D. R. KNIGHT & J. M. RIPPLE.

CARRIAGE CURTAIN-FIXTURES.

No. 169,555. Patented Nov. 2, 1875.

Fig. 1.

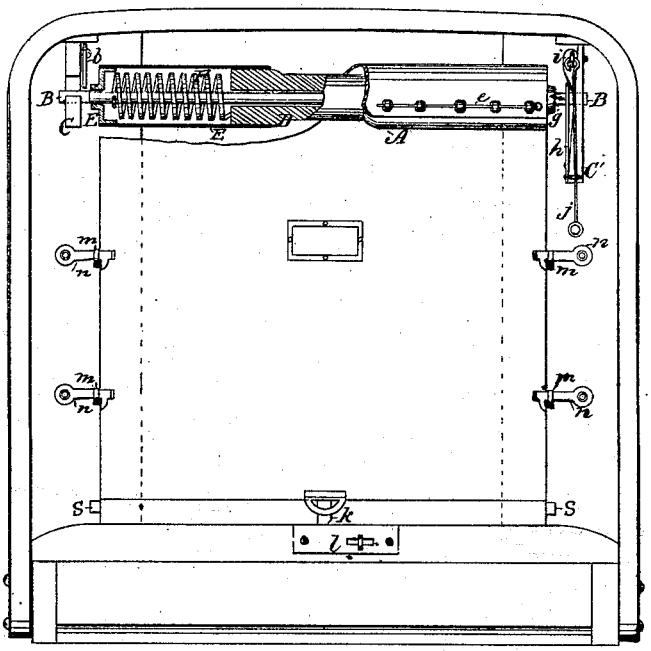


Fig. 2.

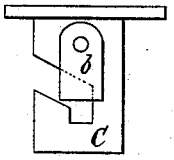


Fig. 3.

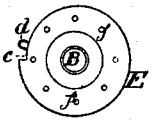


Fig. 4.

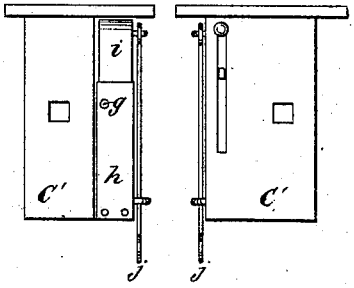


Fig. 5.

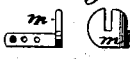
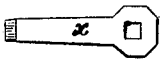


Fig. 6.



WITNESSES:

W. W. Hollingsworth

Solon C. Kemon

INVENTOR:

D. R. Knight

Jno. M. Ripple

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

DANIEL R. KNIGHT AND JOHN M. RIPPLE, OF WAYNESBOROUGH, PA.

IMPROVEMENT IN CARRIAGE-CURTAIN FIXTURES.

Specification forming part of Letters Patent No. **169,555**, dated November 2, 1875; application filed September 4, 1875.

To all whom it may concern:

Be it known that we, DANIEL R. KNIGHT and JOHN M. RIPPLE, of Waynesborough, in the county of Franklin and State of Pennsylvania, have invented a new and Improved Carriage-Curtain Fixture; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is an inside view of the curtain-fixture, with curtain torn away and the roll in section; Fig. 2, a view of the support C of the roll; Fig. 3, an end view of the roll. Fig. 4 are front and side views of the locking device for the roll. Fig. 5 are details of the hooks *m*. Fig. 6 is the wrench.

This invention relates to certain improvements upon the carriage-curtain fixture for which Letters Patent No. 166,114 were granted us July 27, 1875; and it consists in the improved construction of the roll, the method of attaching the curtain thereto, a stop device for adjusting and regulating the height of the curtain, and the means for fastening the sides of the curtain, as hereinafter more fully described.

