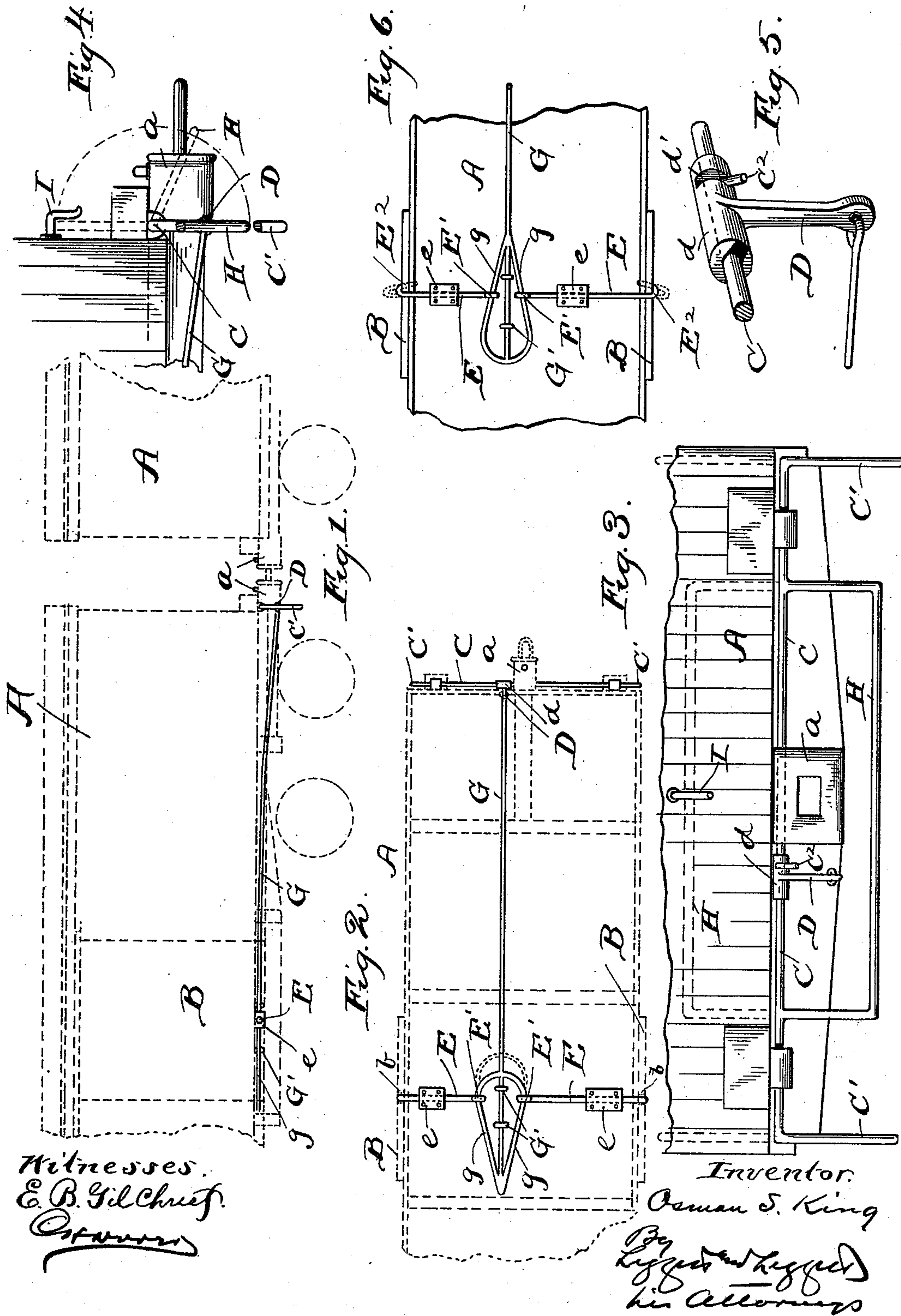


(No Model.)

O. S. KING.
SLIDING DOOR LOCK.

No. 512,714.

