

(No Model.)

H. D. SMITH & J. W. BATCHELLER.
PERMUTATION LOCK.

No. 598,027.

Patented Jan. 25, 1898.

Fig. 1.

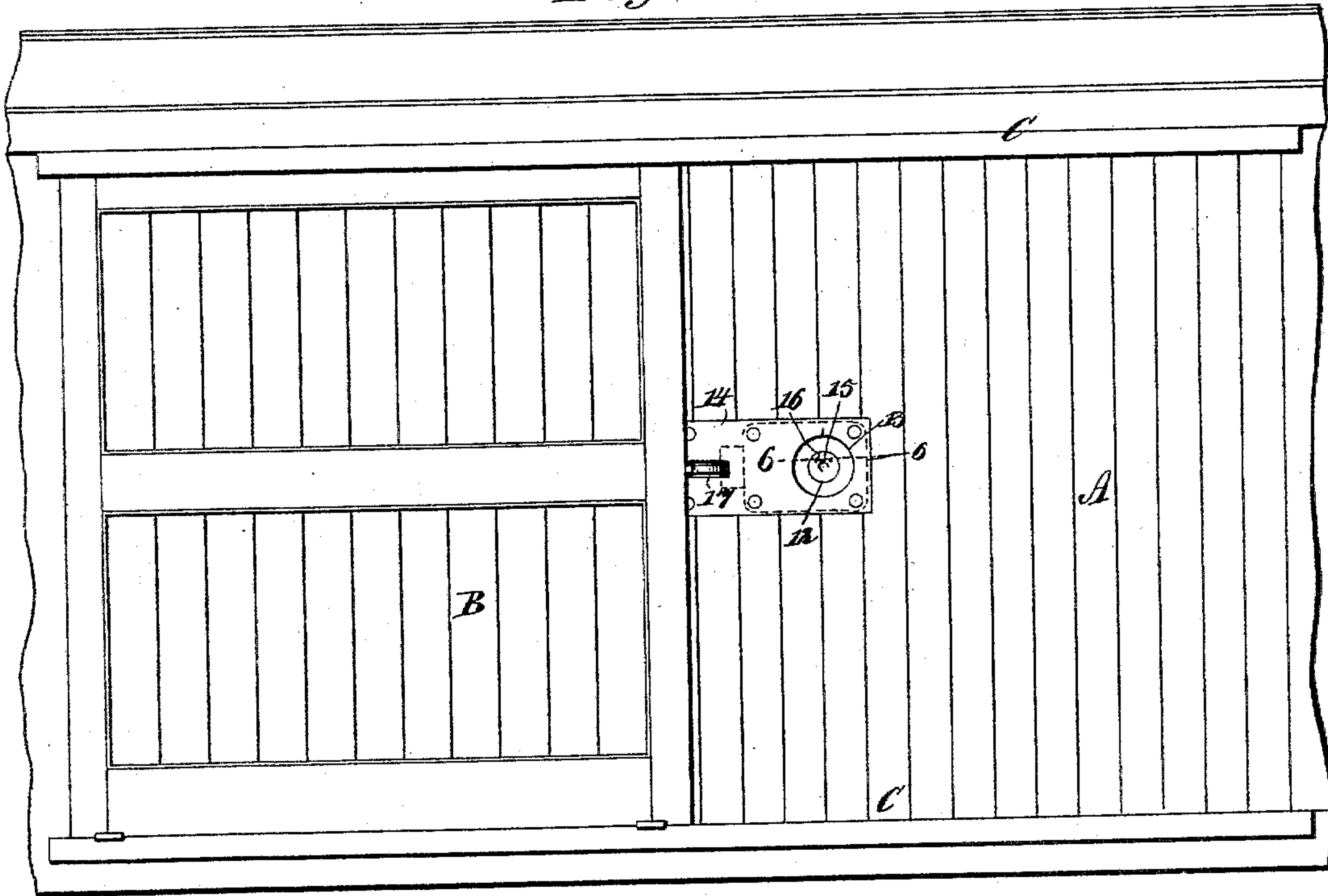


Fig. 2.

