

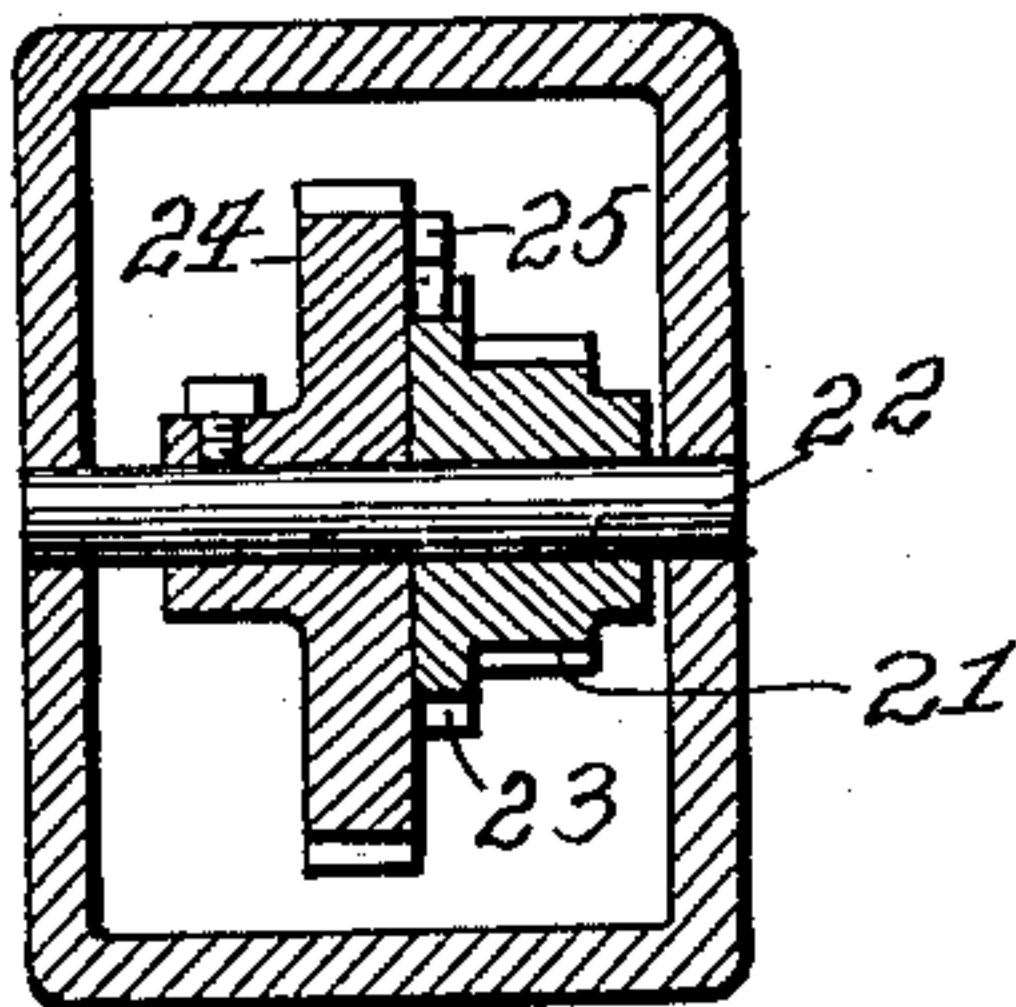
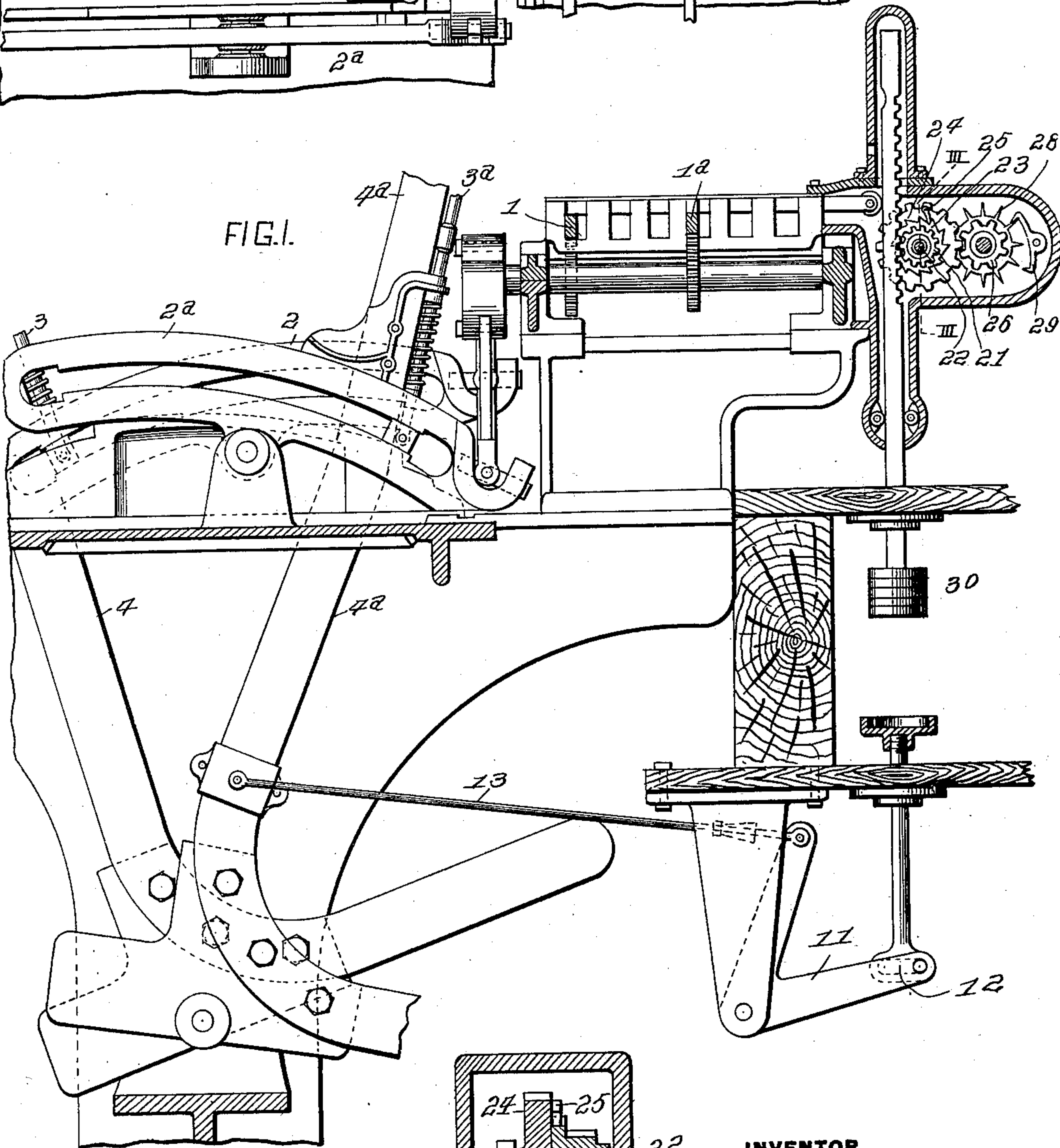
