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PATENTED OCT. 23, 1906.

H. E. KEELER.
CURTAIN FIXTURE.

APPLICATION FILED JULY 3, 1905.

Fig. 1,

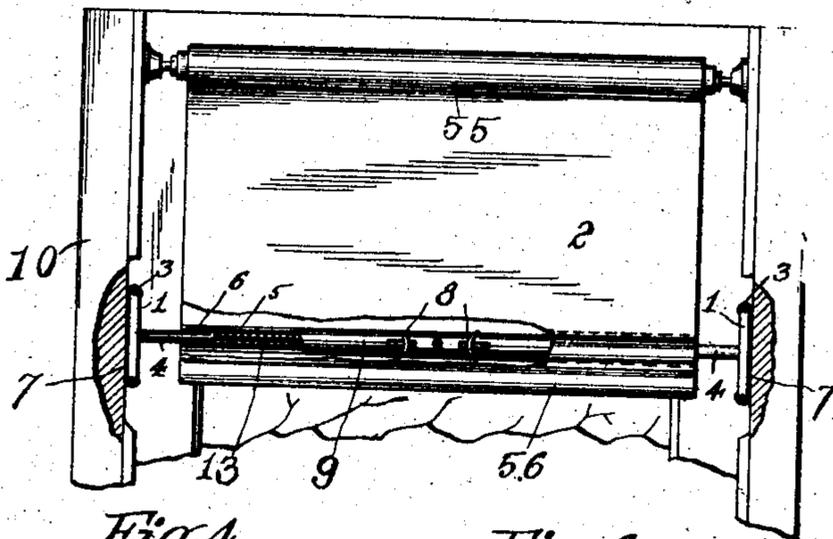


Fig. 2,

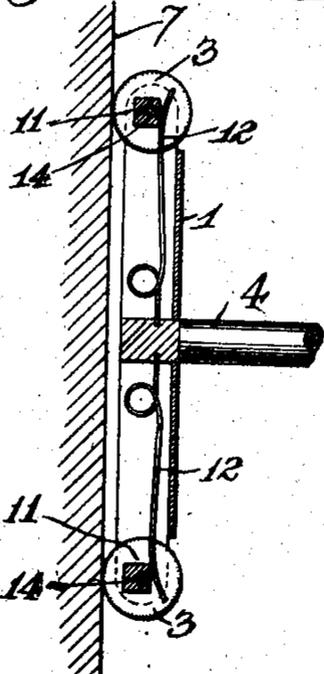


Fig. 4,

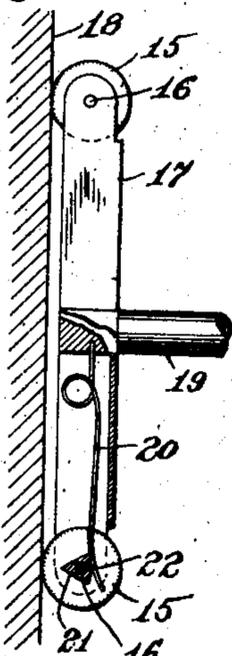


Fig. 6,

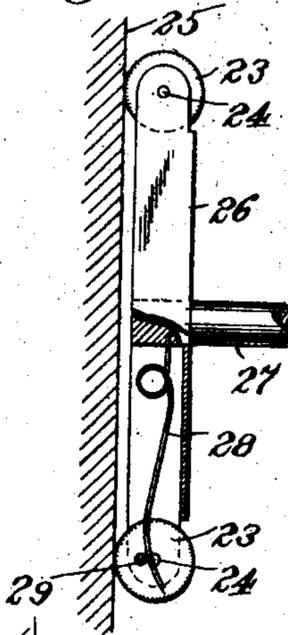


Fig. 8,

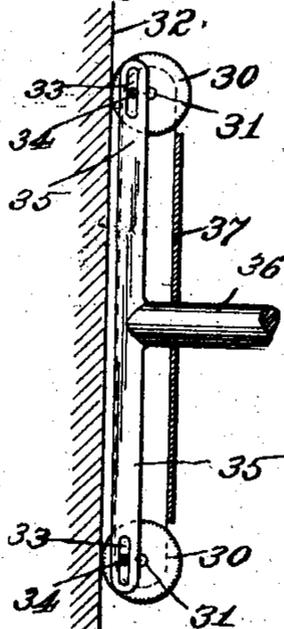


Fig. 3,

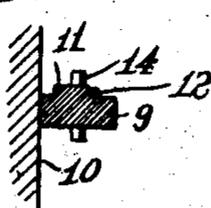


Fig. 5,

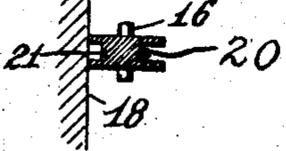


Fig. 7,

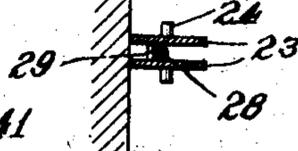
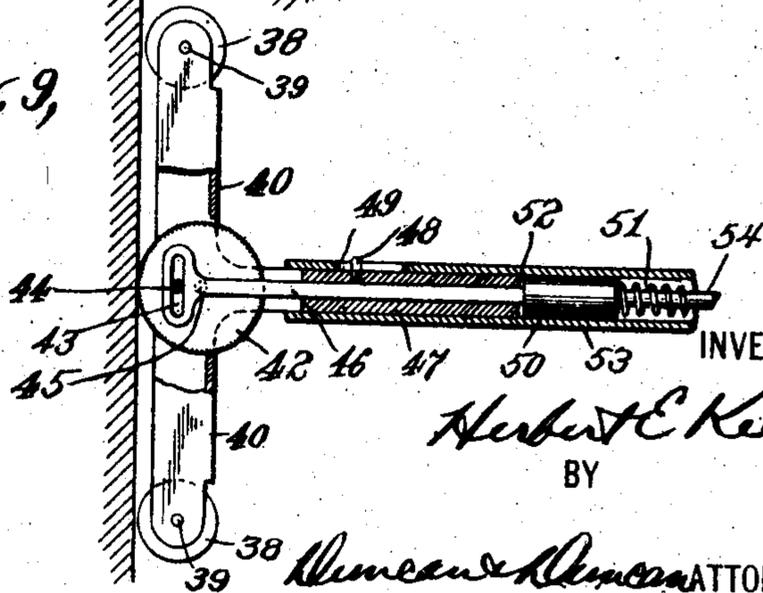


Fig. 9,



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CURTAIN-FIXTURE.

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To all whom it may concern:

Be it known that I, HERBERT E. KEELER, a citizen of the United States, and a resident of New York city, in the county and State of New York, have invented certain new and useful Improvements in Curtain-Fixtures, of which the following is a specification, taken in connection with the accompanying drawings, which form a part of the same.

10 This invention relates to curtain-fixtures, and relates especially to curtain-fixtures such as are employed in railway-cars and serve to securely hold a spring-actuated curtain in any desired position.

15 In the accompanying drawings, showing illustrative embodiments of this invention, and in which the same reference-numeral refers to similar parts in the several figures, Figure 1 is a front view, partly in section, 20 showing one embodiment of this invention applied to a curtain. Fig. 2 is a detail sectional view, on a larger scale, showing one form of shoe used in this curtain-fixture. Fig. 3 is a transverse sectional view of a 25 guide-roll used therein. Fig. 4 is an enlarged view of another form of shoe. Fig. 5 is the corresponding transverse sectional view of the guide-roll. Fig. 6 shows still another form of shoe, and Fig. 7 the corresponding 30 guide-roll in transverse section. Fig. 8 shows another form of shoe, and Fig. 9 shows still a further modified embodiment of this invention.

