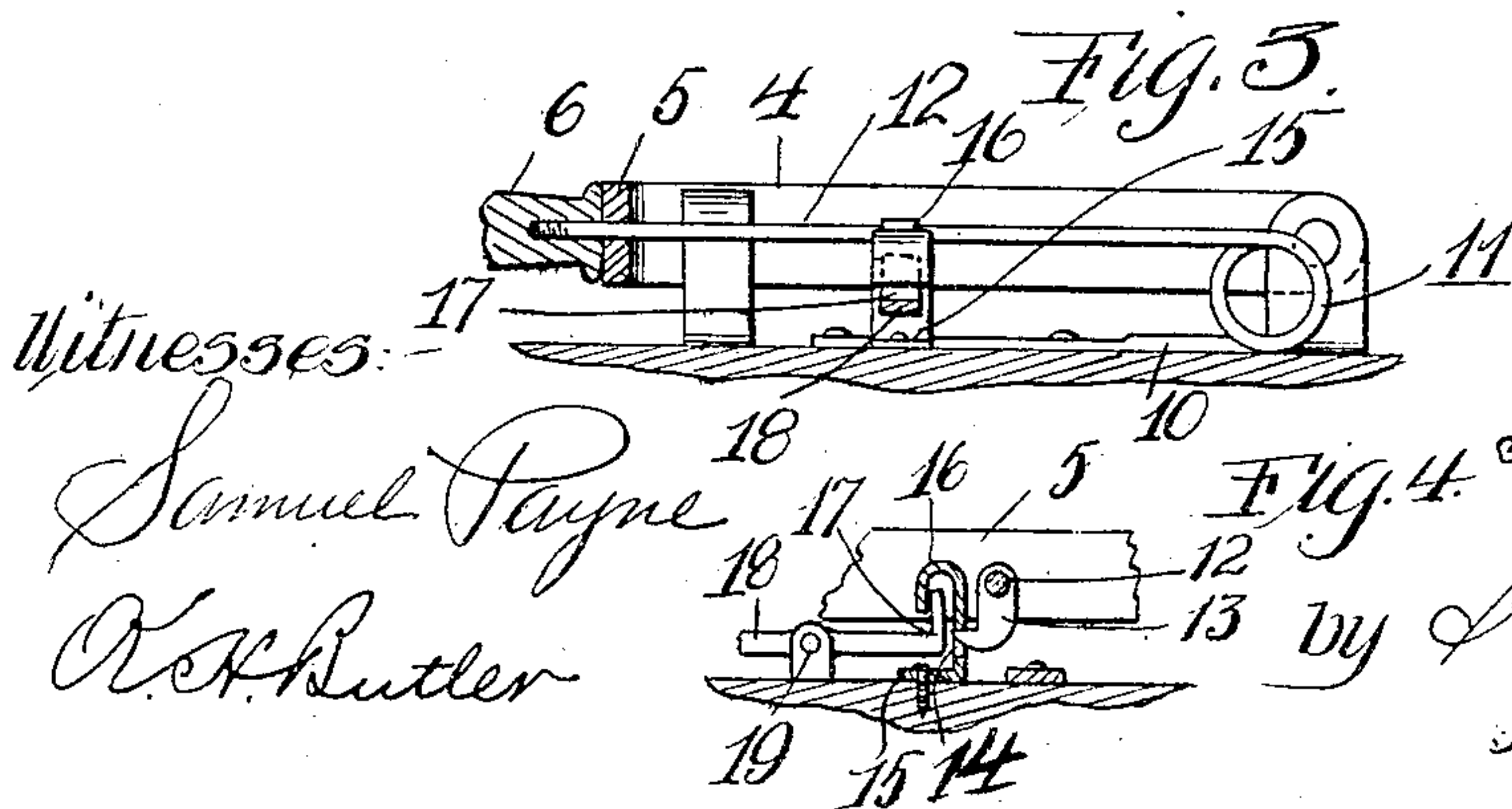
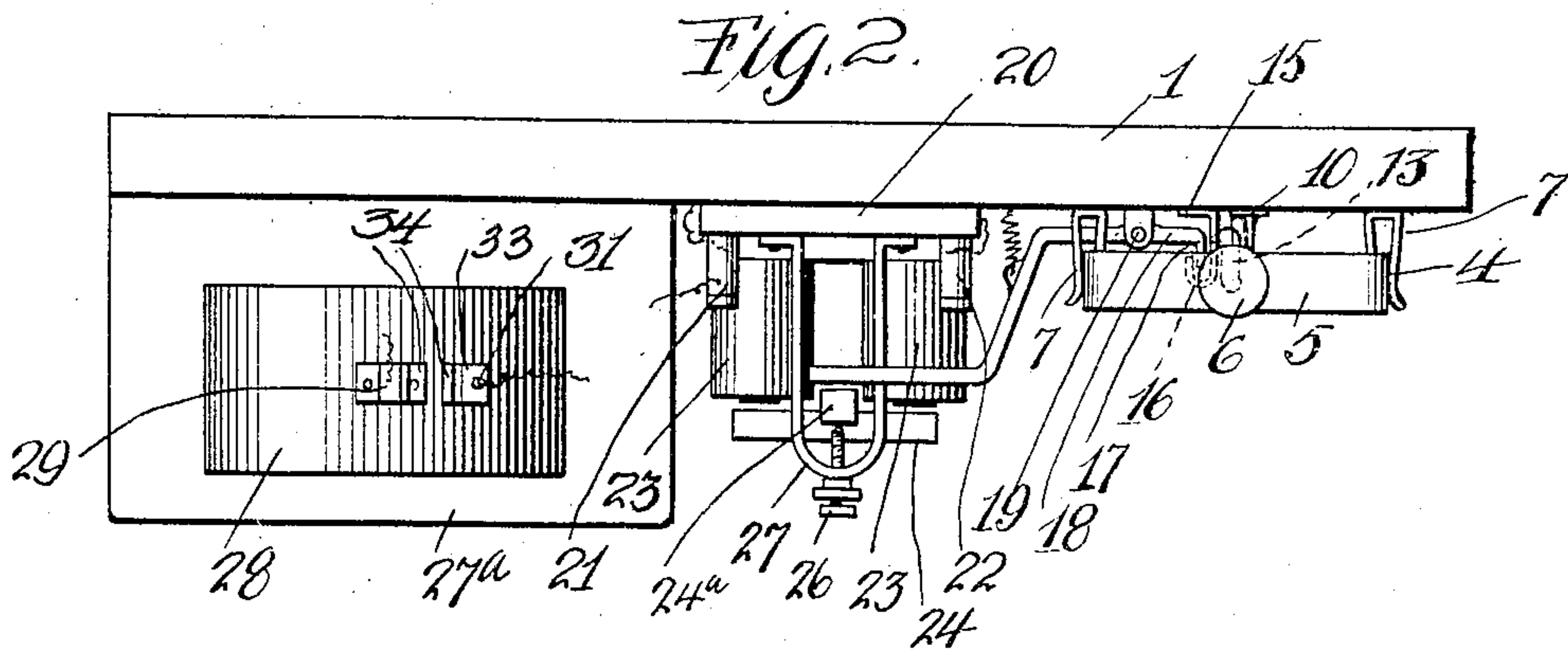
