No. 657,269. Patented Sept. 4, 1900.

G. H. FORSYTH.

CURTAIN FIXTURE.

(Application filed Jan. 26, 1899.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.

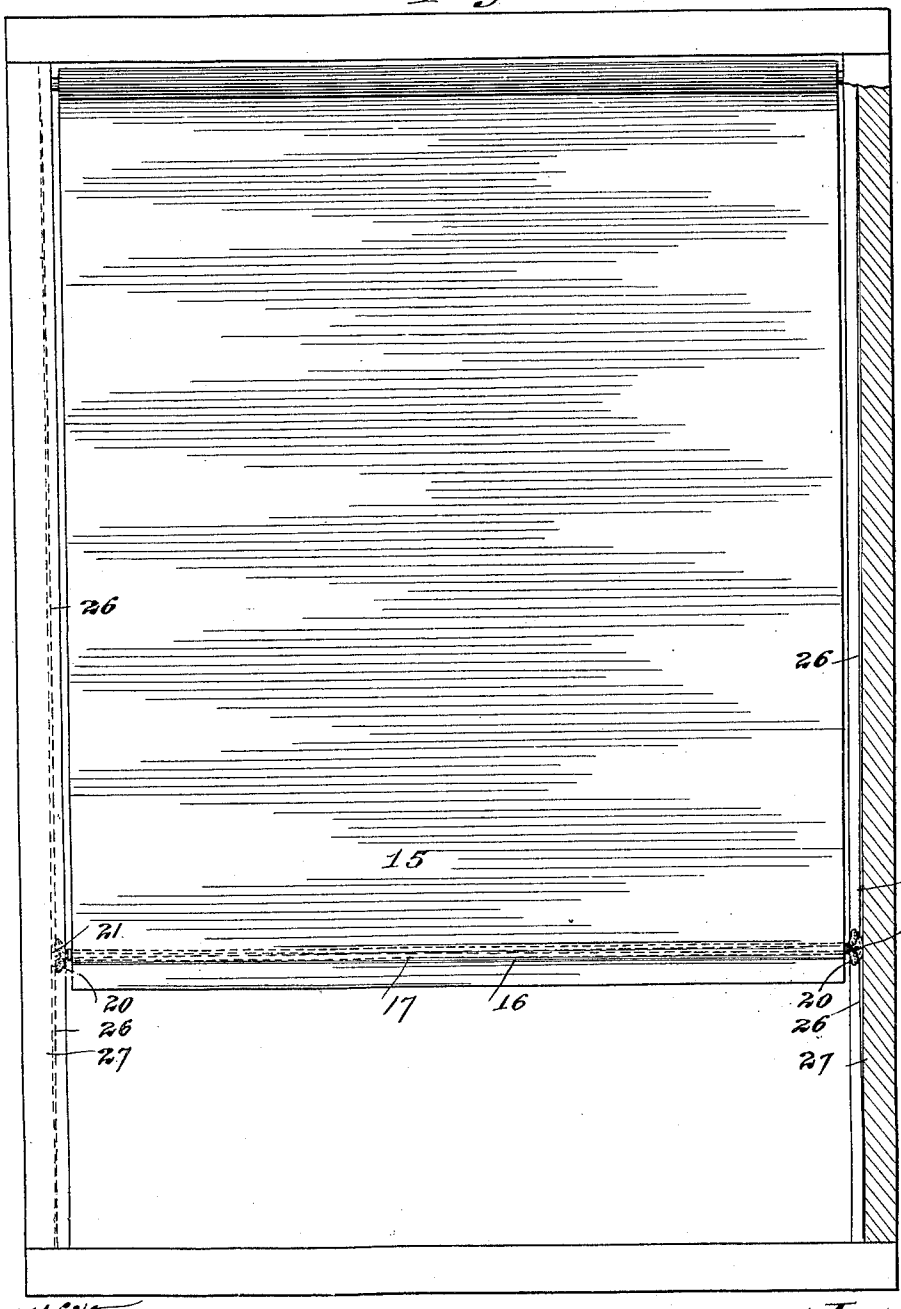
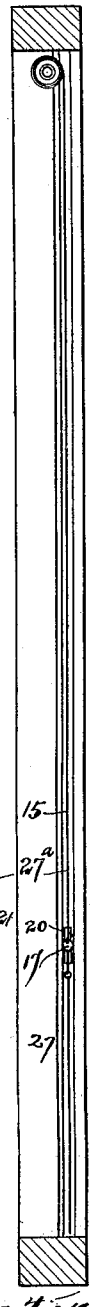


Fig. 2.