35 In the illustrative embodiments of this invention shown in the drawings the window-frame 10 is indicated as provided with suitable guideways, which may be in the form of open grooves. The constantly-acting spring-roller 55 is mounted at the top of the win- 40 dow-frame and carries the curtain-tube, which is preferably provided at its lower end with a suitable weighting-bar 56 sufficiently heavy to substantially counterbalance the pull of the spring-roller in connection with 45 the weight of the other parts attached to the curtain. The hollow curtain-stick 9 is also securely fastened in the curtain adjacent its lower end, and the shoes 1 are preferably mounted on either side of the curtain so as to 50 reciprocate with respect thereto. This may be accomplished by mounting the spindles 4, secured to these shoes, in a suitable opening in the hollow curtain-stick. A suitable pin 6 may be employed to limit the extent of re-

55 ciprocation of the shoes by operating in a slot in the curtain-stick, and a spring 5, indicated as bearing upon one of the spindles 4, operates to force the shoes apart and into proper engagement with the guideways. If 60 desired, a suitable rod 13 may be secured to the spindle and pinch-handles 8 of usual construction secured to the inner ends of these 65 two rods so that the shoes may be manually retracted, which may be of advantage in some cases. These shoes are provided with 70 guiding members which may be forced into proper engagement with the guideways in any desired way. Rotating guiding mem- 75 bers may be used in the shoes and should preferably be formed with gripping treads so as to engage the guideways substantially 80 without slip and be rotated thereby. These rotating guiding members may, as indicated in Fig. 1, be in the form of circular guide-rolls 3 and may be mounted to rotate concentric- 85 ally with respect to the pivot 14, which may of course be rigidly secured either in the guide-roll or in the shoe itself, which may take the form of a metallic casing, as indicated.

80 A suitable retainer 11 is indicated as secured to the guide-rolls, and this retainer, as indicated in Figs. 2 and 3, is in the form of a non-circular substantially polygonal and ec- 85 centrically-located integral portion of the guide-roll itself and located at one side of the roll. This retainer may be engaged by a 90 suitable holding member, which preferably engages it under spring-pressure, so as to retard the rotation of the retainer and guide- 95 roll, especially when engaging the low parts or flat places of the retainer. The holding member may take the form of a suitable spring 12, secured in the casing in any suit- 100 able way, such as by forcing the end of the spring firmly into an aperture in the spindle and soldering the parts, if necessary, so that this spring bears upon the retainer, as indi- 105 cated. The guide-roll or other guiding member at the opposite end of the shoe may be in the form of a freely-rotating guide-roll, as indicated in Fig. 1, or in the form of a corre- 110 spondingly-restrained guide-roll provided with a retainer and holding member, as indicated in detail in Fig. 2, in which case the 115 two guide-rolls cooperate and naturally remain substantially in phase, the greatest holding power occurring at substantially the

position indicated in Fig. 2, when both holding members are indicated as engaging the retainers at substantially their lowest points. It is of course apparent that it is not necessary that the retainers and holding members have an absolute locking action, and, indeed, the form indicated in Fig. 2 readily allows the rotation of the guide-rolls when the curtain is moved manually in adjusting position so as to yieldably retain the guide-rolls in position. The retainers, however, tend to hold the shoe in adjusted position, the holding power being accentuated whenever the retainers are engaged at their low points or flat places by the holding members. The force with which the holding members engage the retainers is of course adjusted to give the desired amount of holding power, and, as stated, the force with which the guide-rolls are pressed against the guideways is preferably such as to prevent any substantial slip between the treads of the rolls and the guideways under normal conditions of operation when the fixture is level.

