No. 690,833. Patented Jan. 7, 1902.

W. J. CARTER.

ELECTRIC TIME SWITCH.

(Application filed Mar. 9, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

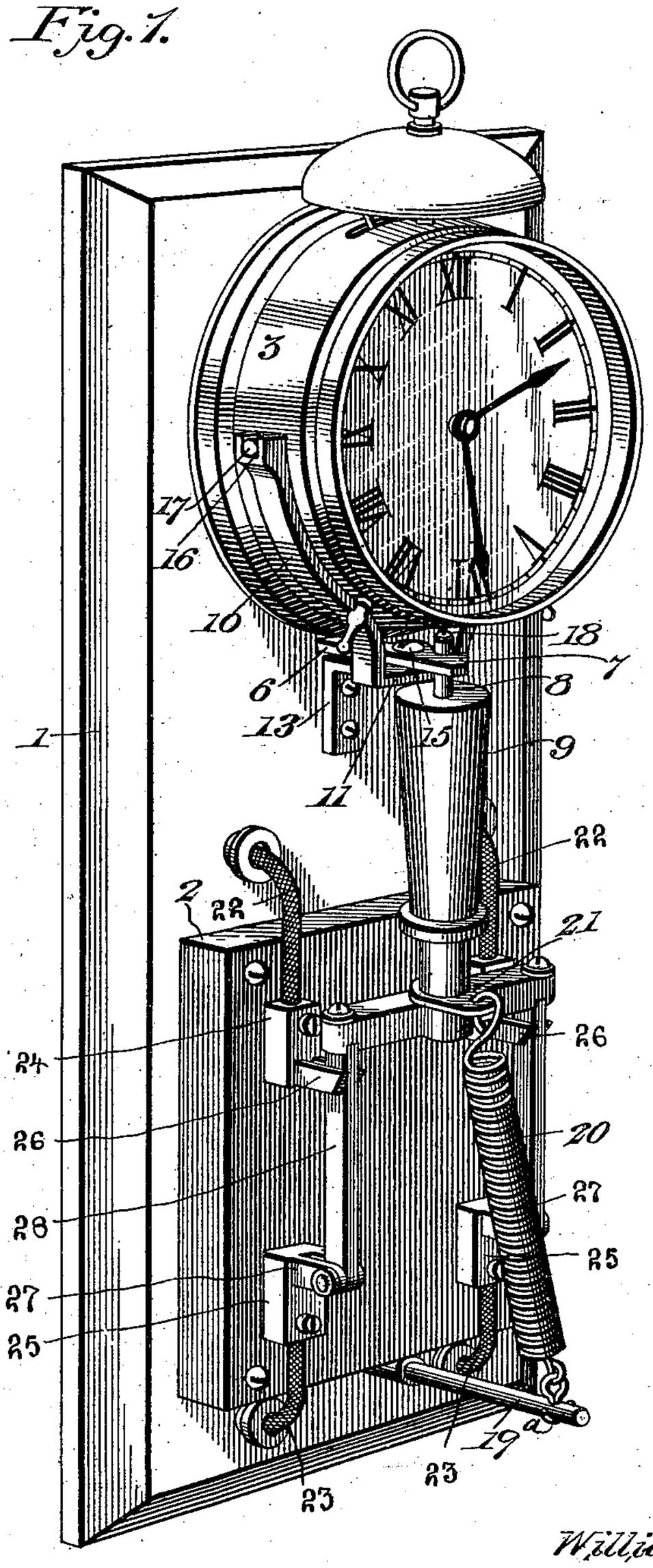

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Fig. 2.

