

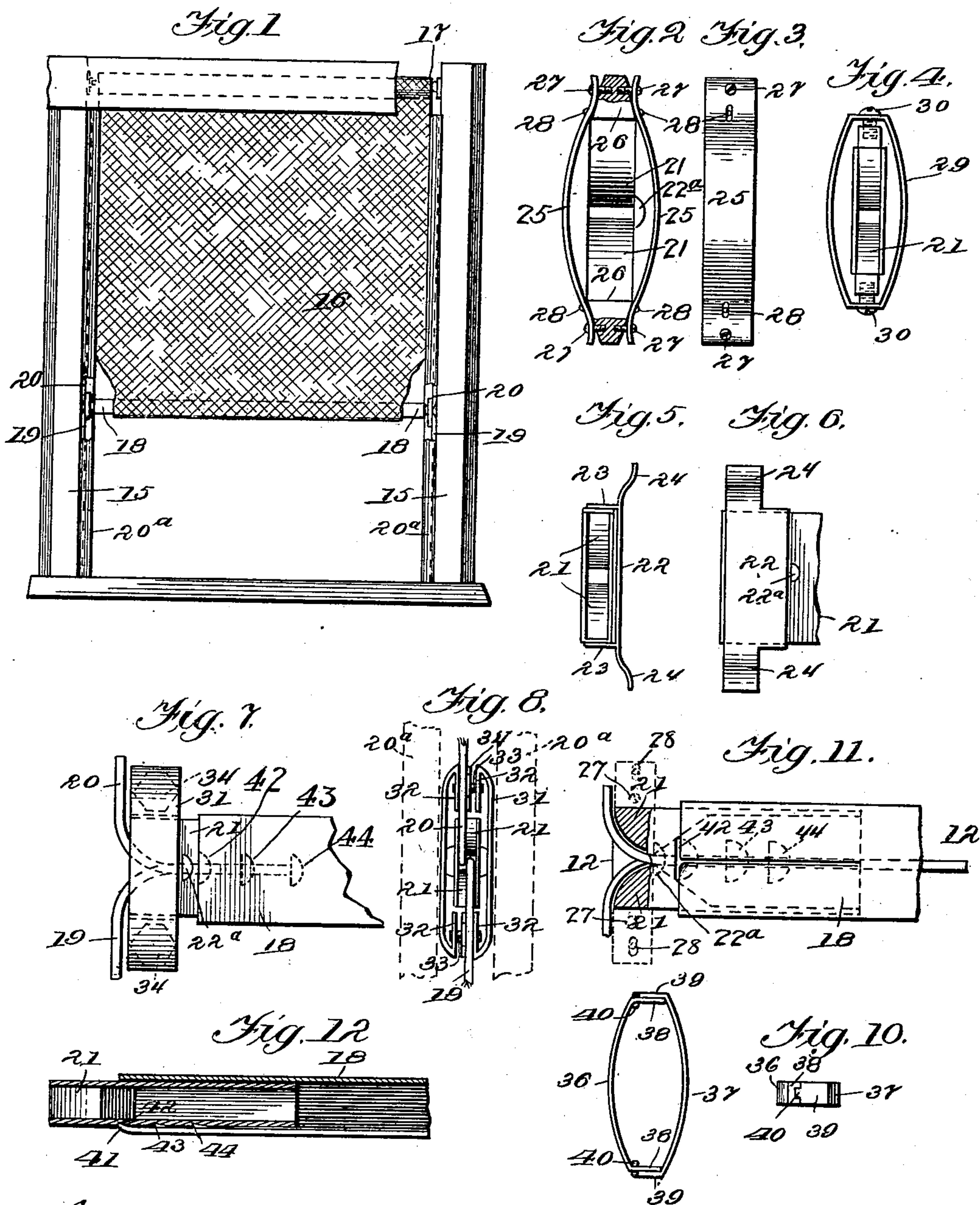
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P. G. EMERY.
CURTAIN FIXTURE.

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NO. MODEL.



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UNITED STATES PATENT OFFICE.

