M. J. RUDDY.

INDICATOR LOCK.

APPLICATION FILED OCT. 29, 1908.

923,584.

Patented June 1, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

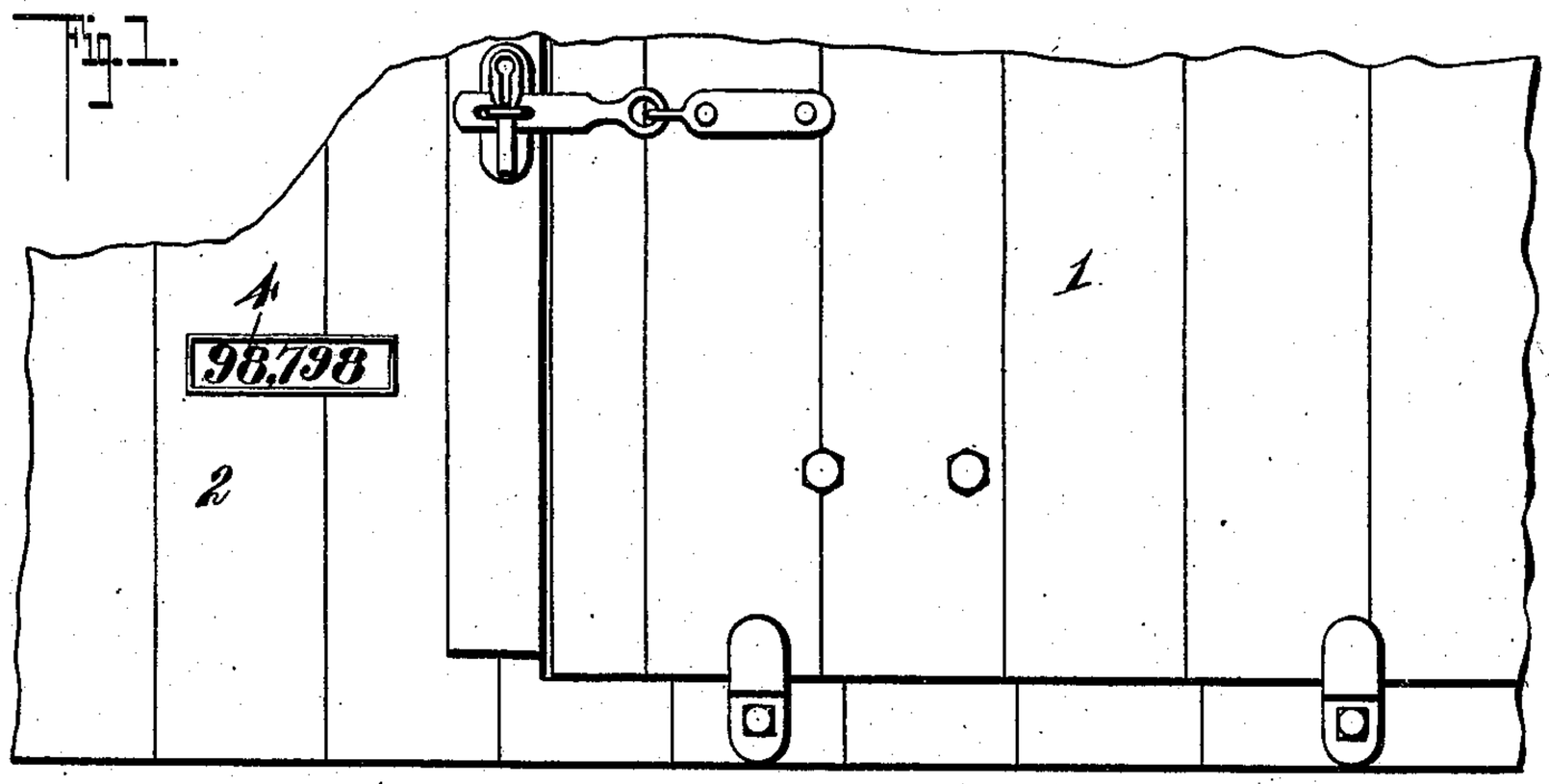


Fig. 2.

