

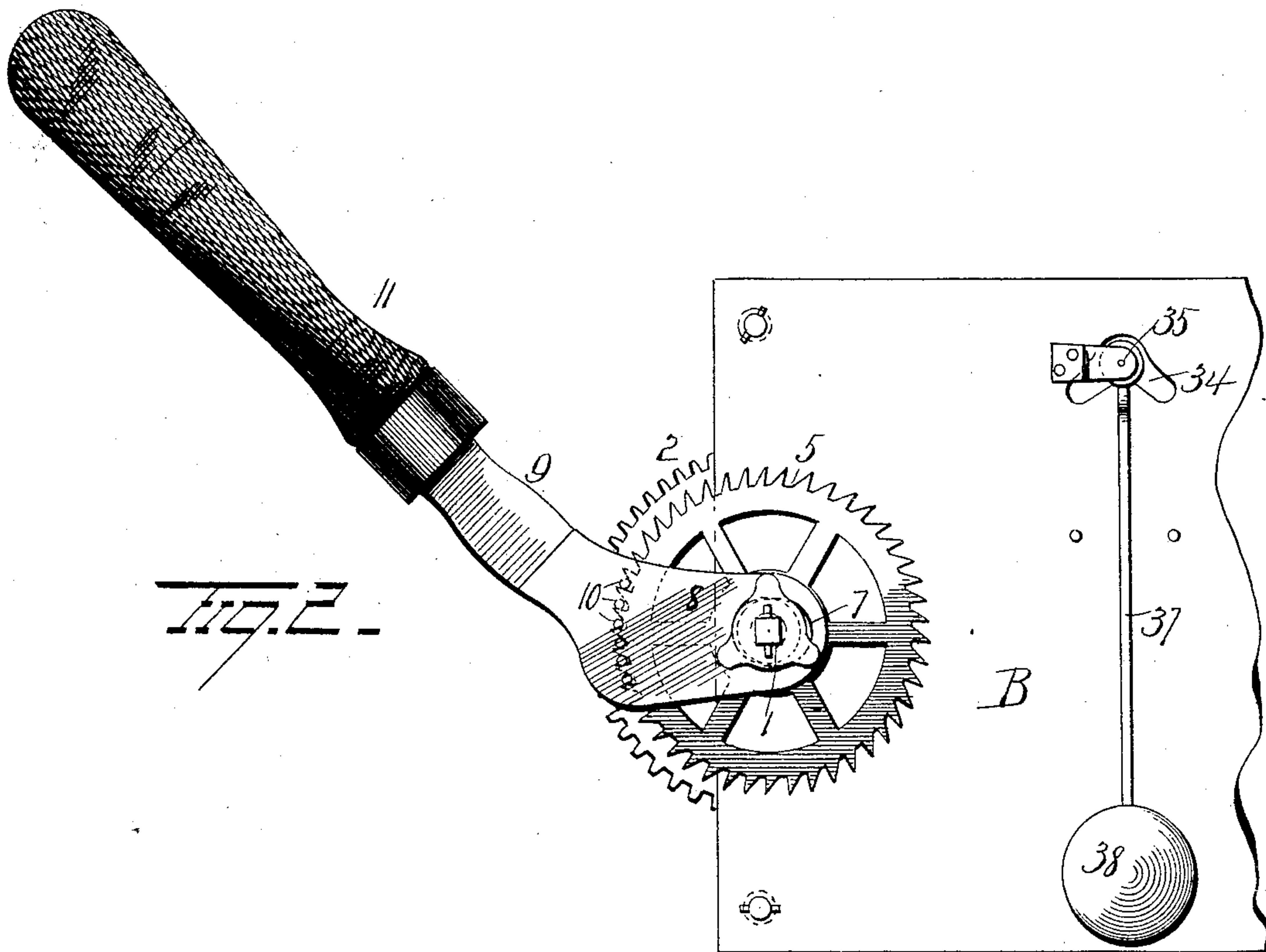
