

J. JONES & J. JONES, JR.
AUTOMATIC TIME SWITCH.
APPLICATION FILED FEB. 13, 1908.

927,803.

Patented July 13, 1909.

Fig. 1.

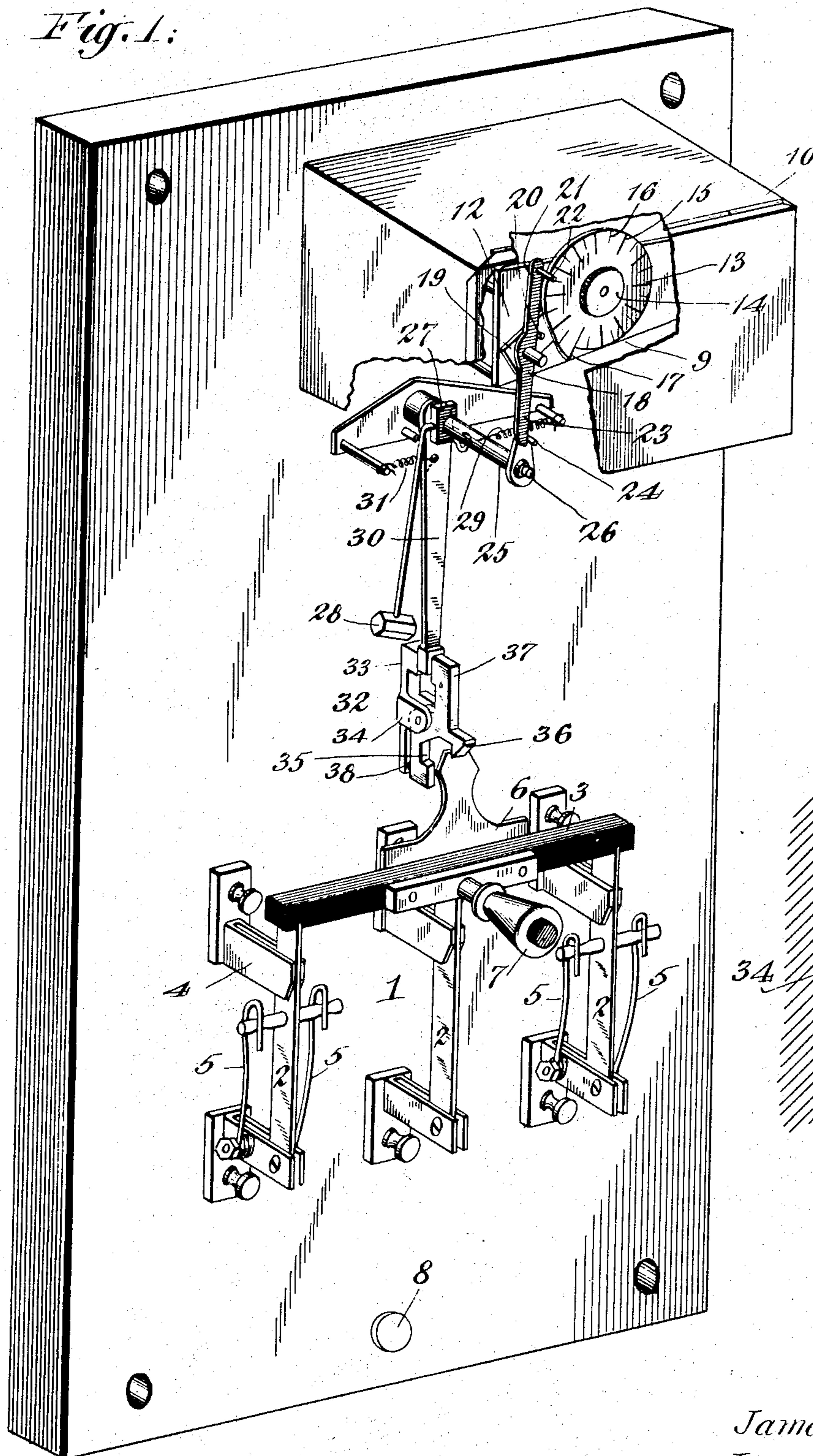
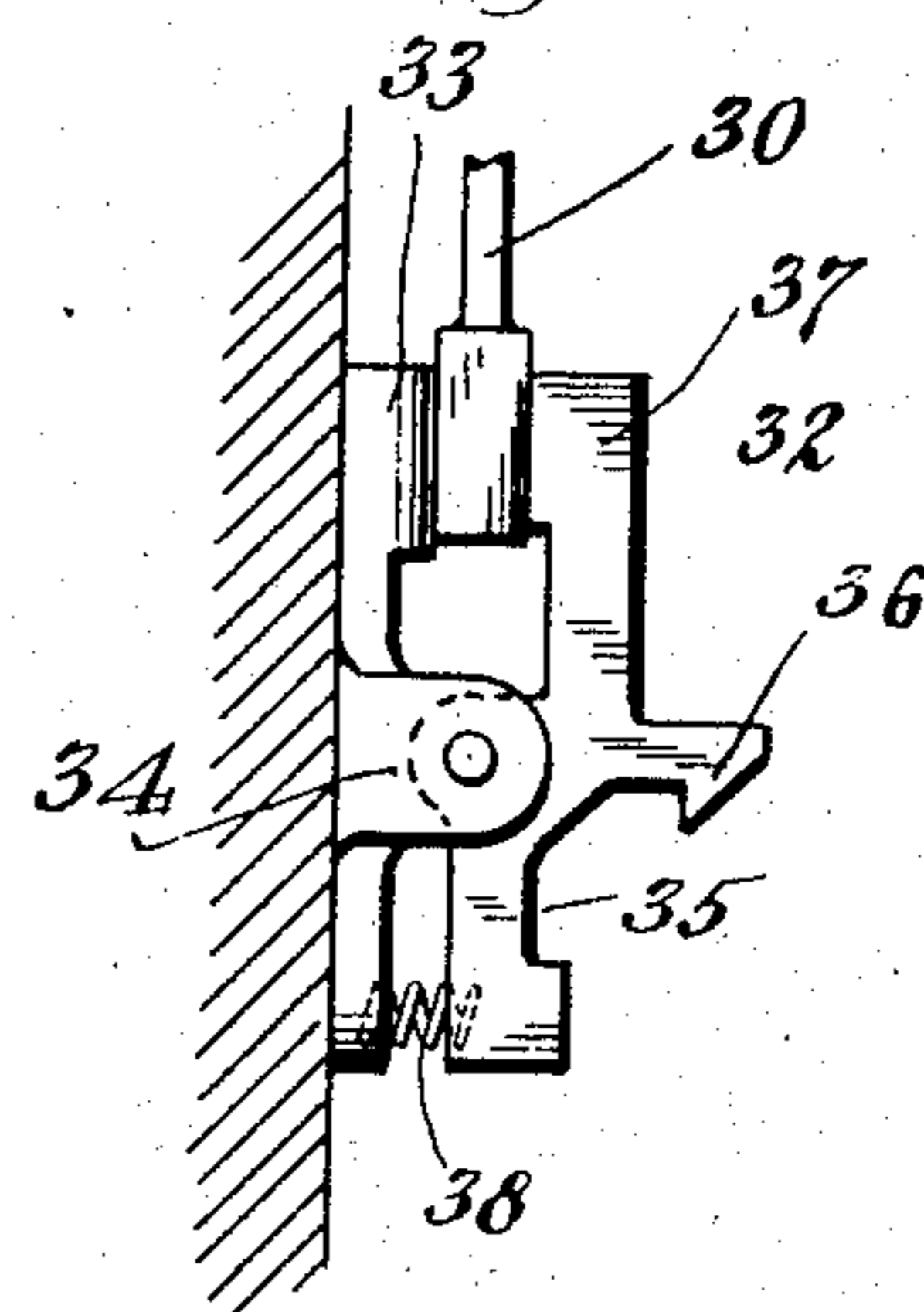