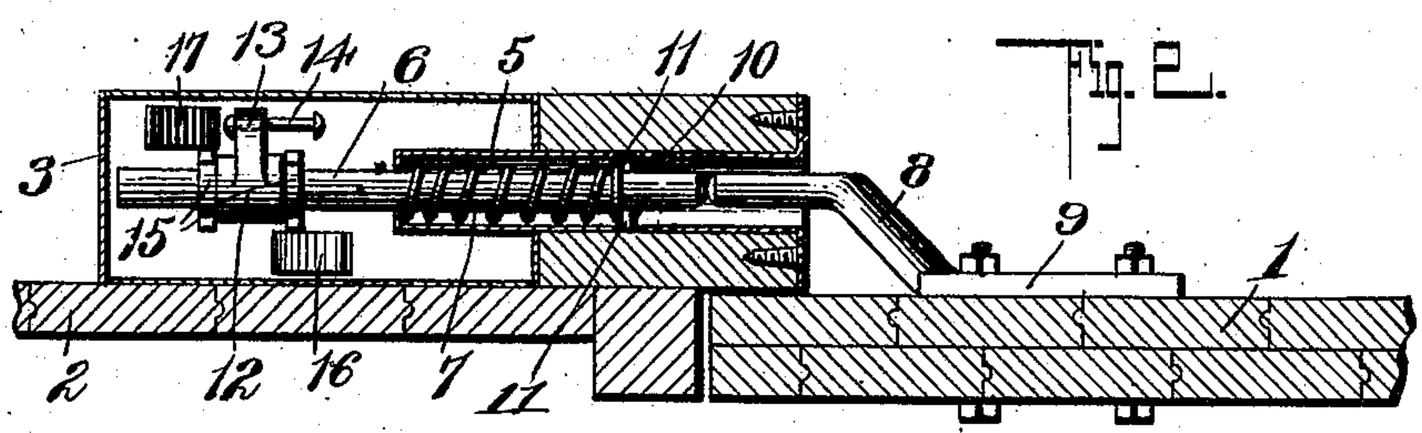


Fig. 3.

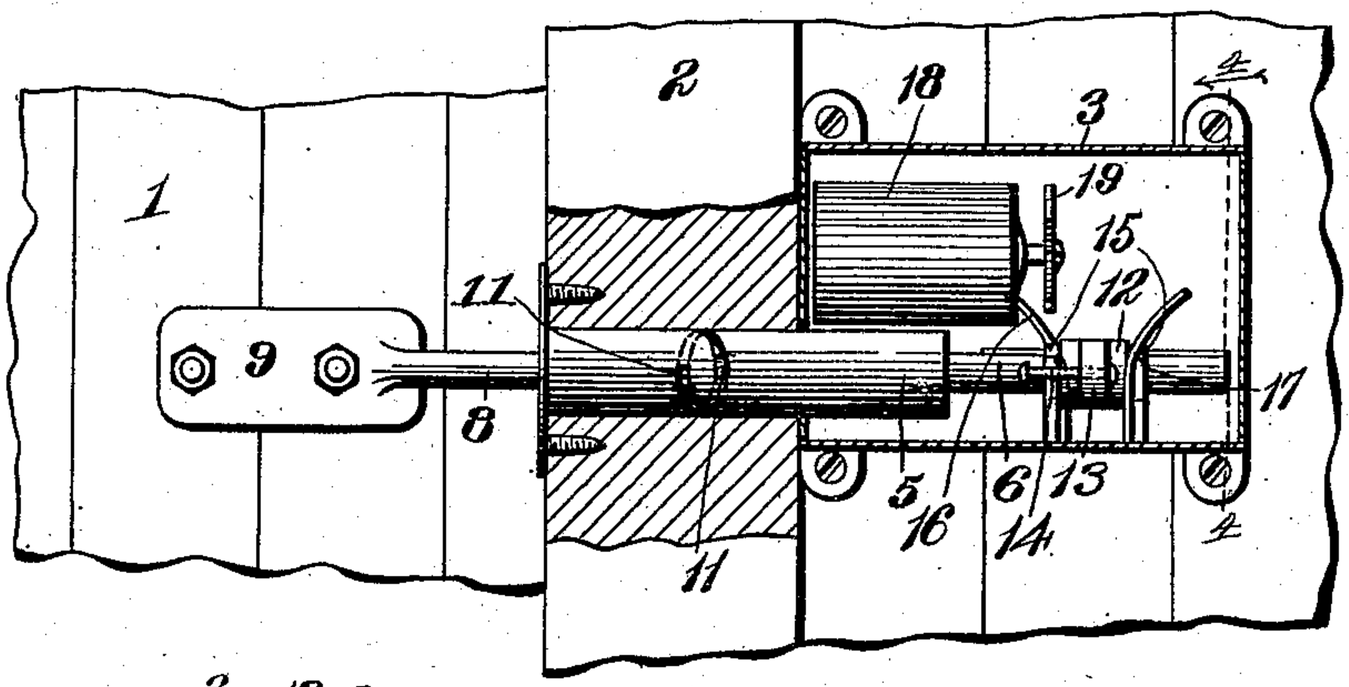


Fig. 4.

