

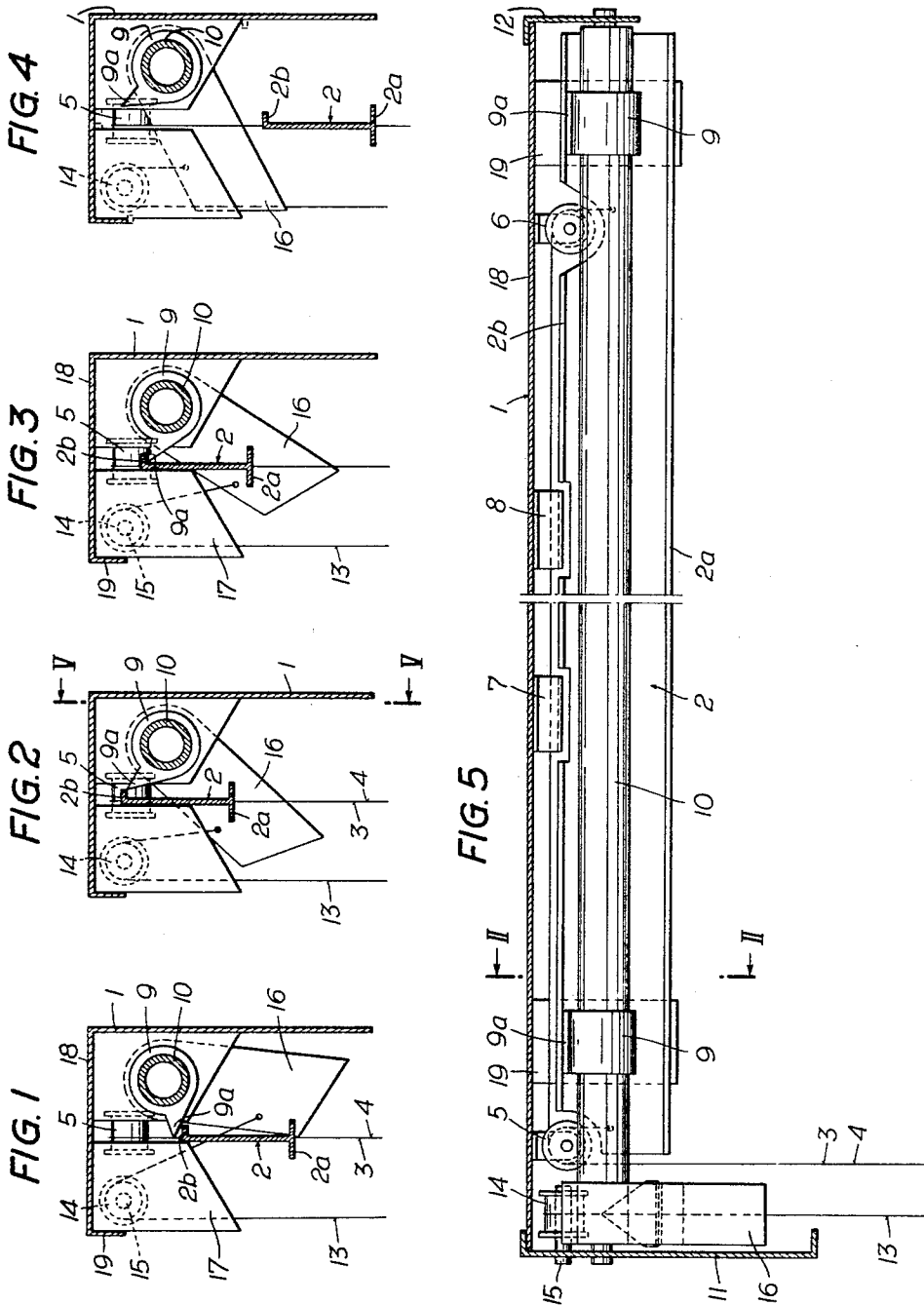
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CURTAIN SUSPENDING MECHANISM

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CURTAIN SUSPENDING MECHANISM

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ABSTRACT OF THE DISCLOSURE

A curtain suspending mechanism according to which a curtain rod can be raised and lowered. The curtain rod has a flat web which engages an abutment means when the curtain rod is in its upper position. A rotary wedge means presses the web of the curtain rod against the abutment means to hold the curtain rod in its upper position. This rotary wedge means has an outer tip which is movable along a path which at its nearest point to the abutment means is situated from the latter by a distance less than the thickness of the web so that the tip of the wedge means can press the web of the curtain rod against the abutment means. A weight urges the tip of the wedge means against the web of the curtain rod and a manually operable means acts on the weight to turn the rotary wedge means in opposition to the force of the weight so as to release the curtain rod for downward movement when desired.

This invention relates generally to curtain suspending mechanism, and in particular to a curtain rod which is detachably mounted on a valance.

Valances are known which are permanently affixed to a curtain rod which carries the curtain. To replace the curtain, the latter has to be secured to or detached from the rod when the same is in position above the window. It is often necessary to employ ladders or the like, in order to fasten the curtain properly onto the curtain rod. This procedure is sometimes dangerous, because the ladder may slip or fall, and cause injury to the person trying to fasten the curtain to the rod.