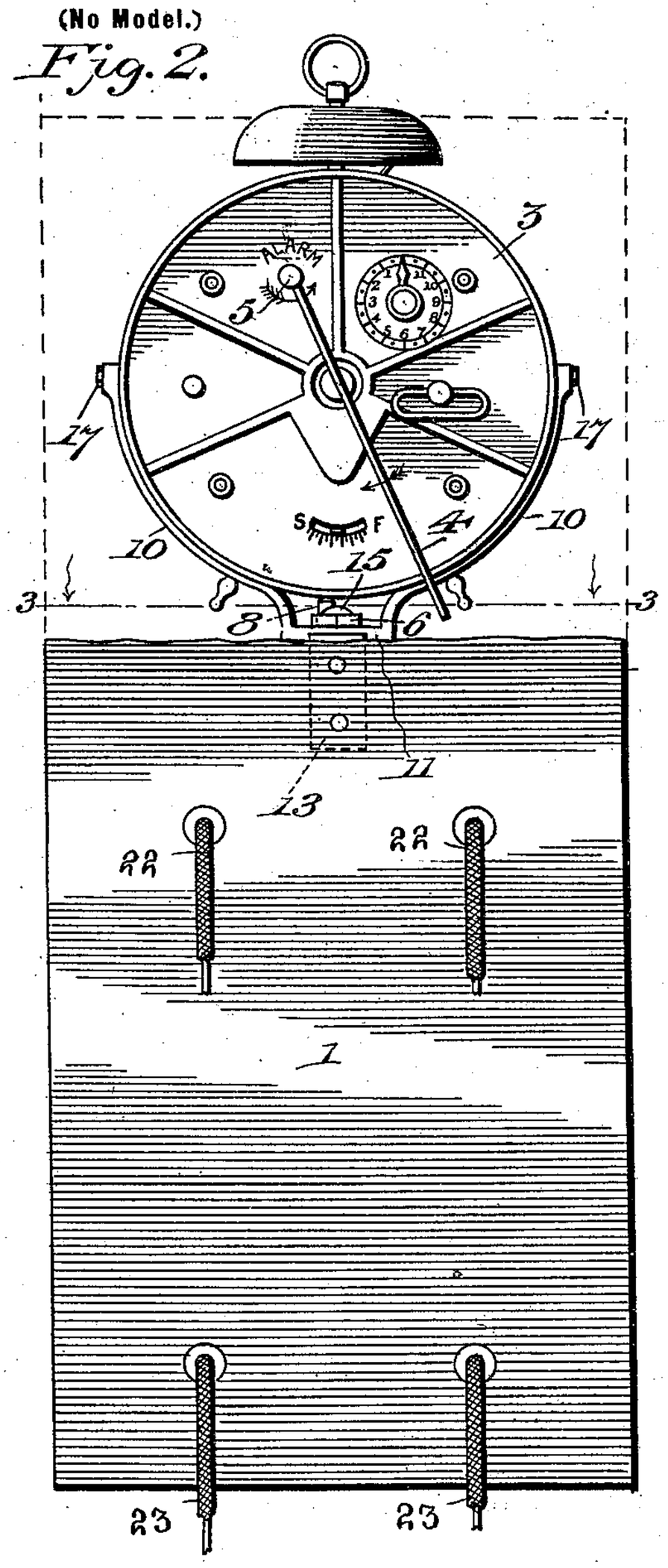


Fig. 3.

