

(Model.)

2 Sheets—Sheet 1.

P. H. WHEELER & H. BARBIER.

STEM WINDING AND SETTING WATCH.

No. 361,658.

Patented Apr. 19, 1887.

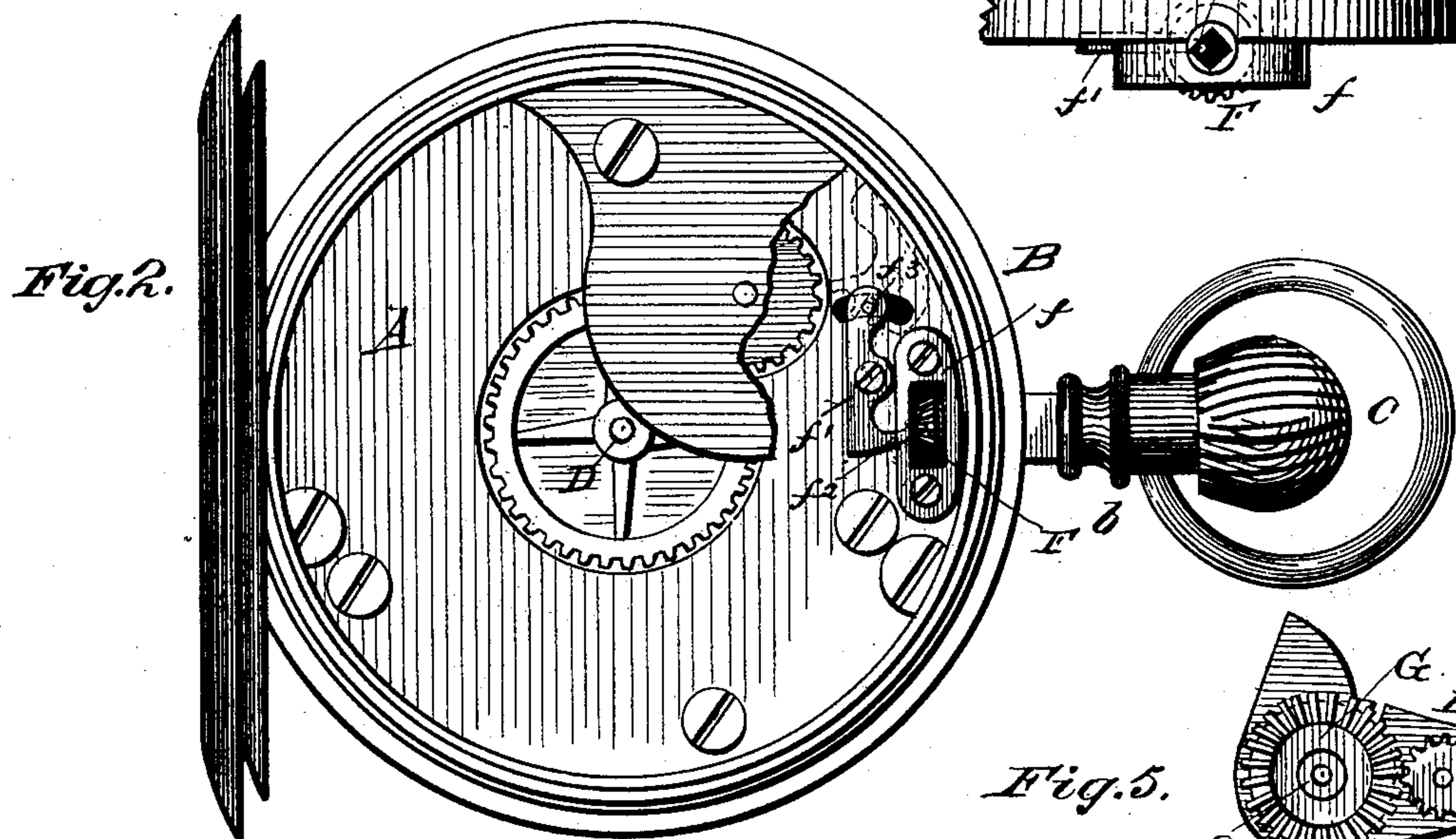
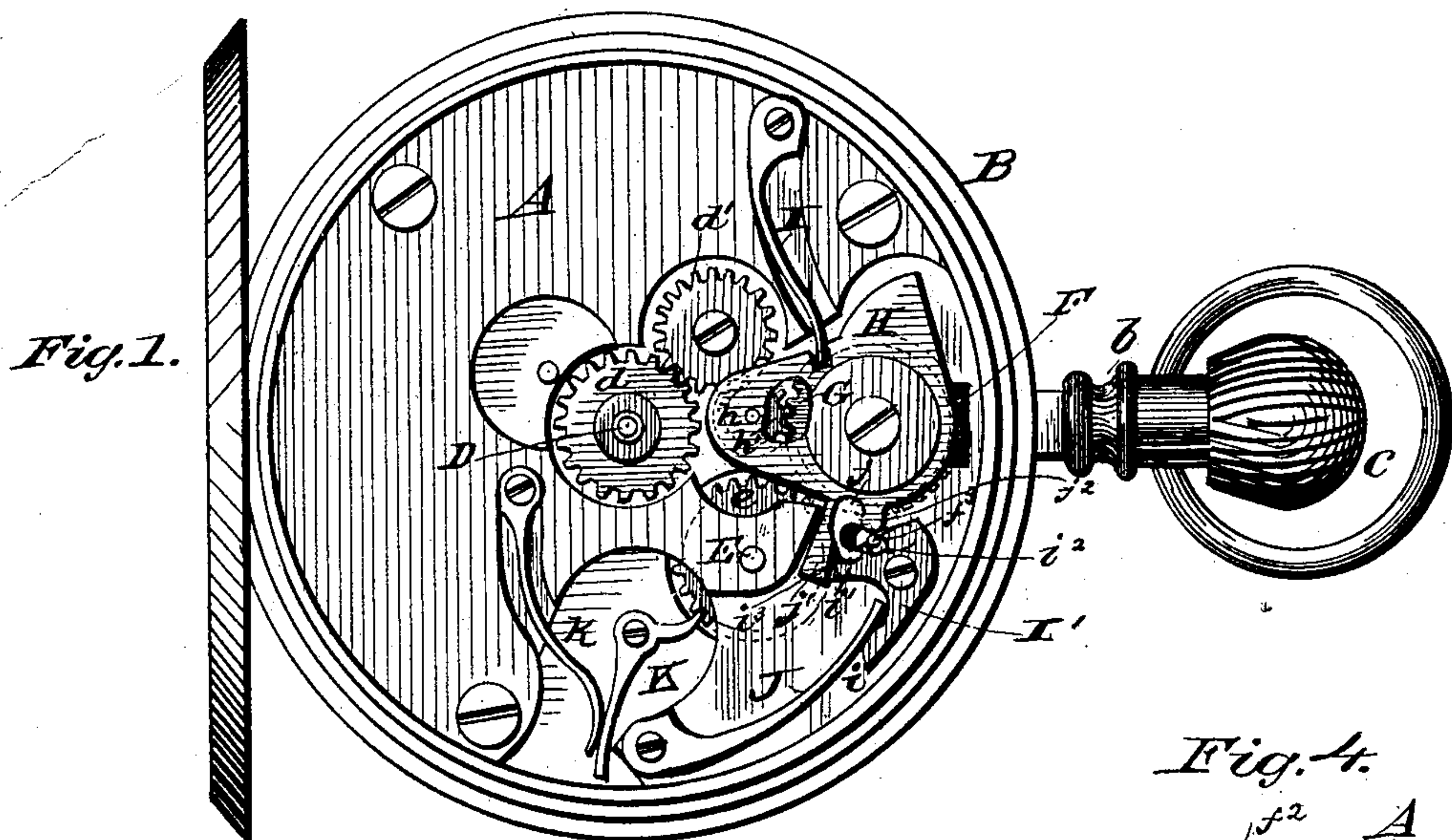
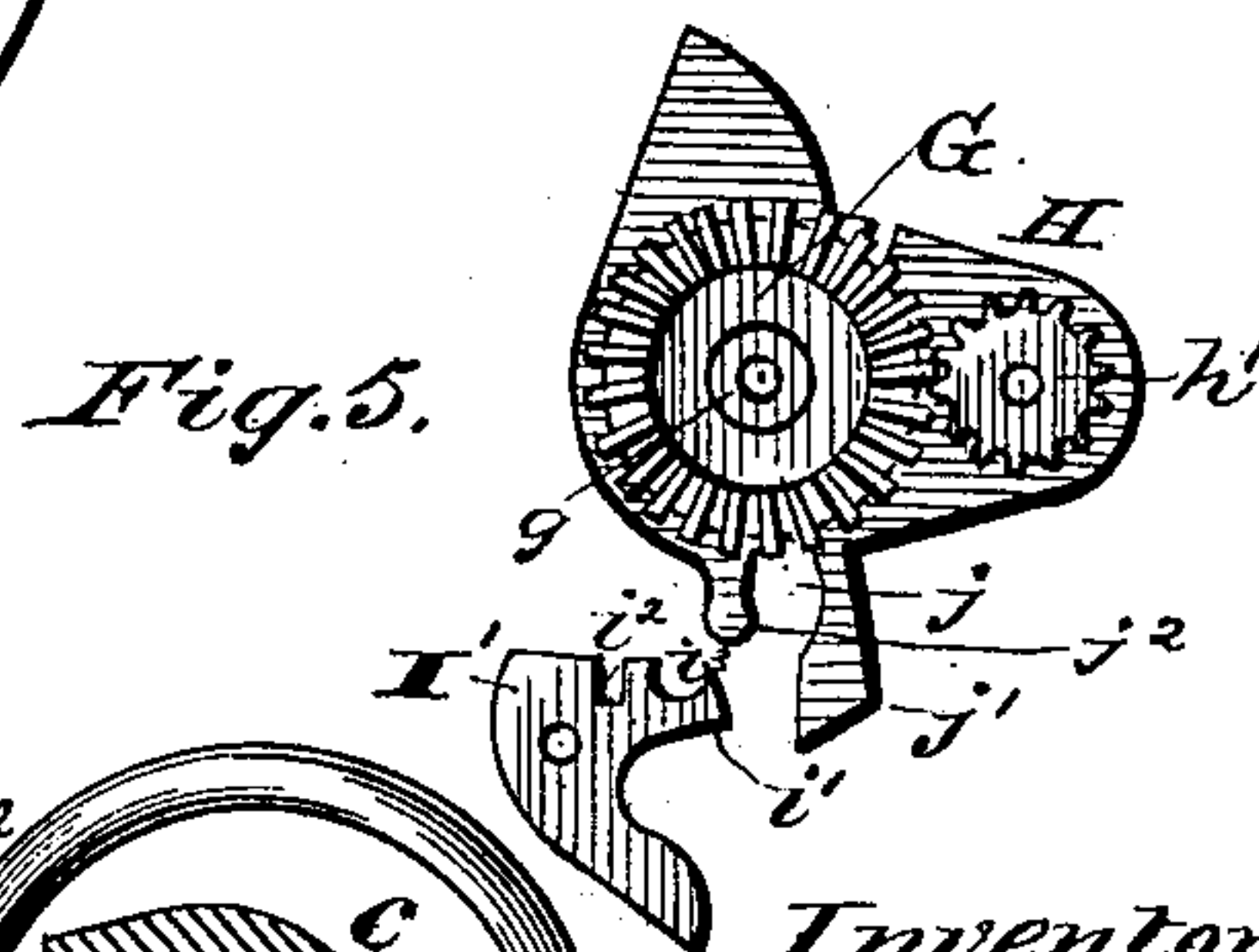
