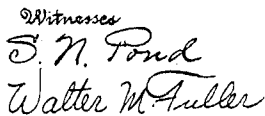


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Patented Mar. 1, 1910.

2 SHEETS—SHEET 1.

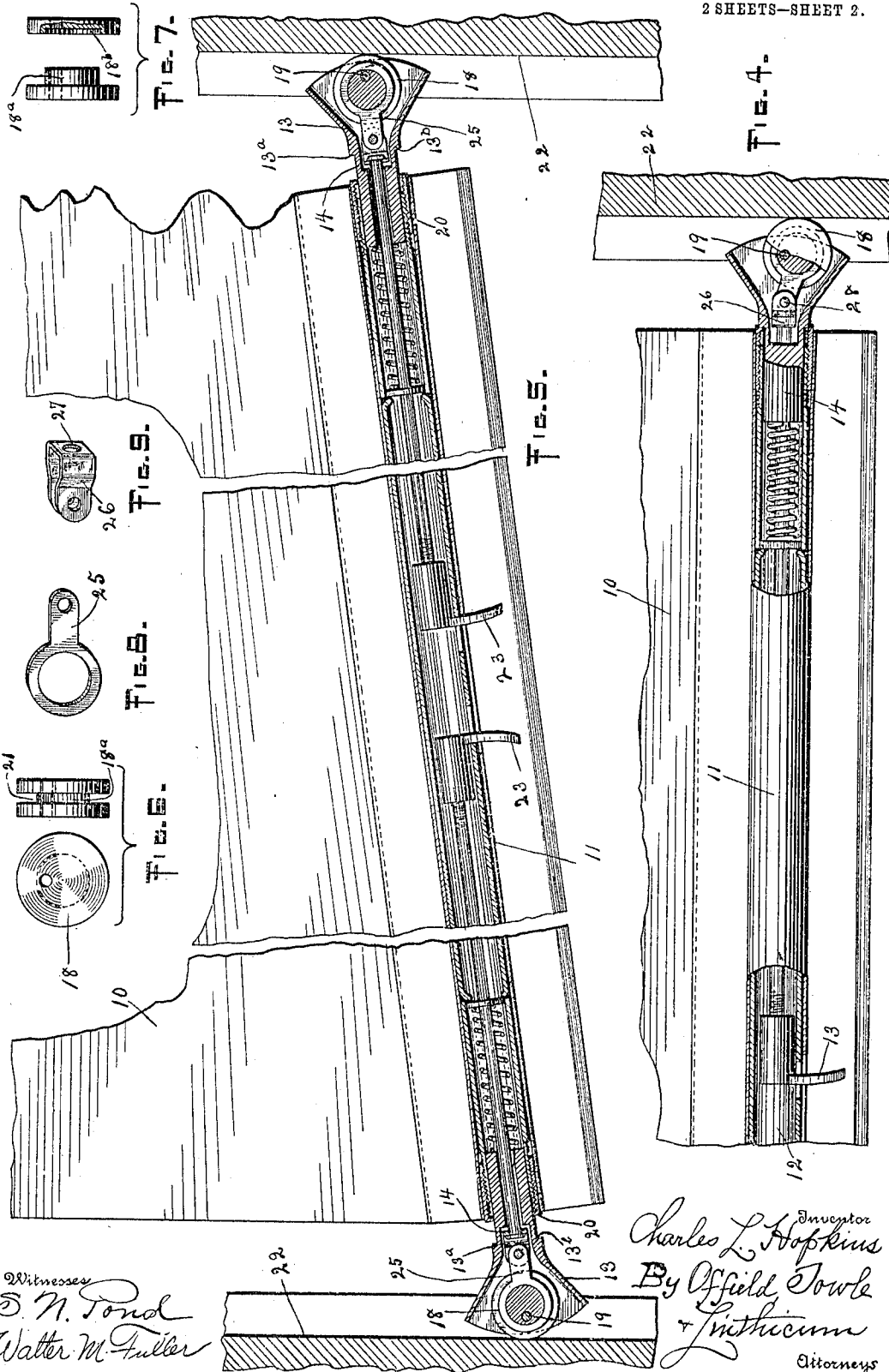


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2 SHEETS—SHEET 2.

