W. J. SCHMAHL & T. H. WATTS.

CAR DOOR LOCK.

APPLICATION FILED AUG. 5, 1908.

908,147.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

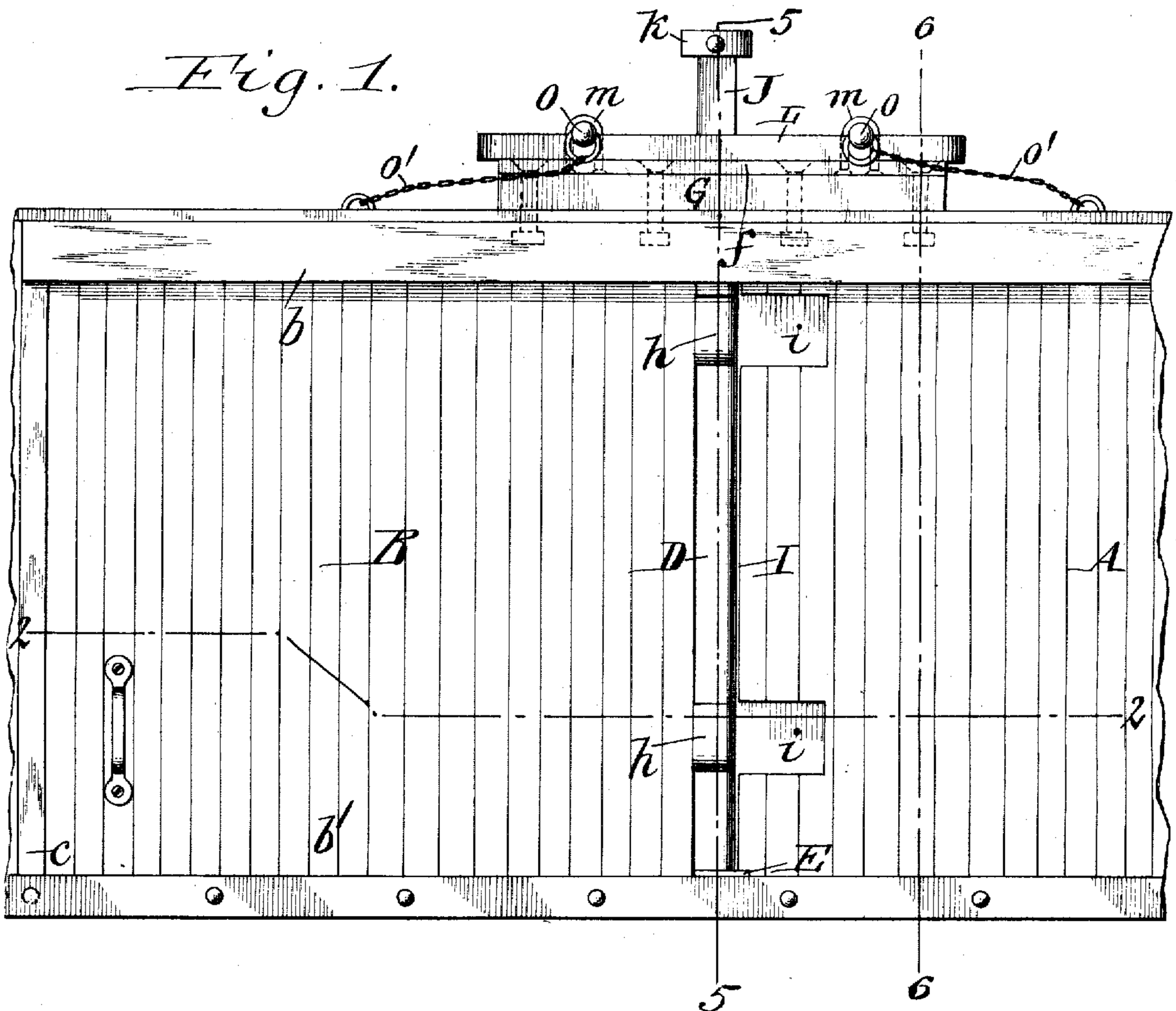


Fig. 2.

