

F. H. FERAUD.
ELECTRIC CLOCK WINDING MECHANISM.
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920,124.

Patented May 4, 1909.

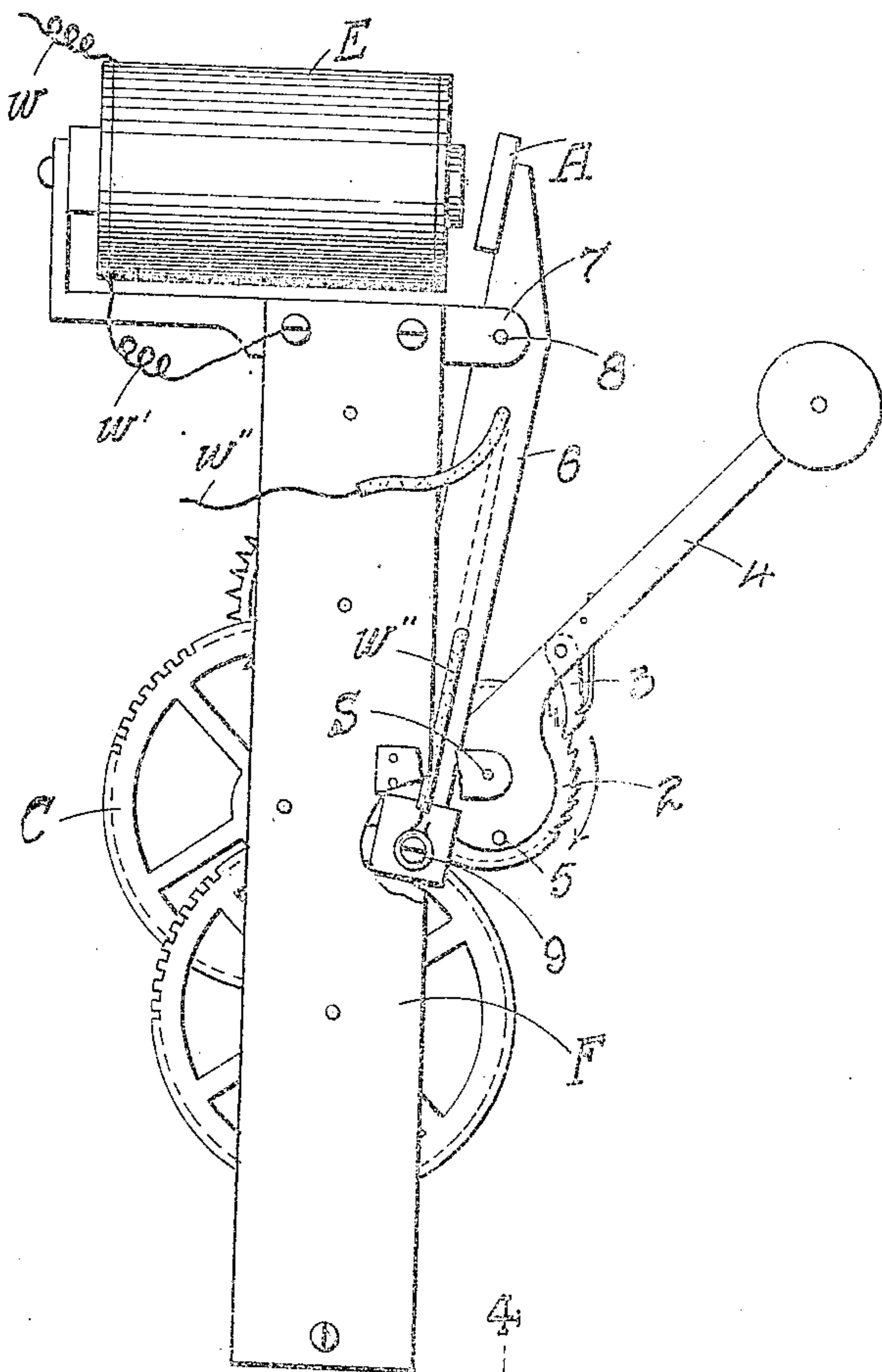


FIG. 1.