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CURTAIN-FIXTURE.

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To all whom it may concern:

Be it known that I, PLATO G. EMERY, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Curtain-Fixtures, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

This invention relates to that type of window-shade fixtures in which a curtain carried by a spring-roller is guided by what are known in the art as "squaring-cords" attached at diagonally opposite corners of the window-frame and passing through a tubular curtain-rod. In this type of fixtures reliance has been had upon the friction of the guide-cords within the tubular curtain-rod to hold the curtain in its adjusted position against the tension-spring in the roller upon which the curtain is wound. This friction is governed by the tautness of the cords. If the cord is slack, they will not hold the curtain, and if strained too strongly they produce an excessive friction, so that the curtain is moved only with difficulty. A greater annoyance arises from the fact that the cords become stretched after being in use for a short time and require to be again drawn taut. Efforts have been unsuccessfully made to provide a practical attaching mechanism for the cords which will admit of their ready readjustment.

The objects of this invention are to provide a friction device for holding the curtain or shade at the place to which adjusted and to provide for extending the curtain-rod to adapt it to window-frames of varying widths; and it consists in a spring-frame applied to one or both ends or heads of the rod for engaging the walls of the groove in the window-stop within which the guide-cords are located and in means for adjustably securing the heads within the rod ends.

In the accompanying drawings, illustrating the invention, Figure 1 is a detail elevation of a window-frame with the invention applied thereto, some of the parts being broken away. Figs. 2 to 10 are details of various forms of the friction device applied to the ends or heads of the curtain-rod. Fig. 11 shows the means for securing the heads ad-

justably within the rod, and Fig. 12 is a horizontal sectional view approximately on the line 12 12 of Fig. 11.

For the purpose of showing the situation in which the invention is applied there is represented at 15 the uprights of a window-frame, at 16 a curtain or shade mounted upon a spring-roller 17, at 18 the tubular rod at the lower end of the curtain, at 19 and 20 a pair of squaring-cords each secured at diagonally opposite corners of the window-frame and passing through the rod 18, at 20^a the stops applied to the inner faces of the uprights 15 and within which are formed the usual grooves within which the cords 19 and 20 lie in curtain-fixtures of this class, and at 21 there is shown the more common form of head applied to the ends of tubular curtain-rods and forming a continuation thereof.

The device constituting the present invention may take on a variety of forms, one of the more simple being shown in Figs. 5 and 6 of the drawings. In this instance the spring friction device consists of a simple plate 22 in blank, being oblong rectangular in form and being of somewhat greater length than the vertical width of the head 21. This plate is split or slitted from each end a short distance, and one of the wings 23 thus formed at each end is bent down at right angles to the body portion, so that they may inclose between them the head 21. If necessary, these wings are clipped at their ends, so that their length does not exceed the thickness of the head. The other pair of wings 24 are inclined outwardly and slightly recurved—that is to say, they are given an ogee curve. In use one of these friction devices is fitted upon one or both of the heads 21 of the curtain-rod 18, and their outstanding wings 24 impinge against one of the side walls of the stop-groove, forcing the head 21 against the opposite wall. The device is made of spring metal, preferably sheet-steel, and its wings are thrown backwardly a sufficient distance to insure the necessary friction to withstand the tension of the spring of the roller 17. As the friction-plate 22 is fitted loosely upon the head 21, it is advisable to form upon the latter a stop-lug 22^a for holding it in place, so that it may not work back upon the head and out of the stop-groove.

In the form of construction shown in Figs. 2 and 3 there is used a pair of spring-plates 25 in bow form, secured at their ends to triangular blocks 26 by means of screws 27, the blocks being prevented from angular displacement by pins 28, set therein and projecting loosely through suitable apertures in the plates 25. The sides of the blocks 26, along which the plates 25 lie, are given a sharper incline than the curvature of the plates. By turning the screws 27 up more or less tightly the tension of the spring-plates may be varied. The length of the device when thus made is such that it fits easily over the end of the head 21, and the two spring-plates impinge frictionally against the side walls of the stop-slot. Any suitable stop may be applied to the head 21 to prevent the friction device from moving backwardly out of the slot.

