July 6, 1926. 1,591,104

W. A. ROBINSON

WINDOW SHADE ROLLER

Filed August 22, 1923 2 Sheets-Sheet 1

Fig. 1.

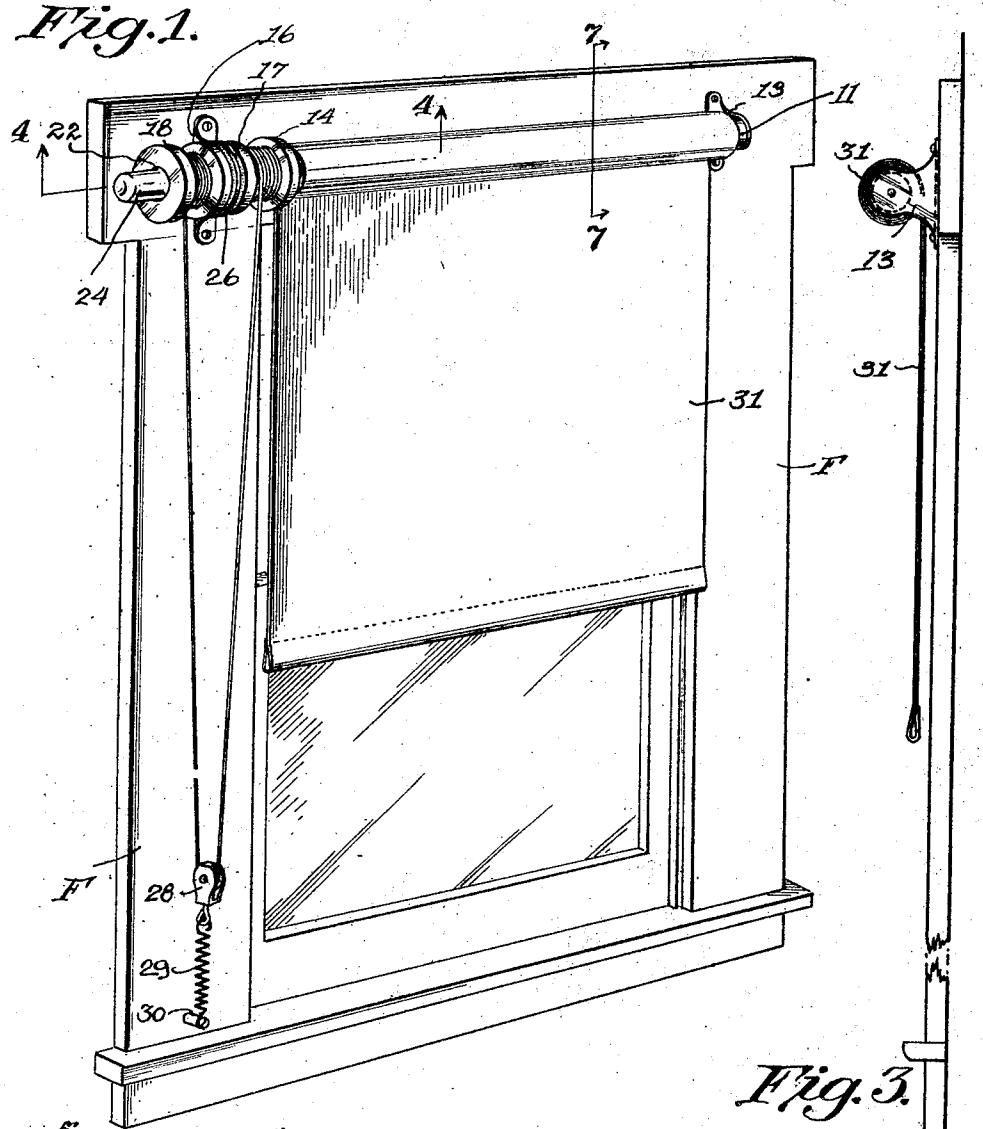


Fig. 3.