It is not necessary in all cases to have the retainer eccentrically located with respect to the guide-roll. Fig. 4 indicates a construction in which the non-circular substantially polygonal retainer 21 is located substantially centrally with respect to the guide-roll 15, its concentric pivot 16 passing through the pivot-opening 22. The tread of this guide-roll may of course be given such holding power by corrugating it or by forming it of material of sufficiently gripping character so as to properly engage the guideway 18. The holding member 20, mounted within the shoe 17, is forced against the retainer 21 by spring action and exerts a maximum holding power when engaging the flat places of the retainer, so that the shoe has a maximum holding power at such points. The retainer 21 may be located substantially in the center of the guide-roll, as is indicated in Fig. 5, or, if desired, it may be located on one side of the guide-roll, as indicated in Fig. 3. Any desired number of such rotating guiding members or guide-rolls may be mounted in a single shoe. Two guide-rolls of similar construction may be mounted at either end, or, if desired, a freely-rotating guide-roll may be mounted in the other end of the shoe 17.

If desired, the retainer may be given a substantially circular form and may be mounted eccentrically with respect to the guide-roll, as is indicated in Figs. 6 and 7, the retainer 29 in that instance being in the form of a substantially circular pin or stud eccentrically located in the guide-roll 23, which, as indicated, may be provided with concentric pivots 24, engaging the casing. A suitable holding member 28, which may have a spring action, is shown as engaging this retainer and operates to cause a maximum holding power

in substantially the position indicated, this retainer and holding member being located intermediate the two parts of the guide-roll 23, as shown in Fig. 7. The guiding member 23, located in the upper end of the shoe 26, may, if desired, have a similar construction and similarly engage the guideway 25 and exert the holding power in connection therewith.

It is not necessary in all cases to have the shoe-spindle rigidly connected with the shoe-casing. In Fig. 8 the shoe-casing 37, in which the guide-rolls 30 are indicated as concentrically mounted by means of the pivots 31, is indicated as loosely engaging the spindle 36, which may be mounted in the opening in the hollow curtain-stick, as described. This spindle carries at its outer end the cross-head 35, which is provided at either end with suitable slots 33, in which the eccentrically-located retainers 34 operate. If the shoe-spindles are forced apart, the guide-rolls are naturally forced into proper engagement with the guideway 32 by means of the cross-head, which also exerts a definite holding power at intervals when it engages the retainers at their low points—that is, at the points nearest the tread of the guide-rolls to which they are connected. The amount of eccentricity of retainers of this character is of course adjusted so as to give the proper holding power and also to allow the device to operate with the desired smoothness of action.

In many cases it is sufficient to have a single rotating-guiding member in each shoe provided with retainers and holding members, and, if desired, such guiding member may be located adjacent the center of the shoe, as indicated in Fig. 9. In that case the guide-roll 42, having a gripping tread, is mounted to rotate concentrically about its pivots 45, which engage the shoe 40. The outer ends of this shoe may, if desired, be provided with other guiding members of any desired character, and freely-rotating guide-rolls 38 may be mounted on the pivots 39 in the ends of the shoe so as to have an antifrictional action in connection with the guideway 41. The shoe 40 is indicated as secured to the shoe-spindle 47, mounted within the hollow curtain-stick 53 and retained therein by the pin 48, which operates in a suitable slot 49, so as to allow the desired freedom of movement between the parts. The holding member 46 is shown as spring pressed under the action of the spring 51, engaging the plunger 50, and the outer end of this holding member may be provided with a suitable slot 43 to engage the eccentrically-located retainer 44. Under these conditions the spring-pressed holding member forces the guide-roll 42 into an operative engagement with the guideway and the retainer is given sufficient eccentricity to produce the desired

holding power under operative conditions. The holding member also holds the shoe 40 in operative position in relation to the guideway, although, if desired, the rod 54, connected with the usual pinch-handle, may be operated to retract the shoe.