The preferred construction shown in Fig. 4 differs from that of Figs. 2 and 3 in that in place of the pair of spring-plates a single continuous fusiform band 29 is used. In order to provide for adjustment of the spring-tension, the apexes of this band are preferably flattened and perforated for the reception of screws 30, which engage suitable sockets in the head 21. By the adjustment of these screws the bowed sides of the friction device are given a greater or less expansion for the purpose of regulating their frictional engagement with the side walls of the stop-groove.

In the device of Figs. 7 and 8 a pair of bowed plates 31 is used, the ends 32 of each being turned backward and apertured. Right and left screw-threaded pins 33 engage the apertures at each end of the bowed plates, each pin being provided with a nut 34, by which it may be turned, so as to adjust the two spring-plates relatively for the purpose of regulating their frictional engagement with the side walls of the stop-groove.

In the structure of Figs. 9 and 10 the same general form is observed as in that shown in Fig. 4; but in place of a single continuous band or strap there is employed a pair of bowed spring-plates 36 37, having their ends 38 39 inturned, the bows being of such relative length that the ends of one will interfold within those of the other. The inturned ends 38 of the shorter bow are apertured, and the extreme ends of the longer bow 37 are provided with lugs 40 for the purpose of engaging the apertures in the ends 38, so that the two springs are secured together and will fit loosely over the head 21, so as to run within the stop-groove.

Any of these forms of friction devices will securely hold the curtain or shade in its adjusted position without dependence upon the friction of the guiding-cords, and hence the latter may be strung somewhat slack and may be secured without regard to readjustment. The friction may be varied at pleas-

ure as to the forms shown in Figs. 2, 3, 4, 7, and 8 by the use of the particular mechanism shown and described and as to the form shown in the other figures by simply bending the spring-plates.

I have not endeavored to show all of the forms of which such a device is capable, but regard myself as the first to apply any form of independent spring friction device to the head of a curtain-rod and believe that any construction of a device of this kind will come within the scope of my invention.

It will be seen that as to most of the forms of construction herein shown the spring friction device may be made as an independent and separate article of manufacture to be applied to any curtain-rod head of the type shown.

In Figs. 11 and 12 there is illustrated means for adjustably securing the head 21 within the tubular rod 18, such means consisting in setting in a part of the extreme end of the rod, as shown at 41, to form a tooth for engaging the recesses 42, 43, and 44, formed in the side of the head 21, so that the head may project a greater or less distance from the rod and yet be securely held.

I claim as my invention—

1. Means for restraining a spring-actuated curtain, consisting of an expanding-spring encircling the end of the curtain-rod and designed to bear laterally against the side walls of the groove in which the rod is adapted to travel.

2. Means for restraining a spring-actuated curtain, consisting of a spring device carried on the end of the curtain-rod and having contracted ends and a bulging intermediate portion to engage the walls of the groove in which the rod is adapted to travel, and squaring-cords for guiding said rod.

3. Means for restraining a spring-actuated curtain, consisting of a spring device carried by the curtain-rod and designed to constantly expand opposite the side of the rod against the side wall of the groove in which the rod is adapted to travel, and squaring-cords for guiding said rod.

4. A restraining device for spring-actuated curtains, consisting of a curtain-rod, a bowed spring-metal frame carried by said rod in the groove in which it travels and having frictional engagement with the side walls of the groove, and squaring-cords for guiding said rod.

5. A restraining device for spring-actuated curtains, consisting of a curtain-rod, a bowed spring-metal frame removably fitted on the end of said rod and designed to constantly expand laterally against both side walls of the groove in which the rod travels, and squaring-cords for guiding said rod.

6. A restraining device for spring-actuated curtains, consisting of a curtain-rod, a spring-frame carried by the rod in the groove in which the rod travels and bearing against the

side wall thereof, means for adjusting the spring tension of said frame, and squaring-cords for guiding said rod.