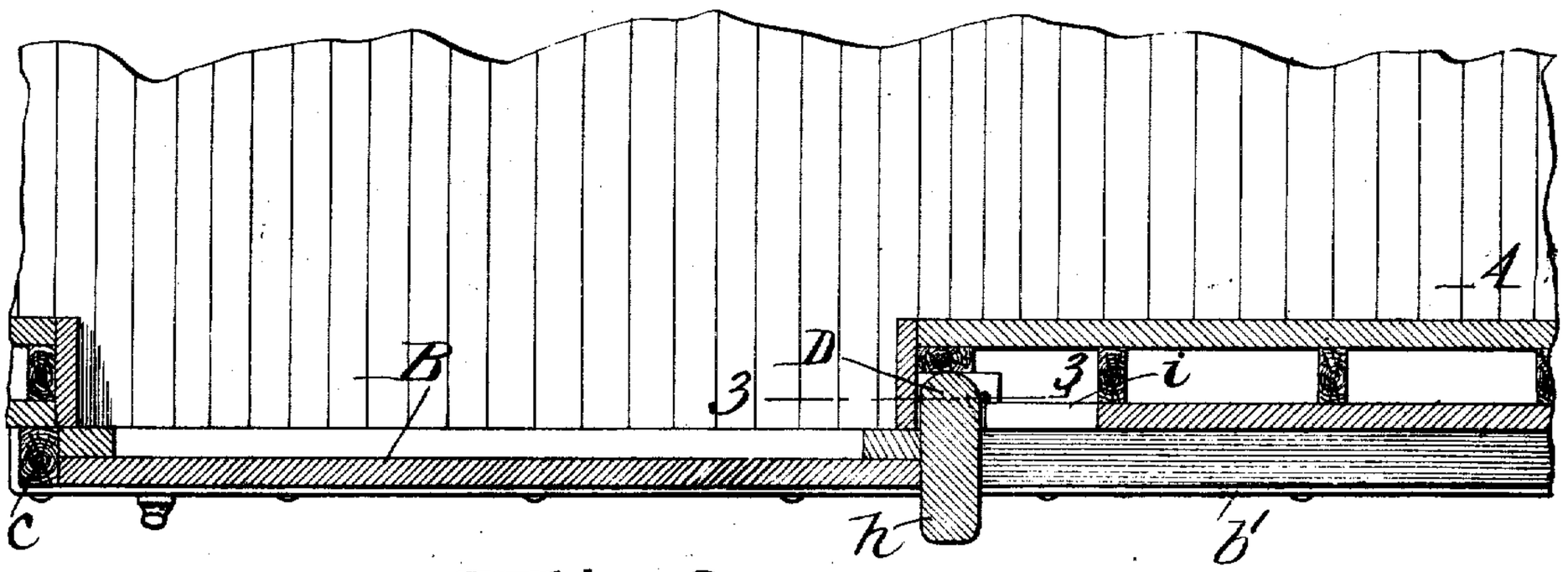
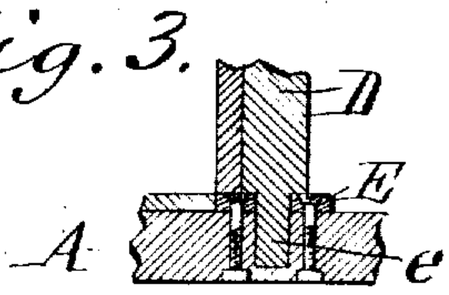


Fig. 3.