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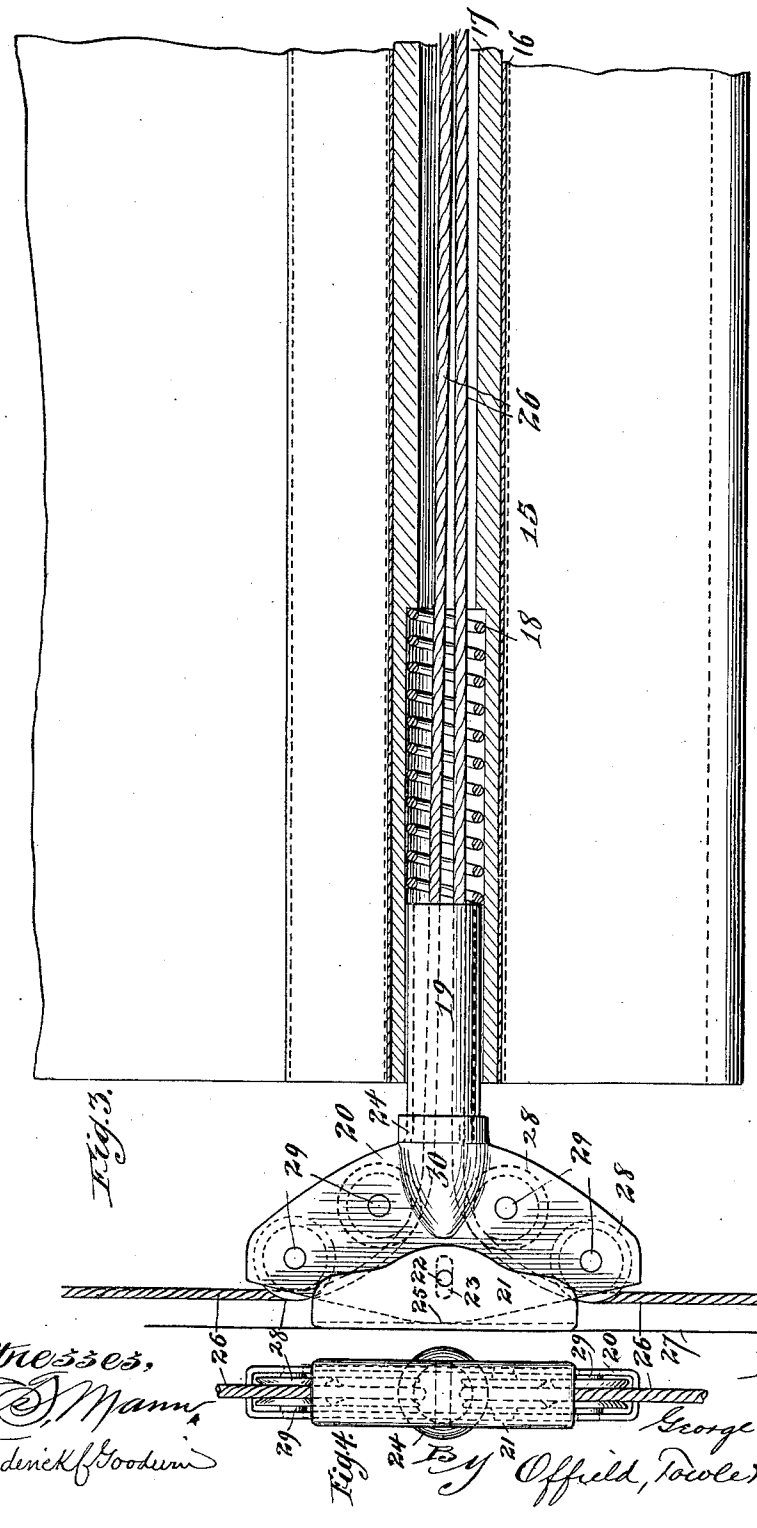
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Fig. 9.



