

(No Model.)

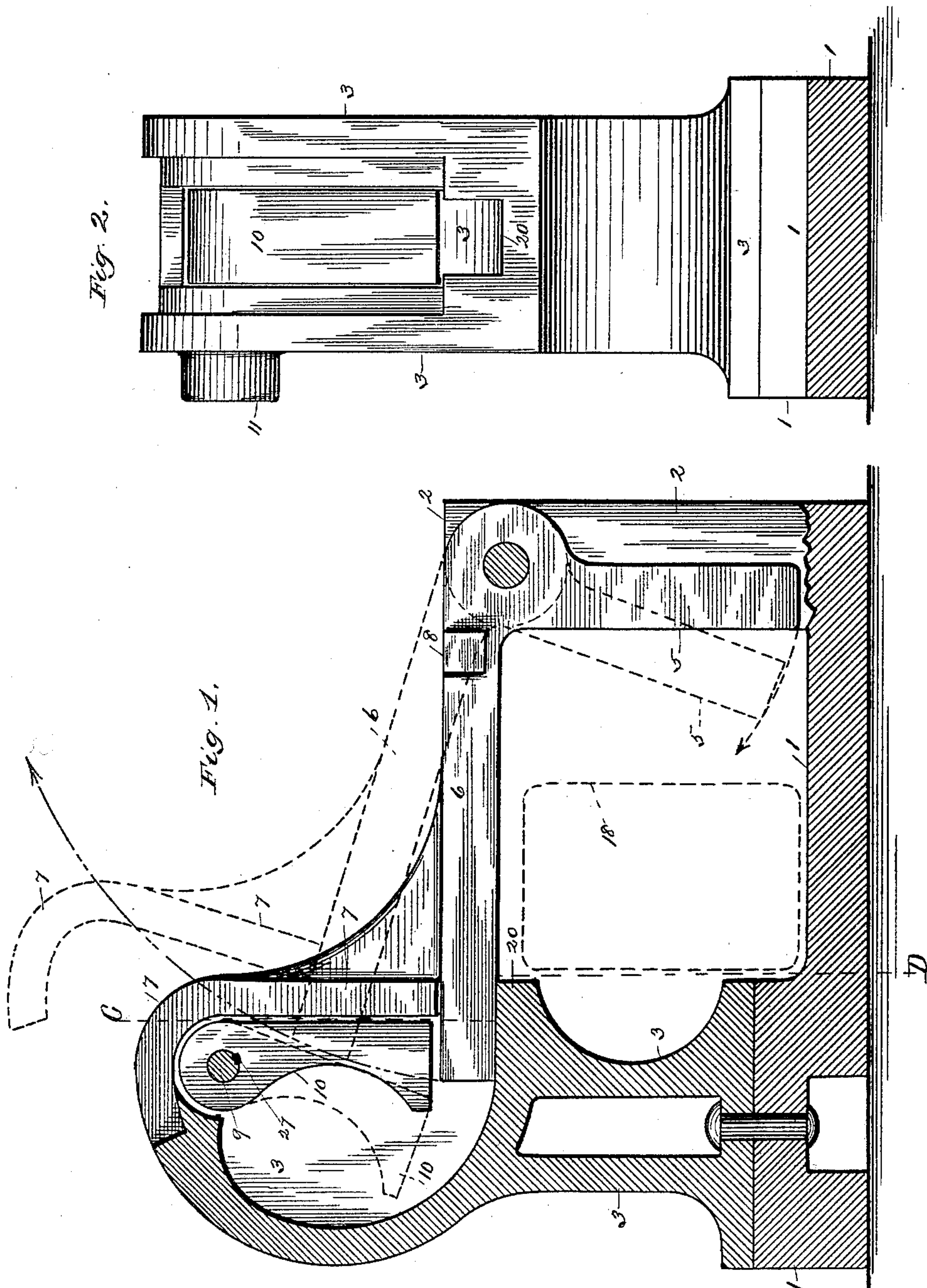
2 Sheets—Sheet 1.