950,622.



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UNITED STATES PATENT OFFICE.

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CURTAIN-FIXTURE.

950,622.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES L. HOPKINS, a citizen of the United States, residing at 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 improvements in that class of devices which are adapted to be secured to a spring-actuated curtain, at or near the lower edge of the latter, to guide the same in its movement and hold it at any desired point of adjustment against the tendency of its spring roller to draw it up.

More particularly, this invention relates to that class of curtain guiding and holding devices, wherein is employed a stick carried by the curtain, preferably in a pocket formed of the material of the curtain, said stick having at its ends heads adapted to move in grooves in the window-frame, and provided with means, carried by the heads, for holdingly engaging the bottoms of the grooves.

The object of the present invention is to provide a device of this class which securely holds the curtain against the pull of its spring roller, which is capable of maintaining the lower margin of the curtain in alignment with the roller, which automatically rights itself after being forced into an inclined position and left in such position, and which will not creep up or down under the influence of the vibration to which such devices are subjected when employed upon curtains for street and railway cars.

In the drawings accompanying this specification,—Figure 1 is a broken elevational view, partly in section, of one end of my improved curtain fixture and a fragment of a curtain. In this figure the fixture is shown out of the groove with the heads thrust out and the holding cams drawn in, relatively to the head, as hereinafter explained. Fig. 2 is a broken view of the lower portion of a curtain fitted with my invention, the fixture being shown in longitudinal section. In this view, the parts of the device are shown in their normal positions, the curtain tending to move upward but restrained by the fixture. Fig. 3 shows, in section, one end of the device, the holding cam being drawn in to release the curtain by the pressing together of the pinch-handles. Fig. 4 shows, partly in section, one end of the device when

the curtain is drawn down as far as the fixture will permit without the handles being pressed together. Fig. 5 is a view similar to Fig. 2, but shows the device after the latter has been forced into an inclined position and before it has righted itself. Fig. 6 shows, on an enlarged scale, in side and edge elevation, the preferred form of holding-cam used in this fixture. Fig. 7 shows the same separated into its component parts. Figs. 8 and 9 are perspectives, on an enlarged scale, of small parts used in the device.

In the several figures of the drawings, 10 is the curtain, having the usual pocket 11, in which is arranged the tubular stick 12. At each end of the stick 12 is a head 13, having a cylindrical stem 14 arranged to slide in the end of the stick 12. The head is outwardly spring-pressed by a light spring 15, which is seated against a washer 16, the latter abutting against the inturned tongues 17 within the stick. Within the head 13 is arranged an eccentrically-pierced roller or wheel 18, adapted to turn, through a portion only of a complete revolution, on the pin 19, and to act as a cam member for holding the curtain by engagement with the window casing, in the manner hereinafter explained.

At each end of the tubular curtain-stick 12 is a sleeve 20, this sleeve being interiorly screw-threaded and adapted to screw on to the end of the stick 12 which is exteriorly provided with corresponding threads. These sleeves 20 are preferably of brass or similar material and conceal the ends of the iron tube 12, thus lending attractiveness to the appearance of the device. Their chief purpose, however, is to serve as adjustable stops for limiting the inward movement of the heads 13, the latter being provided with shoulders 13^a and 13^b adapted to abut against the outer ends of the sleeves 20 when the heads are moved inwardly.

Before proceeding to a further description of the mechanism of the device, attention is called to Fig. 2, in which the device is shown in its normal or holding position. It will be seen that the thrust of the springs 15 against the inner ends of the stems 14 of the heads 13 tends to keep the cams 18 in contact with the window-frame 22, and that the upward tendency of the curtain, under the influence of its spring roller (which is of the continuously-acting type), must cause the cams 18 to turn upon their pivots 19.