Fig. 8.

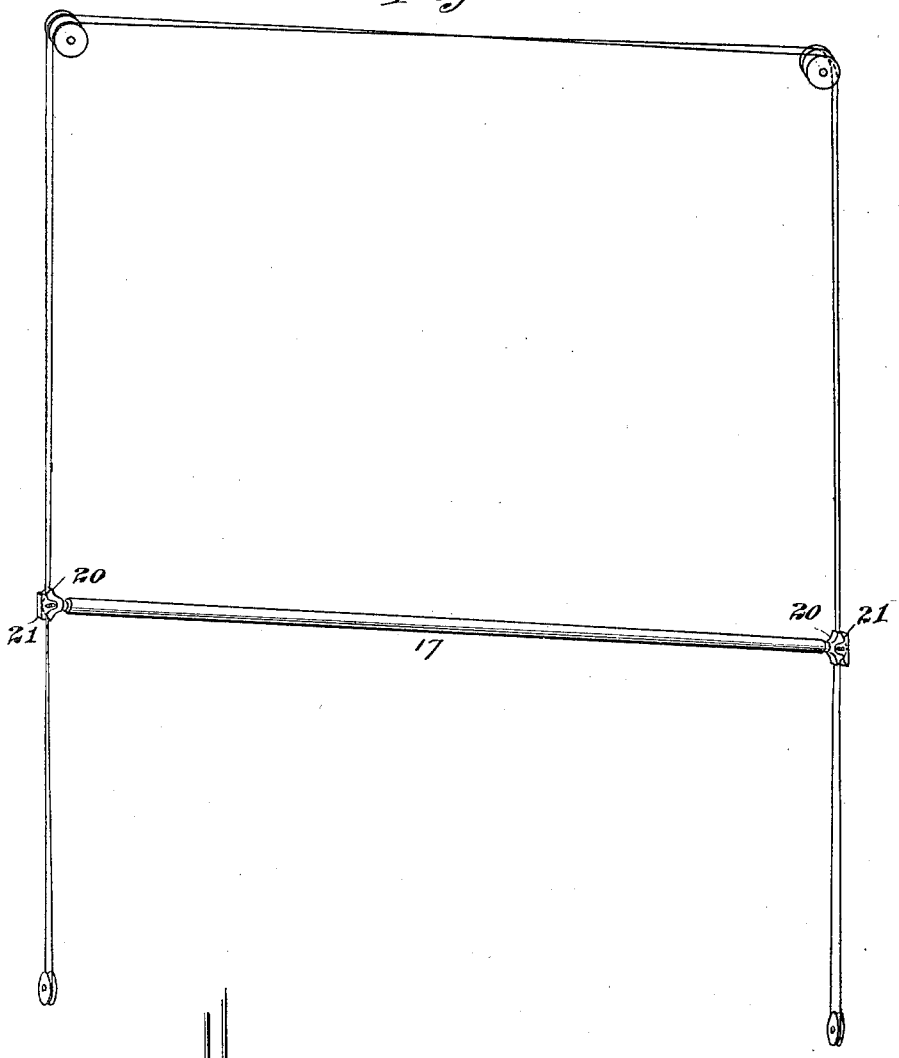
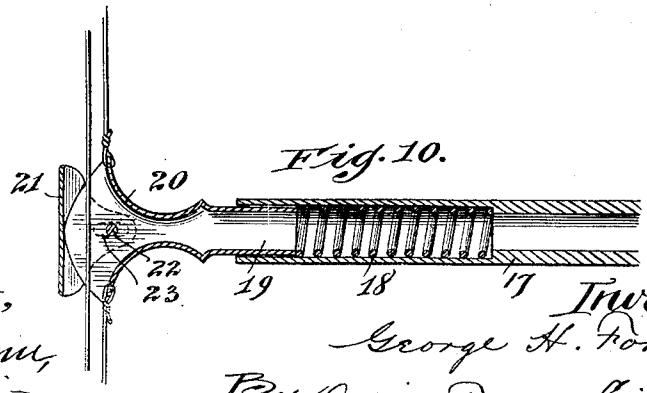


Fig. 10.