E. S. BATCHELOR.

AUTOMATIC RAILWAY SWITCH LOCK AND KEEPER.

No. 442,282.

Patented Dec. 9, 1890.



WITNESSES:  
John H. Kern  
Wm. L. Pierce

Inventor.  
Edwin S. Batchelor

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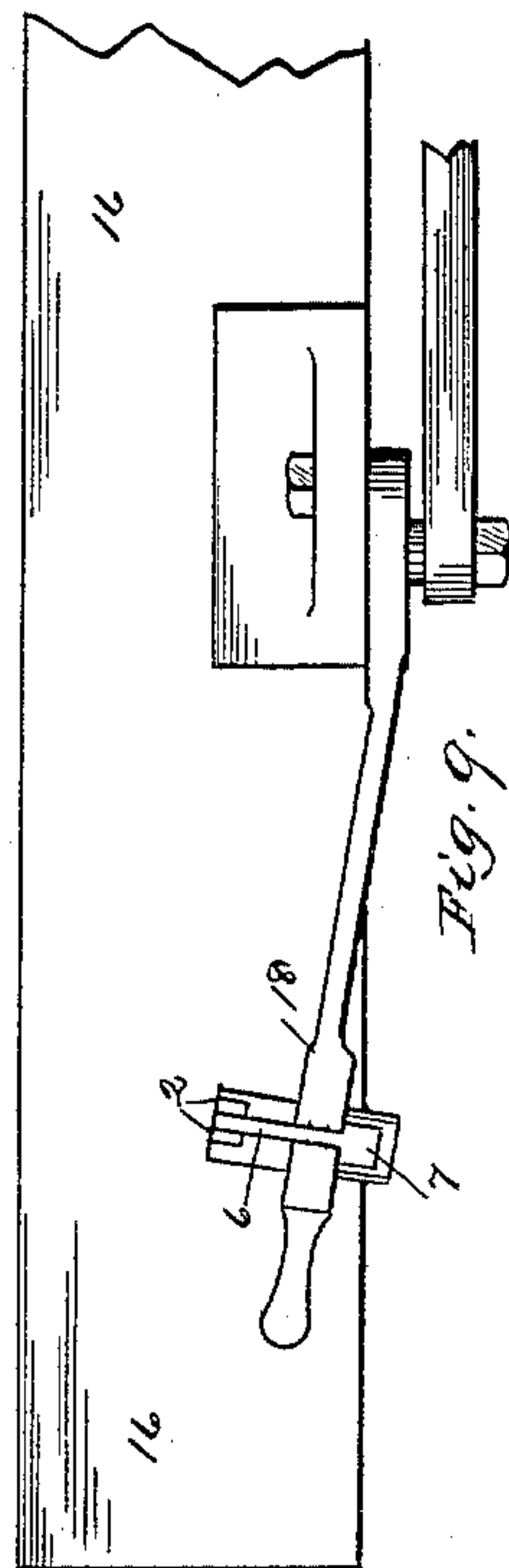