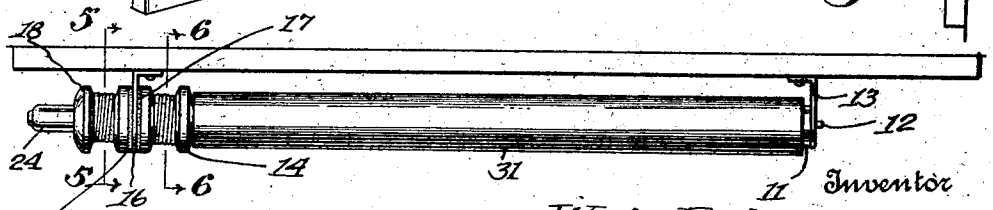


Fig. 2.

Inventor

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July 6, 1926.

1,591,104

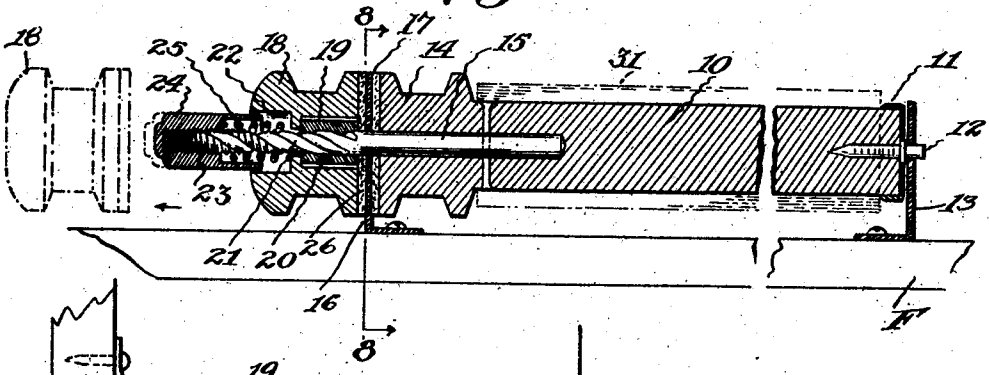
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Fig. 4.



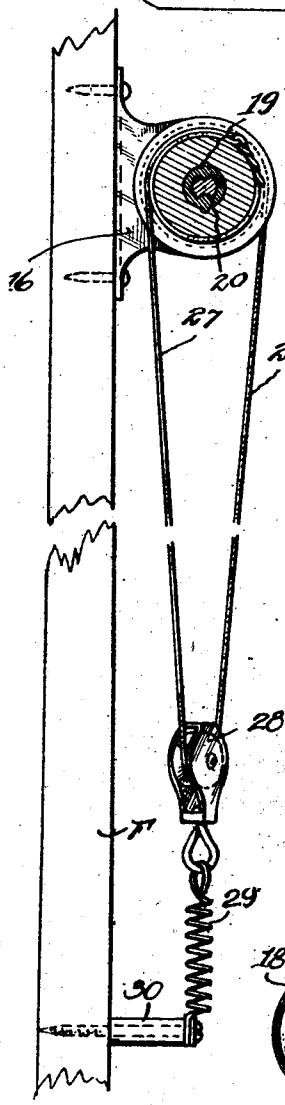


Fig. 5.

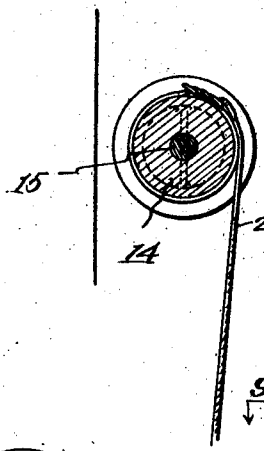


Fig. 6.

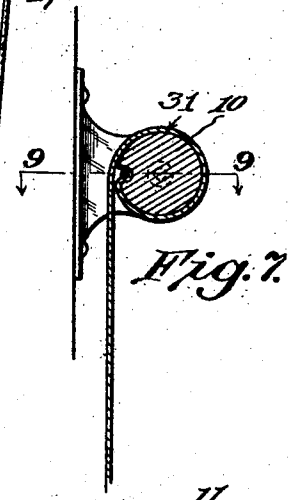


Fig. 7.