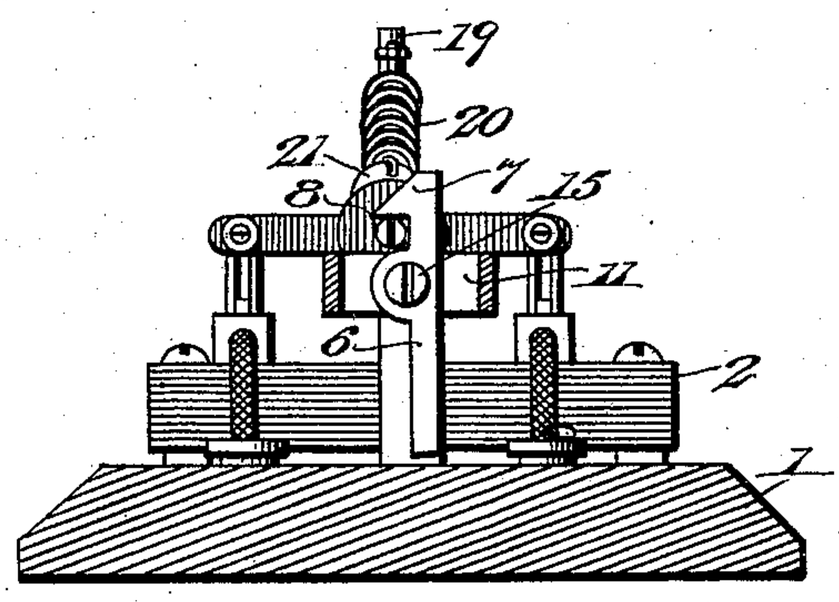


Fig. 4.

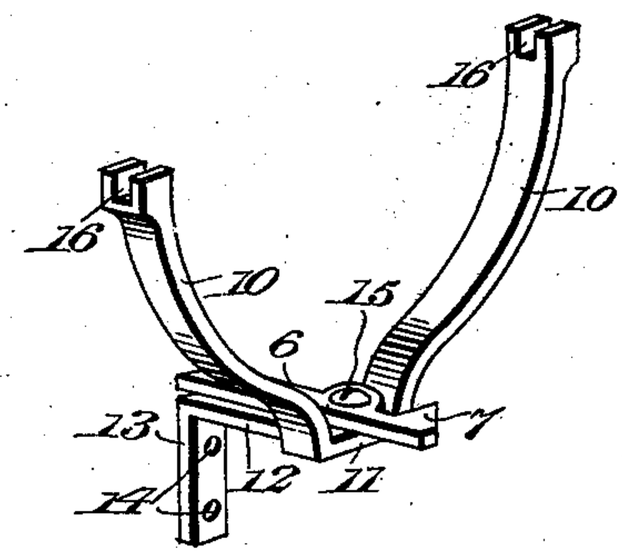
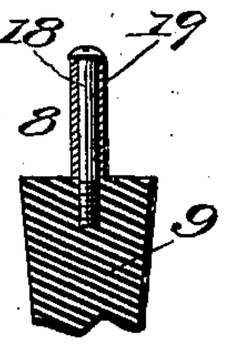


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM J. CARTER, OF BROCKTON, MASSACHUSETTS.

ELECTRIC TIME-SWITCH.

SPECIFICATION forming part of Letters Patent No. 690,833, dated January 7, 1902.

Application filed March 9, 1901. Serial No. 50,484. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. CARTER, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented new and useful Improvements in Time-Switch Mechanism, of which the following is a specification.

This invention relates to time-switch mechanism; and the object in view is to provide simple, reliable, and efficient means whereby an ordinary alarm-clock is adapted at any predetermined time to release the switch-lever of a switch in an electric-light circuit for the purpose of throwing the switch open, breaking the circuit, and extinguishing the lights arranged in the circuit. An alarm-clock of ordinary construction and a switch constitute elements of the operating device; but the specific construction of clock is not essential to the present invention, as the invention relates particularly to the means whereby the switch is released to break the circuit and cut out the lamps included in said circuit.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a complete apparatus constructed in accordance with the present invention. Fig. 2 is a rear elevation of the same with the base-board partly broken away to show the manner in which the trip-lever or sweep coöperates with the holding-latch. Fig. 3 is a horizontal section through the same, taken on the line 3 3 of Fig. 2. Fig. 4 is a detail perspective view of the clock-supporting bracket and latch. Fig. 5 is a detail section taken through the switch lever or handle and the projection with which the latch engages.

Similar numerals of reference designate corresponding parts in all the figures of the drawings.

The invention comprises, essentially, a base-board or suitable support 1, which may be of any desired size or formation, adapted to receive and form the support for a switchboard 2 of any usual or preferred construction, and an ordinary alarm-clock 3, the switchboard 2 being arranged, preferably, near the lower end of the board 1 and the clock located above the switch, as clearly shown in Fig. 1.