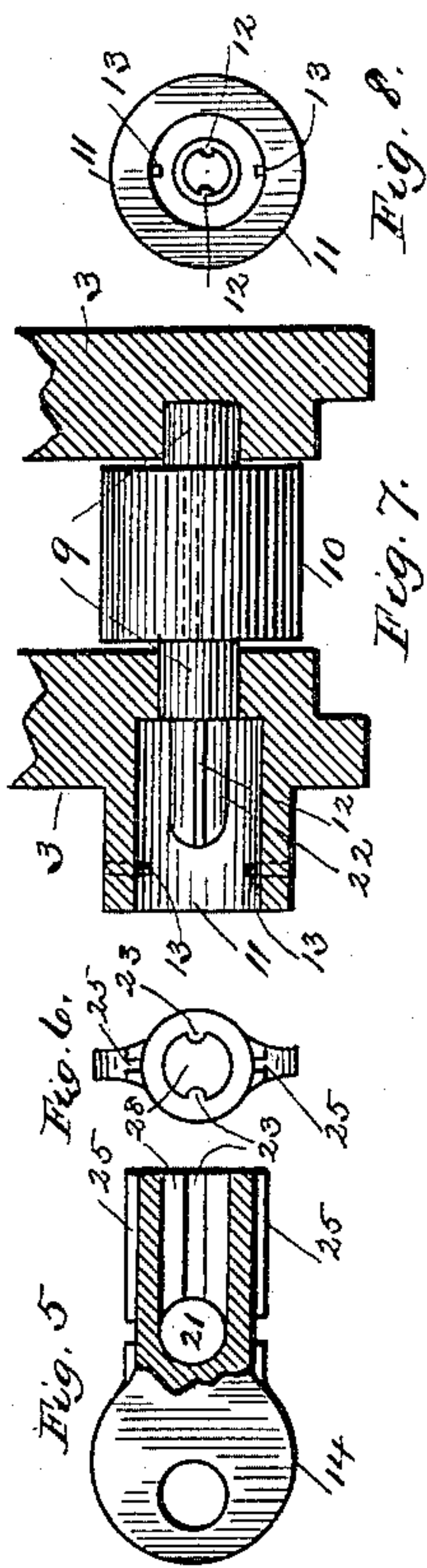
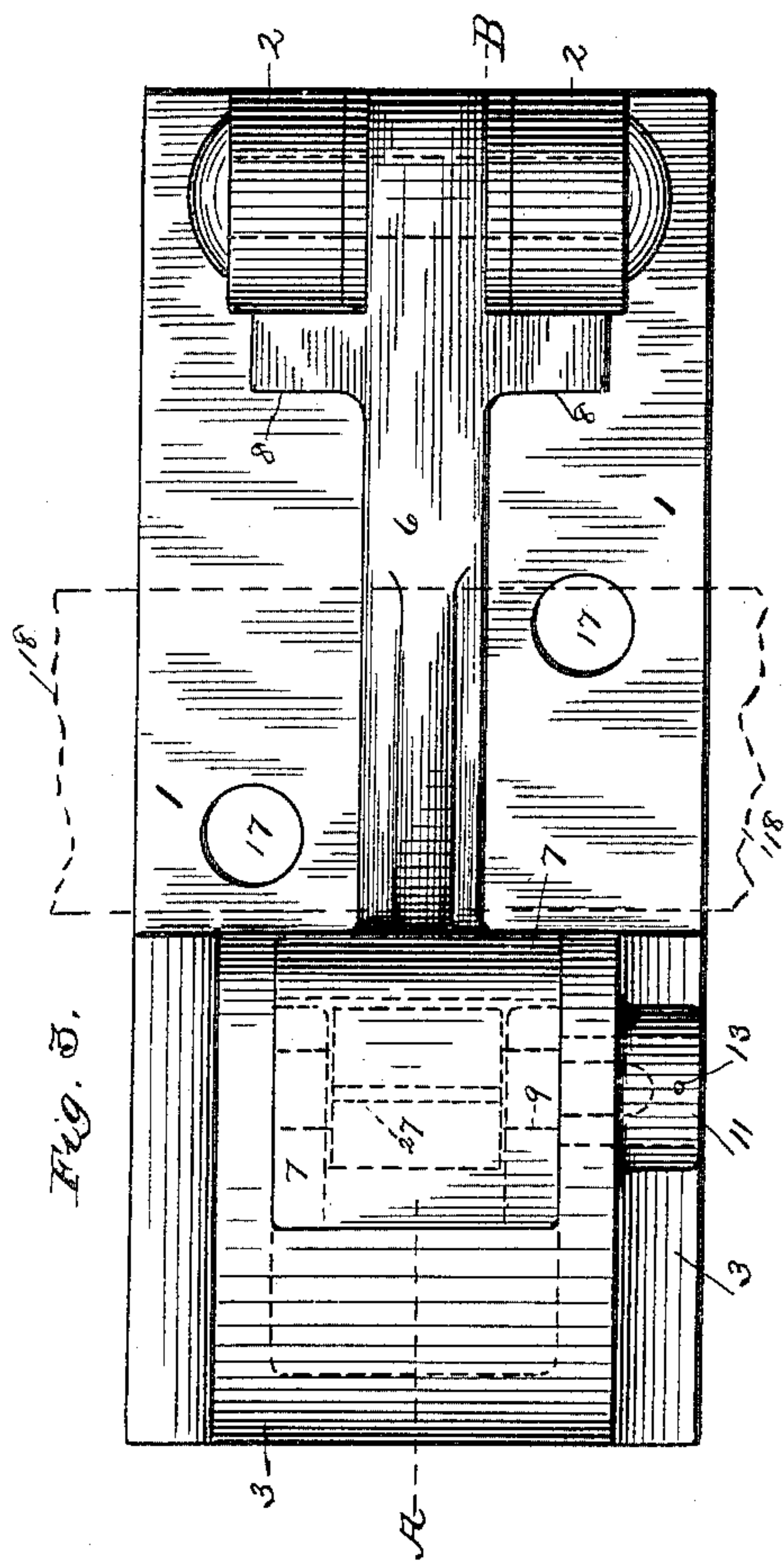
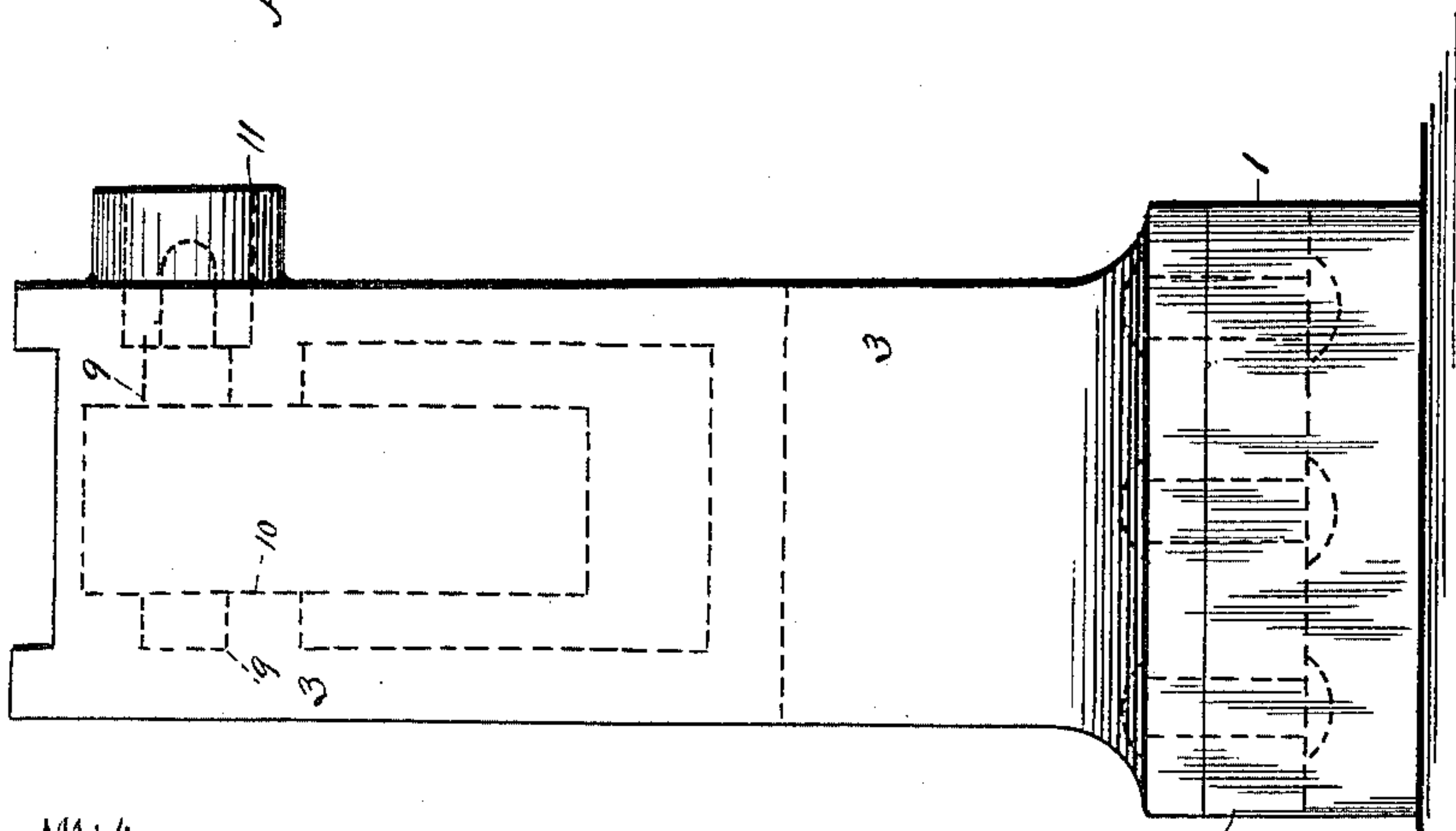


