

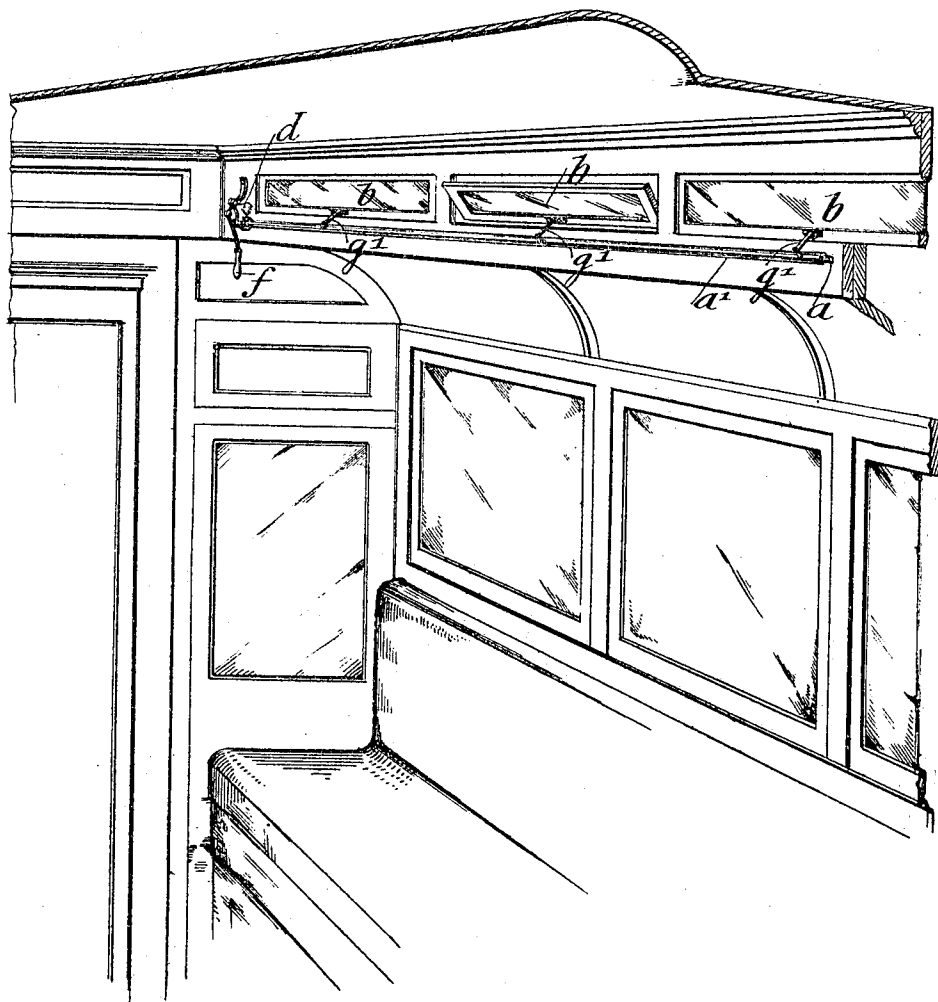
No. 798,909.

PATENTED SEPT. 5, 1906.

J. KRESS.  
DECK SASH OPENER FOR RAILWAY CARS.  
APPLICATION FILED NOV. 2, 1904.

2 SHEETS—SHEET 1.

*Fig. 1.*



Witnesses  
*Henry J. Schubert.*  
*W. H. Schaefer*

Inventor  
*John Kress*  
By his Attorneys *Gruenewald*

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2 SHEETS—SHEET 2.

Fig. 2.

Fig. 3.