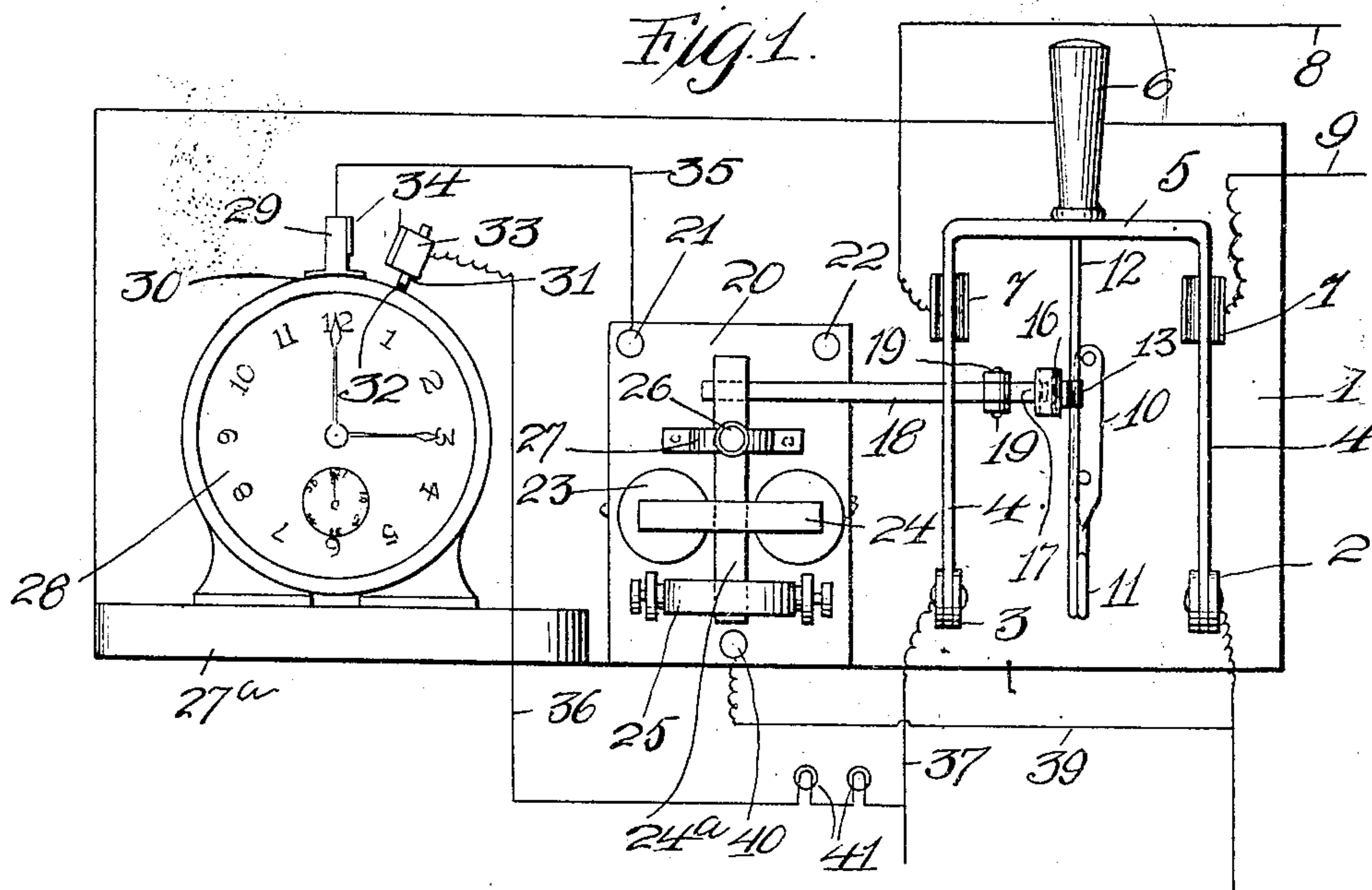