When the device is placed in position and released the heads are first thrust out by the springs 15 until the cams 18 bear upon the window-frame, whereupon these cams begin to rotate, thereby forcing the heads 13 inwardly against the tendency of the springs to force them outwardly.

Heretofore a curtain-fixture has been used wherein an eccentrically-mounted wheel was arranged to engage the window-frame and to roll along the same during adjustment of the curtain. In said device the heads carrying the wheels were backed by powerful springs adapted to normally prevent rotation of the wheels by forcing the centers of rotation of said wheels toward the window-frame, the device being thus restrained and prevented from moving along the window-frame. The device herein shown is to be distinguished from said earlier device in that it is an essential feature of the present invention that the springs be sufficiently yielding to permit the heads to be forced inwardly until these heads engage suitable stops provided for limiting their inward movement. As shown in the drawings, the sleeves 20 constitute such stops. The holding power of the device is, therefore, derived from cam action rather than from the power of a spring, the spring merely serving to hold the cams in contact with the window-frame.

For the purpose of releasing the device and permitting adjustment of the curtain to any desired position, I provide means for retracting the cams out of engagement with the window-frames by rotating them inwardly upon their pivots. Said means may comprise the familiar pinch-handles 23 secured to the inner ends of the rods 24, the outer ends of which are connected with the cams in a manner to be described.

For convenience in assembling the parts of the device, each cam 18 is preferably constructed in two portions or halves, as shown in Fig. 7, one of these portions being formed with a hub-like projection 18^a adapted to be inserted into a shallow recess 18^b in the other half of the wheel. When these halves are fitted together they form a wheel or roller having a groove 21 extending therearound, as shown in Fig. 6. A link member 25 (shown detached in Fig. 8) is slipped on to the hub 18^a before the halves of the roller 18 are put together. Upon the end of the rod 24 is a yoke member 26, which is perforated at 27 to receive the end of the rod 24, the latter being headed, as shown in Figs. 2, 3 and 5 to prevent its withdrawal from the opening 27. The yoke member 26 is pivotally secured to the link 25 by a pin 28.

To release the device from holding engagement with the window-frame, the handles 23 are pressed together causing the cams to rotate backwardly upon their pivots to the position shown in Fig. 3. The curtain

may now be adjusted vertically to any desired position. Upon releasing the handles 23, the heads 13 will first be projected outward by the springs 15 until the cams engage the window-frame. The curtain will then begin to ascend, the cams will turn slightly on their pivots, and the heads will be thrust inward until the shoulders 13^a and 13^b engage the outer ends of the sleeves 20. The curtain and its holding device are now securely locked in position and cannot creep up under any amount of vibration. If it be attempted to adjust the curtain by placing the hand beneath the fixture at a point about midway between its ends and thrusting upward, the cams will be simply moved into firmer holding engagement with the window casing, and the fixture will refuse to move. If, however, an extremely strong upward thrust be given, the cams will slide along the window-frame, thus saving the device from becoming broken by excessively rough handling. This is due to the fact that the cams are pivoted at points considerably removed from their centers of form, and also to the fact that there are no springs or other means provided tending to turn the cams into holding position, the springs 15 merely thrusting the cams bodily toward the window frame, and exerting this thrust through the pins 19 upon which these cams are pivoted.

If the device be grasped near the middle of the stick and a downward pull be given without pressing the handles, the device will descend readily for a short distance, or until the cams have turned to the position shown in Fig. 4, when the device will be locked against further movement. Upon being released from the hand of the operator, the device will ascend a short distance, under the influence of the spring-roller, until the parts are in the positions shown in Fig. 2, when the device will be locked against further upward movement.