In carrying out the present invention I employ a trip-lever or sweep 4, which may consist of a rod having one end connected to the winding-arbor 5 of the alarm mechanism of the clock 3, said trip-lever being of sufficient length to extend below the bottom of the clock, so as to come in contact with one end of a latch 6, the opposite end of which is provided with a beveled catch-lip 7, adapted to engage with a projection 8 on the switch lever or handle 9 in the manner illustrated in Figs. 1 and 3.

In order to support the clock and tripping mechanism, I employ a supporting-bracket, (best illustrated in Fig. 4,) which bracket comprises upwardly-curved divergent arms 10, united by a connecting portion 11, formed integrally with or applied rigidly to the outer end of a supporting-iron 12, provided with a footpiece 13, having openings 14 to receive screws or other fasteners whereby the bracket as a whole is connected rigidly to the supporting base or board 1. The lower ends of the bracket-arms 10 are spaced apart sufficiently to allow of the introduction between them of the latch 6, and the pivot 15 of said latch, which is located between the inner and outer extremities of the latch, is projected through the latch into the connecting portion 11 of the clock-supporting bracket.

The upper extremities of the bracket-arms 10 are provided with notches or bearings 16 for the reception of side trunnions or lugs 17, arranged at diametrically opposite points on and projecting laterally from the clock-case, thus enabling the clock to be lifted out of engagement with the supporting-bracket for the purpose of winding the clock and the alarm mechanism thereof whenever necessary. The bracket-arms 10 are also arranged at such a distance from the base 1 as to leave an intervening space between the rear surface of the clock and the front surface of the board 1 for the movements of the trip-lever or sweep 4, whereby the latter is enabled to revolve freely until it comes in contact with and operates the latch 6.

The electrical connections or circuits are designated 22 23, the terminals of which are

suitably secured in upper and lower brackets 24 25. The upper brackets 24 are formed or provided with contact-lugs 26, between which the upper portions of the side bars of the switch-frame engage. The lower brackets 23 are formed with bearing lugs or ears 27, in which the lower ends of the switch-bars are pivotally supported, as shown in Fig. 1 of the drawings. The side bars 28 28 of the switch when turned up to verticality engage between the contact-lugs 26 and complete the circuit.

In order to facilitate the disengagement of the switch lever or handle, the latter is provided with a longitudinally-projecting pin 18, whereon is loosely mounted an antifriction-roller 19, with which the lip of the latch is adapted to directly engage. Located near the bottom of the switchboard and base-board 1 is a horizontally-projected bar 19^a, to the outer end of which is connected one end of a contractile switch-operating spring 20, the other end of which is connected to a plate 21, connected to the cross-bar of the switch-frame and shown for convenience as interposed between the outer bar of the switch-frame and the inner end of the switch lever or handle 9.

In utilizing the invention the alarm-clock is removed from the supporting-bracket, the alarm mechanism wound, and the alarm-setting device adjusted to release the alarm-striking mechanism at any desired hour. The clock is then replaced on the supporting-bracket in the manner shown in Fig. 1, and the projection on the switch lever or handle is placed in engagement with the latch. When the alarm mechanism of the clock is tripped, the trip-lever or sweep 4 revolves or swings until its lower end comes in contact with the inner end of the latch, thereby swinging the latch on its pivot and disengaging the catch-lip thereof from engagement with the roller 19, forming a member of the projection of the switch lever or handle. The effect of this is to release said lever or handle, whereupon the spring 20 will pull the switch open, thereby breaking the circuit in which the lights are located and extinguishing the latter.

It will be apparent that changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a time-switch, the combination with an alarm-clock, a rod actuated by the clock, and electric wires, of a pivotally-mounted switch to close and open a circuit between the wires, a handle to the switch formed with a pin projecting from its free end, an antifriction-roller on the pin, and a latch to engage the roller and having its other end in the path of the rod of the clock, substantially as described and for the purpose set forth.

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

WILLIAM J. CARTER.

Witnesses:
F. M. BIXBY,
D. P. RICE.