964,289.

J. DE LORENZO.  
ELECTRIC TIME SWITCH.  
APPLICATION FILED JAN. 3, 1910.

Patented July 12, 1910.

2 SHEETS—SHEET 1.



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2 SHEETS--SHEET 2.



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# UNITED STATES PATENT OFFICE.

JOHN DE LORENZO, OF LINHART, PENNSYLVANIA.

## ELECTRIC TIME-SWITCH.

964,289.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed January 3, 1910. Serial No. 535,991.

*To all whom it may concern.*

Be it known that I, JOHN DE LORENZO, a citizen of the United States of America, residing at Linhart, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Electric Time-Switches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a time switch, and the primary object of my invention is to provide a novel switch for automatically cutting off an electric current employed for lighting purposes, as the lamps within a mine, window, store-room, etc.

Another object of this invention is to utilize an ordinary alarm clock in connection with a sounder or relay and knife switch for cutting out an electric circuit after the same has been established a predetermined time.

A further object of this invention is to provide a switch that can be advantageously used by merchants who display merchandise in their windows of an evening, and employ a watchman to turn off the lights late in the evening. By the installation of my improved switch, the turning off of the lights can be automatically accomplished, thereby saving the expense of employing a person to perform the operation.

A still further object of the invention is to provide an automatic switch that will be positive in its operation, simple in construction, and highly efficient for the purposes for which it is intended.

With these and such other objects in view as may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings forming part of this specification, wherein there are illustrated the preferred embodiments of the invention, but it is to be understood that the structural elements thereof can be varied or changed, as to the size, shape and manner of assemblage without departing from the spirit and scope of the invention.

In the drawings:—Figure 1 is a front elevation of a switch constructed in accordance with my invention, Fig. 2 is a plan of the same, Fig. 3 is an enlarged longitudinal sectional view of the knife switch, Fig. 4 is

an enlarged cross sectional view of a portion of the same, Fig. 5 is a front elevation of a modified form of switch, and Fig. 6 is an elevation of a portion of the same.

In the accompanying drawings the reference numeral 1 denotes a foundation for my improved switch, this foundation being preferably made of an insulating material, as marble or slate, it being preferable to use a slab of marble. Upon the front side of the slab 1 and at one end thereof is located a knife switch, comprising terminals 2 and 3, serving functionally as bearings for a pivoted U-shaped knife switch having blades 4 connected by a strap 5 provided with an insulated handle 6. The blades 4 are adapted to engage resilient contacts 7, and connected to these contacts are leading-in wires 8 and 9.