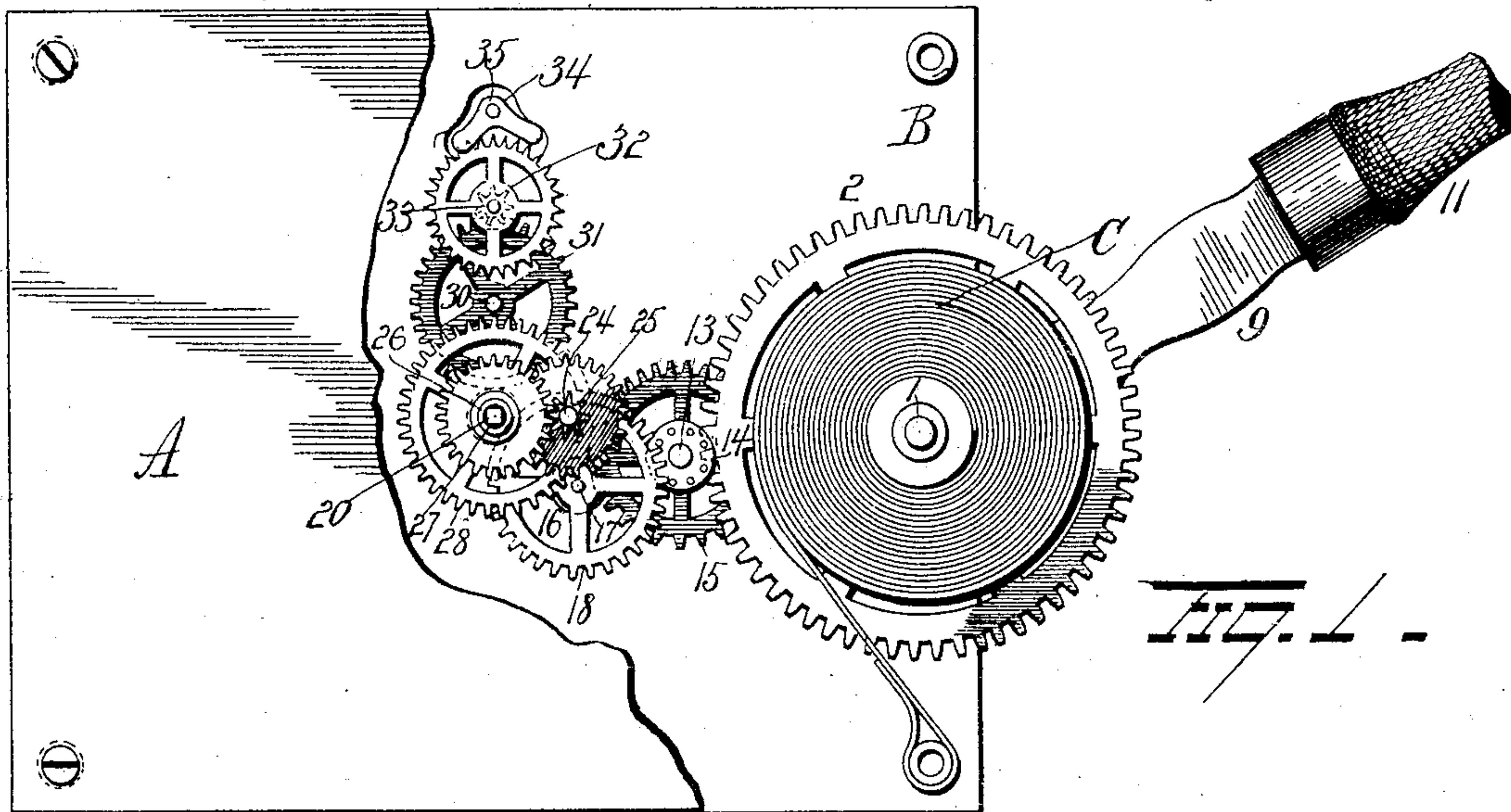
(No Model.)