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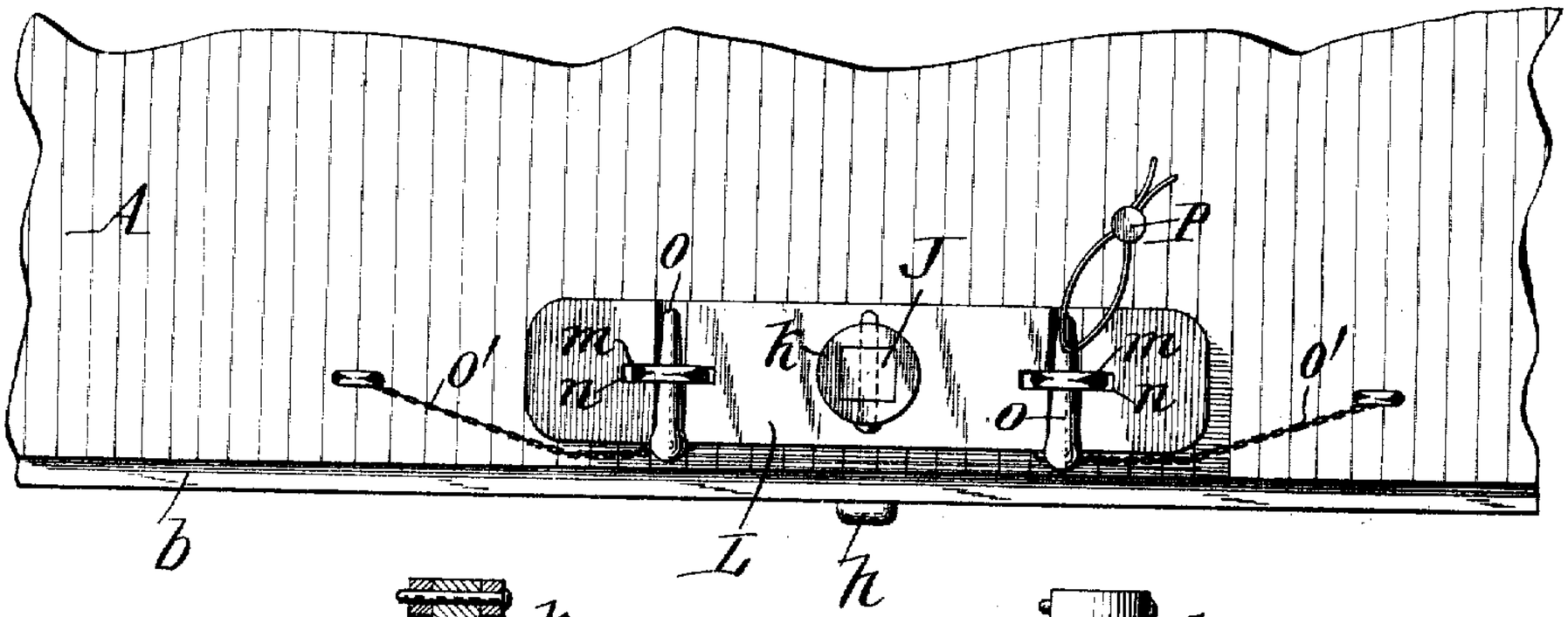
2 SHEETS—SHEET 2.

Fig. 4.