In the drawing, A represents the curtain-roll, recessed at the center for the purpose already described in our patent referred to. The roll revolves upon central shaft B, having squared ends, which fit into the pendent supports C C′, attached to the carriage-frame. This said shaft does not revolve, but is so fixed in the supports C C′ as to be readily detached, with the roll which it carries, through the instrumentality of an open slot in the support C, and a pivoted latch, *b*. Upon this central shaft is located a loosely-revolving sleeve, D, which receives the detachable cylindrical end caps E E, which slide upon the ends of the sleeve, and are made to revolve rigidly therewith by means of a longitudinal offset in the said caps, which fits into a corresponding depression in the sleeve, the said sleeve and end caps constituting together the curtain-roll. F F are spiral springs located at each end of the roll, and fastened to the sleeve D at one end, and to the central shaft B at the other. The said springs are wound up whenever the curtain is drawn down, so that when it is released they automatically rewind it upon the roll.

Instead of forming in the roll a longitudinal groove to receive the curtain, as in our former patent, we construct the sleeve and end caps with a longitudinal offset, *c*, which leaves a rabbet, into which the end of the curtain is placed and secured, this form being preferable to the groove with square sides, for the reason that it does not cause the curtain to bend shortly and wear at its connection, and always leaves a perfectly smooth and even surface for the curtain to be rolled upon. In said rabbet we construct metallic loops *d*, which project through eyelets in the curtain, and receive upon the outside a rod, *e*, which passes through all of said loops, and secures the curtain thereto.

To enable the curtain to be adjustably held at different heights, we construct one of the detachable caps of the roll with cavities *f* in the end thereof, which receive a spring-seated stud, *g*, which locks the curtain in any desired position. Said stud is attached to a spring-plate, *h*, and is projected into the cavities *f* by a vertically-sliding cam, *i*, located in the support C′, and operated from below by a rod, *j*, attached thereto, the cam projecting the stud into the cavities, and the spring-plate withdrawing it when the cam is again elevated. To fasten the curtain, when lowered, against flapping, and to insure a tight inclosure of the body of the carriage, the lower part of the curtain is provided with a catch, *k*, which is secured in a locking device, *l*, against the tendency of the spring to pull up the curtain, as described in our other patent, and the sides of the same are provided with upwardly-pointing hooks *m*, which receive hooks *n*, pivoted to the frame or side cloth of the carriage. The hooks *m*, being at right angles to the sides of the curtain, are made to project far enough beyond the edge to avoid the curtain-roll when wound up, thereby obviating the puckering and irregular winding of the same. X is a wrench, which fits the end of the shaft B, and is intended to be used to give the latter a turn before inserting the roll, the object being to give the spring an initial tension, so as to hold the curtain up tightly.

In order to prevent the curtain-rod from

passing up and around the roll, which would make it loose this tension, we extend the end of the rod slightly at *s*, and arrange it to strike hooks or stop projections attached to the curtain near the top, to prevent it from passing up and around said roll.

We are aware of the fact that it is not new to employ springs at each end of the curtain-roll for the purpose of raising the curtain, and we therefore confine our invention, as to the construction of roll and its arrangement with the springs, to the particular device shown and described.

Having thus described our invention, what we claim as new is—

1. The combination, with the central continuous shaft B, rigidly held in supports, of the springs F F, the detachable cylindrical end caps E E, provided with longitudinal offsets, and the revolving sleeve D, provided with corresponding offsets, and rigidly revolving with said end caps, as and for the purpose described.

2. The curtain-roll having loops *d*, in combination with the curtain provided with eyelets and a rod, *e*, as and for the purpose described.

3. The combination, with the curtain-roll provided with holes or cavities, of the stud *g*, attached to a spring-plate, *h*, the vertically-sliding cam *i*, and the rod *j*, substantially as and for the purpose described.

4. The upwardly-pointing right-angular hooks *m*, attached to the curtain side so as to project beyond the roll, in combination with the hooks *n*, pivoted to the sides of the carriage, substantially as described.

DANIEL R. KNIGHT.
JOHN M. RIPPLE.

Witnesses:
J. BURNS ANDERSON,
R. H. HOOVER.