Mounted upon the slab 1 between the blades 4 is one end 10 of a coil spring 11, the opposite end 12 of said spring being secured in the strap 5 and the handle 6. The object of this spring is to open the knife switch when the end 12 thereof is released. To hold the spring 11 under tension with the knife switch in a closed position, the end 12 is provided with a latch 13 adapted to engage in the opening 14 of a keeper 15 secured to the slab 1. The upper end of the keeper 15 is hook-shaped, as at 16 and is adapted to be sprung outwardly to release the latch 13. Engaging in the hook-shaped end 16 of the keeper 15 is the angular end 17 of a lever 18 fulcrumed, as at 19 upon the slab 1.

Located upon the slab 1, centrally thereof and to one side of the knife switch, is a sounder somewhat similar to that used in connection with telegraph instruments. The sounder comprises a plate 20 having binding posts 21 and 22. Upon the plate 20 are located electro-magnets 23 and when these magnets are energized, an armature 24 is adapted to be attracted by said magnets, said armature being carried by a pivoted lever 24<sup>a</sup> pivoted upon the plate 20, as at 25 and limited in its movement by a set screw 26 carried by a stirrup 27. The outer end of the lever 24<sup>a</sup> extends over the end of the lever 18, and when the electro-magnets are energized, a movement of the lever 24<sup>a</sup> is adapted to impinge the lever 18 and cause said lever to move the hook-shaped end 16 of the keeper 15 out of engagement with the latch 13, thus releasing the knife switch.



The slab 1 is provided with a suitable bracket or support 27 for an alarm clock 28. The clock which I employ is very similar to the present type of alarm clock, with the exception that the bell thereof is removed and substituted for the bell is a contact post 29 which is insulated from the clock casing, as at 30. Furthermore, the tapper 31 of the clock is insulated from the casing thereof, as at 32 and said tapper is provided with a contact block 33. This block, as well as the contact post 29 is provided with platinum contact points 34. The post 29 is connected by a wire 35 to the post 21 of the sounder, and the contact block 33 is connected by a wire 36 to a leading-out wire 37, which is connected to the terminal 3 of the knife switch.

The terminal 2 of the knife switch is provided with a leading-out wire 38, said wires 37 and 38 leading out to the lamps adapted to be lighted by the electric current passing through the knife switch. The leading-out wire 38 is connected by a wire 39 to a binding post 40 carried by the plate 20 of the sounder.

A suitable resistance, as lamps 41 can be inserted upon the wire 36.

The alarm clock 28 is adapted to be set and wound similar to an ordinary alarm clock, whereby when a certain time is reached, the tapper 31 will be oscillated and will contact with the post 29, establishing a circuit through the electro-magnets 23, which attract the armature 24 and move the pivoted lever 24<sup>a</sup>, whereby the lever 18 will release the upper end of the keeper 15 and release the latch 13 of the spring 11, allowing the tension of the spring to open the knife switch and thereby cut out the circuit from the leading-in wires 8 and 9 to the leading-out wires 37 and 38.

In Figs. 5 and 6 of the drawings I have illustrated a modification of my invention, whereby the sounder and the alarm clock are used in connection with a battery or suitable source of electrical energy 42 and a push button 43, the former being entirely independent of the leading-in wires 8 and 9.

Otherwise the mechanism employed in connection with the time switch is practically the same as that previously described.

The coil spring 11 can be re-arranged, also the keeper, whereby the knife switch will be normally retained in an open position and upon the keeper being actuated, the spring will close the switch.

Having now described my invention what I claim as new, is:—

1. In a time switch, a pivoted knife switch, a normally locked spring having one end fixed to a support and its other end connected to the knife switch and adapted when released to open the knife switch, a keeper provided with an opening, a latch carried by said spring and adapted to engage in said opening whereby the spring is locked, a lever having an angular end extending in said keeper and adapted when shifted to release the latch whereby the knife switch is thrown open by the spring, and an electrically-operated time-controlled device arranged in the path of said lever for actuating it to release the latch.

2. In a time switch, a pivoted kniveswitch, a normally locked spring having one end fixed to a support and its other connected to the knife switch and adapted when released to open the knife switch, a latch carried by said spring, a keeper provided with a hook-shaped end and further having an opening adapted to receive said latch whereby the spring is located, a lever, an angle-shaped end engaging in the hook-shaped end of the keeper and adapted when actuated to spring the keeper outwardly to release the latch whereby the knife switch is thrown open by the spring, and an electrically-operated time-controlled device arranged in the path of said lever and adapted when operated to actuate the lever to spring the keeper.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN DE LORENZO.

Witnesses:

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