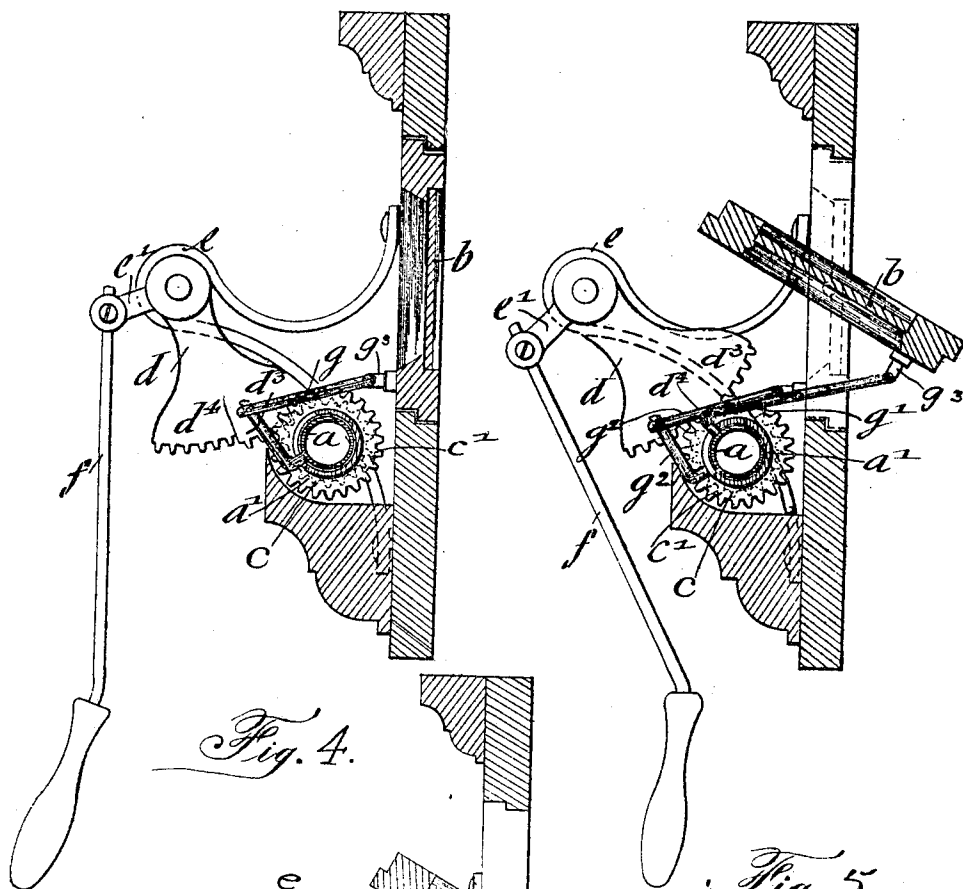
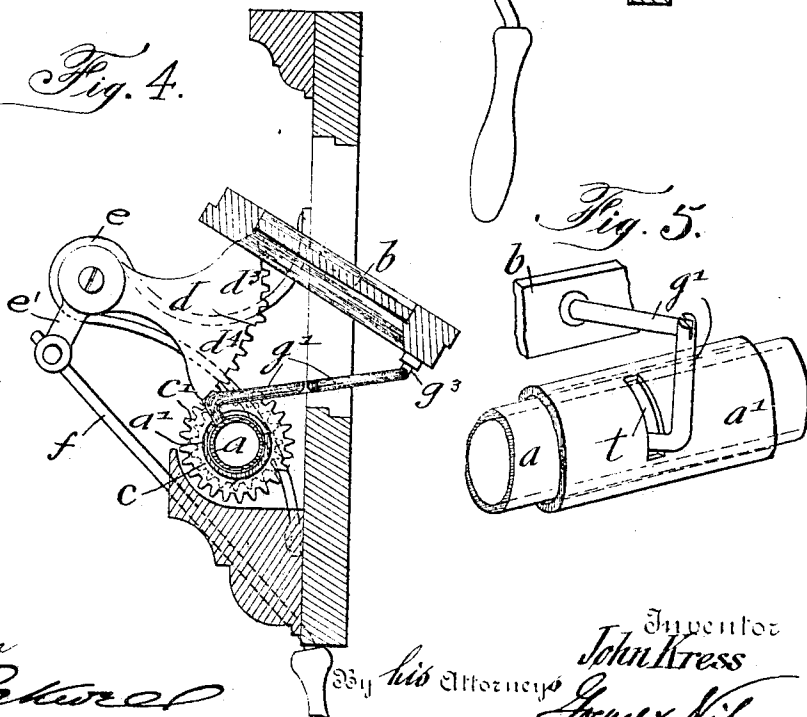


Fig. 4.

Fig. 5.



Witnesses  
W. J. Bergman

W. J. Bergman

By his Attorneys

Inventor  
John Kress

James Miles

# UNITED STATES PATENT OFFICE.

JOHN KRESS, OF NEW ROCHELLE, NEW YORK.

## DECK-SASH OPENER FOR RAILWAY-CARS.

No. 798,909

Specification of Letters Patent.

Patented Sept. 5, 1905.

Application filed November 2, 1904. Serial No. 231,153.

*To all whom it may concern:*

Be it known that I, JOHN KRESS, a citizen of the United States, residing in New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Deck-Sash Openers for Railway-Cars, of which the following is a specification.

This invention relates to an improved device for opening and closing the swinging ventilating-sashes in railway and other cars, which sashes are generally known as "deck-sashes;" and the object of the invention is the provision of an improved means for independently operating, by means of one mechanism, two or more sets of deck-sashes, whereby the ventilation of the car may be regulated as required.

With this end in view the invention consists in the combination, with a series of deck-sashes, of a shaft for operating a set of said sashes, a second shaft for operating a second set of said sashes, and a single device for actuating said shafts.

The invention consists also in other novel combinations of parts to be hereinafter described and claimed.

In the accompanying drawings, illustrative of one form of the invention, Figure 1 is a perspective view of the interior portion of a railway-car provided with my improved deck-sash opener. Figs. 2, 3, and 4 are vertical transverse sections through the deck-sashes, showing said sashes and the operating mechanism in different positions; and Fig. 5 is a detailed perspective view showing the connection between the rock-shaft and a deck-sash.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, *a* designates a shaft, which is supported in suitable bearings located beneath the deck-sashes *b* of a railway, trolley, or other car. The shaft *a* carries at one end near the end of the car a pinion *c*, which meshes with a toothed rack-segment *d*, supported in a bracket-bearing *e*, attached to the side wall of the car-dome, as shown in Fig. 1. To the hub of the segment is applied a short crank *e'*, to which is attached a hand-lever *f*, said hand-lever being preferably curved, as shown. The shaft *a* is connected at certain distances throughout its length with a set of deck-sashes by means of double pivot-links *g'*, the opposite end of each pivot-link being attached by perforated ears *g''* to the lower portion of each deck-sash in said set.

