M. SHMIT & N. JAHN.

DROP CURTAIN.

APPLICATION FILED MAY 6, 1909.

1,068,011.

Patented July 22, 1913.

2 SHEETS—SHEET 1.

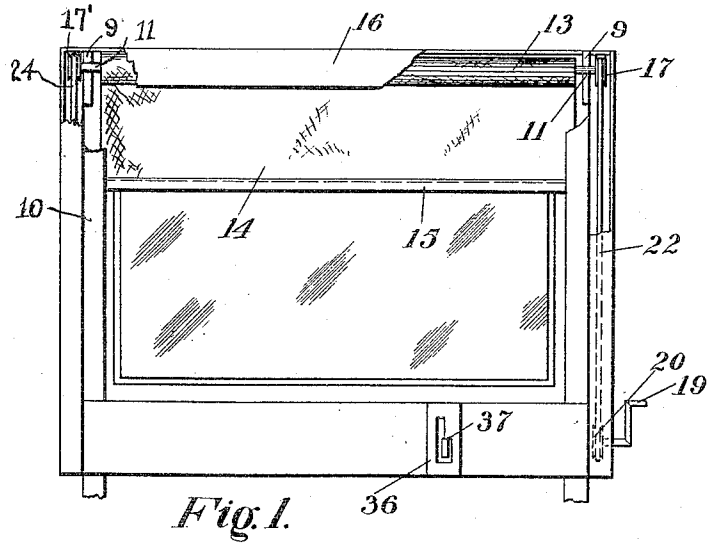


Fig. 1.

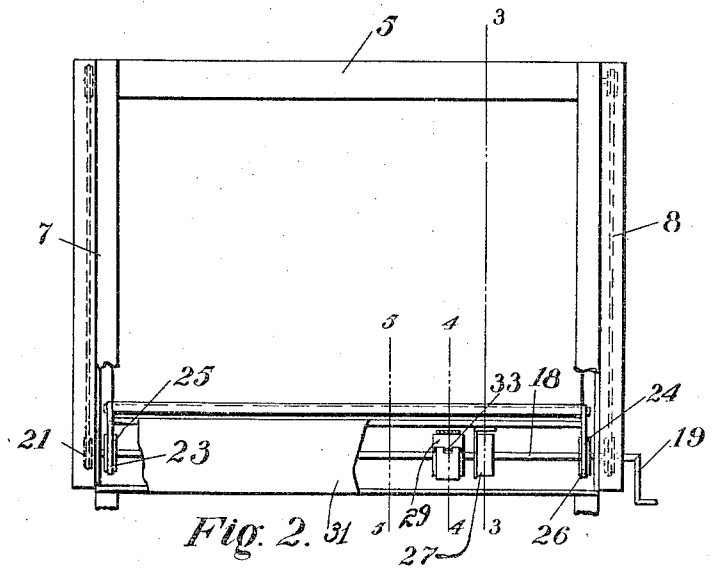


Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

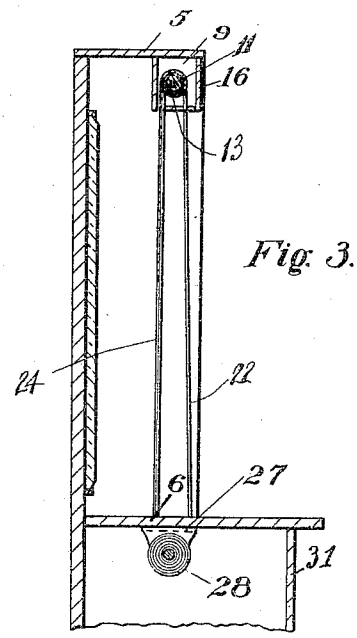


Fig. 3.