In order to eliminate the above mentioned hazards, it is an object of the invention to provide a curtain rod which is automatically detachably securable to the valance, thus eliminating the inconveniences when mounting a curtain on the curtain rod.

It is a further object of the instant invention to dispose the curtain rod on the valance in such a way that the rod may be lifted and lowered in a horizontal fashion. For this purpose the valance is provided with a clamping cam wedge or a similar retaining member for retaining the rod in its upper position, and a pulling rop or a similar operating means is provided for moving the retaining member in a releasing sense, so that the rod may be lowered from time to time.

In accordance with the invention the curtain suspending mechanism includes a curtain rod which has an elongated flat web of a given thickness. A support means, which forms a part of a valance, for example, carries an abutment means which is located at the elevation of the curtain rod when the latter is in its upper positions, and this abutment means is directly engaged by the web of the curtain rod when the latter is in its upper position. At the side of the web which is opposite from the abutment means there is a rotary wedge means which engages

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and presses against the web so as to hold the latter against the abutment means and thus retain the rod in its upper position. This rotary wedge means has an outer tip movable along a path which at its nearest point to the abutment means is situated from the latter by a distance less than the thickness of the web, so that in this way the tip of the rotary wedge means can engage the press against the web to press the latter against the abutment means. The axis of rotation of the wedge means is parallel to the web. An urging means coacts with the rotary wedge means for urging the tip of the latter into engagement with the web of the curtain rod so as to press the latter against the abutment means, and this urging means preferably takes the form of a counterweight with which a manually operable means coacts for the purpose of turning the rotary wedge means in opposition to the force of the counterweight to release the curtain rod for downward movement.

For a better understanding of the invention, its operating advantages and the specific objects attained by its use, reference should be had to the following description in connection with the accompanying drawings in which:

FIG. 1 is a semi-diagrammatic side view, shown partly in vertical section, of a construction according to the invention;

FIG. 2 is a cross-section taken on the line II—II of FIG. 4;

FIGS. 3 and 4 are side views similar to those shown in FIGS. 1 and 2, showing the parts of the construction in different positions; and

FIG. 5 is a vertical section taken on the line V—V of FIG. 2.

Referring now to the drawings, there is shown a valance 1 which carries, concealed behind it near its top, a curtain rod 2 which, in turn, supports a curtain, or curtains (not shown) in usual manner. A short vertical back projection 19 extends downwardly opposite to the outer concealing portion thereof. According to the invention, the curtain rod 2 is held in horizontal position when concealed behind valance 1, and is lifted and lowered in its horizontal position by an apparatus which will now be described.

A pair of elevating and lowering cords 3 and 4, each have one end adjacent the floor when the curtain rod 2 is in elevated position. Because the two cords are immediately next to one another and are operated together as a unit, they are illustrated in the drawings by a single line.

Cord 3 extends upwardly near one end of valance 1 over a horizontal guide roller 5 positioned within and near the top and one end of the valance and downwardly to a point where its other end is connected to the curtain rod. The elevating and lowering cord 4 extends upwardly next to the other cord 3, and over guide roller 5, whence the cord extends horizontally through horizontal guide members 7 and 8, to and over a second guide roller 6 and downwardly, having its other end connected to the curtain rod. Thus, by pulling downwardly upon both elevating and lowering cords, the curtain rod may be lifted in horizontal position to its uppermost position behind the valance. With the curtain rod released from its uppermost position, its weight will force it downwardly, and cords 3 and 4 may be used to retard its downward movement and to keep the curtain rod in hori-

zontal position. Clearly, the lower portions at cords 3 and 4 may be suitably connected in order to insure that they move together and keep the curtain rod always in horizontal position.

The curtain rod 2 is in the form of an elongated flat web having a lower flange 2a extending at right angles thereacross and an upper lip 2b extending at right angles only on one side thereof. In the embodiment illustrated, the curtain rod is retained in its uppermost position by a rotary wedge means formed by a pair of horizontally spaced rotary wedge cams 9 fixed to a horizontal shaft 10 which is turnably mounted in and carried by a support means which includes vertically positioned members 11 and 12 at opposite ends of valance 1 and at right angles to the direction of its horizontal extent. A tip 9a is formed on the holding cam 9 for engaging upper flange or lip 2b of curtain rod 2, so that horizontal shaft 10 may be rotated to cause the lip to wedge against and hold the curtain rod in its uppermost position, as described in greater detail below. For a reason which will later appear, it is preferred that the lower surface of the tip extend tangentially of the horizontal shaft 10.

The horizontal shaft 10 is rotated by a manually operable means including a shaft rotating cord 13 which extends vertically with one end thereof in a position accessible to one standing before the curtain. The shaft rotating cord passes over a roller 14 rotatably mounted on a second horizontal shaft 15 which is carried by the vertically extending member 11. From roller 14 the shaft-rotating cord 13 extends downwardly at an angle to the vertical, and its other end is attached to a counterweight 16 fixed to the first-named horizontal shaft 10 and forming an urging means for urging the wedge means into pressing engagement with the web of the curtain rod to press the latter against abutment means referred to below. Thus, by pulling the shaft rotating cord 13 the horizontal shaft 10 is rotated in a clockwise direction.