Having thus described this invention in connection with several illustrative embodiments thereof, to the details of which I do not desire to be limited, what is claimed as new, and what it is desired to secure by Letters Patent, is set forth in the appended claims:

1. In curtain-fixtures, a substantially counterweighted spring-actuated curtain, 15 guideways adjacent said curtain, a hollow curtain-stick in said curtain, shoes-secured to spindles mounted in said curtain-stick, pinch-handles connected to said shoes to retract the same, means to force said shoes apart and 20 rotating guiding members mounted in said shoes having non-circular polygonal retainers secured thereto and cooperating holding members engaging said retainers under spring action to retain the guiding members and shoes in adjusted position.

2. In curtain-fixtures, a spring-actuated curtain, shoes mounted in said curtain to reciprocate with respect thereto, means to force said shoes into operative engagement with 30 guideways and rotating guiding members in said shoes provided with non-circular eccentrically-located retainers and holding members pressing against said retainers to retain said guiding members and shoes in adjusted position.

3. In curtain-fixtures, a spring-actuated curtain, shoes mounted in said curtain, rotating guiding members in said shoes provided with eccentrically-located retainers 40 and holding members pressing into engagement with said retainers to retain said guiding members and shoes in adjusted position.

4. In curtain-fixtures, a spring-actuated curtain, shoes mounted in said curtain, rotating guiding members in said shoes provided with non-circular retainers and holding members pressing into engagement with said retainers to retain said guiding members and shoes in adjusted position.

5. In curtain-fixtures, a shoe comprising a rotating guiding member provided with a non-circular eccentrically-located retainer and a holding member pressing into cooperation with said retainer to yieldably retain 55 said guiding member in position.

6. In curtain-fixtures, a shoe comprising a rotating guiding member provided with a non-circular substantially polygonal retainer and a holding member pressing against said 60 retainer to yieldably retain said guiding member in position.

7. In curtain-fixtures, a shoe comprising a rotating guiding member provided with a non-circular retainer and a holding member

pressing into engagement with said retainer 65 to yieldably retain said guiding member in adjusted position.

8. In curtain-fixtures, a shoe comprising a rotating guiding member provided with an eccentrically-located retainer and a holding 70 member pressing into engagement with said retainer to yieldably retain said guiding member in position.

9. In curtain-fixtures, a shoe comprising a plurality of separated rotating guiding members provided with non-circular retainers 75 and holding members engaging said retainers and yieldably retaining said guiding members in position by spring action.

10. In curtain-fixtures, a shoe comprising 80 a plurality of separated rotating guiding members provided with eccentrically-located retainers and holding members engaging said retainers and yieldably retaining said guiding members in position by spring action. 85

11. In curtain-fixtures, a shoe comprising a concentrically-pivoted guide-roll provided with a non-circular retainer and a holding member cooperating with said retainer and yieldably retaining said guide-roll in position 90 by spring action.

12. In curtain-fixtures, a shoe comprising a concentrically-pivoted guide-roll provided with an eccentrically-located retainer and a holding member cooperating with said re- 95 tainer to yieldably retain said guide-roll in position by spring action.

13. In curtain-fixtures, a shoe comprising a concentrically-pivoted guide-roll provided with a substantially polygonal retainer and a holding member cooperating with said re- 100 tainer and yieldingly retaining said guide-roll in position.

14. In curtain-fixtures, a shoe comprising a plurality of separated rotating guiding 105 members provided with eccentrically-located retainers and holding members engaging said retainers and having spring action between said retainers and said shoe to yieldingly retain said guiding members in position. 110

15. In curtain-fixtures, a shoe comprising a concentrically-pivoted guide-roll provided with an eccentrically-located retainer, a holding member cooperating with said retainer and having a spring action between said re- 115 tainer and said shoe to yieldably retain said guide-roll in position.

16. In curtain-fixtures, a shoe comprising a rotating guiding member provided with an eccentrically-located retainer and a holding 120 member cooperating with said retainer and having spring action between said retainer and said shoe to yieldably retain said guiding member in position.

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Witnesses:

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