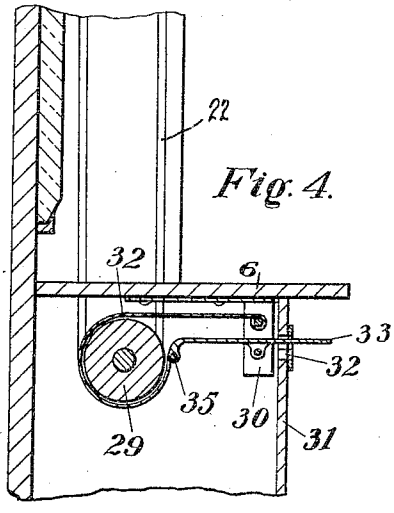


Fig. 4.

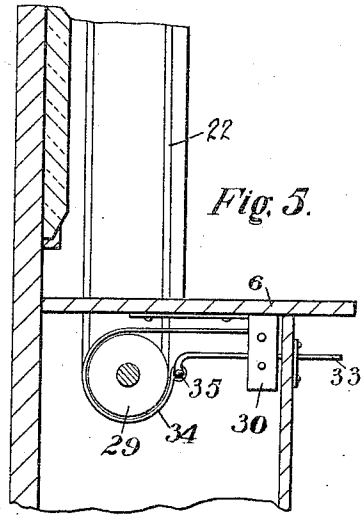


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

MARTIN SHMIT AND NICOLAUS JAHN, OF PERHAM, MINNESOTA.

DROP-CURTAIN.

1,068,011. Specification of Letters Patent. Patented July 22, 1913.

Application filed May 6, 1909. Serial No. 494,393.

To all whom it may concern:

Be it known that we, MARTIN SHMIT and NICOLAUS JAHN, citizens of the United States, residing at Perham, in the county of Ottertail, State of Minnesota, have invented certain new and useful Improvements in Drop-Curtains; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in curtains and has for its object the production of a device of that kind which may be used in connection with bars and display shelves in stores, the parts being so arranged that the curtain or screen may be lowered over the bars or shelves, when the room is being swept.

One object is the provision of a construction, which is adapted to roll the curtain automatically.

Another object is the provision of a construction wherein ropes and the like, are employed to operate the device, and will be hidden from view.

With these and other objects in view as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out and claimed, it being understood that various changes in the form, proportion, size and minor details of the device may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of the specification:—Figure 1 is a front elevation of the device showing a portion of the frame broken away and disclosing the curtain roller. Fig. 2 is a similar view showing the bottom of the frame broken away and disclosing the operating mechanism. Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 2. Fig. 4 is a similar view on the line 4—4 of Fig. 2. Fig. 5 is a similar view on the line 5—5 of Fig. 2.

Similar numerals of reference are employed to designate corresponding parts throughout.

As shown in the drawings the device consists of a frame which is formed of upper and lower sills 5 and 6 respectively and side sills 7 and 8.

Depending from the upper sill 5 of the frame and adjacent either end thereof are brackets 9 and journaled in these brackets are the opposite end trunnions 11 of a roller 13. The roller 13 is designed to have fixedly secured to it one end of a curtain 14 to be wound and unwound, said curtain being provided at its bottom with a batten 15. A depending strip 16 is disposed on the lower face and at the outer edge of the upper sill 5, and extends below the roller 13, whereby the latter is at all times hidden from view. The trunnion 11 extends through and beyond the bracket 9, and into the space between said bracket and the side sill 8 of the frame, and keyed to this end of the trunnion is a pulley or sheave 17.

Journaled adjacent the lower ends of the side sills 7 and 8, and directly beneath the roller 13 is a shaft 18, one end of which extends through the side sill 8 and is provided with a handle lever 19 by means of which it may be turned. Keyed to that portion of the shaft 18 adjacent the inner face of the side sill 8, is a sheave or roller 20, which is in a vertical plane with the sheave or pulley 17, and corresponds in size to the latter. The opposite end of the shaft 18, adjacent the side sill 7 is provided with a sheave or pulley 21, which is keyed thereto and this pulley lies in a vertical plane with a similarly formed pulley 17′ keyed to the trunnion 11 at that end of the roller remote from the sheave 17. As before stated, the upper or inner end of the curtain is fixedly secured to the roller 13, and the said curtain is of a length and width to completely seal the space between the upper sill 5 and the lower sill 6, and also the space between the side sills 7 and 8. A connection between the pulleys 17 and 20 is established by means of a cable or belt 22, and similar connection is established between the pulleys at the opposite ends of the shaft and roller. Thus it will be seen when the handle lever 19 is turned, that the curtain 14 will roll or unroll from the roller 13. The opposite ends of the curtain have secured thereto one end of straps 23 and 24 and keyed to the shaft 18 are a pair of rollers 25 and 26, to which are rigidly secured the opposite ends of the straps 23 and 24, respectively. It will be understood that the lengths of the straps

