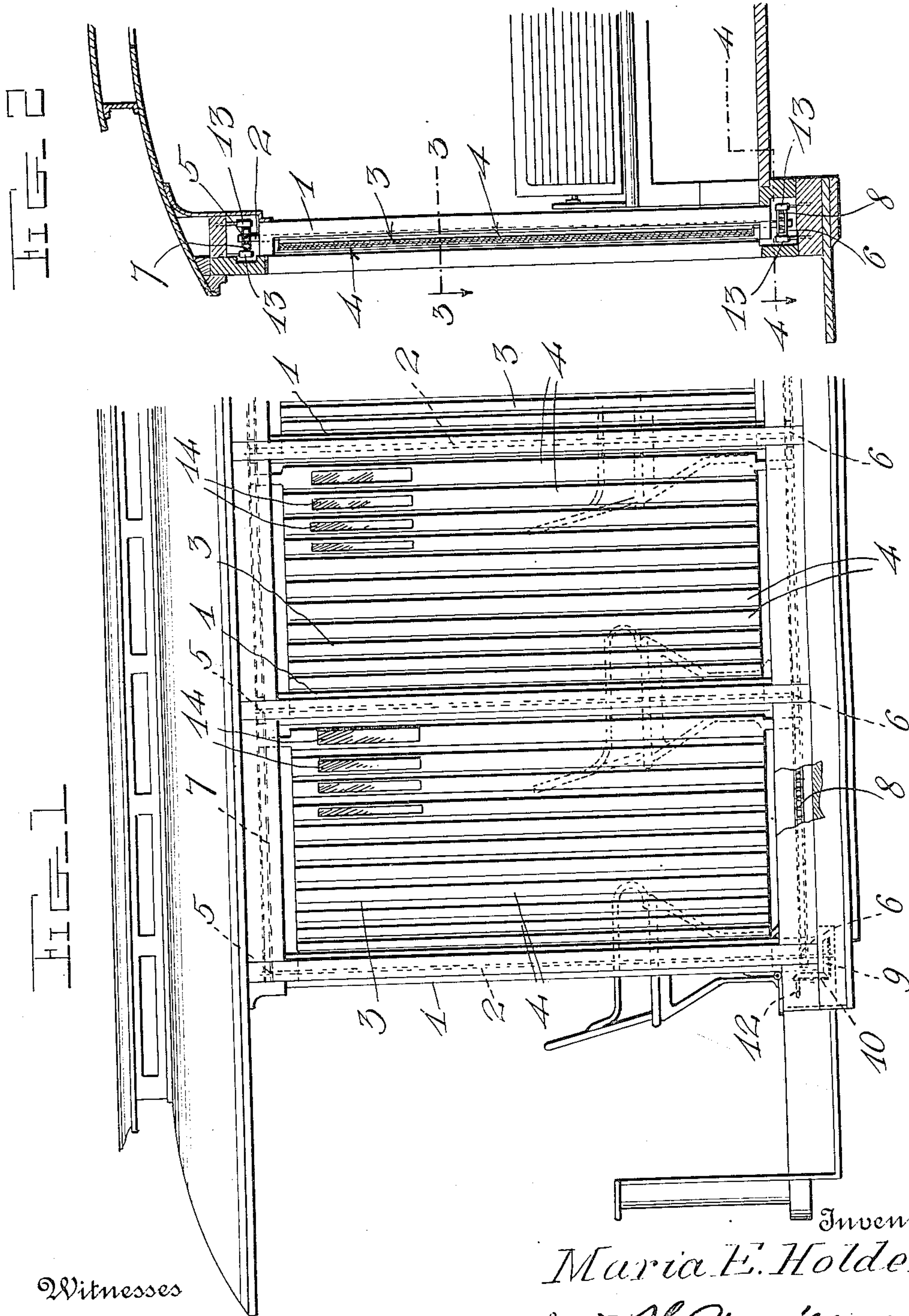


No. 817,562.

PATENTED APR. 10, 1906.

