(No Model.)

G. H. JONES & L. P. HOLT.

ROLLER CURTAIN.

No. 366,112. Patented July 5, 1887.

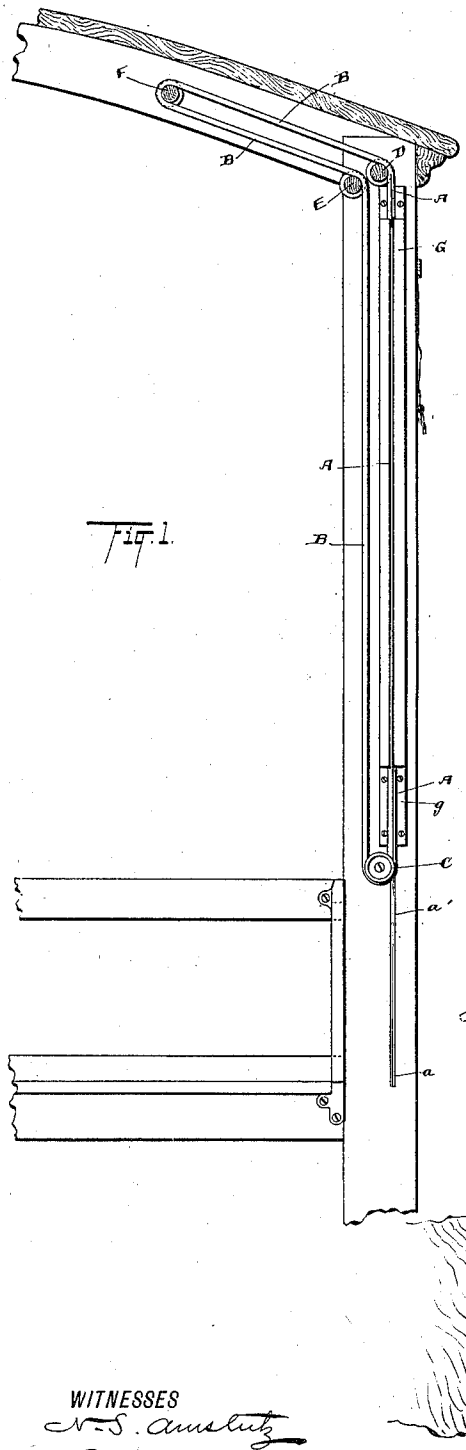


Fig. 1.

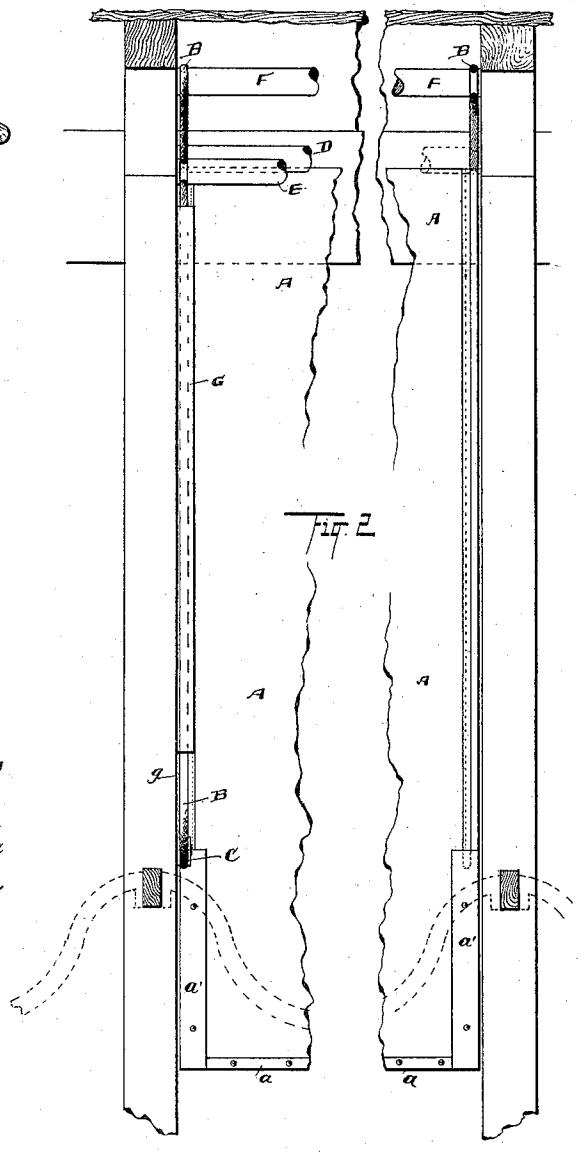


Fig. 2.

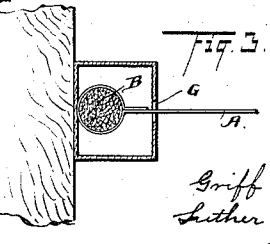


Fig. 3.