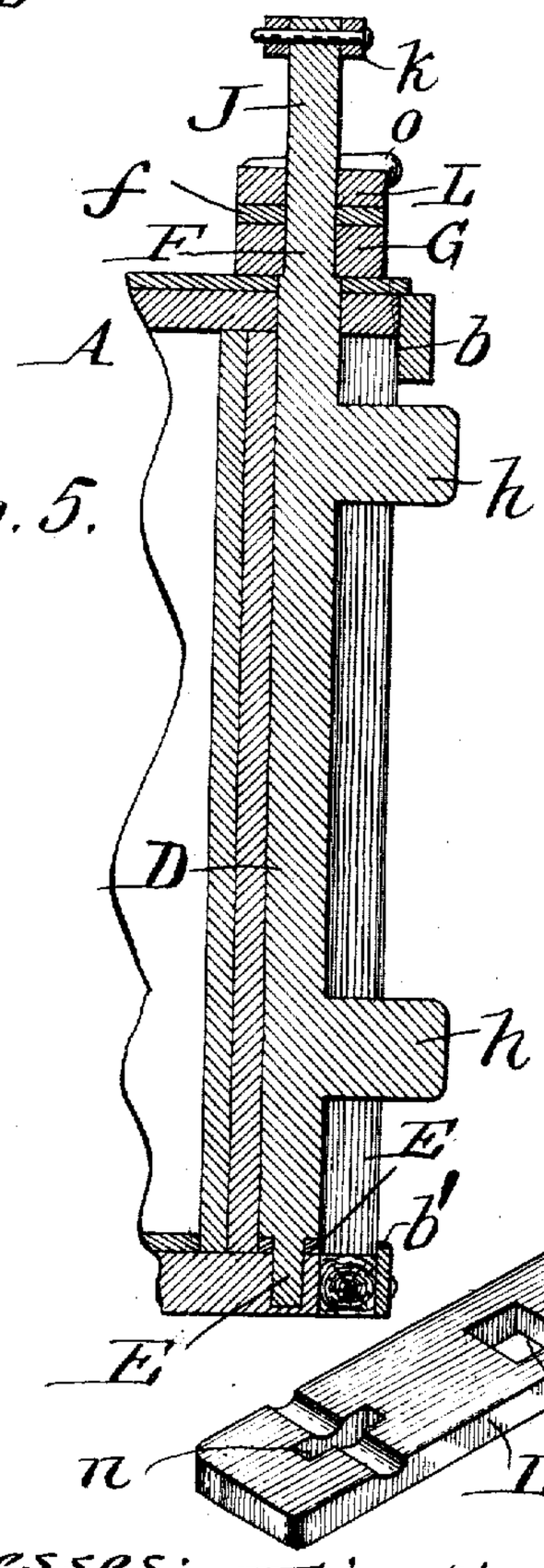


Fig. 5.