If the hand be placed under the stick at one end of the same and an upward thrust be given, so as to slide the cam at that end of the device along the window-frame and tilt the stick into a slightly inclined position, the hand being then removed, the device will not remain in such inclined position, as is the case with many of the holding devices used upon curtains. The pull of the spring curtain-roller is now exerted wholly upon the straight or taut edge of the curtain, as is well understood, tending to raise the lower end of the device, while the weight of the latter tends to cause the raised end of the same to fall. The resultant of these forces is the instant self-righting or leveling of the device when the hand is removed therefrom, the cam rotating to permit this.

If the device is placed in the grooves of

the window frame in such an extremely inclined position as that shown in Fig. 5, so that the heads 13 are extended, or if the device be forced into such a position by pushing up one end thereof and drawing down the other end, the action of the fixture in self-righting may be explained as follows: By reference to Figs. 2 and 5, it will be seen that the heads 13 are limited in their movement outwardly by the pendants 23 coming into engagement with the ends 30 of the slots 31 through which the pendants project. As these pendants are connected with the cams 18, and as the springs 15 thrust against the heads 13, instead of against the rods 24 as in some older devices, it will be seen that the cams must be drawn back relatively to the heads, when the heads are projected outward by these springs. With the device in the position shown in Fig. 5, the cams will therefore be presented to the window-frame with their low sides toward the latter. The upward pull of the roller exerted upon the lower (in this case left-hand) end of the fixture, combined with the tendency of the opposite end of the device to fall by gravity, will cause the cams to roll, one upwardly and the other downwardly, along the window-frame, the heads 13 being at the same time forced inward. As soon as the fixture attains a horizontal position a slight upward movement of the device, under the influence of the spring curtain-roller, causes the cams to become set in the holding position, and the curtain is restrained against further upward movement.

I claim as my invention:—

1. In a curtain fixture, the combination of a stick, a head slidable in said stick, means tending to thrust said head outwardly, a stop limiting the inward movement of said head, a cam mounted in said head so as to engage the window frame and adapted when moved along said frame when the stick travels relatively to said frame, to turn on its axis and thrust the head inwardly against said stop, such stop limiting the inward movement of the head to an amount less than the maximum amount of inward movement capable of being effected by the cam, and means for turning said cam on its axis to withdraw it from engagement with the window frame, substantially as described.

2. In a curtain fixture, the combination of a stick, a head slidable in said stick, means tending to thrust said head outwardly, a cam mounted in said head so as to engage the window frame, and adapted to turn on its

axis and thrust the said head inwardly when moved along said frame, a stop limiting the inward movement of the head to an amount less than the maximum amount of inward movement capable of being effected by the cam, and means limiting the outward movement of the head and adapted to withdraw the cam from engagement with the window frame, substantially as described.

3. In a curtain fixture, the combination of a stick, a head slidable in said stick, means tending to thrust said head outwardly, a cam mounted on said head so as to engage the window frame, and adapted when moved along said frame as the stick travels relatively thereto, to turn on its axis and thrust the head inwardly, a stop limiting the inward movement of the head to an amount less than the maximum amount of inward movement capable of being effected by the cam, a pendant, and connections from the cam to said pendant whereby the position of the cam and head may be controlled, substantially as described.

4. In a curtain fixture, the combination with a stick, of a head at the end of the stick, a cam pivoted in said head, spring means tending to move said head and cam toward the window frame, a stop limiting the inward movement of the head against the tendency of said spring means to an amount less than the maximum amount of inward movement capable of being effected by said cam, and manually operable means for rotating said cam about its pivot whereby to release its holding effect upon the window frame, substantially as described.

5. In a curtain fixture, the combination with a stick, of a head at the end of the stick, a peripherally grooved wheel eccentrically pivoted in said head, spring means tending to move said head and wheel toward the window frame, an adjustable stop on the end of the stick in all positions limiting the inward movement of the head to an amount less than the maximum amount of inward movement capable of being effected by the eccentricity of said wheel, an eccentric strap engaging the peripheral groove of said wheel, and manually operable means connected to said eccentric strap for rotating said wheel about its pivot whereby to release its holding effect upon the window frame, substantially as described.

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