Fig. 4.



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# UNITED STATES PATENT OFFICE.

EDWIN S. BATCHELOR, OF WILKINSBURG, PENNSYLVANIA.

## AUTOMATIC RAILWAY-SWITCH LOCK AND KEEPER.

SPECIFICATION forming part of Letters Patent No. 442,282, dated December 9, 1890.

Application filed September 18, 1890. Serial No. 365,340. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN S. BATCHELOR, a citizen of the United States, residing at Wilkinsburg, county of Allegheny, and State of Pennsylvania, have invented or discovered a certain new and useful Automatic Railway-Switch Lock and Keeper, of which the following is a specification.

The objects of my invention, generally stated, are to construct a combined lock and keeper for a railway-switch lever, so that the latter cannot be put down into full safety position without being locked; also, to embody the above construction in simple mechanism which is not liable to get out of repair and which shall be proof against ordinary tampering.

In the accompanying drawings my invention is shown as applied to a ground-switch lever; but by modifications immediately apparent to a skilled mechanic it can be adapted to other styles of levers.

In the two sheets, Figure 1 is a vertical section on the line A B of Fig. 3, showing in full lines the lock closed and in dotted lines the lock partially opened. Fig. 2 is a front elevation on line C D, with the base in section and the flap of bell-crank or the keeper removed. Fig. 3 is a plan view of the lock, showing in dotted line the switch-handle broken off at either end. Fig. 4 is a rear elevation of my invention. Fig. 5 is partly an elevation and partly a longitudinal section of the key. Fig. 6 is the front end view of the key. Fig. 7 is a central longitudinal section of key-case and spindle with shell of lock-case broken away and dog and spindle in elevation. Fig. 8 is a front elevation of key-case, showing end of spindle. Fig. 9 is a plan view of a tie with my device spiked thereto, locking handle of ground-switch lever.

In the various views, 1 is a metal base having at one end thereof two uprights 2 2 and at the other end a hollow lock-case 3, preferably of the general contour seen in the drawings, and which for convenience in casting is made in a separate piece and riveted to the base 1. Between the uprights 2 2 is pivoted a bell-crank lever having short arm 5 and long arm 6. The relative positions of these arms may, however, be readily interchanged in a modified construction. On the outer end

of said long arm 6 is a flap or keeper 7, the form of which is seen in Fig. 1. The long arm 6 of said bell-crank has two lugs 8 8, one on each side thereof, to engage the top of the uprights 2 2 when said long arm is thrown back to about ninety degrees.

As clearly shown in Figs. 1 and 2, the lock-case has an opening in its face to neatly fit and receive the keeper 7. A shaft 9 is pivoted in the shell of the lock-case and near the top thereof, and secured to said shaft by a pin 27 is a dog 10. Said shaft 9 projects as a spindle 22 into a key-case 11, (best seen in Fig. 7,) said key-case being cast upon the side of the lock-case 3. Said spindle has two opposite longitudinal grooves 12 12, and is rounded at its outer end. On the inside of the lock-case 3, and near to its outer end, are set two opposite pins 13 13.