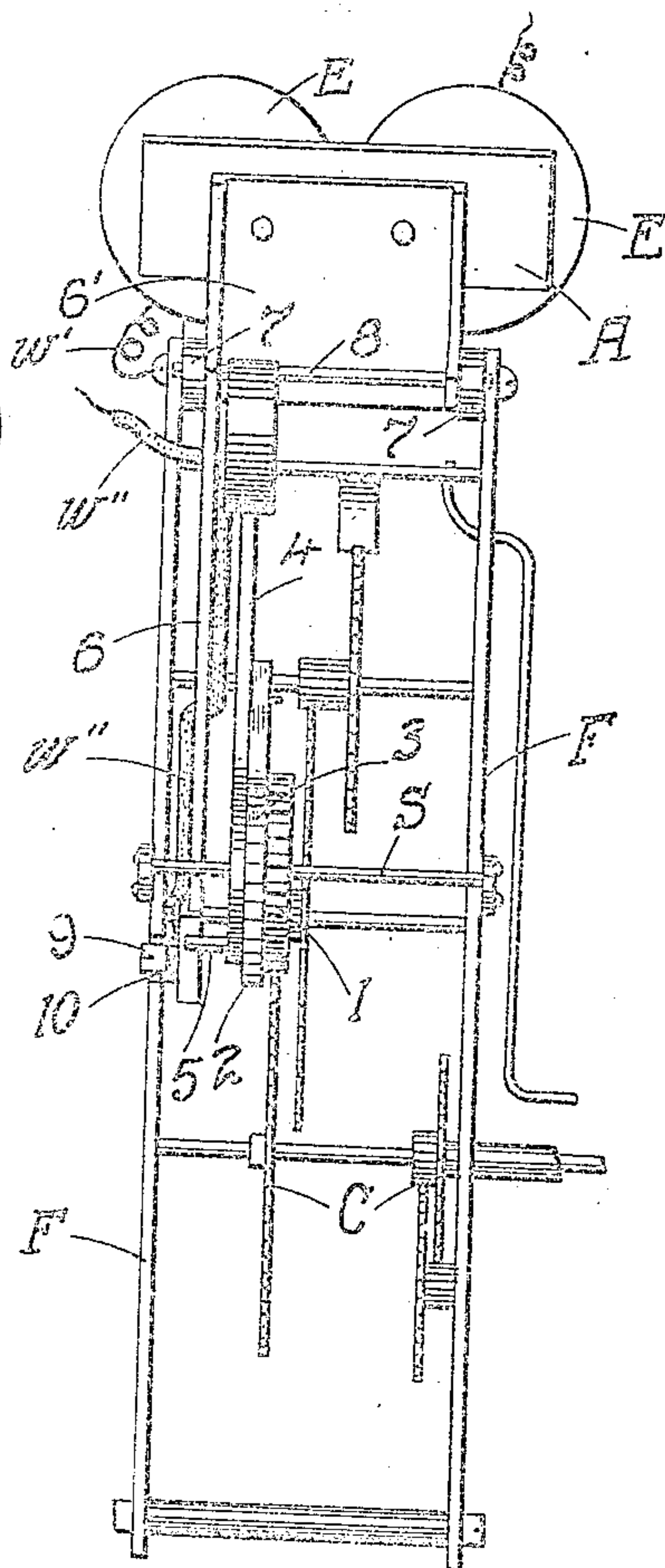


FIG. 2.

