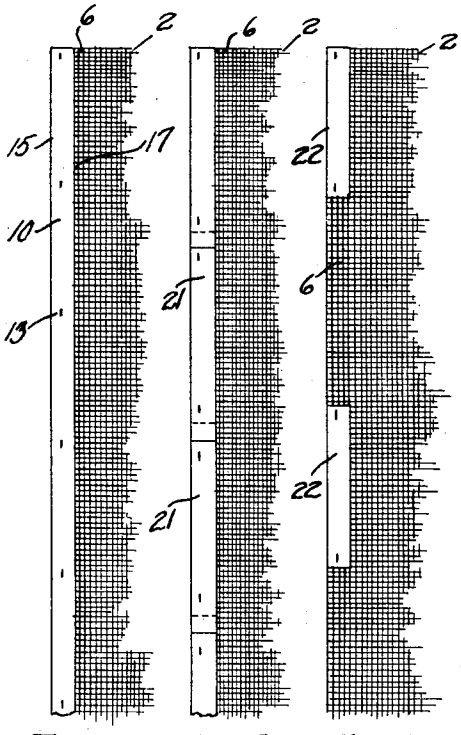

Fig. 5 Fig. 6 Fig. 7

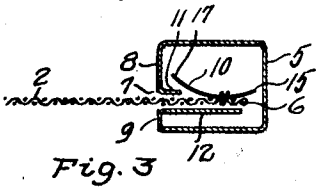

Fig. 3

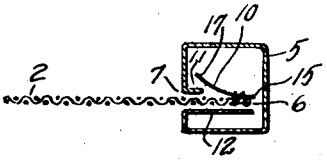

Fig. 4

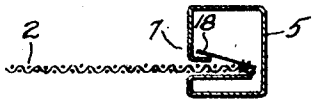

Fig. 8

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Patented Oct. 18, 1932

1,882,982

UNITED STATES PATENT OFFICE

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ROLLING SCREEN RETAINING MEANS

Application filed November 25, 1930. Serial No. 498,032.

The invention relates to a means applicable to rolling window screens for preventing the side edges of the screen from being pulled laterally out of the screen guides at the sides of the window opening.

In the most common type of roller window screen, the screen is arranged for positioning in the window opening with the side edges of the screen slidably disposed in guides or tracks located at the sides of the opening. A serious difficulty prevalent in this type of screen is that of preventing the screen edges from being pulled out of the guides without at the same time interfering with the smooth and compact winding of the screen upon the roller. Most of the attempts to overcome this difficulty have consisted in securing along the screen edges a single continuous or a plurality of individual enlargements which engaged suitable stops in the guides to prevent the withdrawal of the screen. In general these enlargements were of such a bulky nature, or were otherwise so formed, that while the screen was prevented from being pulled out, the enlargements would cause the screen to wind up in such a large and uneven roll, that their use was entirely impractical.

It has therefore been an object of my invention to provide a means arranged to be used at the edges of the screen which will effectively prevent said withdrawal and at the same time will permit the screen to wind up as compactly or even more so than it would without the provision of any retaining means.

Another object of the invention is to provide a means of the character described which eliminates any tendency of the screen to bulge or otherwise become deformed in the middle portion thereof when the screen is unwound from the roller.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawings and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawing:

Figure 1 is a vertical sectional view of a roller screen and mountings equipped with the means of my invention.

Figure 2 is a fragmentary front view of the parts shown in Figure 1, with portions of the screen casing and guide broken away to show the hidden parts more clearly.

Figure 3 is a fragmentary transverse section of the screen and guide with the means of my invention, the plane of the section being indicated by the line 3—3 of Figure 2.

Figure 4 is a view similar to Figure 3, but showing a slightly modified form of the means.

Figure 5 is a fragmentary front view of an edge portion of the screen provided with the retaining means.

Figures 6 and 7 are views similar to Figure 5, but showing modified constructions.

Figure 8 is a view similar to Figure 3, of a modified form of the invention.

As illustrated in the drawing, the means of my invention is applied to a screen 2 which is arranged to be wound on and off the spring actuated roller 3 in covering or uncovering a window or other like opening. The roller, as clearly shown in Figures 1 and 2 is mounted in a hood 4 which is positioned at the upper side of the window opening and is large enough to accommodate the screen when fully wound on the roller. Arranged to be positioned at the vertical sides of the opening are guides 5 in which the side edges 6 of the screen are retained as the latter is moved across the opening. The guides are preferably in the form of channels with the open side 7 facing the window opening and provided, as here shown, with extensions 8 and 9 which at their inner edge extend into the guides to form opposed bearing portions 11 and 12 for the edge portions 6 of the screen.

Extending along and secured to the screen edge portions 6, are tapes 10 which are made of thin resilient material and formed as shown in Figures 3 and 4 of curved cross-section. In the preferred embodiment of the invention, the tapes are formed continuous,

that is, they are each formed of one piece and extend substantially the full length of the screen. The tape is preferably positioned on the face of the screen and may be secured to the latter in any suitable manner, as here shown, the attachment being effected by means of wire staples 13 which in the embodiment shown in Figure 3 are located mediately of the edges of the tape while as shown in Figure 4, they are located nearer the outer edge 15 of the tape. With the tape attached as in Figure 4, the width thereof may be comparatively narrow and a relatively small guide member may be used.