WITNESSES

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GRIFF H. JONES AND LUTHER P. HOLT, OF CLEVELAND, OHIO.

ROLLER-CURTAIN.

SPECIFICATION forming part of Letters Patent No. 366,112, dated July 5, 1887.

Application filed March 1, 1887. Serial No. 229,313. (No model.)

To all whom it may concern:

Be it known that we, GRIFF H. JONES and LUTHER P. HOLT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Roller-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 pertains to make and use the same.

Our invention relates to improvements in roller-curtains designed more especially for open street-cars, delivery-wagons, and other analogous purposes; and it consists in certain features of construction and in combination of parts, hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 2 is an inside elevation of a roller-curtain embodying our invention, portions of the curtain being broken away to show the construction. Fig. 1 is an elevation in section crosswise of the car, showing an edge view of the curtain and an end view of the supporting-rollers, &c. Fig. 3 is a transverse section of a guide used in connection with the curtain.

A represents the curtain, the same along the edges thereof being attached to endless cords B, except the lower portion of the curtain, that is left free from the cords. The cords at the bottom pass around sheaves C, and at or near the top of the car or vehicle the two members of each cord pass, respectively, over rollers D and E. The cord, at the upper inner extremity thereof, passes over a roller, F, the latter being located on the under side of the roof or top cover of the car or vehicle. The lower or free end of the curtain is provided with a lateral strip, *a*, and with vertical strips *a'*, preferably of metal, the latter being secured to the respective edges of the curtain below the attachment of the cord and curtain. The strips *a'*, and preferably the end of the lateral strips *a*, move vertically in ways or slots G, the latter being connected with the standard or frame-work of the car or vehicle at the respective sides of the curtain. By this arrangement of parts the bottom of the curtain is held from being swayed to and fro by the wind. It is therefore made always to cover the opening and exclude the sun and rain when the curtain is drawn down. As it is not always practical to locate the sheave C at the bottom of the opening or passage-ways that the curtain is designed to cover, the lower end of the curtain is left free from the cord, as aforesaid, so that it may be depressed the desired distance below the sheaves C. By taking hold of the strip *a* at the bottom of the curtain the latter may be drawn up or down, and will maintain itself in any position in which it is left. In drawing up the curtain the top edge thereof, by reason of the attachment of the endless cord aforesaid, passes over the roller D, and thence over the roller F, and thence back toward the roller E, until the upper ends of the strip *a'* have reached the top of the way G or are made to abut the roller D, in which position the curtain is supposed to be drawn up far enough for all practical purposes. The roller F may be located any desired distance from the rollers D and E, according to the length of the curtain, and in some instances the roller F may be located so far from the other rollers that in drawing up the curtain the top end of the latter is not doubled back over the roller F. The rollers D, E, and F, near the respective ends thereof, and where the endless cords B engage these rollers, are grooved circumferentially to retain the cords in position lengthwise of the rollers, by which arrangement the cords are held apart, and the curtain, where it is fastened to these cords, is held taut.

In open street-cars handles are sometimes fastened to the outside of the standards and located low down, where they are easily reached by persons standing on the ground. These handles sometimes extend outward to or a trifle past the desired line of the curtain, to allow the curtain to pass these handles. In such case the outside wall of the groove G is cut away from the bottom end thereof upward a short distance, as shown at *g*, and the strips *a'* are made of elastic material, by reason of which, while the upper end of these strips are still confined in the grooves G, the bottom of the curtain may be pressed outward and made to pass by the protruding handle.

The curtains, that are usually of heavy canvas and are exposed to the weather, are sometimes in condition dry, light, and flexible,

and are sometimes wet, heavy, and stiff, and by reason of these variable conditions it is found to be difficult, if not wholly impracticable, to adjust spring-rollers or spring mechanism of any kind to successfully operate such curtains.

With our improved device the curtains work equally well under the different conditions aforesaid, the operator applying such force as is found necessary to move the curtains, such force at most being such as is easily applied by hand, and the device is simple, durable, and easily operated.

We have reduced the invention to practice, and it is found to be entirely satisfactory.

What we claim is—

1. The combination, with a lower roller or sheave, a pair of upper rollers or sheaves, and a roller or sheave located to one side of the vertical plane of the upper rollers or sheaves, of endless cords passing over said rollers or sheaves, and a curtain attached to said cords, substantially as set forth.

2. The combination, with a lower roller or sheave, a pair of upper rollers or sheaves, a roller or sheave located to one side of the vertical plane of the upper rollers or sheaves, and vertical ways or guides located between the upper and lower rollers or sheaves, of the endless cords passing over the rollers or sheaves, a curtain attached to said cords, and strips attached to the lower side edges of the curtain, substantially as set forth.

In testimony whereof we sign this specification, in the presence of two witnesses, this 3d day of February, 1887.

GRIFF H. JONES.
LUTHER P. HOLT.

Witnesses:
CHAS. H. DORER,
ALBERT E. LYNCH.