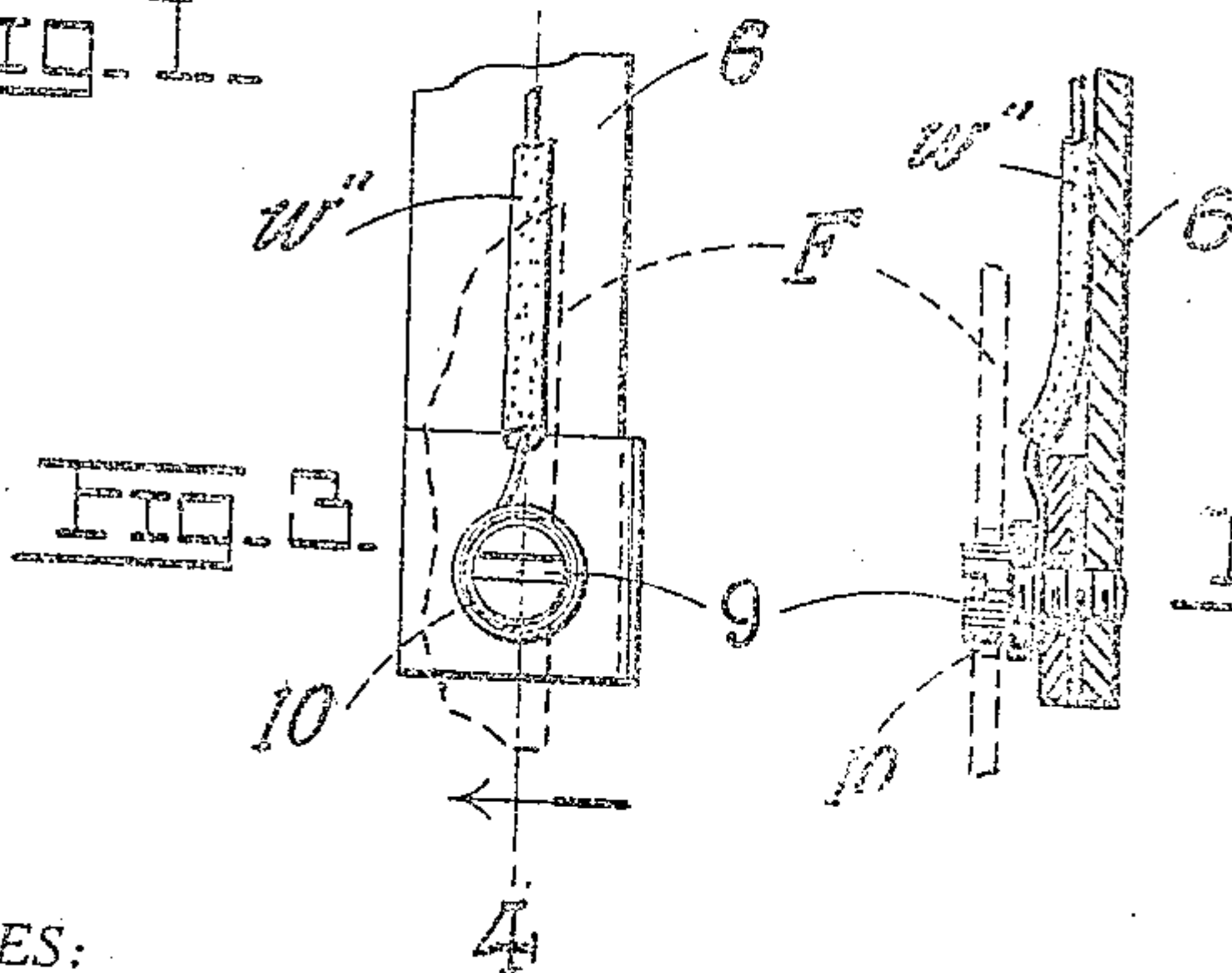


FIG. 3.

FIG. 4.

WITNESSES:

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ELECTRIC CLOCK WINDING MECHANISM.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK H. FERAUD, citizen of the Republic of France, residing at Granite City, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Electric Clock Winding Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in electric-clock winding mechanism; and it consists in the novel arrangement and construction of parts more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is a side elevation of a clock with the driving lever about half descended; Fig. 2 is a rear elevation of the same; Fig. 3 is an enlarged side elevational detail of the end of the long arm of the armature-lever; and Fig. 4 is a sectional detail on line 4—4 of Fig. 3.

The object of my invention is to construct an electric clock-winding mechanism made of a simple set of electro-magnets; one having no expensive contacts; one possessing a minimum number of parts; one which is simple and positive in action, and one having further and other advantages better apparent from a detailed description of the invention which is as follows:—

Referring to the drawings, C, represents a clock of any conventional design having a winding shaft or arbor S as usual. Connected to, or forming an integral part of the gear 1 on the shaft S is a ratchet disk 2 with which coöperates a pawl 3 carried by the weighted driving lever 4. The lever is loosely pivoted at one end about the shaft S, the basal enlargement of the lever carrying an impact pin 5 which, when the lever 4 has dropped to its lowest position in the normal operation of the clock comes in contact with or engages the long arm of an armature lever 6, the latter being pivoted between lugs 7, 7 on a shaft 8 immediately below the adjacent ends of the energizing coils E, E, the armature A, being secured to a plate 6' forming the short member or arm of the armature lever. One of the terminal wires *w* of the coils E, E, leads to one pole or terminal of a suitable battery or other source of electric energy (not shown). The other terminal *w'* is connected to the metal frame F of the clock, the

said frame conducting the current through the lever 4, pin 5, armature lever 6, and wire *w'* back to the opposite pole or terminal of said battery or source of electric energy.

When the driving lever 4 is in its highest position (Fig. 1) the pin 5 is disengaged from the armature-lever 6, but as soon as the clock runs down, that is when the lever 4 has dropped to its lowest position, the contact between the pin 5 thereof and the armature lever 6 at once closes the circuit, which suddenly energizes the coils E, E. These in turn suddenly draw the armature inwardly, which has the effect of suddenly throwing the long arm of the armature lever outwardly. This sudden outward movement or oscillation of the long arm of the armature lever, contacting as this arm does with the pin 5, has the effect of tripping or throwing the driving lever 4 upwardly, in which upward movement the pawl 3 thereof simply rides over the teeth of the ratchet 2, the lever 4 being again brought to its highest position, and in readiness to again propel the clock. This action is repeated indefinitely. It is to be noted of course, that the armature lever is properly insulated from the clock-frame, so it is only serviceable as an electric conductor when the pin 5 of the driving lever comes in contact therewith as the clock runs down. The armature lever is so mounted and weighted as to normally keep the armature A a slight distance from the coils E, E, the base of the armature-lever being provided with a laterally mounted binding screw 9 (for the wire *w'*) which rests in a notch 10 formed for its reception in the clock-frame.

Having described my invention, what I claim is:—

In combination with a clock-mechanism having a winding shaft, a weighted driving lever loosely pivoted at one end about the shaft, a pawl on the lever, a ratchet disk carried by the shaft and engaged by the pawl, a laterally projecting impact pin at the base of the driving lever, an energizing coil, an insulated armature lever having a long and short arm, the short arm carrying an armature in front of the coil, a conducting wire coupled to the end of the long arm of the armature lever, a binding screw to secure the wire, the frame of the clock having a notch for receiving the head of the binding screw, the pin on the driving lever being

adapted to contact with the long arm of the armature lever, whereby the circuit is closed and the coil energized, and the armature lever is suddenly oscillated thereby throwing
5 the driving lever about its axis of rotation upwardly thus restoring it to its highest position, substantially as set forth.

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

FRANK H. FERAUD.

Witnesses:

W. E. ROBERTSON,

W. C. KILLEEN.