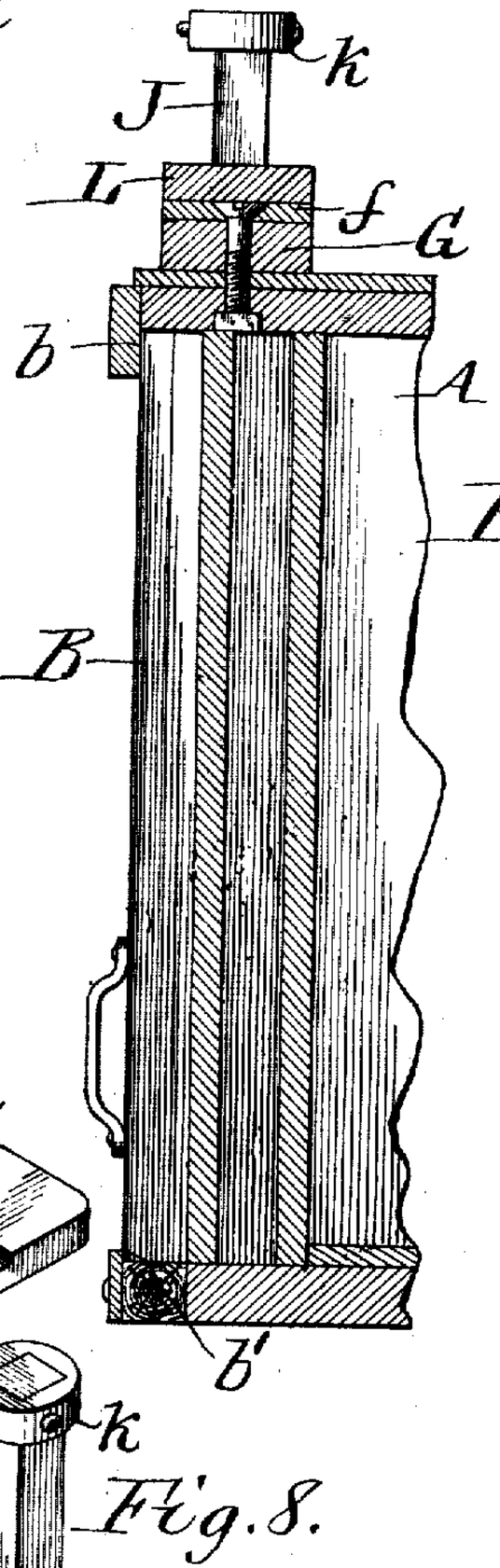


Fig. 6.

Fig. 7.

Fig. 8.

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UNITED STATES PATENT OFFICE.

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CAR-DOOR LOCK

No. 908,147. Specification of Letters Patent. Patented Dec. 29, 1908.

Application filed August 5, 1908. Serial No. 447,165.

To all whom it may concern:

Be it known that we, WILLIAM J. SCHMAHL and THOMAS H. WATTS, citizens of the United States, and residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Car-Door Locks, of which the following is a specification.

This invention relates to a lock or fastening device which is more particularly intended for use on the horizontally sliding doors of box freight cars. The locks or fastenings for such doors have heretofore usually been applied to the side of the door and car body at which place they are easily accessible and subject to tampering by unauthorized persons and render it possible to burglarize the car without detection.

It is the object of this invention to provide a lock or fastening for car doors of this character which is so constructed that the same must be operated from the top of the car, thereby rendering it more difficult to tamper with the same and also increasing the risk of detection if a burglar should attempt to operate the lock.

In the accompanying drawings consisting of 2 sheets: Figure 1 is a fragmentary side elevation of the car provided with our improved door lock or fastening. Fig. 2 is a horizontal section thereof in line 2—2, Fig. 1. Fig. 3 is a fragmentary vertical longitudinal section in line 3—3, Fig. 2. Fig. 4 is a top plan view of the lock and the adjacent parts of the car body. Figs. 5 and 6 are fragmentary vertical transverse sections in the correspondingly numbered lines in Fig. 1. Fig. 7 is a perspective view of the handle or operating bar of the lock. Fig. 8 is a similar view of the upper end of the locking shaft.

Similar letters of reference indicate corresponding parts throughout the several views.

The box car to which our invention is applicable may be of any suitable construction that shown in the drawings consisting of a body A and a door B which slides horizontally and lengthwise at its upper and lower edges in guides b, b^1. The forward movement of the door when in its closed position is arrested by means of a stop c which is secured to the outer side of the car body and engaged by the front edge of the door.

Our improved lock or fastening for holding the door shut is constructed as follows: D represents an upright locking shaft which is arranged on the inner side of the path of the door and adjacent to the rear edge thereof when the same is in its closed position. At its lower end the shaft is provided with a reduced pivot pin or trunnion e which is journaled in a bearing plate E secured by bolts or otherwise to the lower part of the car body while its upper part is provided near its upper end with a reduced cylindrical neck F which is journaled in a bearing plate f secured to a block G on top of the car body by bolts or other suitable means. Between the top and bottom of the car the locking shaft is provided with one or more laterally projecting lugs or stops h which are adapted to be swung outwardly so as to project across the path of the door and engage with the rear edge thereof upon turning the shaft in one direction and thereby hold the door against opening, as shown in Figs. 1, 2 and 5, or to be swung inwardly clear of the path of the door upon turning the shaft in the opposite direction when it is desired to release the door and permit the same to be opened. The locking shaft and its stop lugs are arranged in a recess formed in the side of the car consisting of a main upright portion I which receives the main part of the shaft and two branches i, i extending rearwardly from the main portion and adapted to receive the stop lugs when the same are in their retracted position.