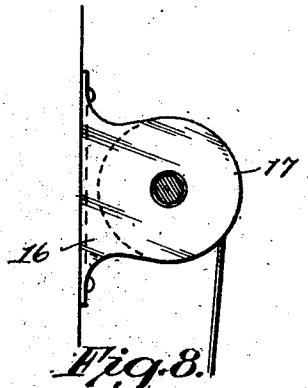


Fig. 8.

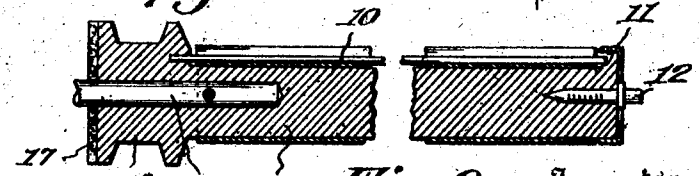


Fig. 9.

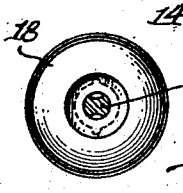


Fig. 10.

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Patented July 6, 1926. 1,591,104

UNITED STATES PATENT OFFICE.

WILLIAM A. ROBINSON, OF LEICESTER, NORTH CAROLINA.

WINDOW-SHADE ROLLER.

Application filed August 22, 1923. Serial No. 658,732.

This invention relates to curtains, and has particular reference to a curtain roller of the kind which are used to support window shades and the like.

The principal and most important objects of the invention are to improve the general construction of curtain rollers of this description, to provide means whereby the curtains may be rolled up or down without the intervention of spring winding means, the improved means being of novel construction, to provide, in such improved means, friction elements which will serve to retain the curtain in its adjusted position, provide means for automatically relieving the friction at appropriate times, and such other objects as will be hereinafter apparent.

The invention consists in general of certain novel details of construction and combinations of parts which will first be described in detail, specifically pointed out in the claims and illustrated in the accompanying drawings wherein—

Fig. 1 is a perspective view of a window and its frame equipped with the improved shade roller arrangement.

Fig. 2 is a plan view thereof.

Fig. 3 is a side elevation thereof.

Fig. 4 is an enlarged detail section on the line 4—4 of Fig. 1.

Fig. 5 is an enlarged detail section on the line 5—5 of Fig. 2.

Fig. 6 is an enlarged detail section on the line 6—6 of Fig. 2.

Fig. 7 is an enlarged detail section on the line 7—7 of Fig. 1.

Fig. 8 is an enlarged detail section on the line 8—8 of Fig. 4.

Fig. 9 is a section on the line 9—9 of Fig. 7.

In the present embodiment of the invention it will be seen that there is provided a roller 10 of the usual elongated cylindrical form, and this roller at one end has a cap 11 wherethrough passes a pintle 12 forming a journal for this end. This pintle 12 is supported on a bracket 13 which is to be mounted in the usual manner on the window frame F. On the other end of the roller is provided a cord winding drum 14, and inserted in this end of the roller is a pintle 15 forming a journal which is supported in a bracket 16 also secured to the frame F. This bracket 16 forms, in addition to a bearing for the pintle, a friction plate, and on the outer end of the drum 14 is carried a friction disk 17 which engages against one side of the bracket 16. On the journal 15 is also mounted a second cord winding drum 18, which has in its inner end a recess 19 receiving a nut 20 having a steeply pitched thread therein engaging a corresponding thread 21 formed on the outer end of the journal 15. The outer end of the cord winding drum 18 is likewise recessed as at 22, and the extremity of the journal 15 is provided with an ordinary screw thread 23, so that a nut 24 may be screwed thereon. Between the nut 24, which is preferably recessed at its inner end, and the bottom of the recess 22 is a spring 25. The inner face of the drum 22 is provided with a friction disk 26 like the friction disk 17, and like it engaging the bracket 16.

On the drum 14 is wound one end of an operating cord 27, while on the drum 18 is wound the other end of this operating cord. These ends are wound in opposite directions, the cord on the drum 18 being wound in the same direction as the thread on the journal 15. The middle or bight portion of this cord hangs down and passes through a pulley 28 to which is attached a tension spring 29 secured to a pin or screw 30 projecting from the window frame or casing F. By this means the cord 26 is kept in constant tension. On the roller 10 is wound the usual curtain 31.