It will be understood that by reason of the curvature of the tape and the fact that the convex side thereof faces the screen, the inner edge portion 17 of the tape will be normally spaced from the face of the screen, and as clearly shown in Figures 3 and 4 such edge portion is arranged when the contiguous part of the tape is in the guide, to lie back of the guide extension 8 whereby the latter forms a stop against which the portion 17 will abut should any force be exerted on the screen to pull the edges thereof from the guides. It will further be noted that since the bearing portion 11 of the guide is arranged to lie between the screen and tape, there will be no danger of the tape being pulled through the space between said bearing and the bearing portion 12.

The tape, as will be understood, is arranged to be wound on the roller together with the screen, and as clearly shown in Figure 1, the tape is positioned on such side of the screen as will cause the concave face of the tape to lie outermost when wound on the roller. In this manner, as the tape approaches the roller, it gradually straightens out in cross section under the pull of the roller spring and the drag of the screen and readily winds upon the roller as a thin flat ribbon, thereby allowing the screen to become wound on the roller as compactly, or more so, as with the tape omitted, it being noted in this latter connection that the tape tends to wind more compactly than the screen and therefore prevents the latter from winding unevenly. In the unwinding of the screen, the tape of course resumes its normal curved form and readily enters the guide with the tape edge 17 and screen portion 6 on opposite sides of the guide portion 11.

While I have found that a tape with a curved cross section is most satisfactory in operation, still if desired a flat tape 18 such as shown in Figure 8 may be used to advantage. With this latter form the tape is attached to the screen at its outer edge, and the screen serves as a hinge to permit the tape to lie against or spaced from the face of the screen according to whether the tape is wound on the roller or disposed in the guide.

Instead of having the tape as one continuous member, as indicated in Figure 5, it may be formed of a plurality of sections 21 and 22 as respectively illustrated in Figures 6 and 7. When the tape is formed in sections, the latter may be entirely spaced from one another as in Figure 7, or arranged in intimate and overlapping relation as in Figure 6.

It will now be seen that the means of my invention is well adapted to the accomplishment of the objects hereinbefore mentioned.

I claim:

1. In means of the character described, a roller screen mounted in a window frame, guides at the sides of the frame for the edges of the screen, resilient tapes secured to and extending along the side edges of the screen and arranged within said guides, and means engaging said tapes to prevent the withdrawal of the screen edges from the guides.

2. In means of the character described, a roller screen mounted in a window frame, guides at the sides of the frame for the side edges of the screen, tapes secured to and extending along said edges and arranged within said guides, and means engaging a side edge of said tapes to prevent the withdrawal of the screen edges from the guides.

3. In means of the character described, a roller screen mounted in a window frame, guides at the sides of the frame for the side edges of the screen, and resilient tapes secured to and extending along said edges and engaging in said guides whereby the withdrawal of said edges from the guides is prevented.

4. In means of the character described, a roller screen mounted in a window frame, a guide at the side of the frame for a side edge of the screen, and a resilient tape normally of concavo-convex cross section secured to and extending along said edge with one of its edges arranged for bearing in said guide to prevent the withdrawal of screen edges from the guide.

5. In a device of the character described, a roller screen mounted in a window frame, for covering the opening of the frame, a guide at the side of the opening for the side edge of the screen, a resilient tape of normally curved cross section along said edge adapted to be wound on the roller together with said screen whereby when wound on the roller it will lie flat against the screen whereas when unwound from the roller the inner edge portion of the tape will be moved to spaced relation to said screen, and means associated with the guide arranged for engagement with said edge portion to prevent the lateral withdrawal of side edge of the screen from the guide.

6. In a device of the character described, a roller screen mounted in a window frame,

for covering the opening of the frame, a guide at the side of the opening for the side edge of the screen, a resilient tape of normally curved cross section secured to the screen and secured to and extending along said screen edge with the convex side toward the screen whereby on being wound on the roller the tape will straighten out in cross section but will return to its normal form when unwound from the roller, and means associated with the guide engageable by an edge of the unwound portion of the tape to prevent the lateral withdrawal of the screen edge from the guide.

7. In a device of the character described, a roller screen mounted in a window frame, for covering the opening of the frame, a guide at the side of the opening for the side edge of the screen, resilient overlapping tape sections secured along said screen edge adapted to be wound on said roller with said screen and to lie flat against said screen when wound on the roller, but to assume a normal position with a side edge thereof spaced from the screen face when the screen is unwound from the roller, and means engageable by said tape to prevent withdrawal of the side edge of the screen from the guide.

8. In a device of the character described, a roller screen mounted in a window frame, for covering the opening of the frame, a guide at the side of the opening for the side edge of the screen, resilient spaced tape sections of normally curved cross section secured along said screen edge adapted to be wound on said roller with said screen and to lie flat against said screen when wound on the roller, but to assume a normal position with a side edge of the tape sections spaced from the screen face when unwound from the roller, and means engageable by said side edge of the sections to prevent withdrawal of the side edge of the screen member from the guide.

In testimony whereof I have hereunto set my hand at Oakland, California, this 20th day of November, 1930.

AUGUST J. SCHMIEDESKAMP.