14 is a key, which has a longitudinal opening 28 to fit around spindle 22. This opening also has lengthwise ribs or wards 23 23 opposite to each other to fit grooves 12 12 on the spindle. On its outer surface the key has two lengthwise grooves 25 25 on opposite sides to track-pins 13 13. The key has also a circumferential groove 26, in which the pins 13 13 engage as the key is turned. 21 is a transverse hole in said key at the inner end of the above-described longitudinal opening to permit dirt, snow, and like obstructions to fall out.

In operation my combined lock and keeper is secured to a tie 16 by spikes through holes 17 17 in the base thereof and in such a position that the arms of the bell-crank lever will be at right angles to switch-lever 19. When the switch is to be locked, the arms of the bell-crank are thrown back until the lugs on the arm 6 strike the uprights 2 2. This leaves the short arm 5 standing out at right angles to the uprights and in the path of the handle 18 of switch-lever. When said handle is thrown down into safety position, it strikes the short arm 5, throwing down long arm 6, which pushes against pivoted dog 10 and swings said dog out of its normal position into the position shown in dotted lines in Fig. 1. When the long arm 6 drops upon shoulder of lock-case 3, the dog 10 is free to return by gravity to its normal position, (shown in full lines in Fig. 1,) where it effectually locks the



arm 6. Simultaneously with the fall of the arm 6 the keeper or flap 7 has dropped into its socket in the lock-case 3, and all illegitimate access to said lock-case is now prevented.

5 The switch-lever is now so confined that it cannot be moved to a sufficient amount to affect the switch. By inserting the key, however, the parts can be thrown back and the lever released.

10 The pins 13 13 in the key-case act as guides for the thrust of the key and tend to prevent successful tampering with said case with wires, &c. By changing position of pins 13 13 and position of corresponding grooves on exterior  
15 of key many different keys and spindles may be obtained without altering the other parts of the structure.

Evidently entirely different forms of keys and cases may be used with my invention from  
20 any here shown. The key-case may be omitted; but it is useful to protect the spindle from injury and makes it more difficult to pick the lock. The lugs on the arm 6 may be dropped; but the bell-crank would then have to be held  
25 up by hand or some other means.

I claim—

1. The combination of a base-piece, a lock-case with an opening in the face thereof, supported upon said base, a dog pivoted in said  
30 lock-case, a bell-crank pivoted to an upward extension from said base, one arm of which bell-crank when raised will be in the path of a switch-lever as the latter is thrown into safety position, the second arm of which bell-

crank lever will swing the pivoted dog clear  
35 of the path of said last arm, and then be secured by said dog, a keeper upon the outer end of said last arm, adapted to drop into the opening in the face of the lock-case, and means for moving said dog to release said bell-crank  
40 lever, substantially as set forth.

2. The combination of a base-piece, a lock-case with an opening in the face thereof, supported upon said base, a dog pivoted in said  
45 lock-case, a bell-crank lever pivoted to an upward extension from said base, one arm of which bell-crank when raised will be in the path of a switch-lever as the latter is thrown into safety position, the second arm of which  
50 bell-crank lever will swing the pivoted dog clear of the path of said last arm, and then be secured by said dog, a keeper upon the outer end of said last arm, adapted to drop into the opening in the face of the lock-case, a spindle  
55 projecting from the side face of the dog and longitudinally grooved, a key-case having one or more pins set therein on the outer end of said spindle, a key with ribs corresponding to the grooves of said spindle, and grooves on said key to form tracks for said pins, sub-  
60 stantially as set forth.

In testimony whereof I have hereunto set my hand.

EDWIN S. BATCHELOR.

Witnesses:

CHAS. M. JOHNSTON,

WM. L. PIERCE.