In operation it will be seen that the frictional engagement of the friction disks with the bracket may be varied at will by increasing or decreasing the tension of the spring 25 through the manipulation of the nut 24. Also it will be obvious that when the cord is pulled in one direction the curtain will be wound up, and that when the cord is pulled in the opposite direction, the curtain will be unwound. Whenever the cord is pulled in either direction it is to be particularly noted that the friction between the disks and the bracket 16 is reduced by reason of the fact that this pulling of the cord tends to cause relative movement between the nut 20 and the journal 15 in such direction as to compress the spring 25 toward the nut 24, and this causes, in turn, a tendency of the friction disks 17 and 26 to separate and thereby relieve frictional pressure on the bracket 16.

While the form just described is one preferred form, it is not to be understood that

the device is confined to the exact construction herein shown and described, but it is to be understood that it is the intent of the invention to cover all such variations as may be made by those skilled in the art and which come within the scope claimed.

I claim:

1. A device of the kind described comprising a curtain supporting roller having a journal at one end, a bracket forming a bearing for said journal, cord winding drums carried by said journal to revolve therewith and located on opposite sides of the bracket to frictionally engage said bracket, the inner drum being fixed to the journal and the outer drum being revoluble thereon, and a cord having one end wound in one direction on one of said drums and its other end wound in the opposite direction on the remaining drum.

2. A device of the kind described comprising a curtain supporting roller having a journal at one end, a bracket forming a bearing for said journal, cord winding drums carried by said journal to revolve therewith and located on opposite sides of the bracket to frictionally engage said bracket, the inner drum being fixed to the journal and the outer drum being revoluble thereon, variable pressure means carried by said journal and engaging the outer one of said drums to regulate the friction between the drums and bracket, and a cord having one end wound in one direction on one of said drums and its other end wound in the opposite direction on the remaining drum.

3. A device of the kind described comprising a curtain supporting roller having a journal at one end, a bracket forming a bearing for said journal, cord winding drums carried by said journal to revolve therewith and located on opposite sides of the bracket to frictionally engage said bracket, a nut screwed on the end of said journal, a spring interposed between said nut and the outer one of said drums, the last mentioned drum being movable along said journal and the other drum being fixed with respect to the journal, and a cord having one end wound in one direction on one of said drums and its other end wound in the opposite direction on the other drum.

4. A device of the kind described comprising a curtain supporting roller having a journal at one end, a bracket forming a bearing for said journal, cord winding drums carried by said journal to revolve therewith and located on opposite sides of the bracket to frictionally engage said bracket, variable pressure means carried by said journal and engaging the outer one of said drums to regulate the friction between the drums and bracket, a cord having one end wound in one direction on one of said drums and its other end wound in the opposite direction on the remaining drum, and means for automatically relieving pressure between the drums and bracket actuated by pulling upon said cord.

5. A device of the kind described comprising a curtain supporting roller having a journal at one end, a bracket forming a bearing for said journal, cord winding drums carried by said journal to revolve therewith and located on opposite sides of the bracket to frictionally engage said bracket, a nut screwed on the end of said journal, a spring interposed between said nut and the outer one of said drums, the last mentioned drum being movable along said journal and the other drum being fixed with respect to the journal, a cord having one end wound in one direction on one of said drums and its other end wound in the opposite direction on the remaining drum, and means for automatically compressing the spring towards the nut and thereby relieving the pressure between said drums and bracket upon pulling on said cord.

6. A device of the kind described comprising a curtain supporting roller having a journal at one end, a bracket forming a bearing for said journal, cord winding drums carried by said journal to revolve therewith and located on opposite sides of the bracket to frictionally engage said bracket, a nut screwed on the end of said journal, a spring interposed between said nut and the outer one of said drums, the last mentioned drum being movable along said journal and the other drum being fixed with respect to the journal, a cord having one end wound in one direction on one of said drums and its other end wound in the opposite direction on the other drum, a nut carried by the spring pressed drum, a thread on said journal engaged by said nut, the pitch of the thread and nut being sufficient to cause relative movement between the nut and drum and the journal upon pulling said cord.

In testimony whereof I affix my signature.

WILLIAM A. ROBINSON, M. D.