

J. E. CROSS.

Deck-Sash or Ventilator-Openers for Railroad-Cars.

No. 141,037.

Patented July 22, 1873.

Fig. 2

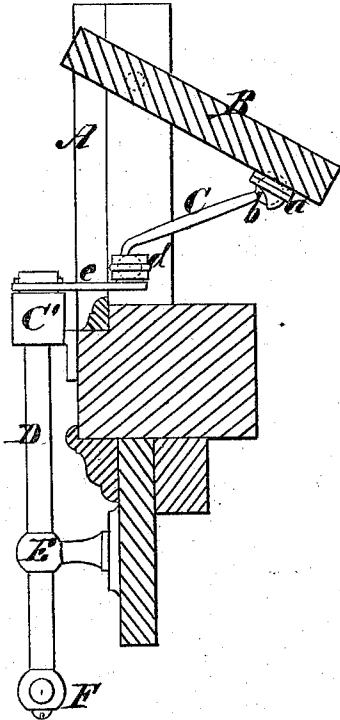


Fig. 1

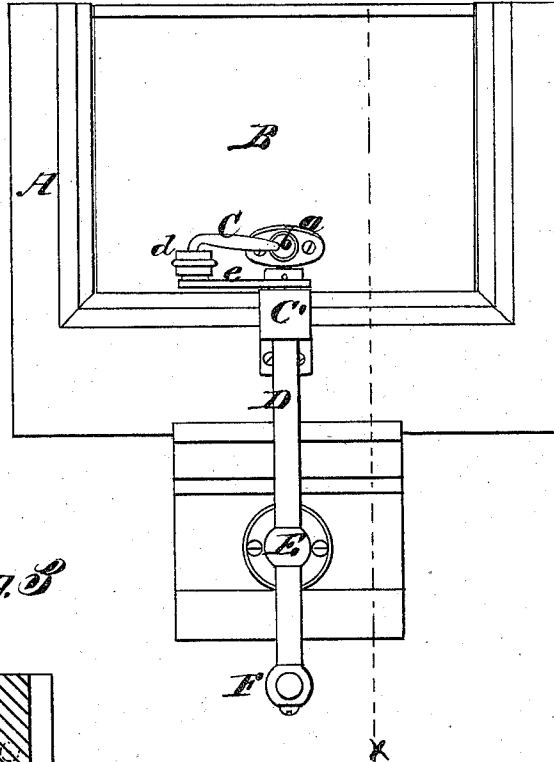
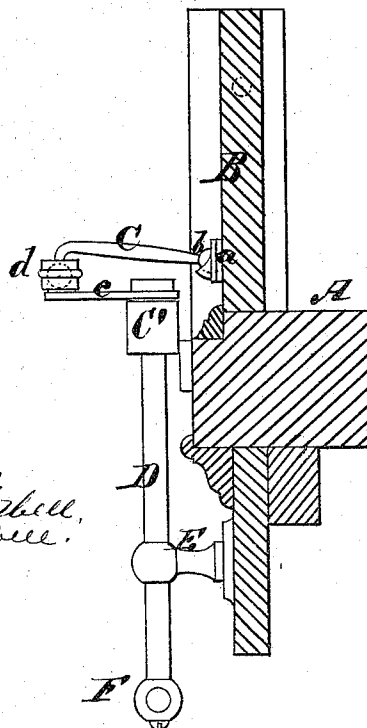


Fig. 3



Witnesses.