Patented Jan. 16, 1894.



UNITED STATES PATENT OFFICE.

OSMAN S. KING, OF PAINESVILLE, OHIO.

SLIDING-DOOR LOCK.

SPECIFICATION forming part of Letters Patent No. 512,714, dated January 16, 1894.

Application filed April 10, 1893. Serial No. 469,723. (No model.)

To all whom it may concern:

Be it known that I, OSMAN S. KING, of Painesville, in the county of Lake and State of Ohio, have invented certain new and useful Improvements in Mechanism for Locking Doors of Freight-Cars; and I 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.

My invention relates to improvements in locking mechanism for doors of freight cars; and it consists in certain features of construction and in combinations of parts hereinafter described and pointed out in the claims, the primary object being to provide mechanism whereby the doors cannot be unlocked when the cars are coupled in a train, as in transit.

In the accompanying drawings, Figure 1 is a side elevation of portions of two freight cars coupled together and provided with my improved door-locking mechanism. Fig. 2 is a bottom plan of the body of a car having my improved locking-mechanism attached. Fig. 3 is a side elevation of the operating shaft and attachments, supported from the car-body. Fig. 4 is an elevation and Fig. 5 a perspective of portions of the locking-mechanism, more clearly exhibiting the manner of operating said mechanism. Fig. 6 is a bottom plan of a portion of the body of a car and attached door-locking-mechanism, exhibiting a modification.

Referring to the drawings, A A represent two freight cars coupled together, and *a a* the couplings at adjacent ends of the cars.

B represents the doors of one of the freight cars, the same being constructed and supported in the usual manner.

C represents a shaft that is located and extends transversely of the car just below one of the end-sills of the car at the top of the coupling, said shaft at either end being provided with an arm or lever C' for operating the same. Upon said shaft, at one side of the car-coupling, is mounted a laterally-extending arm, D, that, at its free or outer end, is operatively connected, by means of suitable mechanism, such, for instance, as hereinafter described, with bolts, E, that are adapted to reciprocate transversely of the car, have bear-

ing in one or more boxes, *e*, supported from the bottom of the car-body and are adapted to engage holes *b* in the car-doors, the arrangement of parts being preferably such that said bolts also extend and reciprocate through the side-sills of the car, the side-sills being perforated (not shown) for the purpose.

The mechanism that operatively connects bolts E with the operating shaft C whereby the bolts are adapted to simultaneously lock or unlock the doors by turning the operating shaft in the one direction or the other, is preferably as follows:—A rod or bar, G, arranged lengthwise of the car and having suitable bearing in one or more boxes, G', supported from the bottom of the car-body or attachments of the latter, is operatively connected with the outer end of arm D. Said rod or bar, at or near its opposite end, is provided with diverging inclines or guides, *g*, that engage and are adapted to actuate the locking-bolts to lock or unlock the car-doors according as reciprocating rod or bar G is actuated in the one direction or the other, said inclines or guides being preferably formed by means of rods or bars rigid with rod or bar G and having the trend required to perform the functions for which they are designed, and the locking-bolts, at their inner end, preferably terminate in sleeves, E', that embrace the respective inclined rods or bars. Suitable means are provided whereby said locking mechanism cannot be actuated to unlock the doors when the car is coupled to another car as shown, the means for the purpose consisting preferably of a frame H rigid with the operating-shaft, the arrangement of parts being such that said frame is adapted to engage the under side of the coupling-link, or coupling of the opposing car, and thereby form a stop to limit the oscillation or rotation of the operating-shaft in the direction to actuate the locking-mechanism to unlock the doors, and the arrangement of parts being also such that the locking-mechanism shall not release the doors until frame or stop H is elevated above the lower side of the coupling-link or object that limits its oscillation in that direction. Hence, it is obvious that the cars must be separated in order to unlock the car-doors. It is, therefore, quite

manifest that a car provided with my improved door-locking-mechanism is not likely to have any portion of its contents stolen while in transit.