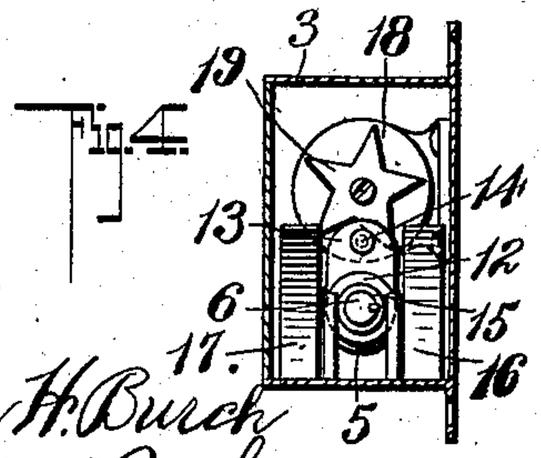
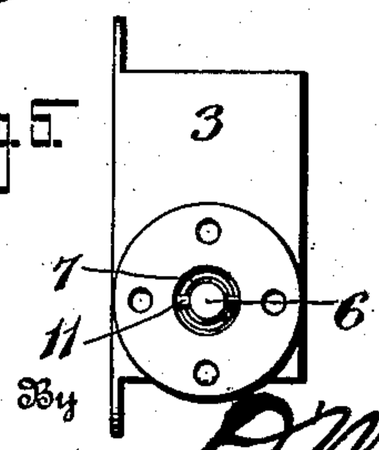


Fig. 5.



Witnesses

Philip H. Burch

E. B. McBath

Inventor

M. J. Ruddy,

By Mead & Burch

Attorneys

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2 SHEETS—SHEET 2.

Fig. 6.