correspond to the length of the curtain so that when the latter is wound upon its roller the straps will be unwound from the rollers 25 and 26, and when the handle lever is turned so as to unwind or lower the curtain the straps 23 and 24 will be wound upon the rollers 25 and 26, as the curtain descends, whereby the curtain will descend straight and thus the straps will positively prevent any tendency of the curtain to wabble, or to wind upon its roller in an uneven fashion.

After the curtain has been lowered by the handle lever 19, and it becomes necessary to raise the curtain the following mechanism is employed for performing this operation automatically:—By referring now to Fig. 3 it will be seen that the lower face of the lower sill 6 is provided with a hollow casing 27, which surrounds the shaft 18, and disposed within this casing is a coil spring 28, one terminal of which is secured to the wall of the casing and the opposite terminal to the shaft 18, as clearly shown in Fig. 3. The spring is so arranged upon the shaft that when the curtain is unwound from its roller and disposed across the space of the frame, that the spring will be wound upon the shaft 18, so that when the latter is released the shaft will turn in an opposite direction and at the same time the roller will wind the curtain.

In order to hold the shaft 18 against rotation after the spring has been compressed, the following construction is employed:—By referring now to Fig. 2 it will be seen that the shaft is provided adjacent the casing 27 with a drum 29 and depending from the lower face of the lower sill 6 is a bracket 30, which is disposed adjacent the outer edge of the sill. A front wall 31 depends from the outer edge of the lower sill 6, and is formed with an opening 32 through which projects one end of a resilient lever 33, the intermediate portion of which is fulcrumed on the bracket 30. Secured to the upper end of the bracket 30 and above the fulcrum of the lever 33, is one end of a band, or friction brake 34, the opposite end portion of which is curved to bear on the drum 29, and terminates in a knuckle 35, which interlocks with the inner end of the lever 33. Secured to the front face of the depending wall 31 and over the opening is a plate 36, which is provided with a longitudinal opening which registers with the opening in the wall 31, one side of the opening in the plate 36 being provided with a tooth 37, against which the lever 33 is adapted to engage, after its outer end has been depressed. It will be understood by depressing the outer end of the lever 33, that its inner end will move upwardly, and by virtue of its connection with the knuckle of the friction band 34 the latter will bind on the drum sufficiently hard to prevent the drum from turning, whereby the shaft will be locked.

Thus it will be seen that we have provided a device which may be readily applied to most forms of bars now in use, and the parts being so arranged that when the curtain is raised that the connection between the latter and the operating shaft will be hidden from view. It will be further observed that the device is comparatively simple in structure, and inexpensive to manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

Having thus described our invention what is claimed as new, is—

The combination with a drop curtain, of a supporting frame provided with channels in its opposite sides and ends, a curtain roller journaled in the upper of said channel, a spring actuated shaft journaled in the lower of the channel, pulleys keyed to the shaft and roller, belts passing over said pulleys for operatively connecting the shaft and roller, a plate secured to the lower side of the frame and provided with an L-shaped slot, a roller fixed on said shaft, a resilient band extending around the last named roller, a lever secured to one end of the band adjacent the last named roller and pivoted at a suitable distance from its opposite end to a support and projecting through the plate for coöperation with the L-shaped slot, a curtain attached to said curtain roller, and a rod carried by the curtain and projecting into the channels at the side of the frame.

In testimony whereof, we affix our signatures, in presence of two witnesses.

MARTIN SHMIT.
NICOLAUS JAHN.

Witnesses:
GEO. M. YOUNG,
JOE. SHEA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."