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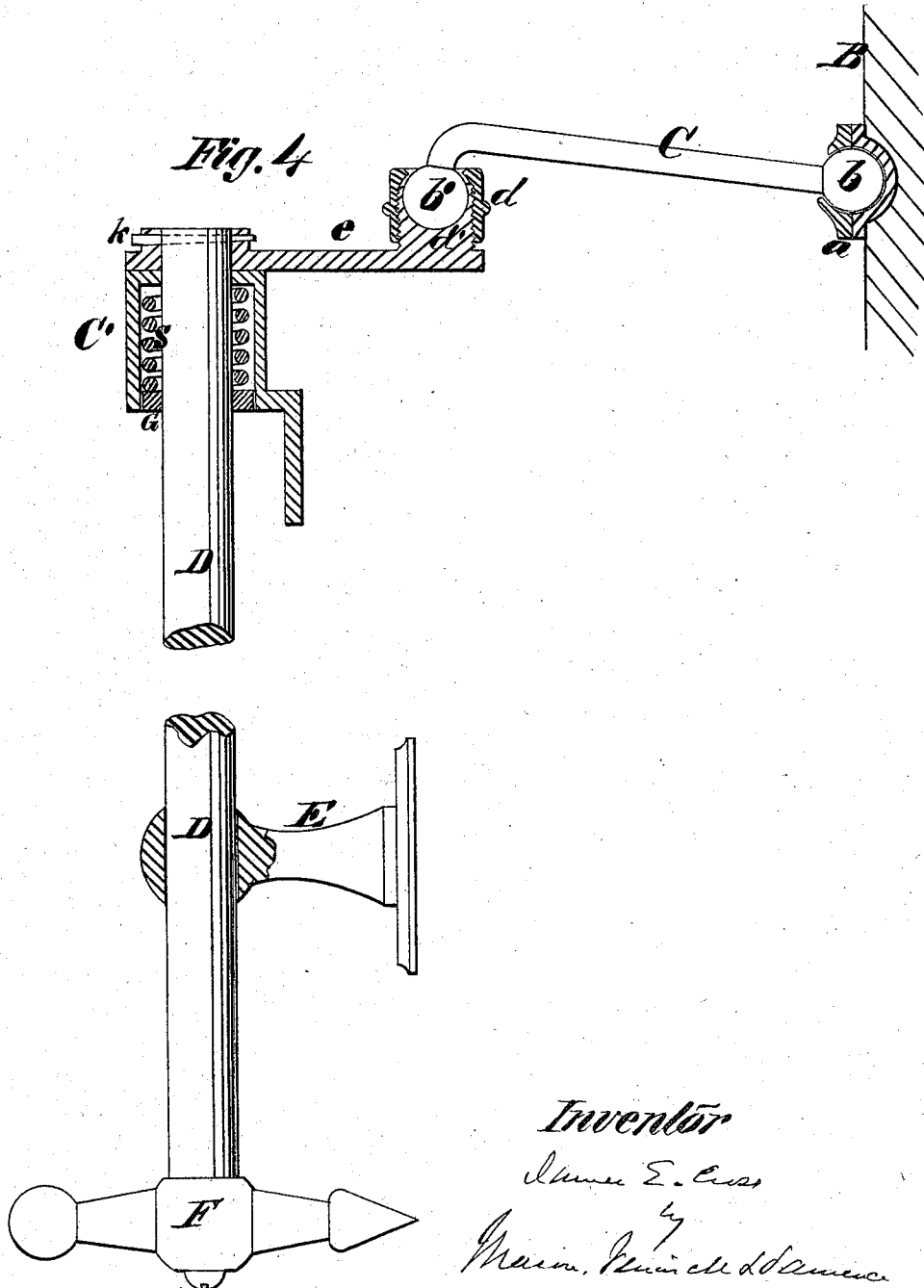
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UNITED STATES PATENT OFFICE.

JAMES E. CROSS, OF ADRIAN, MICHIGAN, ASSIGNOR TO ILLINOIS MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN DECK-SASH OR VENTILATOR-OPENERS FOR RAILROAD CARS.

Specification forming part of Letters Patent No. 141,037, dated July 22, 1873; application filed May 21, 1873.

To all whom it may concern:

Be it known that I, JAMES E. CROSS, of Adrian, in the county of Lenawee and State of Michigan, have invented a new and Improved Deck-Sash or Ventilator-Opener for Railroad Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1, Plate 1, is a vertical section through Fig. 1 in the plane indicated by dotted line *xx*, showing the sash open. Fig. 3, Plate 1, is a similar view of the same parts as shown by Fig. 2, indicating the sash closed. Fig. 4, Plate 2, is a sectional view in detail of the device.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to improved means for opening and shutting the deck-sashes or ventilators which are applied overhead in railroad passenger-cars. My object is to connect a crank-arm, which is on a vertical actuating-rod, to a swinging sash by means of a rod and ball-and-socket joints, as will be hereinafter explained.

The following description of my invention will enable others skilled in the art to understand it fully.

In the accompanying drawings, Plate 1, A represents a portion of the deck of a railroad car; and B represents one of the vertically-swinging sashes thereof, which sash it is desired to open and shut or adjust at different angles. The sash B is connected by a rod, C, to a horizontal crank-arm, *e*, which is secured by a key, *k*, to the upper end of a vertical actuating-rod, D. The rod D is of such length that it can be conveniently grasped by the handle F by a person upon the floor of the car, and this rod is supported and held in place by means of a bracket-post, E, and a spring-box bracket, C', which latter is at the top of the actuating-rod. The box C' con-

tains a spring, *s*, which surrounds the actuating-rod D, and is confined between the upper fixed head of the box C', and a circular bottom plate, G, which is secured on the rod D, and is received into the lower end of the box G', as shown in Fig. 4, Plate 2. The rod D is allowed to be turned, but, owing to the friction exerted by the spring *s* on the plate G, the sash B will be held at any angle at which it is adjusted. As that end of the connecting-rod C which is connected to the sash B must be allowed to rise and descend, and that end of this rod which is connected to the crank-arm *e* must be moved around horizontally, the attachments of the rod C must be such as to admit these motions. For this purpose I adopt ball-and-socket joints, which will admit of universal movements. The ball *b* is connected to the sash B by means of two socket-plates, *a*, and the ball *b'* is connected to the crank-arm *e* by means of a cup, *d'*, on this arm *e*, and a socket-cap, *d*, which is screwed onto the cup *d'*, as shown in Fig. 4.

It is not necessary, nor is it desirable, to make the ball-and-socket joints so tight that they will bind, for the reason that the sash B is held at any desired angle by the friction of the spring *s* on the plate G of the actuating-rod D, as above described.

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

1. The connecting-rod C and its ball-and-socket joints, combined with the pivoted sash B, crank-arm *e*, and actuating-rod D, substantially as and for the purpose described.

2. The spring *s* in the box C', combined with the plate G, an actuating-rod, D, crank-arm *e*, connecting-rod C, and a swinging sash, B, substantially as described.

JAMES E. CROSS.

Witnesses:

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