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Fig. 11.

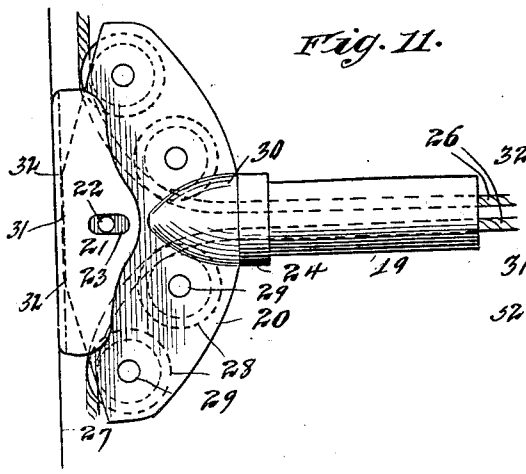


Fig. 12.

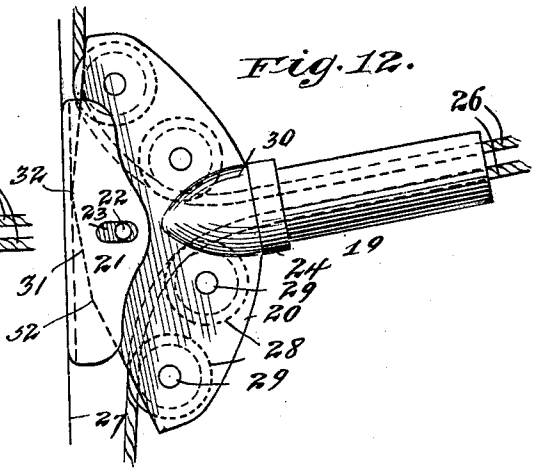


Fig. 13.

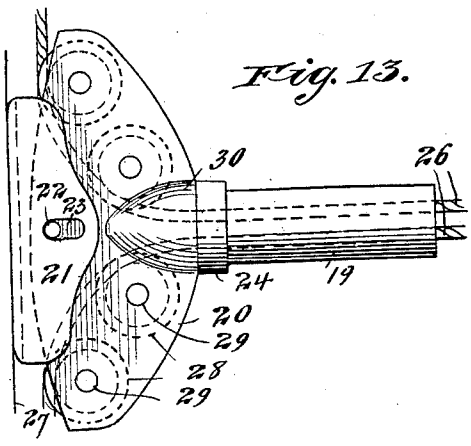
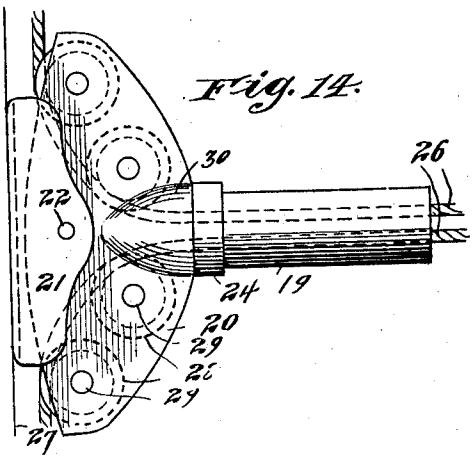


Fig. 14.



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UNITED STATES PATENT OFFICE.

GEORGE H. FORSYTH, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE CURTAIN SUPPLY COMPANY, OF SAME PLACE AND JERSEY CITY, NEW JERSEY.

CURTAIN-FIXTURE.

SPECIFICATION forming part of Letters Patent No. 657,269, dated September 4, 1900.

Application filed January 26, 1899. Serial No. 703,441. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. FORSYTH, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Curtain-Fixtures, of which the following is a specification.