M. E. HOLDEN.  
STORM CURTAIN FOR OPEN CARS.  
APPLICATION FILED DEC. 26, 1905.

2 SHEETS—SHEET 1.



Witnesses  
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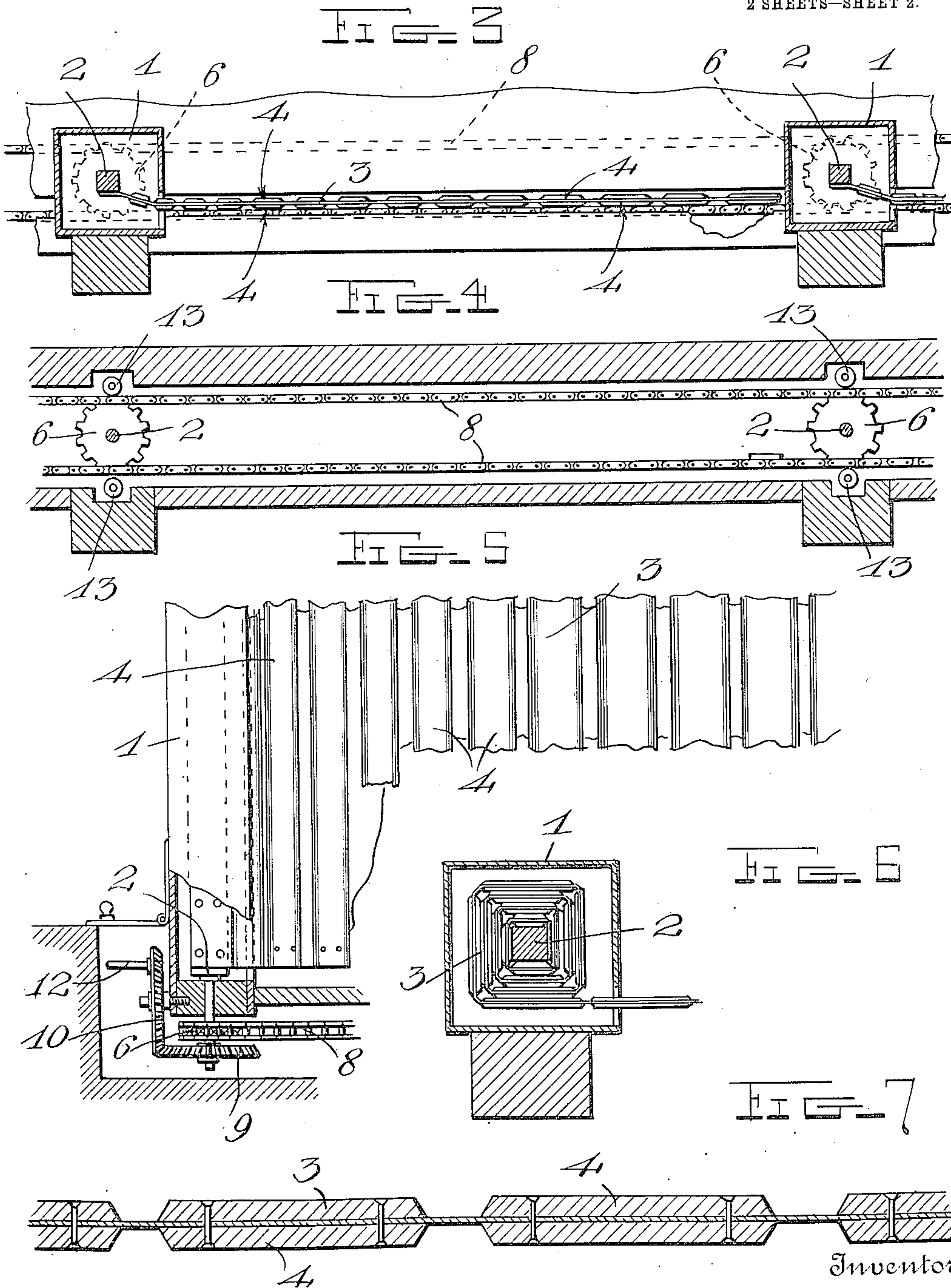
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# UNITED STATES PATENT OFFICE.

MARIA ENGLEHART HOLDEN, OF YONKERS, NEW YORK.

## STORM-CURTAIN FOR OPEN CARS.

No. 817,562.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed December 26, 1905. Serial No. 293,384.

*To all whom it may concern:*

Be it known that I, MARIA ENGLEHART HOLDEN, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Storm-Curtains for Open Cars; and I do 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 storm-curtains for open cars.

The object of the invention is to provide means whereby one or both sides of an open car may be quickly and easily closed in stormy weather, means being provided whereby the curtains on either side of the car may be quickly and simultaneously opened or closed by the conductor or motorman at one end of the car.