The tubular shaft *a* is inclosed by a second tubular shaft *a'*, which is provided with a larger pinion *c'* at one end adjacent and parallel to the pinion *c* and with arc-shaped slots *t*, through which pass the pivot-links *g'*, connecting the inner shaft *a* with the first-mentioned set of deck-sashes. The outer shaft *a'* is connected in the same manner as the inner shaft with a set of deck-sashes, this set being preferably alternated with those of the first set. The segmental rack *d*, which meshes with both the pinion *c* and the pinion *c'*, is divided into two parts in order that the two sets of deck-sashes connected, respectively, with the inner and outer shafts may be independently operated, and these two sections *d<sup>3</sup>* and *d<sup>4</sup>* are offset from each other and in parallel planes, so that the section *d<sup>3</sup>* meshes with the pinion *c*, while the other section *d<sup>4</sup>* engages the pinion *c'* of the outer tubular shaft.

In order that the two sets of sashes may be successively operated, the section *d<sup>3</sup>* is set in advance of the section *d<sup>4</sup>*, so that the two sections successively engage the concentric pinions *c* and *c'*, respectively.

When one set of the deck-sashes is to be opened, the lever *f* is moved to one side, so that the offset toothed section *d<sup>3</sup>* operates the inner shaft. When it is desired to open all of the sashes, the lever *f* is moved still farther in the same direction, so that the section *d<sup>4</sup>* meshes with the pinion *c'*, and thereby opens the sashes which are in connection with the outer tubular shaft *a'*. It is obvious that upon the return movement of the operating-lever the sets of sashes will be successively closed.

By means of my improved operating device several sets of sashes may be independently opened or closed by the turning of a single lever toward or away from the said wall of the car-dome, so that the ventilation of the car may thereby be regulated as may be required. In very long cars it may be advisable to arrange the operating-lever and motion-transmitting devices at each end, so as to operate only one-half of the deck-sashes by means of one lever. The operation of the different sets of deck-sashes by means of one operating-lever enables the sashes to be opened or closed with great facility, and at the same time the objectionable noise which is caused by the mechanism now in use is in a degree obviated. The improved sash-operating device may also be applied to the sashes in the end walls of the car-dome, and said de-

vices may also be employed for opening or closing skylights, transoms, or other windows which are to be opened or closed for ventilating purposes.

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

1. In combination, a series of deck-sashes, a shaft for operating a set of said sashes, a second shaft for operating a second set of said sashes, and a single device for actuating said shafts.

2. The combination, with a series of deck-sashes, of a shaft for operating a set of said sashes, a second shaft for operating a second set of said sashes, and a single device for successively actuating said shafts.

3. The combination, with a series of deck-sashes, of a shaft for operating a set of said sashes, a second shaft for operating a second set of said sashes, and means, operable by a single lever, for actuating said shafts.

4. The combination, with a series of deck-sashes, of a shaft for operating a set of said deck-sashes, and having a pinion fixed thereon, a second shaft for operating a second set of said sashes and likewise having a pinion fixed thereon, and a rack operable to engage both of said pinions.

5. In combination, a series of deck-sashes, a shaft for operating a set of said sashes, and having a pinion fixed thereon, a second shaft for operating a second set of said sashes and likewise having a pinion fixed thereon, and a rack operable to successively engage said pinions.

6. In combination, a plurality of deck-sashes, a shaft for operating a set of said sashes, a second shaft for operating a second set, parallel pinions fixed to said shafts, and a rack provided with offset sections adapted to engage said pinions.

7. In combination, a plurality of deck-sashes, a shaft for operating a set of said

sashes, a second shaft for operating a second set of said sashes, parallel pinions fixed to said shafts, and a rack provided with offset sections adapted to engage said pinions, one of said sections being arranged in advance of the other.

8. In combination, a series of deck-sashes, a shaft for operating a set of said sashes, a tubular shaft inclosing said first-named shaft and in operative connection with a second set of said sashes, and means for actuating said shafts.

9. The combination, with a series of sashes pivoted at their ends, of a shaft supported adjacent said sashes, a lever connection between said shaft and a set of the deck-sashes, a tubular shaft inclosing said first-named shaft, with a second set of deck-sashes, and means for successively actuating said shafts.

10. The combination, with a series of deck-sashes pivoted at their ends, of a shaft supported adjacent said sashes, means for connecting every alternate sash with said shaft, an outer tubular shaft inclosing said first-named or inner shaft and provided with slots for the passage of the connecting means between the latter and said alternating sashes, means for connecting the outer tubular shaft with a second set of deck-sashes alternating with said first-named set, pinions at the ends of said inner and outer shafts, a rack-segment provided with offset sections adapted to mesh with the pinions on said shafts, and a lever for operating said segment.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN KRESS.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.