This invention relates to curtain-fixtures, and is in the nature of an improvement upon the curtain-fixtures set forth in Letters Patent of the United States, No. 612,606, granted to me October 18, 1898. In said prior Letters Patent I have set forth a curtain-fixture comprising a flexible shade or curtain and a spring-actuated roller therefor, in connection with which flexible guides are employed to maintain the lower edge of the shade in substantial parallelism with the roller, and holding means consisting of spring-actuated friction-shoes are carried by the curtain and bear against the window-frame, so as to hold the shade at any desired elevation by reason of their frictional contact with said window-frame. In practice it is found that window-frames, either as originally constructed or by reason of distortion subsequent to their construction, frequently do not have their opposing surfaces parallel, and these surfaces are, moreover, sometimes not plane surfaces, but present inequalities of greater or less extent. When fixtures of the character set forth in my said prior Letters Patent are employed in conjunction with window-frames having the foregoing or similar defects, it is found that the friction-shoes do not bear fully and squarely with their entire friction-surfaces upon the opposing surfaces of the window-frame, and inequality of action is thus produced, the holding power being at times too great and at other times too small, while the concentration of the spring-pressure upon a comparatively-small portion of the shoe sometimes produces a grinding action, which tends to cause the fixture to bind and at the same time produce undue wear.

It is one object of my present invention to obviate these difficulties and to provide a fixture wherein the friction-shoe proper shall bear with its entire surface against the opposing surface of the window-frame under the adverse conditions hereinbefore pointed out; and to this end my invention consists in the combination, with a curtain-fixture of the character described having a flexible shade or curtain, a spring-actuated roller therefor, and flexible guides to maintain the lower edge of the shade in substantial parallelism with the roller, of spring-actuated friction-shoes comprising a head or connecting portion and a friction-shoe proper, so connected with the head as to have a tilting motion, which permits it to adapt itself to the varying inclinations and inequalities of the window-frame, and thereby have a full and complete bearing upon said frame in all positions of the fixture.

My invention has for a further object to provide a friction-shoe for use in fixtures of this type which shall consist of two parts movable relatively to each other—to wit, a head and a friction-shoe proper—in such manner that the relative movement of the parts will increase the space within the head, and thereby facilitate the operation of threading or passing the flexible guides through the head in assembling the fixture.

In the accompanying drawings, Figure 1 is a front elevation of a window-frame having a curtain provided with my improved curtain-fixture mounted therein, a portion of the frame being broken away or shown in section. Fig. 2 is a sectional elevation through the curtain, its tube, and shade-roller, showing one side of the frame in side elevation. Fig. 3 is a detail elevation of one of the lower corners of the shade and fixture and an adjacent portion of the window-frame, the shade tube and spring being shown in section. Fig. 4 is an end view of a portion of the fixture detached; Fig. 5, a plan view of the same; Fig. 6, a central plan section, and Fig. 7 a view similar to Fig. 6, illustrating a modified form. Figs. 8, 9, and 10 illustrate the application of my improvement to a form of curtain-fixture varying somewhat from that shown in Figs. 1, 2, and 3. Fig. 11 illustrates a modified form of the tilting connection between the head and friction-shoe proper. Fig. 12 is an illustrative view showing the structure shown in Fig. 11 in another position. Fig. 13 is a view of another modi-

fied form of connection between the head and friction-shoe proper, and Fig. 14 shows a further modification of this connection.

In the said drawings, 15 indicates the shade or curtain, having the usual pocket 16, in which is mounted a tube or hollow curtain-rod 17, which is provided at each end with a spring 18, said springs bearing upon the shanks 19 of the movable heads 20 at each end of the tube 17 to thrust the same outward.

In accordance with my prior Letters Patent hereinbefore set forth I provide at each vertical margin of the shade a friction-shoe, and for the purpose of my present invention I construct each friction-shoe of two parts—to-wit, a head 20 and a friction-shoe proper, 21. These two parts are so connected that the friction-shoe proper has a tilting or rocking motion relatively to the head, and in the forms of connection shown in Figs. 1 to 13, inclusive, one of said parts is slotted in a direction at right angles to the line of travel of the shade, the other part being provided with a pin engaging the slotted portion of the other member, so as to maintain a connection between the two and yet permit relative movement of the two parts toward and from each other bodily.