Abutments 17 form the above mentioned abutment means and are carried by the support means which include the uppermost part 18 of valance 1 and a downwardly extending flange thereof in positions on the opposite side of the position of the curtain rod, when, in its uppermost position from those of the holding cams. Tips 9a are of such length that when they lock the curtain rod behind the valance (see FIG. 3) they will cause the rod to bear against the abutments.

Operation of the apparatus is as follows:

The elevating and lowering cords 3 and 4 are pulled downwardly to elevate curtain rod 2 to a position behind valance 1. The counterweight 16 initially projects downwardly from the horizontal shaft 10 under the influence of gravity, and tips 9a extend to the left as viewed in FIGS. 1, 2 and 3 and 4. As the curtain rod is elevated to the position illustrated in FIG. 1, the upper end of the rod web comes into contact with and slides at its rear surface along abutments 17 and upper lip 2b of the rod bears against the lower surface of tips 9a. As the curtain rod 2 is further elevated, it slides along abutments 17 which prevent it from being moved to the left, as viewed in FIGS. 1 to 4. At the same time the upper lip 2b slides along the adjacent face of tips 9a which, being tangential to the horizontal shaft 10, turn the shaft together with the counterweight with relative ease. See FIG. 2. Still further elevation of the curtain rod 2 permits the tips to be turned by counterweight 16 into contact and pressing engagement with the web of the rod beneath upper flange 2b. See FIG. 3. Thereupon, abutments 17 prevent the rod from being moved away from the prongs and the latter from being turned further by the counterweight in contra-clockwise direction. As is particularly apparent from FIGS. 1 and 3, the tip 9a of the rotary wedge means 9 describes a path which at its nearest point to the abutment means 17 is situated from the latter by a distance less than the thickness of the web of the rod 2, so that in this way it becomes possible for the counterweight 16 to hold the parts in the position of FIG. 3

where the tips of the wedges press the web of the curtain rod against the abutment 17. Curtain rod 2 is thus locked in position behind valance 1. It will be appreciated that the operations above described are entirely automatic, being dependent only on a downward pull executed upon the elevating and lowering cords 3 and 4.

Release of the locking action upon the curtain rod is very simply effected. By pulling upon the shaft rotating cord 13, the counterweight 16 is rotated in clockwise direction, as viewed in FIGS. 1 to 4. Rotation of the counterweight also rotates horizontal shaft 10, and with it the holding cams 9 in the same direction. Such rotation causes tips 9a to elevate the rod until the tips slide from under upper lip 2a and the curtain rod is released. It is then only necessary to allow the elevating and lowering cords to slide through the hand and thus retard downward movement of the rod.

The embodiment of the invention here described and illustrated is presented merely as an example of how the invention may be applied. Other embodiments, forms and modifications of the invention, coming within the proper scope of the appended claims, will of course suggest themselves to those skilled in the art.

What is claimed is:

1. In a curtain suspending mechanism, a curtain rod which is to be moved upwardly toward and downwardly from a given upper position, said rod having an elongated flat web extending longitudinally of the rod, abutment means located at the elevation of said rod when the latter is in its upper position and engaging one face of said web thereof, support means supporting said abutment means at said elevation, rotary wedge means carried by said support means at a side of said rod opposite from said abutment means, said rotary wedge means having an outer tip which during turning of said rotary wedge means describes a path located at its point nearest to said abutment means at a distance from the latter which is less than the thickness of said web, so that said tip of said wedge means can engage said web at a face thereof directed away from said abutment means to press said web against said abutment means, urging means coacting with said rotary wedge means for urging the latter to a position where said tip thereof presses said web against said abutment means, and manually operable means coacting with said rotary wedge means to turn the latter in opposition to said urging means to a release position releasing said rod for downward movement from its upper position.

2. The combination of claim 1 and wherein said rotary wedge means has a turning axis parallel to a plane in which said web is located.

3. The combination of claim 1 and wherein said urging means is in the form of a counterweight operatively connected to said rotary wedge means.

4. The combination of claim 3 and wherein said manually operable means is connected directly with said counterweight to turn the latter and said rotary wedge means therewith.

5. The combination of claim 1 and wherein said support means carries a pair of abutments situated on one side of and longitudinally spaced along said web when said rod is in its upper position, said rotary wedge means including a pair of coaxial rotary wedges respectively aligned with said pair of abutments, situated at the side of said web which is opposite from said abutments, and having outer tips which respectively engage said web to press the latter against said abutments.

6. The combination of claim 5 and wherein said rotary wedge means includes an elongated shaft which is common to and carries both of said rotary wedges.

7. The combination of claim 1 and wherein said rod has at an upper edge of said web thereof a lip directed away from said abutment means to engage said wedge means at said tip thereof for displacing said wedge means during upward movement of said rod means to its upper position to a location where said tip of said wedge means will ride over said lip and be placed by said urging means

in pressing engagement with said web to hold the latter
against said abutment means.

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