Above its upper bearing the locking shaft is provided with a shank J and at its upper end the same is provided with a collar k which is secured thereto by a transverse rivet, as shown, or in any other suitable manner. Mounted upon this shank so that it is compelled to turn with the shaft but is free to move axially thereon independently of the same, is an operating handle or bar L whereby the shaft is turned and which also forms part of the means whereby the shaft and its stop lugs are held in their locked position. The means for thus connecting the handle to the shaft consists in making the shank thereof of rectangular form in cross section and providing the handle with an opening l of corresponding form to receive said shank. The handle is preferably constructed in the form of a cross bar which projects radially from opposite sides of the shank so that both hands may be employed for turning the same and the locking shaft. When the latter has been turned forwardly

into its operative position in which its stop lugs project across the rear edge of the door, the handle bar is arranged lengthwise in line with the block G on top of the car. Upon reaching this position, the handle bar may be secured against movement for holding the shaft in its locked position by any suitable means, that shown in the drawings being suitable for this purpose and consisting of two staples *m*, *m* projecting upwardly from opposite ends of the block G through openings *n*, *n* in opposite ends of the handle bar, a pair of pins *o*, *o* passing transversely through said staples above the handle bar and being connected to the car body by means of chains o^1 or other suitable flexible connections and a wire seal P applied to the front end of one or both of said pins for the purpose of preventing unauthorized withdrawal of the same.

While the handle bar is being turned together with the locking shaft it is raised on the rectangular shank thereof, so that it sweeps clear over the upper ends of the staples, but after the handle bar has turned the locking shaft into its operative position the handle bar is slid downwardly on the shank for engaging its openings with the staples of the block preparatory to inserting the pins or other fastenings to the staples.

The parts of our improved locking device which engage directly with the door and which are accessible from the ground are very strong and durable and cannot be easily broken. By arranging the operating and fastening means of the door lock on top of the car body where the same are difficult of access and where any one operating the same is in a more exposed position than at the side of the car, the liability of tampering with the door fastening by burglars and the danger of robbing the car of its contents are materially reduced.

We claim as our invention:

1. A car door lock comprising an upright shaft journaled on the car body on one side of the path of the door and having a projection adapted to be moved into and out of the path of said door by turning the shaft in one direction or the other, a handle connected with the upper end of said shaft so as to be compelled to turn therewith but capable of moving axially on the shaft independently thereof, and means for fastening said handle to the top of the car.

2. A car door lock comprising an upright shaft journaled on the car body on one side of the path of the door and having a projection adapted to be moved into and out of the path of said door by turning the shaft in one direction or the other, a handle connected with the upper end of said shaft so as to be compelled to turn therewith but capable of moving axially on the shaft independently thereof, and a staple which is arranged on top of the car and which is adapted to engage with an opening in said handle and to receive a fastening for holding the handle on said staple.

3. A lock for horizontally sliding car doors comprising an upright shaft journaled on the car body on the inner side of the path of the door and having a projection adapted to engage with the rear edge of the door and having a rectangular part which projects above the top of the car and a collar at its upper end, a handle having a rectangular opening which receives the correspondingly shaped part of said shaft below said collar and is capable of turning with the shaft and moving axially thereon, and means for fastening the handle to the top of the car.

4. A lock for horizontally sliding car doors comprising an upright shaft journaled on the car body on the inner side of the path of the door and having a projection adapted to engage with the rear edge of the door and having a rectangular part which projects above the top of the car and a collar at its upper end, a handle having a rectangular opening which receives the correspondingly shaped part of said shaft below said collar and is capable of turning with the shaft and moving axially thereon, and means for fastening the handle to the top of the car comprising staples which are arranged on top of the car body on opposite sides of the shaft and with which openings—opposite ends of the handle are adapted to engage by a downward movement of the handle on the shaft and holding means adapted to pass through said staples above said handle.

Witness my hand this 3rd day of August, 1908.

WILLIAM J. SCHMAHL.
THOMAS H. WATTS.

Witnesses:
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