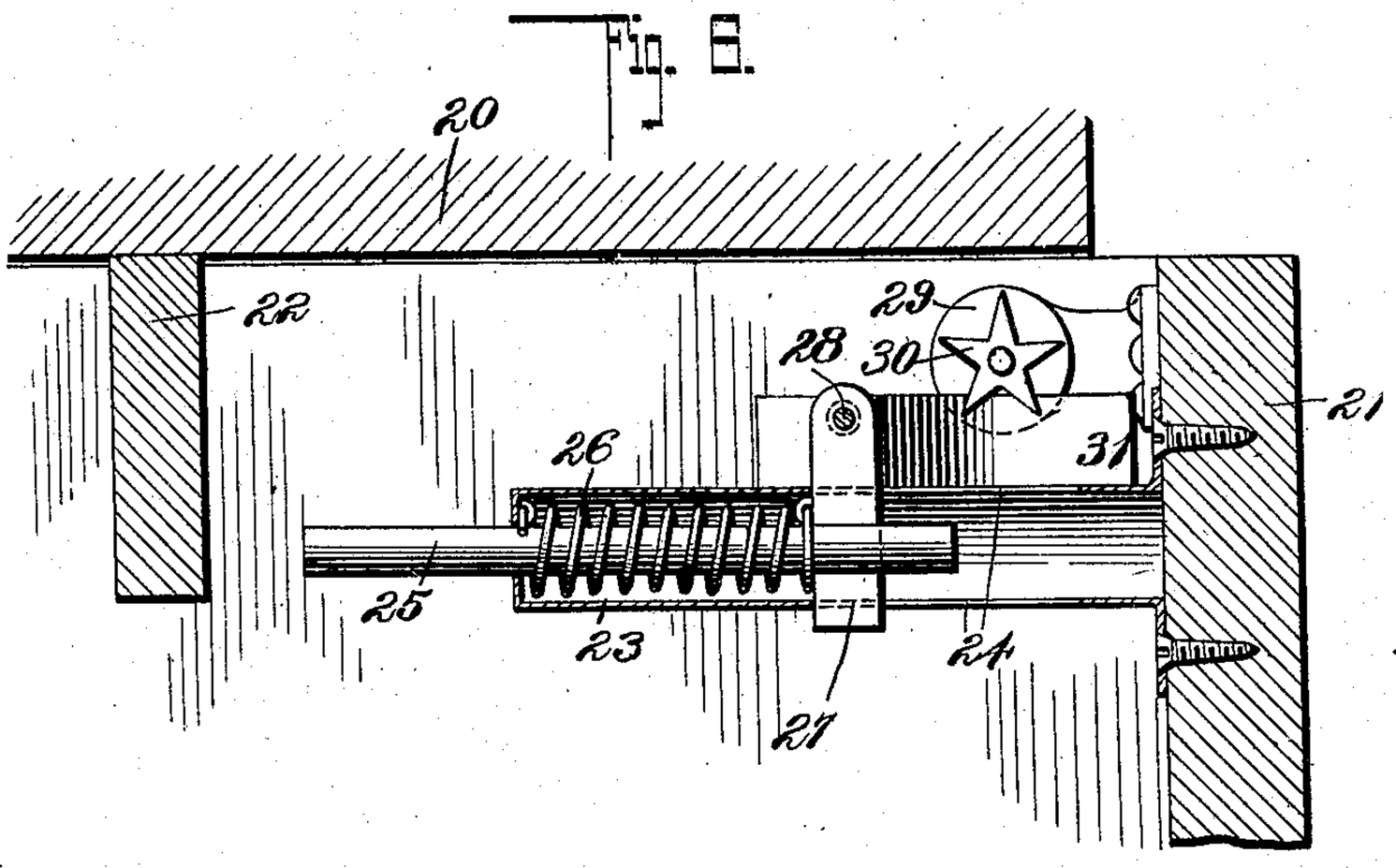
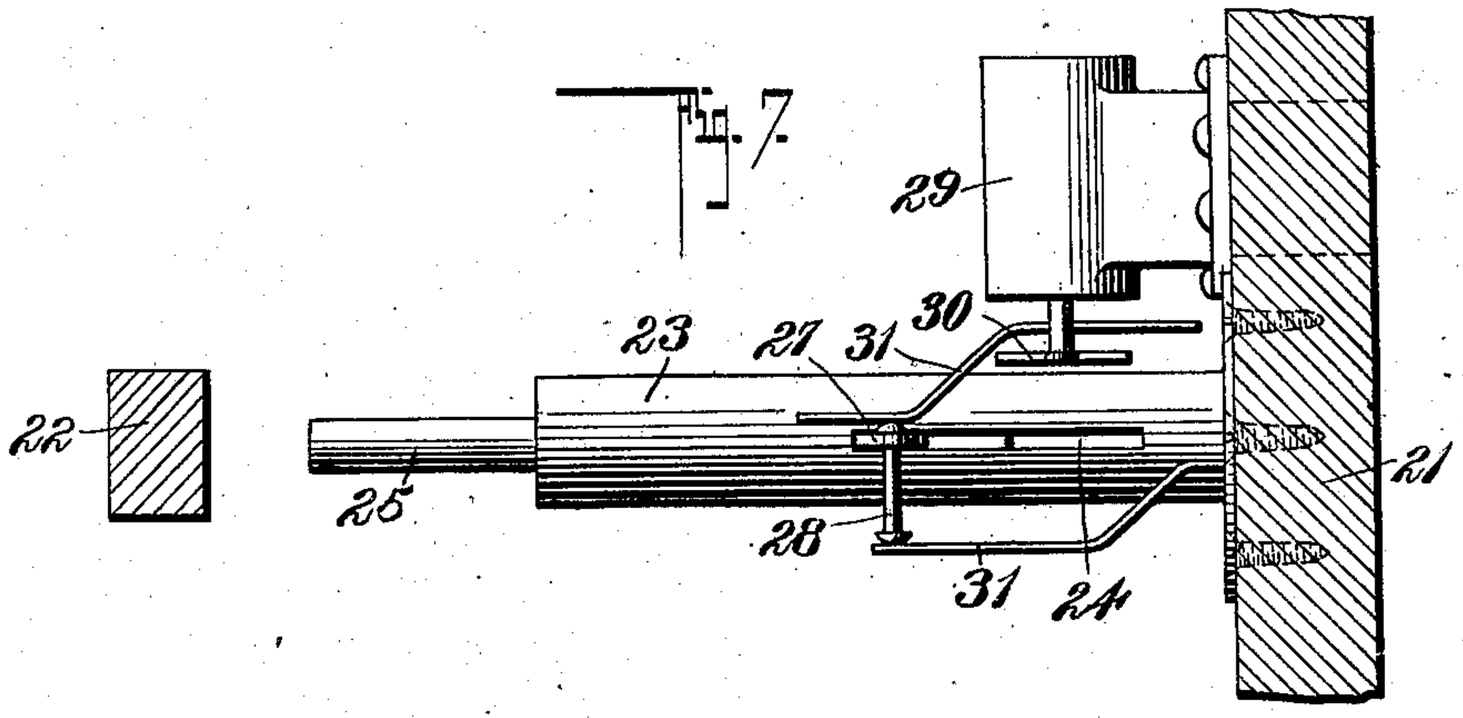


Fig. 7.