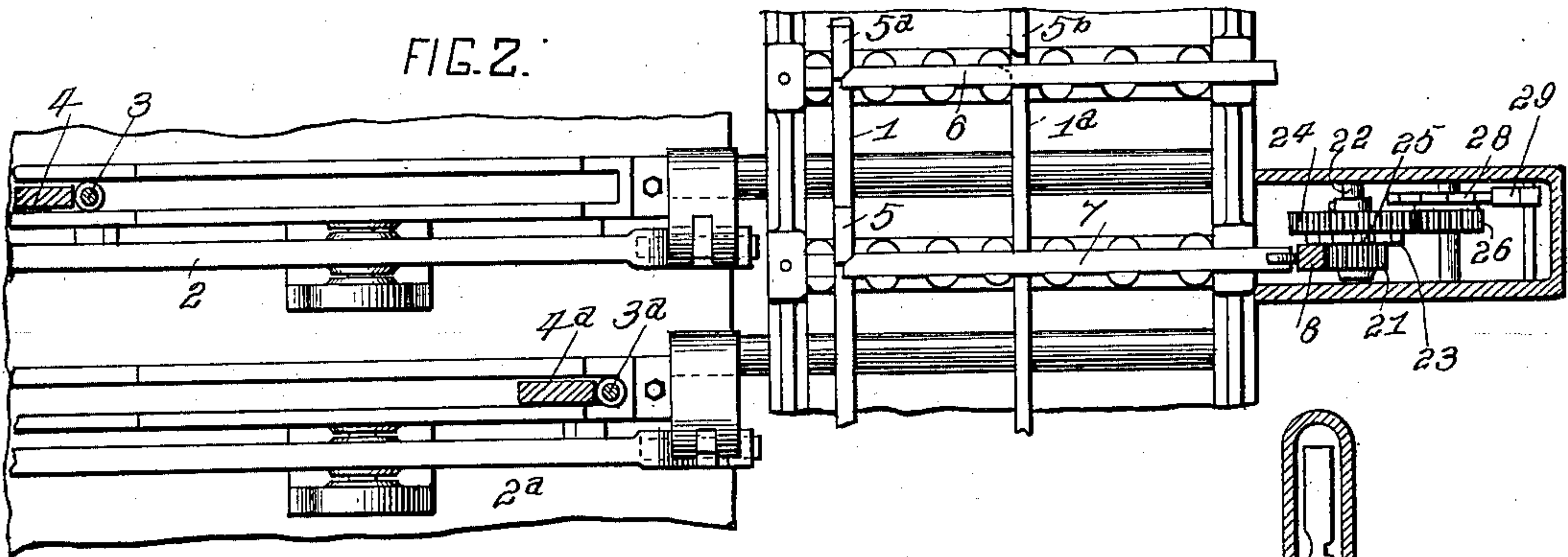
No. 628,637.