In the construction shown in detail in Figs. 3, 4, 5, and 6 the friction-shoe 21 is shown as hollow or U-shaped in cross-section, as clearly shown in detail in Figs. 5 and 6, its parallel sides being a sufficient distance apart to embrace between them the adjacent portion of the head 20. These side portions of the shoe are provided with a transverse pin 22, and the head 20 is slotted, as shown at 23, to receive said pin. The shoe may be constructed otherwise than in the form just described, although said form may be readily manufactured by the stamping process and produces a light and inexpensive shoe. For instance, I have shown in Fig. 7 a construction in which the shoe 21 is formed of a solid piece of metal having a comparatively-narrow tongue or projection 21^a, which extends upward within the body of the head 20 and which has formed within it the slot 23, which receives the pin 22, this latter being fixed in the head. The head 20 may also be constructed in any suitable manner—as, for instance, in any of the ways set forth in my prior Letters Patent hereinbefore referred to. In the forms shown in Figs. 3 to 7 of the drawings, inclusive, said head, as well as the shank 19, is formed in two symmetrical halves, which may be conveniently and cheaply made by the stamping process and which may be united by a ring or band 24, forced over the shank and fitting tightly thereon. Certain pins, hereinafter to be referred to, further serve to connect the two parts together, and, if desired, soldering or brazing may also be employed at the meeting edges for this purpose.

In the form of construction shown in Figs. 1 to 10 of the drawings each head 20 has its outer edge or face centrally prolonged or projected, as indicated at 25, to bear upon the back of the shoe 21, and owing to this projection of the central portion of the head or to the cutting away or recession of the upper and lower portions thereof the shoe 21 is free to rock or tilt relatively to the head.

In the construction shown in Figs. 1 to 7, inclusive, I have shown a construction in which flexible guides 26 are employed, which are secured at diagonally-opposite corners of the window-frame 27 and pass through the tube 17 in opposite directions and also the heads 20 at the ends of said tube. For the purpose of reducing the friction of said flexible guides or cords I mount in each of the heads 20 a series of rollers 28, which are carried by pins 29, having reduced or shouldered heads, said pins serving to aid in securing the two halves of the head together. When the pin 22 is a fixed pin, as in the construction shown in Fig. 7, said pin also serves to connect the two halves of the head. The rollers 28 are mounted two above and two below the opening of the shank, in such position that the guides or cords 26 pass around them and are deflected in a gradual manner without requiring the use of rollers of large diameter. I also provide at the junction of the head and shank an enlargement or chamber 30, whereby a space is formed to prevent the flexed portions of the incoming and outgoing cords or guides from being brought into too close contact with each other.

In Figs 8, 9, and 10 I have shown my improvement as applied to a fixture employing an endless cord secured to and moving with the shade around suitable pulleys at the upper and lower corners of the window-frame. This construction is fully described in my prior Letters Patent hereinbefore referred to, and the application of the tilting shoe 21 to the head 20 thereof is clearly shown in said figures and requires no detail description here.

In the several constructions hereinbefore considered the head in each case bears upon the back of the shoe at about the center thereof, and when the fixture is in use the pressure of the springs 18 exerted upon the shanks 19 and heads 20 causes these latter to press the shoes 21 against the walls of window-frame 27. The window-frame is preferably provided with guiding-grooves 27^a, as indicated in Figs. 1 and 2, within which the friction-shoes may travel. It will be seen that whether the opposing faces of the window-frame be parallel or divergent the actual contact-surfaces of the friction-shoes will bear to their full extent upon such surfaces by reason of the capacity for tilting or rocking provided for said shoes and there will therefore be no binding or inequality of action of the frictional holding-power of the device. Moreover, where minor inequalities of the frame-surfaces occur in the path of the shoes these latter, by tilting, will accommodate themselves to such

inequalities and insure smoothness of action. The provision of a slotted connection between the shoe and head not only permits this rocking of the shoe upon the head, but it also permits the shoe to be drawn outward away from the head, so as to increase the space within the interior or at the mouth of the head, and thereby facilitates the operation of stringing or inserting the flexible guides or cords when assembling the fixture. This advantage is particularly prominent in the case of the type of shoe shown in Fig. 7 of the drawings.