Witnesses

Philip H. Brock

C. B. McBaith.

Inventor

M. J. Ruddy,

By O'Meara & Brock

Attorneys

UNITED STATES PATENT OFFICE.

MICHAEL J. RUDDY, OF SALT LAKE CITY, UTAH, ASSIGNOR OF ONE-HALF TO ALLEN H. SEARLE, OF SALT LAKE CITY, UTAH.

INDICATOR-LOCK.

No. 923,584. Specification of Letters Patent. Patented June 1, 1909.

Application filed October 29, 1908. Serial No. 460,132.

To all whom it may concern:

Be it known that I, MICHAEL J. RUDDY, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented a new and useful Improvement in Indicator-Locks, of which the following is a specification.

This invention relates to an indicator lock adapted for use in connection with doors, either swinging or sliding, drawers, safety deposit boxes and so forth.

The object of the invention is to display a particular number upon closing of the door, drawer or box or compartment of any kind said number being visible from the outside, and being automatically changed as soon as the door, drawer or box is opened.

The changing of the number indicates at a glance that the lock or other fastening means had been tampered with and the compartment opened.

The invention consists in the novel features of construction hereinafter described, pointed out in the claims and shown in the accompanying drawings, in which,

Figure 1 is a partial side elevation of a freight car showing my invention as applied thereto, the door being closed and fastened. Fig. 2 is a horizontal section taken through a portion of a car and door, and illustrating my invention applied thereto, parts being in section and parts in plan. Fig. 3 is a side elevation of the device in position for use, as seen from the inside, the casing being in section and the door closed. Fig. 4 is a section on the line 4—4 of Fig. 3. Fig. 5 is an end view of a casing. Fig. 6 is a detailed sectional view illustrating application of my device in one form to a desk drawer. Fig. 7 is a plan view of the mechanism carried by the drawer, the front of the drawer and a stop being shown in section.

In these drawings, 1 represents the car door and 2 the sides of the car, and upon the inner face of the car, the side adjacent the door, is placed a casing 3, the casing and door being both cut out in order that an indicating series of numerals 4 may be viewed from the outside. The casing 3 has projecting from the end nearest the door a sleeve 5. Working in this sleeve is a rod 6 which rod is normally forced forward by a coil spring 7. When the car door is closed however, the rod 6 is engaged by an angled plunger 8 carried by a plate 9 secured upon the inner face of the door. In order that the engagement of the plunger 8 with the rod 6 will cause a rotatable as well as a slidable movement to be imparted to the rod I provide the sleeve 5 with a spiral slot 10 and the rod 6 is provided with laterally extending pins 11 which engage the said spiral slot and cause a one-half revolution of the rod as it is forced inward or outward. The inner end portion of the rod 6 slides through a block 12, keyed to rotate with the rod, and which block carries a projecting arm 13 through which loosely works a pin 14 parallel to the rod 6. The block 12 is prevented from moving longitudinally with or upon the rod 6 by brackets 15 secured to the casing upon opposite sides of the block, and through which the rod 6 works.

At opposite sides of the rod 6 are placed oppositely forwardly and rearwardly curved guides 16 and 17 in position to be engaged by an end of the pin 14. I also place above the inner end of the sleeve 5 a suitable drum casing 18 in which is arranged a drum upon which the series of numerals 4 are placed, the casing 18 being of course suitably cut out to register with the cut out portions of the casing 3 and the side of the car. Upon a projecting portion of the drum shaft is fixed a star wheel 19.

The operation of this mechanism is as follows:—As the plunger 8 forces the rod 6 inwardly the rod is also given a one-half rotation by engagement of the pins 11 with the slot 10, thus rotating the block 12 and swinging of the arm 13 will cause the pin to strike the guide 17, thus sliding the pin through the arm 13 into the position shown in Figs. 2 and 3. But when the door is opened the spring 7 will force the rod 6 outwardly and the pins 11 will give it a one-half rotation in a reverse direction to the rotation produced by closing of the door thus throwing the arm 13 back upon the other side of the casing, and as it swings back the pin 14 strikes a point of the star wheel 19 thus imparting one-fifth of a rotation to the drum and bringing a new series of numerals into view. The pin 14 then strikes the guide 16 and is moved back through the arm 13 to its normal inoperative position, so that when the door is again closed, and the arm again rotated the pin will not engage the star wheel, and the numeral displayed by the opening of the door at one time will not be changed until the door has been opened the second time.