2 Sheets—Sheet 1.

D. VAUTHIER.
WINDING MECHANISM FOR CLOCKS.

No. 500,683.

Patented July 4, 1893.



Witnesses
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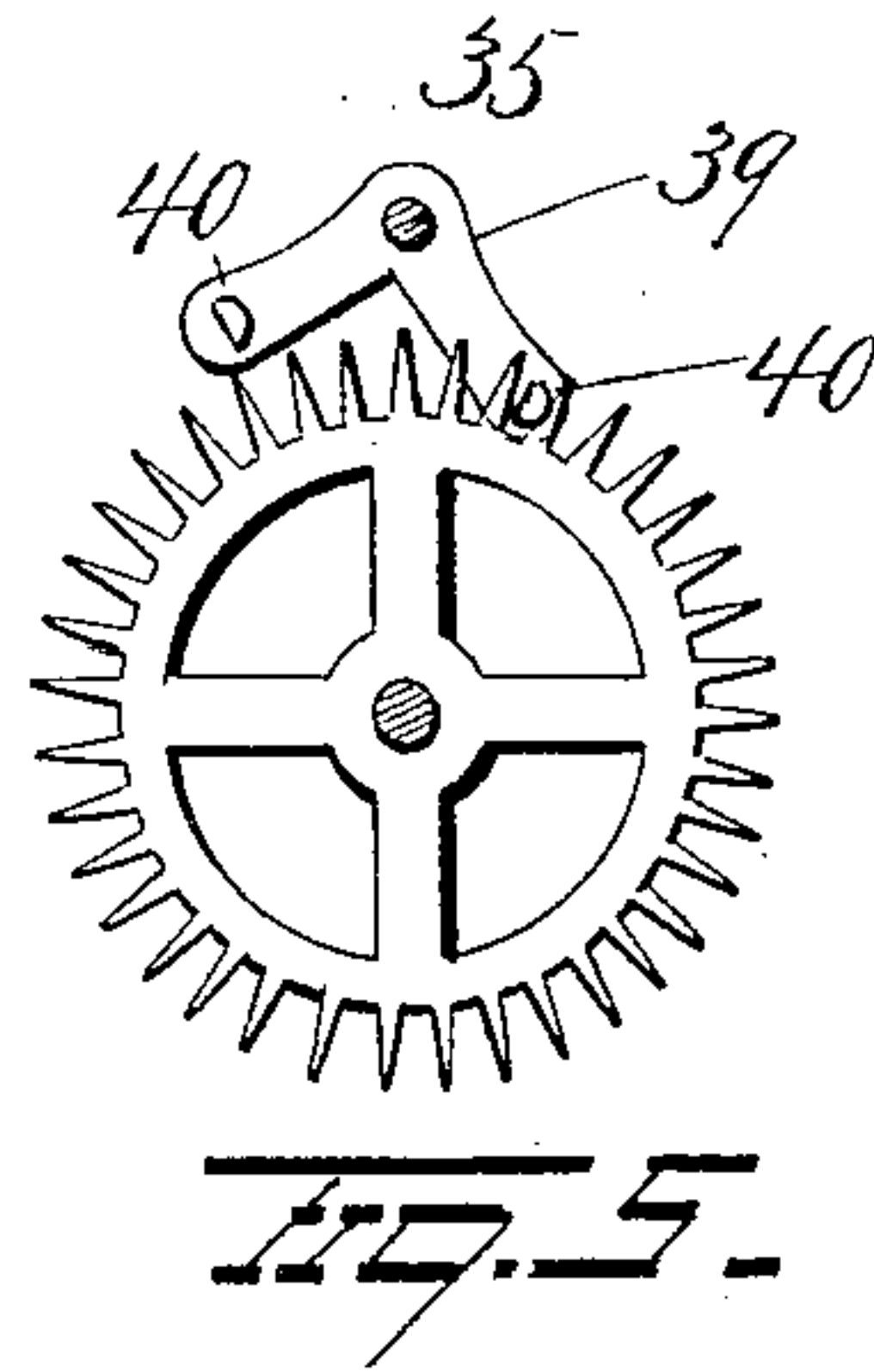
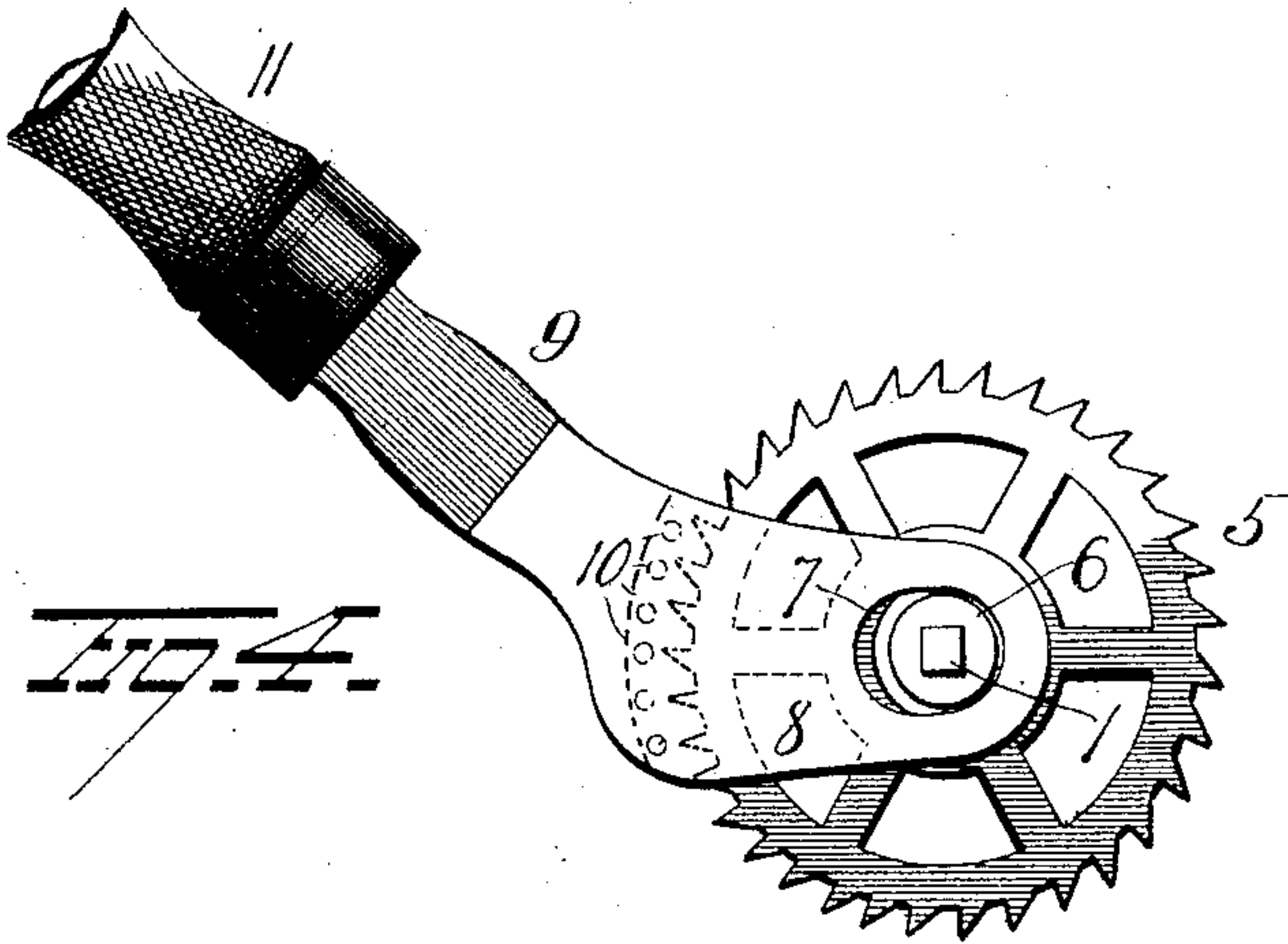
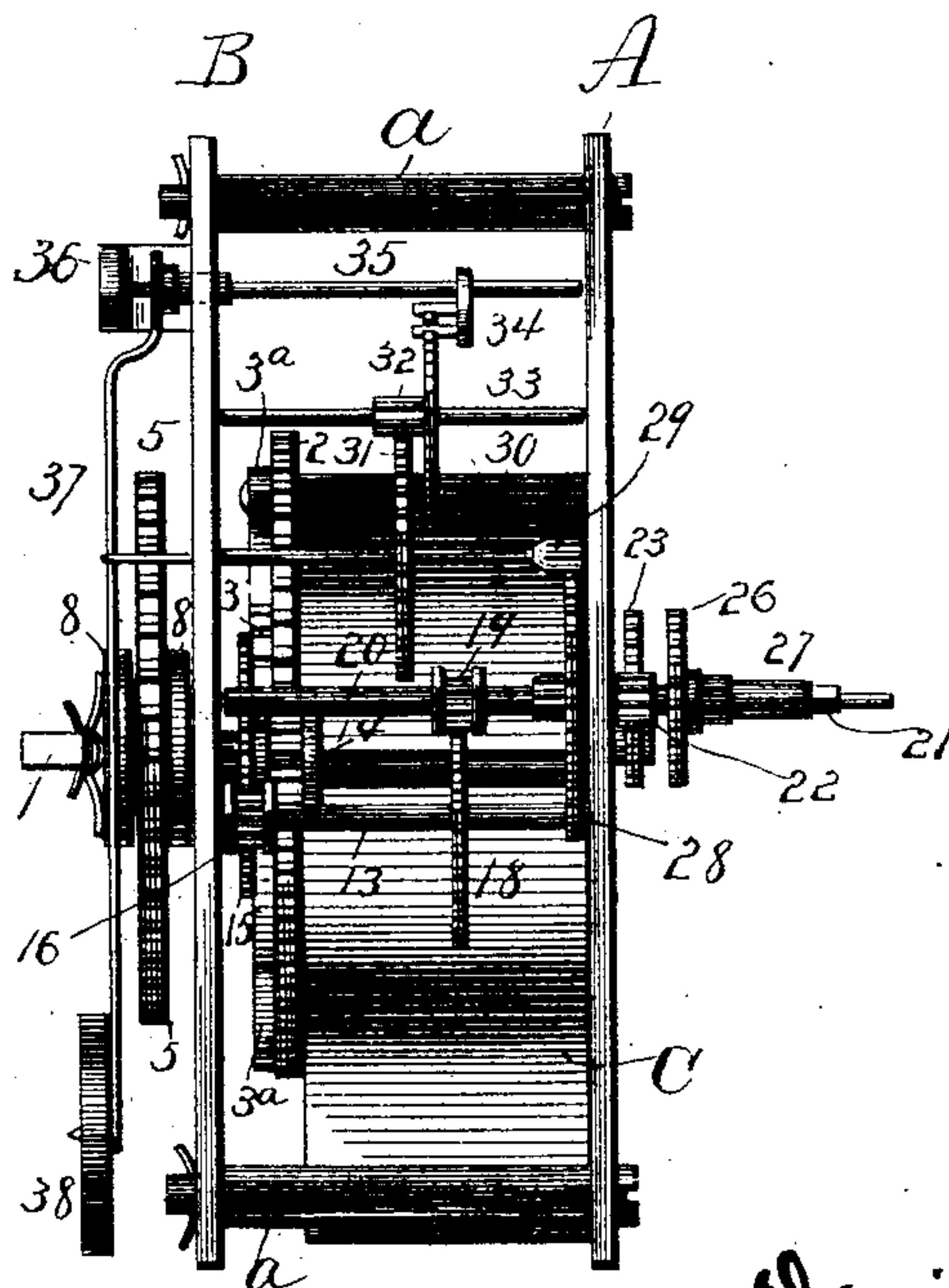