A further object is to provide means whereby light may be admitted to the car when the curtains are in closed position and means whereby the curtains will be rolled up out of sight when not in use.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of a portion of a car, showing the application of the invention; Fig. 2 is a vertical sectional view taken through one side of the car adjacent to one of the curtain-casings. Fig. 3 is a horizontal 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 an enlarged fragmentary sectional view showing the arrangement of the devices at the operating end of the same; Fig. 6 is an enlarged horizontal sectional view of one of the car-supporting posts and the roller-casing and curtain, showing the latter wound up; and Fig. 7 is an enlarged detail sectional view through a section of the curtain.

Referring more particularly to the drawings, 1 denotes a vertically-disposed hollow casing, one of which is arranged at the opposite ends of each seat adjacent to the supporting-posts of the car. Revolvably mounted in each of the casings 1 is a winding-post 2, to which is secured the inner end of the slatted curtain 3. Said curtain is preferably formed of a waterproof fabric, to the inner and outer

sides of which are secured slats 4, said slats being spaced apart at short intervals. The slats 4 increase in width from the inner toward the outer edge of each curtain, thereby facilitating the winding of the same upon the winding-posts 2.

Mounted on the upper and lower ends of the winding-posts 2 are sprocket-gears 5 and 6, the opposite sides of which are engaged by upper and lower sprocket-chains 7 and 8, said sprocket-chains passing around the sprocket-wheels 5 and 6 on the upper and lower ends of a winding-post at each end of the car. On the lower end of the winding-posts at one end of the car is secured a bevel-gear 9, with which is adapted to mesh a beveled gear-wheel 10, suitably mounted upon a stub-shaft on the front of the car. Connected to the gear-wheel 10 is a crank-handle 12 by means of which said gear may be turned, thereby imparting motion to the winding-post through the gear 9, and from said post motion is imparted to the other winding-posts on this side of the car by means of the sprocket-chains 7 and 8, with which the outer ends of the curtain are connected, whereby said curtains may be wound and unwound when the operating mechanism is turned in the proper direction. The operating-gears 9 and 12 and the crank-handle 10 on each side of one end of the car are preferably arranged beneath the seat or in a suitably-inclosed compartment, whereby the same will be out of sight and out of the way. If desired, a series of idle guide-rollers 13 may be mounted on the frame of the car adjacent to each sprocket gear-wheel, thereby holding the chains in place and in engagement with said sprocket wheels. The chains and sprocket-gears at the upper ends of the winding-post are preferably disposed within a suitable casing, while the chains and gear on the lower ends of said winding-post are disposed within a channel or passage formed between the floor of the car.

If desired, the wider slats of the curtains may be provided near their upper ends with transparent panels 14, by means of which light may be admitted to the car when in closed position.

By providing curtains constructed and arranged as herein shown and described, the same may be operated by the conductor or motorman at one or the other ends of the car to quickly close either or both sides of the car, thereby protecting the latter in stormy



weather, said curtains being quickly rolled up in the same manner to again open the car.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, as defined by the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In storm-curtains for cars, the combination with suitable casings, of vertically-winding posts arranged therein, horizontally-movable curtains adapted to be wound on said posts, and means operated at one end of the car to simultaneously open or close the curtains on either side of the car, substantially as described.

2. In storm-curtains for cars, the combination with suitable casings, of winding-posts pivotally mounted therein, slatted curtains adapted to be wound on said posts, sprocket-gears mounted on the ends of the latter, sprocket-chains arranged on said gears and operating-gears arranged at one end of the car to simultaneously open or close the curtains on either side of the car, substantially as described.

3. In storm-curtains for cars, the combination with suitable casings, of winding-posts pivotally mounted therein, slatted curtains adapted to be wound on said posts, transparent panels arranged in certain of the slats in said curtains, sprocket-gears mounted on the ends of said winding-posts, sprocket-chains arranged on said gears, operating-gears connected with the winding-post at one end of the car, and a crank-handle to operate said gears, substantially as described.

4. In storm-curtains for cars, the combination with suitable casings, of winding-posts pivotally mounted therein, slatted curtains adapted to be wound on said posts, transparent panels arranged in certain of the slats in said curtains, sprocket-gears mounted on the ends of said winding-posts, endless sprocket-chains arranged on sprocket-gears and connected to said curtains, guide-rollers to hold said chains in place, a bevel-gear mounted on the end winding-shafts at one end of the car, operating-gears connected with said bevel-gears, and a crank-handle to operate said gears, thereby winding or unwinding said curtains, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MARIA ENGLEHART HOLDEN.

Witnesses:

L. MAGAN,  
ELIZABETH L. WRIGHT.