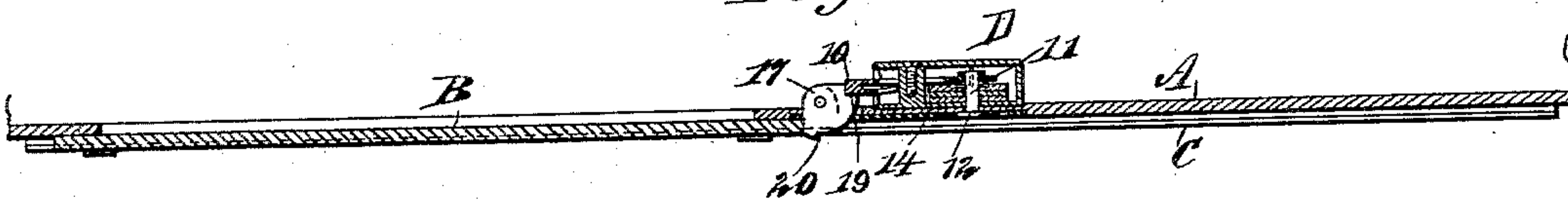


Fig. 3.

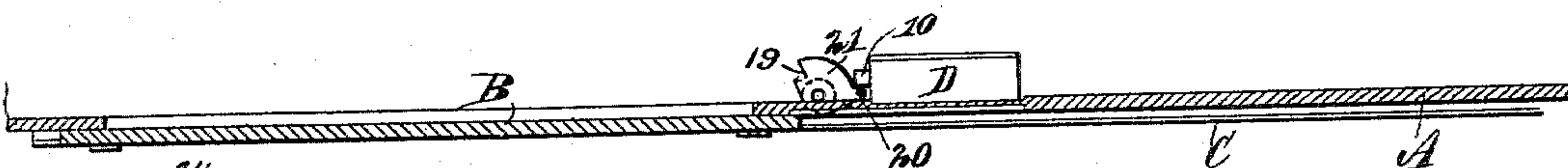


Fig. 4.