FIG. 3.



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UNITED STATES PATENT OFFICE.

DAVID VAUTHIER, OF WATERBURY, CONNECTICUT.

WINDING MECHANISM FOR CLOCKS.

SPECIFICATION forming part of Letters Patent No. 500,683, dated July 4, 1893.

Application filed March 21, 1892. Serial No. 425,818. (No model.)

To all whom it may concern:

Be it known that I, DAVID VAUTHIER, a citizen of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Clocks; and I 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 which it appertains to make and use the same.

My invention relates to an improvement in clocks,—the object being to lengthen the running time of a clock without affecting its accuracy and without unduly complicating the movement.

A further object is to provide an improved winding device, whereby the clock may be easily and quickly wound without the use of a key.

A further object is to provide a simple and efficient escapement.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings: Figure 1 is a face view of the movement with the front casing plate broken away. Fig. 2 is a rear face view. Fig. 3 is an end view. Fig. 4 is a detached view of the winding devices. Fig. 5 it a detached view of the escapement.

A, B, represent, respectively, the front and rear casing plates, which are connected together at their corners by means of posts *a*, in the usual manner. The spring arbor 1, is mounted in the plates A, B, at one end thereof, and carries the spring C, one end of said spring being secured to the arbor 1 or a drum thereon, and the other end to one of the posts *a*. A wheel 2, considerably larger than the other wheels of the movement is mounted loosely on the winding arbor 1, and secured to said arbor adjacent to said wheel 2, is a ratchet wheel 3, with which spring actuated dogs 3^a carried by the wheel 2 are adapted to engage. The winding arbor 1 projects beyond the rear plate B and has secured to it, a ratchet wheel 5. The wheel 5 is provided on each face with collars or enlargements 6, which are adapted to enter enlarged elongated openings 7 in the members 8, 8, of a lever 9,

said members 8, 8, of the lever being properly spaced apart and adapted to embrace the ratchet wheel 5.