Patented July 11, 1899.

V. K. SPICER.  
SWITCH AND SIGNAL MECHANISM.

(Application filed May 23, 1899.)

(No Model.)



WITNESSES:

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Att'y.



# UNITED STATES PATENT OFFICE.

VIBE K. SPICER, OF KENILWORTH, ILLINOIS, ASSIGNOR TO THE UNION SWITCH AND SIGNAL COMPANY, OF SWISSVALE, PENNSYLVANIA.

## SWITCH AND SIGNAL MECHANISM.

SPECIFICATION forming part of Letters Patent No. 628,637, dated July 11, 1899.

Application filed May 23, 1899. Serial No. 717,903. (No model.)

*To all whom it may concern:*

Be it known that I, VIBE K. SPICER, a citizen of the United States, residing at Kenilworth, in the county of Cook and State of Illinois, have invented or discovered certain new and useful Improvements in Switch and Signal Mechanism, of which improvements the following is a specification.

In an application of even date herewith I have described and claimed certain improvements in time-lock mechanism for switch and signal mechanism, such locking mechanism consisting, generally stated, in arrangement of devices adapted to be shifted in one direction to locking position by the operation of the signal-shifting mechanism and to remain in such position for a predetermined time, when it will be free to be unlocked either automatically or manually by the operator.

The invention described herein relates to a certain specific form or construction of time-lock.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional elevation of a switch and signal operating mechanism having my improvements applied thereto. Fig. 2 is a top plan view of the same; and Fig. 3 is a sectional detail view, the plane of section being indicated by the line III III, Fig. 1.

In the practice of my invention the machine as regards the levers 4 4<sup>a</sup>, latch-rods 3 3<sup>a</sup>, quadrants 2 2<sup>a</sup>, slides 1 and 1<sup>a</sup>, and locking-bars 6 and 7 is constructed and operated substantially as described and shown in the application above referred to. At the rear end of the locking-bar 6 is arranged a vertically-movable sliding bar 8, provided on the face adjoining the locking-bar with a notch or recess 9 of sufficient depth to permit such a movement of the locking-bar as will allow the block 5 on the switch-slide 1 to move past the inner end of the locking-bar. This slide is raised to locking position by means of the signal-lever 4<sup>a</sup> through any suitable mechanical connection—such, for example, as that shown and consisting of a bell-crank lever 11, having one arm in engagement with the lower end of a push-rod 10 and its opposite arm connected by a rod 13 to the signal-lever. The outer face of the sliding bar 8 is provided

with a series of teeth engaging a pinion 21 of an escapement mechanism. This escapement mechanism consists of the pinion 21 and a ratchet-wheel 23, secured to or formed on the pinion, which is loosely mounted on the shaft 22. The ratchet-wheel is adapted to be locked to the pinion 24, which is keyed to the shaft 22, by a pawl 25 when the pinion 22 is rotated by the downward movement of the sliding bar. When the sliding bar is raised, the pinion and ratchet-wheel will rotate freely without affecting the pinion 24. The pinion 24 intermeshes with the pinion 26 on the shaft 27, on which is also keyed the escapement-wheel 28, the teeth of which are engaged with the escapement-lever 29.

It will be readily understood by those skilled in the art that when the switch and signal levers have been shifted from normal position the switch mechanism will be locked in such position by the usual interlocking mechanism and will be released by the return of the signal mechanism to normal position; but by the use of my improvement an additional lock is placed on the switch mechanism by the movement of the signal-operating mechanism from normal position. This mechanism is not moved by the return of the signal mechanism to normal, and hence the switch mechanism cannot be shifted until the time-lock has operated. Although the signal-operating mechanism cannot shift the time-lock from operative or locking position, it controls the time-lock, as the latter cannot begin its releasing movement until the signal mechanism is returned to normal.

By suitably adjusting the escapement mechanism the interval of time between the reversal of the signal mechanism and that of the switch mechanism can be regulated.

By the employment of my improved time-lock a sufficient time will be given the operator to allow him to ascertain whether or not he has made a mistake in endeavoring to change the switches and signals previously given.

The essential features of my improvement consist in a lock applied to some movable part of the switch-operating mechanism by the movement of the signal mechanism from normal and the control of the reverse move-

ment of the lock by a mechanical automatically-operating mechanism.

I claim herein as my invention—

1. In a switch and signal mechanism, the  
5 combination of a switch-operating mechanism, a lock adapted to be shifted by the signal mechanism to hold the switch mechanism in reversed position, and an escapement mechanism controlling the reverse movement of the  
10 lock, substantially as set forth.

2. In a switch and signal mechanism, the combination of a switch-lever, a signal-lever, interlocking mechanism, a lock adapted to be

shifted by the signal-lever into engagement with one of the parts of the interlocking mechanism controlling the switch-lever, and an escapement mechanism controlling the reverse movement of the lock, substantially as set forth. 15

In testimony whereof I have hereunto set  
my hand. 20

VIBE K. SPICER.

Witnesses:

E. T. BARNES,  
J. W. PECK.