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES JONES AND JAMES JONES, JR., OF NEW YORK, N. Y.

AUTOMATIC TIME-SWITCH.

No. 927,803.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed February 13, 1908. Serial No. 415,687.

To all whom it may concern:

Be it known that we, JAMES JONES and JAMES JONES, Jr., of New York, in the county of New York and State of New York, have
5 invented certain new and useful Improvements in Automatic Time-Switches; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to
10 which it appertains to make and use the same.

This invention relates to that class of switches, controlling the current flowing through an electric conductor, in which the
15 switch is manually set to close the circuit and automatically thrown to open the circuit by actuating means under the control of a clock mechanism.

In the accompanying drawing Figure 1 is
20 a perspective view of the device and Fig. 2 is a detail view of the latch.

Referring to the drawing 1 designates an electric switch of the "jack-knife" type comprising the usual pivotally mounted blades 2
25 connected by an insulated bridge member 3 and designed to be turned on their pivots and engaged by jaws 4, springs 5 tending to throw the blades into the open position and hold them there. We have shown the bridge 3
30 equipped with a forwardly projecting lip or flange 6 and provided with a post 7 preferably having a rubber extremity designed to contact with a pillow 8 on the switch board when the switch is thrown into its open position.
35

9 designates the clock mechanism by which the release of the blades from their jaws is effected. We have shown the clock mechanism inclosed by a housing 10 mounted on
40 the switch board and having a hinged cover, thus tending to prevent dust from getting into the clock machinery while affording means for readily gaining access to wind or adjust the clock and set the automatic release. A plate
45 12 is shown forming part of the supporting structure of the clock. Through this plate projects the shaft which rotates twice in twenty-four hours, that is, the shaft on which the hour hand of a time indicating clock
50 would be mounted. We have shown a dial or cam disk 13 mounted upon and movable with this shaft and capable of being axially adjusted by loosening a milled wheel 14 which normally holds the disk in its fixed
55 position on the shaft. The periphery of the disk is graduated to indicate the extent of its

rotation during an hour and a half hour, the series of longer radial serrations 15 marking the hours and the series of intermediate shorter serrations 16 indicating the half
60 hours. At a point on its periphery the disk is formed with a cam surface 17. A laterally movable arm 18 is shown mounted on plate 12 in proximity to the disk, being fulcrumed at its center on a base 19 secured to the plate
65 and equipped with a stop 20 limiting the movement of the extension 21 of the arm toward the disk. The extension 21 carries a pin or stud 22 at its free end designed to be engaged by the cam surface 17 of the disk,
70 while the extension 23 projects through an opening in the housing and engages a post 24 on the upper end of a vertically mounted, axially movable sleeve 25. This sleeve is shown supported by and inclosing a shaft 26
75 mounted on the switch board. The sleeve carries a block 27 at its lower end on one side of which is secured a hammer 28 while a spring 29 is shown secured to the other side of the block.
80

The latch-releasing lever 30 is shown fulcrumed upon shaft 26 beneath the block 27 and laterally movable in one direction under the tension of a spring 31 and in the other under the impact of the hammer 28. The
85 free end of the lever 30 normally engages a latch 32 by which the switch blades are held in engagement with their jaws. This latch comprises a base portion 33 having ears 34 in which is mounted the rocking or trip member
90 35 having a hooked portion 36 designed to engage the lip or flange 6 on the switch. The trip has an extension 37 projecting rearwardly from the hook and between this extension and the base 33 is normally held the
95 free end of lever 30, the spring 31 tending to hold it in that position. The latch is provided with a coil spring 38 tending to turn the trip into the "off" position, that is, tending to tilt it and release the blades when
100 lever 30 is removed from its position between the trip and the base.

In operation the switch is manually set to close the circuit by moving its blades into engagement with their respective jaws. In
105 this closing movement the lip 6 in engaging hook 36 tilts the trip 35 as against the tension of spring 38. This allows spring 31 to draw the lever 30 into its position between the trip and the base, thus holding the trip so
110 that the latch cannot release the switch unless or until the lever is moved from the

latch. The disk 13 is then adjusted so that the desired time shall elapse before the cam surface 17 rocks and releases arm 18. This rocking of the arm occasioned by the cam surface pushing on the stud 22 turns the sleeve 25 and draws the hammer away from the lever 30 against the tension of spring 29. When the cam surface suddenly releases the stud 22 this direction of movement is reversed and the hammer is forcibly swung against the lever 30, causing the latter to move out of engagement with the latch 32 and allowing the trip 35 to tilt under the action of spring 38, releasing the switch and cutting off the electric current.

We claim as our invention:—

1. In an automatic time switch, the combination with the switch, of a latch designed to hold the switch in one position, a lever normally co-acting with said latch to hold the latter in engagement with the switch, a clock mechanism, a cam disk movable therewith, a spring held arm designed to be moved by said cam against the tension of its spring, and a hammer actuated by the movement of said arm to strike said lever and throw it out of engagement with said latch.

2. In an automatic time switch, the combination with the switch board or base plate and the switch blades pivotally mounted thereon, of a latch on said plate designed to lock said switch, a shaft mounted on said plate, a lever fulcrumed on said shaft, a spring tending to hold said lever in engagement with said latch to maintain the latter in locking relation to said switch, a sleeve inclosing said shaft, a hammer carried by said sleeve and designed to contact with said lever to remove it from engagement with said latch, a housing or casing mounted on said plate, clock mechanism therein, an arm pivotally mounted within said housing and extending outwardly therefrom into engagement with said sleeve, and means operated by the clock mechanism for moving said arm to turn said sleeve and actuate said hammer.

In testimony whereof, we have signed this specification in the presence of two subscribing witnesses.

JAMES JONES.
JAS. JONES, JR.

Witnesses:

HUGO GROW,
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