Secured between the members 8, 8, of the lever 9, is a series of pins 10, arranged in a curve line adjacent to the periphery of the wheel 5. The lever 9 will preferably be provided with a handle 11 of wood or other suitable material. From this construction it will be seen that by pressing slightly on the lever 9 the pins 10 will engage the teeth of the wheel 5 and that by then pressing down upon said lever the ratchet wheel 5 will be rotated, thus winding the spring. When the lever has been pressed down to the full extent of its throw it is pulled rearwardly slightly to disengage the pins 10 from the teeth of the wheel 5, then moved upwardly to cause the pins 10 to again engage the wheel 5, and the lever again pressed downwardly. This operation is continued until the spring shall have been wound.

Mounted in the plates A, B, adjacent to the wheel 2 is an arbor 13, on which a lantern pinion 14 is fixed and adapted to receive motion from the wheel 2. A wheel 15 is also fixed to the arbor 13 and adapted to transmit motion to a pinion 16 fixed on an arbor 17.

A wheel 18 is fixed on the arbor 17 and adapted to transmit motion to a lantern pinion 19 on an arbor 20, which latter is mounted in the plates A, B, and projected beyond the front plate A, for the reception of a fixed sleeve 21, which latter is adapted to carry the minute hand of the clock. The sleeve 21 carries a pinion 22 adapted to transmit motion to a wheel 23, mounted loosely on a pintle 24 secured to the front plate A. A pinion 25 is mounted on the pintle 24 and rotates with the wheel 23, said pinion 25 being adapted to transmit motion to a wheel 26 carried by a sleeve 27 mounted loosely on the sleeve 21 and adapted for the reception of the hour hand of the clock.

The arbor 20 has fixed to it, a wheel 28 adapted to transmit motion to a pinion 29 carried by an arbor 30 mounted in the plates A, B. The arbor 30 carries a gear or toothed wheel 31, which transmits motion to a pinion 32 carried by an arbor 33. The arbor 33 also carries an escapement wheel.

An opening 34 is made in the rear plate B,

through which one end of the escapement arbor 35 projects. The escapement arbor 35 is mounted at one end in a bracket or arm 36 secured to the rear plate B and at the other
5 end in the front plate A.

To the escapement arbor 35 the pendulum 37 is secured, said pendulum having a bob 38 adjustably secured to its lower end.

The escapement pallets are secured to the
10 escapement arbor 35 and comprise a short bar 39, to the ends of which laterally projecting pins 40 are secured, each of said pins having a flat face and a curved face. By this construction and arrangement of escape-
15 ment pallet, an escapement will be produced which will be very accurate in its operation.

By constructing and arranging a clock movement as above described, a clock will be produced which will run for more than seventy
20 days with but one winding of the spring or even as long as eight hundred days. By the addition of another wheel in the movement and the use of a proper weight having suitable scope of movement, the clock may be
25 made to run for more than a year with but a single winding.

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

30 1. The combination with the winding arbor of a clock, and a motor for rotating the same, of a ratchet wheel mounted on said arbor and adapted to rotate therewith, a lever mounted on the arbor and embracing the ratchet wheel,
35 said lever being adapted to have a lateral

movement relatively to the arbor, and a series of pins carried by the lever and adapted to engage the ratchet wheel, substantially as set forth.

2. The combination with the winding arbor 40 of a clock, of a ratchet wheel mounted to rotate therewith, a lever comprising two members adapted to embrace the ratchet wheel and have a lateral movement relatively to the winding shaft or arbor, and pins carried by 45 said lever between its members and adapted to engage the ratchet wheel and turn it when the lever is vibrated in one direction, substantially as set forth.

3. The combination with the winding arbor 50 of a clock, of a ratchet wheel mounted to rotate therewith, disks or collars on the faces of said ratchet wheel, a lever comprising two members adapted to embrace said ratchet wheel, said members having enlarged and 55 elongated slots into which said disks or collars project, whereby said lever will be permitted to have a lateral movement relatively to the winding arbor, and pins carried by said lever between the two members thereof 60 and adapted to engage the teeth of the ratchet wheel, substantially as and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscrib- 65 ing witnesses.

DAVID VAUTHIER.

Witnesses:

S. S. LAPOINT,
GORDON B. LAWRENCE.