In Figs. 11 and 12 I have shown a construction possessing certain advantages, in which the head 20 is provided with a somewhat extended flat bearing 31 upon the back of the shoe 21, terminating in bearing-points 32, which are comparatively widely separated. With this construction when the shoe and head assume an angular position to each other the shoe will be held at a greater distance from the flexible guide and its rollers at the nearest end of said shoe than if a single central bearing of the head upon the shoe were provided. This is obvious from a comparison of the two figures, showing two different positions of the parts, and the employment of such a construction will serve as a protection against injury by contact between the shoe and the flexible guides or their rollers. It is not, however, essential for the purposes of my invention that the head should bear directly upon the back of the shoe, and in Fig. 13 of the drawings I have shown a construction wherein the several parts are so located and proportioned that when the pin 22 is at the limit of its motion in the slot 23, under the thrust of the spring 18, the head is not in contact with the shoe at the back thereof, the contact occurring between the pin and the end wall of the slot. I have also utilized this figure for the purpose of showing that the slot or slots may be formed in the shoe and the pin be secured to the head, this being an obvious reversal of the construction appearing in the foregoing figures and it being also obvious that either construction might be used in conjunction with any of the other structural features or modifications hereinbefore set forth.

Although, for the reasons already given, I prefer to provide for a positive or bodily longitudinal movement of the shoe and head relatively to each other, yet I do not limit my invention to such a provision, and in Fig. 14 of the drawings I have shown the shoe as pivoted directly to the head and as having only a circular movement around its pivot without the longitudinal movement hereinbefore referred to. The tilting or rocking motion of the shoe, however, is still present, and the beneficial results hereinbefore pointed out as obtained from this feature of my invention are equally attributable to the pivoted construction shown in Fig. 14.

My invention is obviously not limited to the precise details of construction hereinbefore pointed out, although I deem some of them advantageous, and modifications other than those hereinbefore set forth may be made without departing from the principle of my invention.

I claim—

1. The combination with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, apertured heads carried by the shade and through which the flexible guides extend, a plurality of antifriction-rollers mounted in each head and over which the respective guides pass, and spring-pressed friction-shoes pivotally mounted upon said heads and adapted to contact with the window-frames, substantially as described.

2. The combination, with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, and spring-actuated friction-shoes carried by the curtain and adapted to contact with the window-frame and each comprising a head and a friction-shoe proper having a tilting or rocking connection with the head and free to move bodily toward and from the same, said head bearing on said shoe when in operative position, substantially as described.

3. The combination, with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, and spring-actuated friction-shoes carried by the curtain and adapted to contact with the window-frame and each comprising a head through which the flexible guides pass, and a friction-shoe which is bodily movable toward and from the head, whereby the space within the head may be increased to facilitate the insertion of the flexible guides, substantially as described.

4. The combination with a flexible shade or curtain and its spring-actuated roller, of a tube mounted in the lower edge of said shade or curtain, heads carried by said tube and apertured in line with the bore thereof, a plurality of antifriction-rollers journaled in said heads on opposite sides of the apertures thereof, flexible guides passing over said rollers and through said heads and tube in opposite directions, friction-shoes mounted upon said heads and having a tilting or rocking connection therewith, said heads and said shoes being slidably mounted in the tube, and springs for pressing them outwardly, substantially as described.

5. The combination, with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, and spring-actuated friction-shoes carried by the curtain and adapted to contact with the window-frame and each comprising a head and a friction-shoe proper hav-

ing a pin-and-slot connection with each other, and said head having a centrally-projecting portion to bear upon the back of the friction-shoe proper, substantially as described.

6. In a fixture of the character described, a combined head and shank consisting of two similar parts divided on a median plane, a ring or band fitting over the shank, and pins connecting the two parts and carrying guide-rollers, substantially as described.

7. The combination with a flexible shade or curtain and its spring-actuated roller, of flexible guides adapted to maintain the lower edge of the shade in substantial parallelism with the roller, and spring-actuated friction-shoes carried by the curtain and adapted to contact with the window-frame and each comprising a head and a friction-shoe pivotally mounted on the head, substantially as described.

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