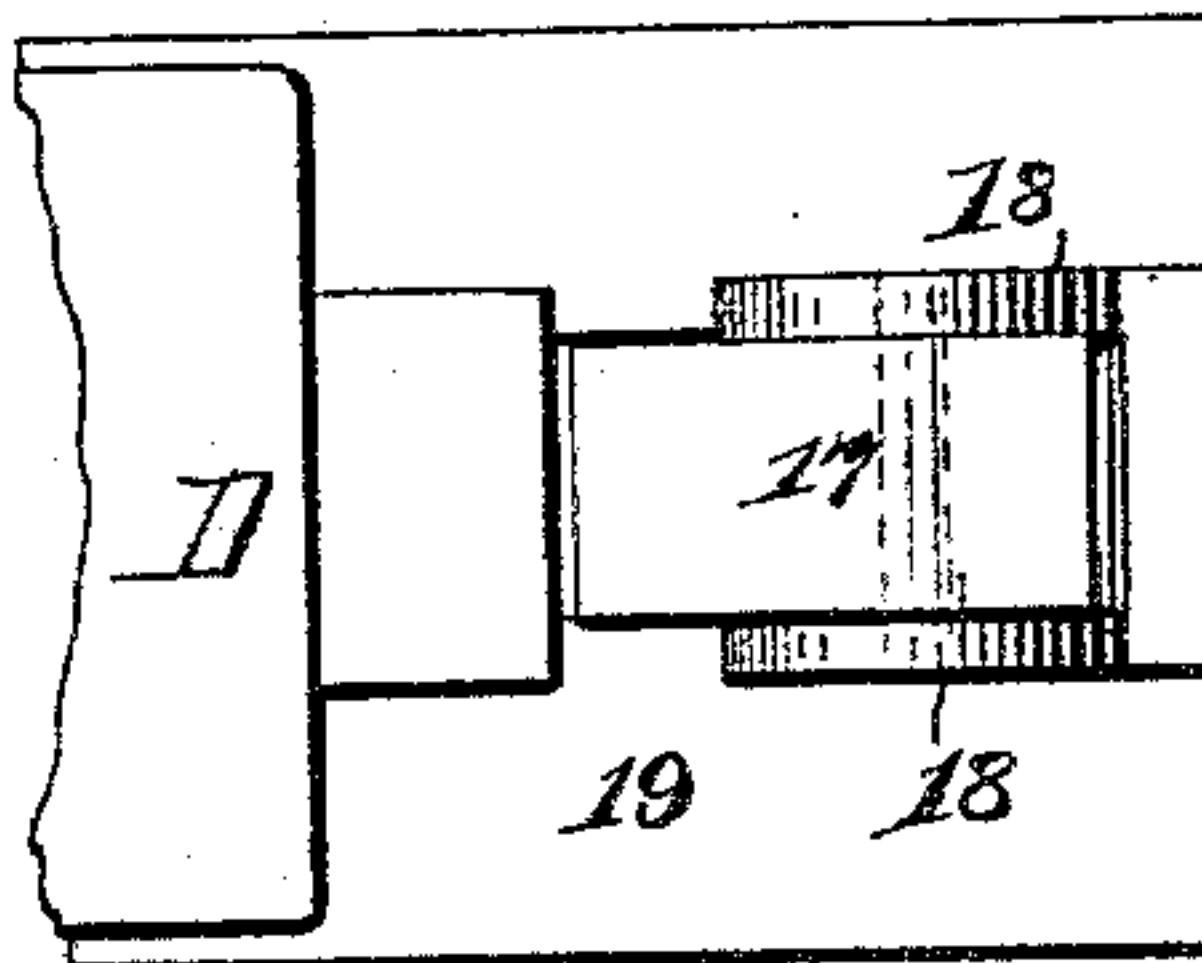


Fig. 5.

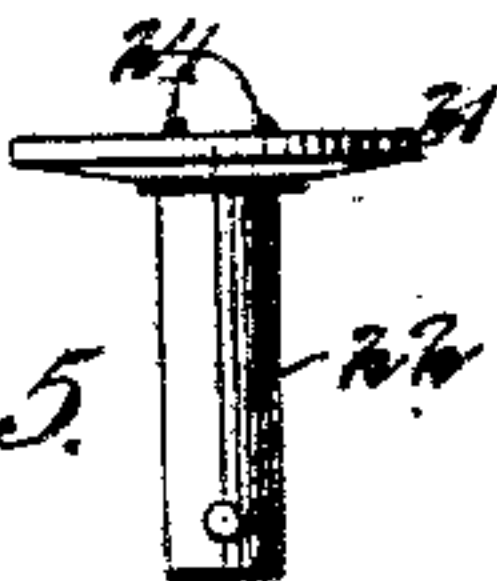
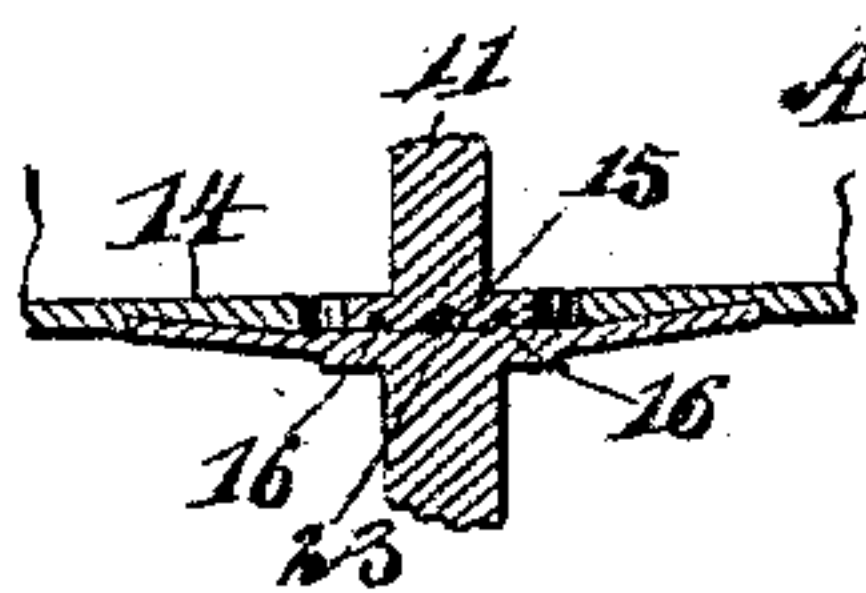


Fig. 6.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY D. SMITH AND JOSIAH W. BATCHELLER, OF ST. JOSEPH, MISSOURI,
ASSIGNORS OF ONE-THIRD TO JOHN H. SPARKS, OF SAME PLACE.

PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 598,027, dated January 25, 1898.

Application filed January 20, 1897. Serial No. 619,897. (No model.)

To all whom it may concern:

Be it known that we, HENRY D. SMITH and JOSIAH W. BATCHELLER, of St. Joseph, in the county of Buchanan and State of Missouri, have invented a new and Improved Device for Locking Car-Doors, of which the following is a full, clear, and exact description.

The object of our invention is to provide a device whereby doors, especially of freight-cars, may be secured closed through the medium of a combination-lock located within the car, only the operating-spindle of the lock appearing at the outside of the car, and to provide a means whereby the dial or disk containing the combination, together with its handle or knob, may be conveniently and expeditiously removed from or placed in engagement with the locking spindle to bolt or unbolt the lock.

