

(No Model.)

L. LEFEVRE & H. PALLUT.

CLOCK WINDING DEVICE.

No. 355,404.

Patented Jan. 4, 1887.

FIG. 1.

FIG. 3.

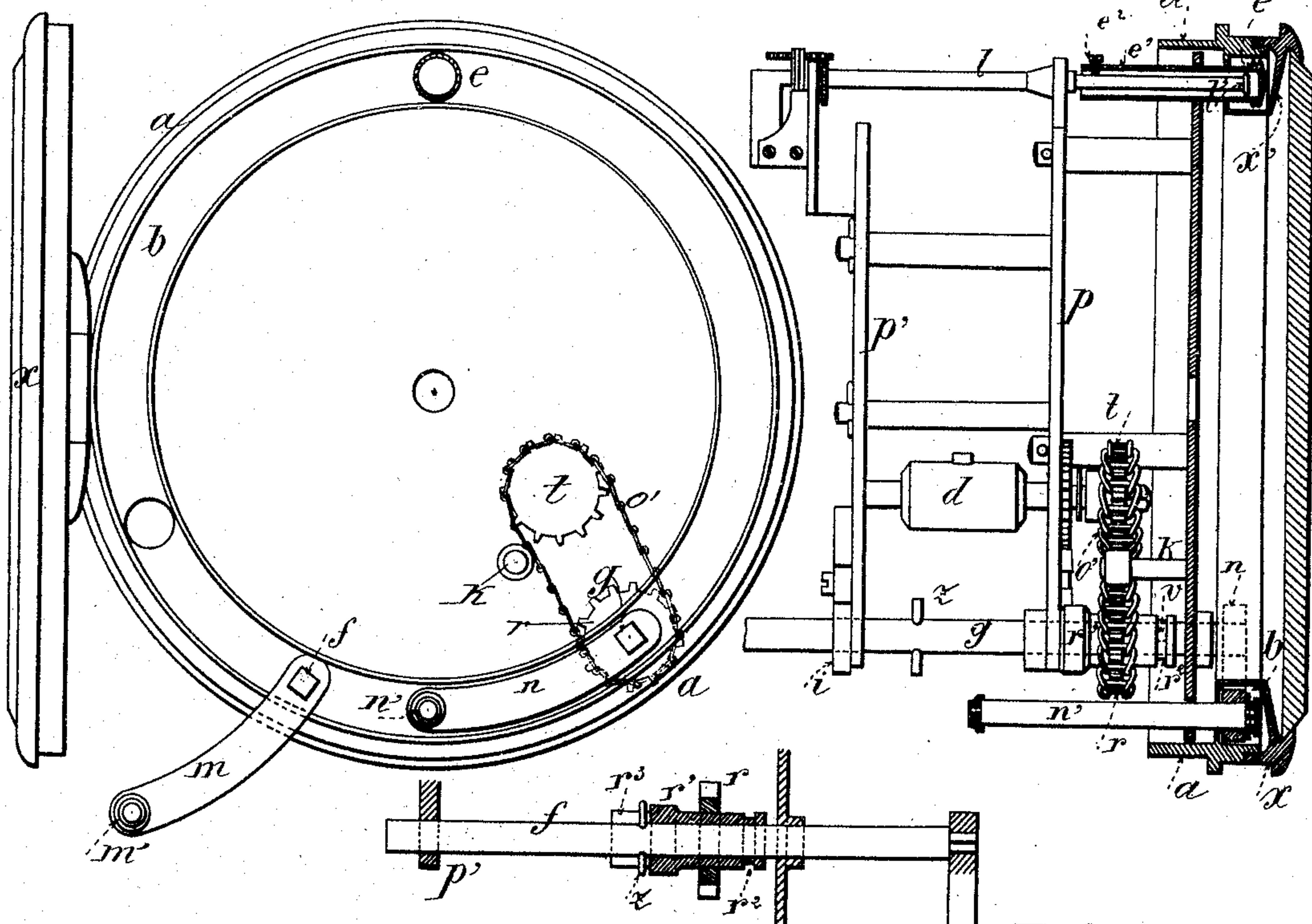
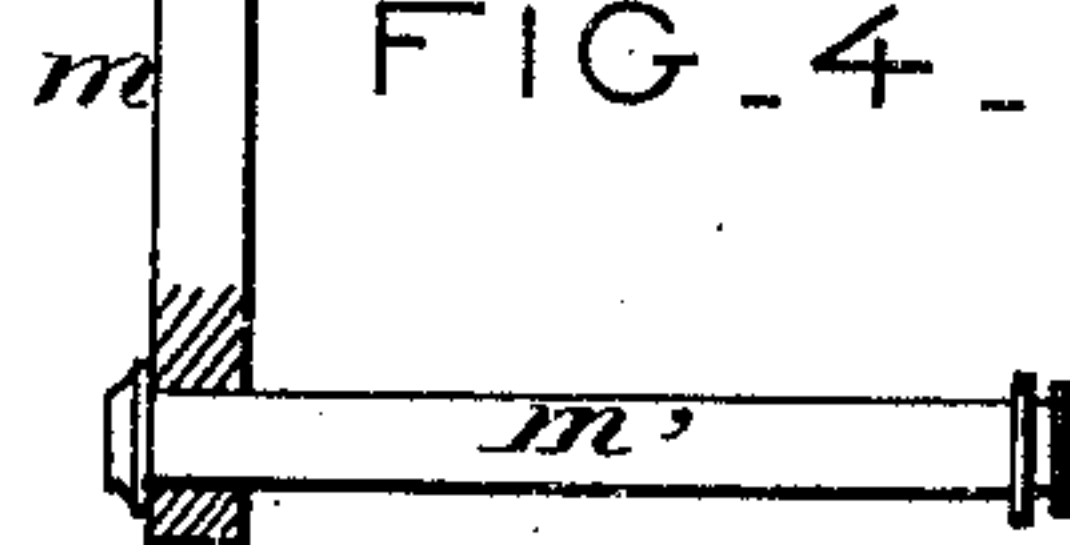
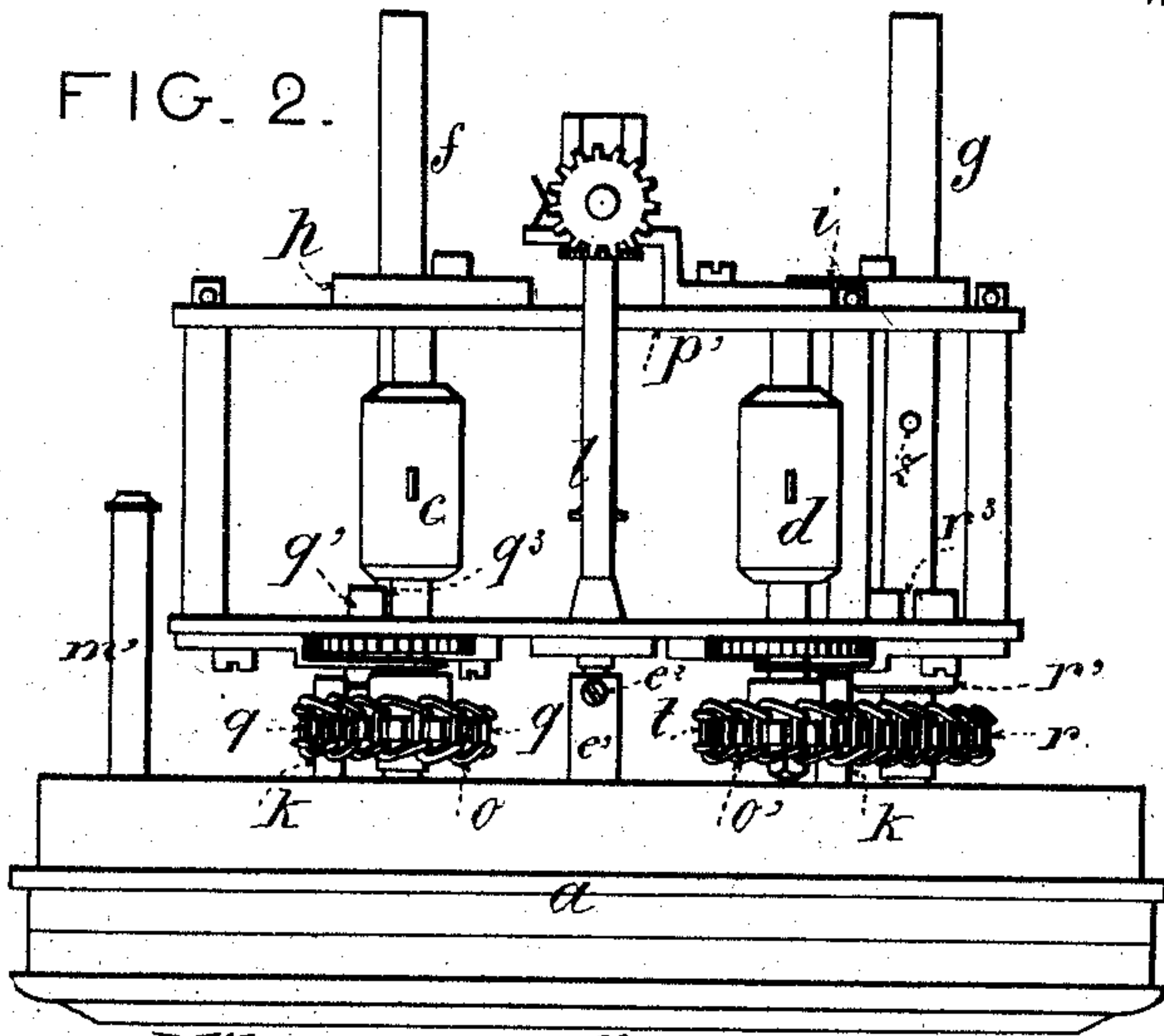