5 Arm D is preferably provided with a hub d loosely mounted upon the operating-shaft, and the latter has a laterally-projecting pin or member C^2 that engages and is adapted to traverse a lateral hole or slot, d' , in said hub, 10 said hole or slot being of such size and the parts so arranged that the aforesaid laterally-projecting pin or member C^2 of the operating-shaft, in the operative position of the locking-mechanism, shall engage the one end- 15 wall of said slot, namely, the end-wall of the hole or slot opposite to the direction in which arm D is turned in unlocking the car-doors, so that the operating-shaft shall operate idly until the lateral pin or member C^2 thereof 20 comes into engagement with the opposite end-wall of the aforesaid hole or slot in the hub of arm D, and so that by actuating the operating shaft and stop H, from the position shown in solid lines Figs. 3 and 4, to the po- 25 sition shown in dotted lines in same figures when stop H performs its function, arm D shall not yet have been actuated.

If desired the portion of the mechanism under the car-body may be inclosed or incased 30 in any suitable manner.

I would have it understood that my invention is not confined to the exact details of construction or specific mechanism disclosed in this application. For instance, bolts hav- 35 ing hook-ends, E^2 , (see Fig. 6) might be employed to engage the car-doors from the outside, in which case the position of inclines or guides g would be reversed, as shown in Fig. 6.

40 I represents a hook secured to the end of the car a suitable distance above the adjacent end-sill, and in case of an empty car, or preparatory to unloading a car, the operating shaft is turned to bring frame or stop H into 45 position to be engaged by hook I, the latter being capable of being turned on its axis and lock said frame or stop in the upright position indicated in dotted lines, Fig. 4, where it is out of the way, and in which position of 50 parts the doors of the car are released.

What I claim is—

1. In locking-mechanism for a car-door, the combination with the bolt adapted to engage and lock the car-door, and suitable means for 55 reciprocating said bolt, of an operating shaft C provided with one or more arms or levers, and a rod or bar, D, operatively connecting the bolt-actuating means with said shaft, the

arrangement of parts being substantially as shown, for the purpose specified. 60

2. In locking-mechanism for a car-door, the combination with a bolt adapted to engage and lock the door, of an operating shaft pro- 65 vided with one or more arms or levers, a reciprocating incline engaging said bolt and adapted to actuate the latter to lock or unlock according as the incline is reciprocated in the one direction or the other, and suitable means 70 operatively connecting said incline with the aforesaid operating shaft, substantially as set forth.

3. In locking-mechanism for car-doors, the combination with reciprocating bolts adapted to engage and lock the doors, of an operating 75 shaft provided with one or more arms or levers for operating the same, diverging inclines or guides engaging the respective bolts and adapted to actuate the bolts to lock or unlock according to the direction of their reciproca- 80 tion, and suitable means operatively connecting said inclines with the aforesaid operating shaft in such a manner that the locking bolts are capable of simultaneous operation, sub- 85 stantially as set forth.

4. In locking mechanism for a car-door, the 85 combination with a bolt adapted to engage and lock the door, of an operating shaft, suitable means operatively connecting the bolt with said shaft in such a manner that the bolt is actuated to lock or unlock according 90 as said shaft is turned in the one direction or the other, and suitable means for preventing the operation of the bolt to unlock when the car is coupled to another car, substantially 95 as set forth.

5. In locking-mechanism for a car-door, the combination with a bolt adapted to engage and lock the door, of an operating shaft, suit- 100 able means operatively connecting the bolt with said shaft in such a manner that the bolt is actuated to lock or unlock according as said shaft is turned in the one direction or the other, and suitable means for preventing 105 the operation of the bolt to unlock when the car is coupled to another car, said means comprising a frame, H, rigid with the operating shaft and adapted to engage the under side of the coupling-link, or coupling of the other car, substantially as set forth.

In testimony whereof I sign this specifica- 110 tion, in the presence of two witnesses, this 27th day of March, 1893.

OSMAN S. KING.

Witnesses:

C. H. DORER,
WARD HOOVER.