The invention consists in certain combinations of elements, as will be fully described hereinafter and defined in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a partial side elevation of a freight-car, illustrating the door closed and locked by the improved appliance. Fig. 2 is a horizontal section through the door of the freight-car and adjacent portions of the sides of the car, showing the locking-knuckle in plan view and a combination-lock in section, the door of the car being shown as closed and locked in that position. Fig. 3 is a horizontal section through a car-door and adjacent side portions of the car, illustrating the lock and the knuckle in plan view and the door closed yet free to open. Fig. 4 is an enlarged view of a part of the lock viewed from the inside of the car, illustrating the bolt in locking engagement with the knuckle, the latter being shown in side elevation from the inside of the car also. Fig. 5 represents, respectively, a side elevation and plan view of the combination-disk and its handle detached from the lock; and Fig. 6 is a sectional view taken practically on the line 6 6 of Fig. 1, showing the combination-disk in working engagement with the lock-spindle.

A represents a side of the car, B the door, and C the tracks upon which the door slides.

A lock D, preferably a combination-lock of any approved type, is secured upon the inside of the car, the bolt end of the lock being just behind the sliding door and substantially flush with the door-jamb.

The bolt 10 of the lock and likewise the interior mechanism may be of any suitable construction; but the spindle 11, which turns the disk or operates the tumblers in the lock, is carried outward to the outer face of the side of the car and at its outer end is provided with a head 12, located within a recess 13, preferably of a circular contour, and this recess may be made directly in the side of the car or in a wear-plate 14, as illustrated in the drawings, the plate being secured to the car.

The head of the lock-spindle is provided with a central depression 15 and apertures 16, located adjacent to the central recess or cavity.

In front of the bolt of the lock an opening is made in the side of the car and in the wear-plate 14 when the latter is used, and a knuckle 17, of substantially triangular shape, is journaled at or near the junction of two of its sides between lugs 18, formed upon or attached to the inner face of the side of the car, as shown in Fig. 4. The third side of the knuckle 17, or that side which faces the bolt, is preferably given a convexed form, as shown in Figs. 2 and 3, and at one side of the convexed side a recess 19 is made, while at the other end a second recess 20 is produced, the two recesses being at angles to one another.

In connection with the lock a disk 21 is employed, upon which the figures, letters, or characters of the combination are produced, and this disk or plate is provided with a handle 22 of any approved type. The inner face of the combination disk or plate is provided with a central short stud 23, adapted to enter the central recess in the head of the lock-spindle, and upon the said inner face of the combination-disk two pins 24 are located, adapted to enter the apertures 16 in the aforesaid lock-spindle head, as shown in Fig. 6. Ordinarily the inner face of the combination-disk is concaved and the surface around the head of the lock-spindle is more or less convexed, as is likewise shown in Fig. 6.

It will be seen that the parts 11 and 12 form

an operating member for the lock, with which member the disk 21, which is a separate member, coacts.

5 In operation when the door is closed and it is desired to lock it in said position the knuckle 17 is carried outward, so that the recess 20 will extend beyond the outside of the car, whereupon the straight side of the knuckle will be brought in engagement with the rear or
10 backed edge of the door, as shown in Fig. 2. The combination disk or plate is then brought in engagement with the lock-spindle and the bolt of the lock is shot outward and made to enter the recess 19 in the inner end portion of
15 the said knuckle, as is likewise shown in Fig. 2, the lock preventing the knuckle from moving inward and the knuckle preventing the door from being moved back upon its tracks. After the locking of the door is effected the
20 combination-disk is removed from the lock and no means will be visible to guide or assist a person in an attempt to open the lock without authority. When the car arrives at its destination and the door is to be opened,
25 the proper person will place a combination-disk again in engagement with the lock-spindle, and when the proper combination has

been found the lock may be opened and the knuckle carried to the inner position shown in Fig. 3, and the bolt of the lock may be
30 again shot outward to enter the recess 20 in the knuckle, thereby preventing the knuckle from being moved outward from the side of the car and interfere with the opening and closing of the door. This attachment is ex-
35 ceedingly simple, durable, and economic, and its advantages are obvious.

Having thus described our invention, we claim as new and desire to secure by Letters
40 Patent—

A combination-lock, the spindle whereof is disposed at one side of the lock-casing, and a combination-disk having numbers, letters or characters formed thereon and provided with
45 a handle, the said combination-disk having its inner face constructed for fast yet removable engagement with the exposed portion of the aforesaid lock-spindle, as and for the purpose specified.

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Witnesses:

FRED. W. GRANT,

JNO. A. READ.