FIG. 2.

FIG. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

LÉON LEFÈVRE AND HENRI PALLUT, OF PARIS, FRANCE.

CLOCK-WINDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 355,404, dated January 4, 1887.

Application filed July 10, 1886. Serial No. 207,654. (No model.) Patented in France June 8, 1886.

To all whom it may concern:

Be it known that we, LÉON LEFÈVRE and HENRI PALLUT, watch and clock makers, citizens of France, residing at Paris, in the French Republic, have invented new and useful Improvements in Clocks, (for which we have obtained a Patent in France on the 8th of June, 1886, and which is not yet numbered,) of which the following is a specification.

The object of the invention is to wind up the going and striking movements of clocks with the aid of chains, so as to do away with the wheel-work usually employed for these purposes, and also to conceal the winding appliances.

These improvements are effected as follows: In the metal ring or rim surrounding the dial a groove is made, in which are concealed the keys for winding up the going and striking parts of the clock, as well as the regulating-button, the winding being effected by endless band-chains, so as to obviate the employment of all intermediate wheel-work for effecting this object.

Figure 1 of the accompanying drawings is an elevation of the clock-movement supplied with the improved winding mechanism, showing the winding-handles of these keys and the regulating button or knob. Fig. 2 is a plan of the movement. Fig. 3 is a vertical section through the axis of the movement. Fig. 4 is a longitudinal section of one of the cranked winders.

The rim *a*, surrounding the dial, has the glass *x* fixed to it by hinges. It is provided with an annular groove, *b*. This groove is completely covered by the rim of the glass *x* when the latter is closed, the groove being sufficiently deep to lodge the handles of the keys and the regulating-knob. Behind the rim *a* the main plate *p* is fixed, between which and the smaller or rear plate, *p'* the clock-movement is supported, and which does not materially differ from that of other clocks, with the exception of the winding part.

Quite outside the movement, and parallel with the barrel-arbors *c d*, are two shafts, *f g*, which pass through the groove *b* in the rim *a*, the main plate *p* and plates *h i*, fixed to the back plate, *p'*. These arbors turn freely in the holes in the pieces supporting them, and in front they receive the cranks *m n* with han-

dles *m' n'*. These handles slide through the holes in the crank and enter and rest in other holes pierced through the bottom of the groove *b*, so that they are concealed in the rim *a* and are parallel with the shafts *f g*. On these latter are loosely mounted long-shaped hubs *q' r'*, cast with the sprocket or star wheels *q r*, which are connected to the star-wheels *s t* on the arbors *c d* by endless chains *o o'*. These chains are or may be of steel, copper, or other sufficiently strong metal. The hubs *q' r'* are held from longitudinal movement by means of screws or lugs on the disk *a*, which engage the grooves *q² r²* in the hubs. Instead of these screws fixed keys can be used. The result of this arrangement is that the toothed wheels *q r* can turn easily and yet cannot move longitudinally on their axes *f g*. The wheels *q* and *r* are locked to the shafts *f g* by drawing the shafts *f g* forward so as to lodge the steel pins *y z* in transverse notches *r³*, made in the rear ends of the hubs *q' r'*. When these spindles are so situated, the cranks *m' n'* are drawn out, as will be seen on reference to Fig. 1, so that the barrel with which they communicate can be wound up, this winding movement being transmitted directly through the band-chains *o o'* to *q r s t*—that is to say, to the barrel arbors. The chains are partly borne on guide-rollers mounted on the spindles *k k'*. In winding up one or other of the barrel-springs—that is, the striking or the going movements of the clock—say, for instance, *c*—the handle *m'* is drawn out, and then the crank *m* also, till the pins *z* on the shaft *f* enter the notch *r³* in the hub *q'*. The handle *m'* is then turned from right to left—that is, in the usual manner—and the barrel-spring is at once wound up. When the winding is completed, no matter what position the crank *m* occupies, the shaft *f* is pushed back to ungear the spindle *y* from the hub *q'*, and the crank *m* and handle *m'* can then be returned to their respective places to the bottom of the groove *b* of the rim *a*, surrounding the dial-plate.

For larger or smaller clocks the same arrangement is used; but the chains *o o'* are proportionately increased or reduced to connect the crank-winders with the barrel-arbors.

In regulating the balance the regulation is effected by means of a button, *e*, at the end of a long tube, *e'*, mounted on the end of the regu-

lating-shaft l . This end of the shaft is of a partly flat section, or it may be square, like the hole in the tube e' , so as to lock the parts in turning, at the same time allowing the tube to be pushed in or drawn out. A screw, e^2 , prevents the tube entirely drawing out by its coming in contact with a shoulder, l' , on the shaft l .

We claim as our invention—

- 10 1. In a clock mechanism, the combination of a sliding winding-shaft having a sprocket-wheel loosely mounted thereon and held from longitudinal movement, and means for locking said wheel to the shaft, with a barrel-ar-
15 bor having a sprocket-wheel thereon, and an endless chain connecting said sprocket-wheel, substantially as described.

2. In a clock, the sliding winding-shaft f , having rigid arm m , combined with the sliding handle m' in said arm, substantially as herein 20 shown and described.

3. The combination of the sliding shaft f with the winding-arm m , sliding handle m' , and a perforated face-rim, one perforation being for the reception of the winding-arm m and 25 the other for the reception of the handle m' when not in use, substantially as described.

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