In Figs. 6 and 7 I have shown the device applied to a sliding drawer. This application can be made in a number of ways depending upon the manner in which the parts are attached, but the attachment which I have shown will make the construction of this form of the device clear. In these figures 20 indicates a portion of a desk, 21 the front of the sliding drawer, and 22 a depending stop carried by some fixed part of the desk. This form of the device comprises a sleeve 23 having two diametrically arranged straight, longitudinal slots 24. A rod 25 works in the sleeve and is normally held projecting from the inner end of the sleeve by a spring 26. This rod carries a block 27 through which works a star wheel operating pin 28. I provide also a drum casing 29 and star wheel 30. Upon opposite sides of the sleeve are placed parallel angled guides 31 against which the ends of the pin 28 bear and which guide the pin back and forth through the block 27 as the block slides along the slots 24. The star wheel 30 is arranged to one side of the block 27 and as the drawer is closed and the rod 25 strikes the stop 22 the rod, block 27 and pin 28 move forward and past the star wheel. This forward movement however shifts the pin 28 so that when the drawer is opened and the spring 26 reverses the movement of the parts the pin 28 will strike the star wheel thus rotating the drum one step.

It will be noted that in both forms a longitudinally movable rod carries a block through which a pin is loosely moved by suitable guides, and that this pin misses a star wheel upon movement in one direction and engages it upon movement in the other for the purpose of changing the number displayed upon the opening of the drawer or door. It will also be obvious that the form shown in Figs. 6 and 7 is adapted to be applied to swinging doors, the form first shown and described being best adapted for sliding doors.

What I claim is:—

1. The combination with compartment closing means, a number displaying device, a star wheel for actuating said device, and a pin movable by the closing and opening of said compartment, said pin engaging the star wheel and rotating it one step on movement of the pin in one direction.

2. The combination with a sliding closing means, of a number displaying device, a block, a pin working through said block, means for moving the block upon movement of the closing means and guides shifting the pin into and out of the position to actuate the number displaying device upon movement of the closing means, as and for the purpose set forth.

3. The combination with a sliding door or drawer, of a number displaying device, a slotted sleeve, a rod sliding in the sleeve, a block carried by the rod, a pin working through said block, a star wheel forming a part of the numbering device, and guides for shifting the pin back and forth through the block in position to engage the star wheel when the door or drawer is opened, and to pass to one side of said wheel when the door or drawer is closed.

4. In a device of the kind described a star wheel, a block, means for moving said block upon opening and closing of a door, a pin working loosely through the block, a guide engaging said pin and sliding it through the block into position to engage the star wheel when the door is opened, and a guide engaging said pin and shifting it to the opposite side of the block and out of the way of the star wheel as the door is closed.

5. A device of the kind described comprising a number displaying device, said device including a star wheel, a sleeve, a rod sliding longitudinally in the sleeve, a plunger adapted to be carried by a door to enter said sleeve and engage the rod, means for imparting a partial rotation to said rod during sliding movement, a block keyed to rotate with the shaft and held against sliding movement, a pin sliding through said block, and means for shifting said pin as the rod slides inward and outward, the said pin engaging the star wheel in one position and passing by said wheel without engagement when in its other position.

6. The combination with a car door and an angled plunger carried by the door, of a casing arranged adjacent the door, a number displaying device carried by said casing, said number being visible from without the car, a sleeve carried by said casing an outwardly spring pressed rod slidably held in said sleeve, the plunger entering the sleeve and forcing the rod inwardly when the door is closed, the said sleeve being spirally slotted, pins carried by the rod and projecting into the slots, said pins imparting a partial rotation to the rod during sliding movement, a block through which the rod slides, said block being keyed to rotate with the rod, oppositely curved guides placed upon opposite sides of the rod, a pin sliding loosely through said block and alternately engaging said guides, the said pin actuating the number displaying device when shifted to one side of the block by one of said guides, as and for the purpose set forth.

MICHAEL J. RUDDY.

Witnesses:
BERTHA L. RUDDY,
MARY MCPHERSON.