7. A restraining device for spring-actuated curtains, consisting of a curtain-rod, a frame made of spring metal and removably mounted on the end of the rod to engage the side walls of the groove in which the rod is adapted to travel, a device at the end of said frame for adjusting the tension thereof, and squaring-cords for guiding said rod.

8. A restraining device for spring-actuated curtains, consisting of a spring-metal band adapted to be fitted on the end of the curtain-rod, a screw passing through the band for adjusting the tension thereof, and means for holding the band in opposition to said adjustment.

9. The combination with a curtain having a constant upward tendency and a curtain-rod arranged to travel in a guide-groove, of squaring-cords for guiding the rod, and a laterally-expandible restraining device carried by the rod, on the end thereof, to yieldingly engage the side walls of the groove with sufficient friction to hold the curtain in opposition to its upward tendency.

10. The combination with a curtain having a constant upward tendency and a curtain-rod arranged to travel in a guide-groove, of squaring-cords for guiding the rod, and a restraining device carried by the rod, on the end thereof, and consisting of a spring-metal frame adapted to have constant frictional engagement with the side walls of the groove in which the rod travels.

11. The combination with a curtain having a constant upward tendency and a curtain-rod arranged to travel in a guide-groove, of squaring-cords for guiding the rod, and a laterally-expandible restraining device removably mounted on the end of the rod and adapted to have constant engagement opposite the sides of the rod against the side walls of the groove in which the rod travels and with sufficient friction to hold the curtain in opposition to its upward tendency.

12. The combination with a curtain having a constant upward tendency and a curtain-rod arranged to travel in a guide-groove, of a spring-metal frame mounted on the end of the rod and adapted to have constant frictional engagement with the side walls of the groove, and a stop for holding said frame in operative position in the groove and at the end of the rod.

13. The combination with a curtain having a constant upward tendency, a groove, and a curtain-rod, of a cord-guide at the end of said rod having a notched engagement therewith to maintain the guide in fixed relation to the rod, and a restraining device mounted on said guide and operating in the groove in which the guide is adapted to travel.

14. The combination with a curtain having

a constant upward tendency, a groove and a curtain-rod, of an adjustable cord-guide at the end of said rod, a restraining device mounted on the guide and operating in the groove in which the guide is adapted to travel, and means for holding said restraining device in operative position on the guide and in the groove.

15. The combination with a curtain having a constant upward tendency, a groove, and a curtain-rod arranged to travel in said groove, of antitilting means for the rod, and a restraining device consisting of a fusiform spring-metal frame mounted on the end of the rod and adapted to operate in the groove.

16. The combination with a curtain having a constant upward tendency, a groove, and a curtain-rod arranged to travel in said groove, of antitilting means for the rod, a restraining device consisting of a fusiform spring-metal frame mounted on the end of the rod and adapted to operate in the groove, and means for holding the frame in operative position on the rod and in the groove.

17. The combination with a curtain having a constant upward tendency, a groove, and a curtain-rod adapted to travel in said groove, of antitilting means for the rod having an upright portion at each end thereof, a laterally-expandible restraining device carried by the rod in the groove and adjacent to the upright portion of the antitilting means to yieldingly engage the side wall of the groove with sufficient friction to hold the curtain against its upward tendency, and a stop device on the rod to hold the restraining device within the groove.

18. The combination with a curtain having a constant upward tendency, a groove, and a curtain-rod arranged to travel in said groove, of squaring-cords for guiding the rod, and a laterally-expandible spring-metal plate arranged on the side of the rod and adapted to yieldingly engage the side wall of the groove with sufficient friction to hold the curtain against its upward tendency.

19. The combination with a curtain having a constant upward tendency, a groove, and a curtain-rod arranged to travel in said groove, of antitilting means for the rod, a spring-metal plate arranged on the side of the rod and adapted to engage the side wall of the groove, and means for adjusting the tension of said plate.

20. The combination with a curtain having a constant upward tendency and a curtain-rod guided in a guide-groove, of antitilting means for the rod, and a spring-section on each side of the rod and carried thereby in operative engagement with the side wall of the groove.

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