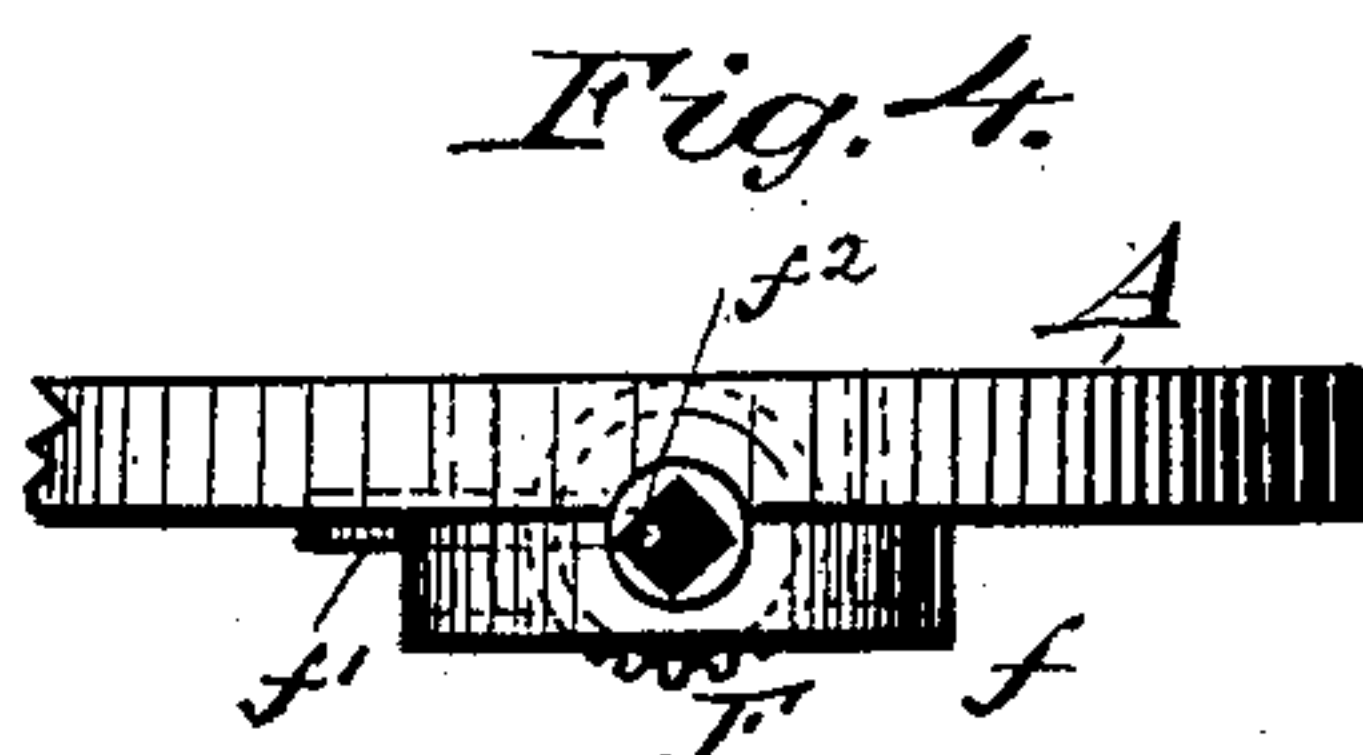
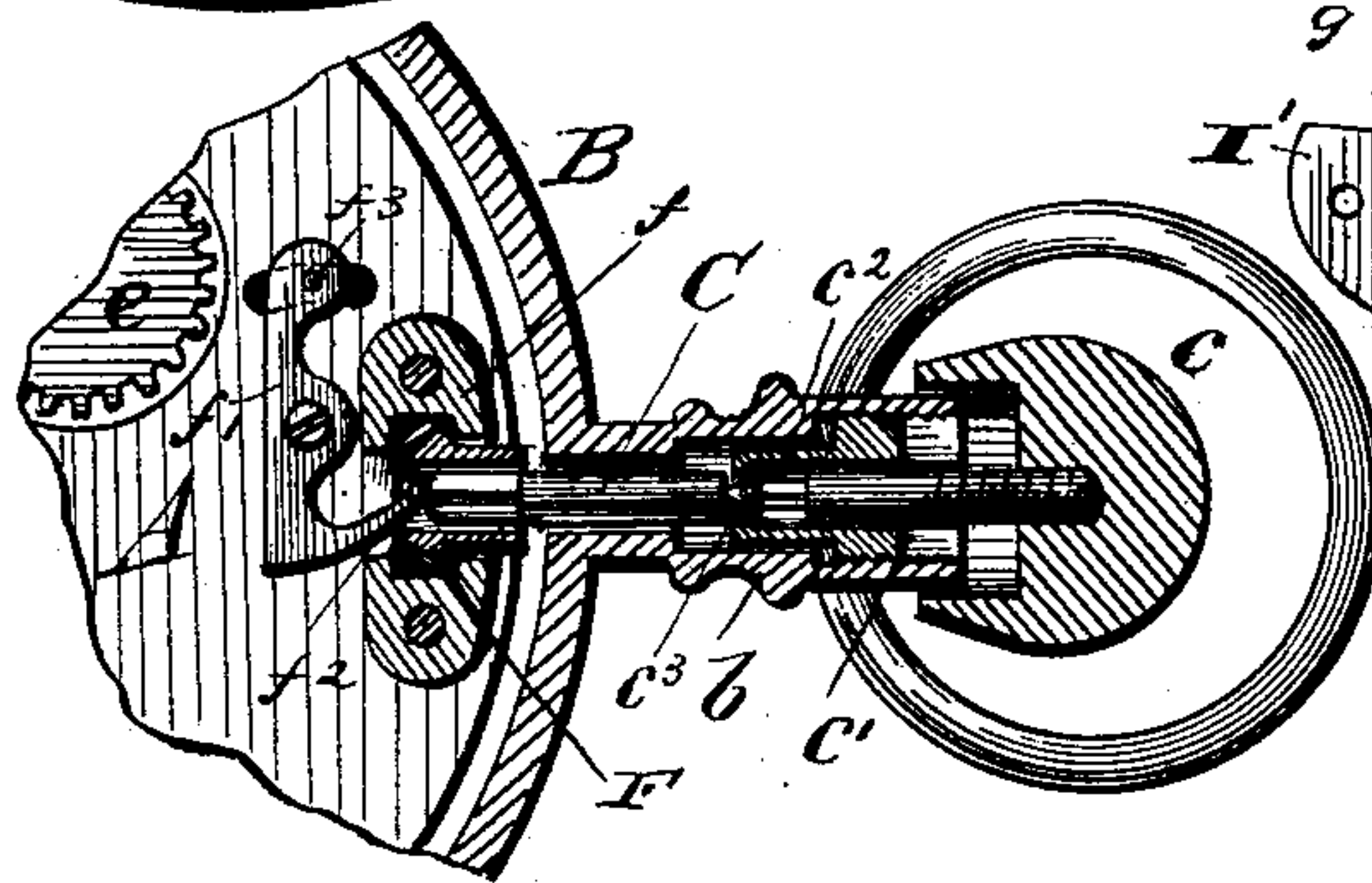


Fig. 3



Witnesses:

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Henry Barbier.
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Attorneys.

(Model.)

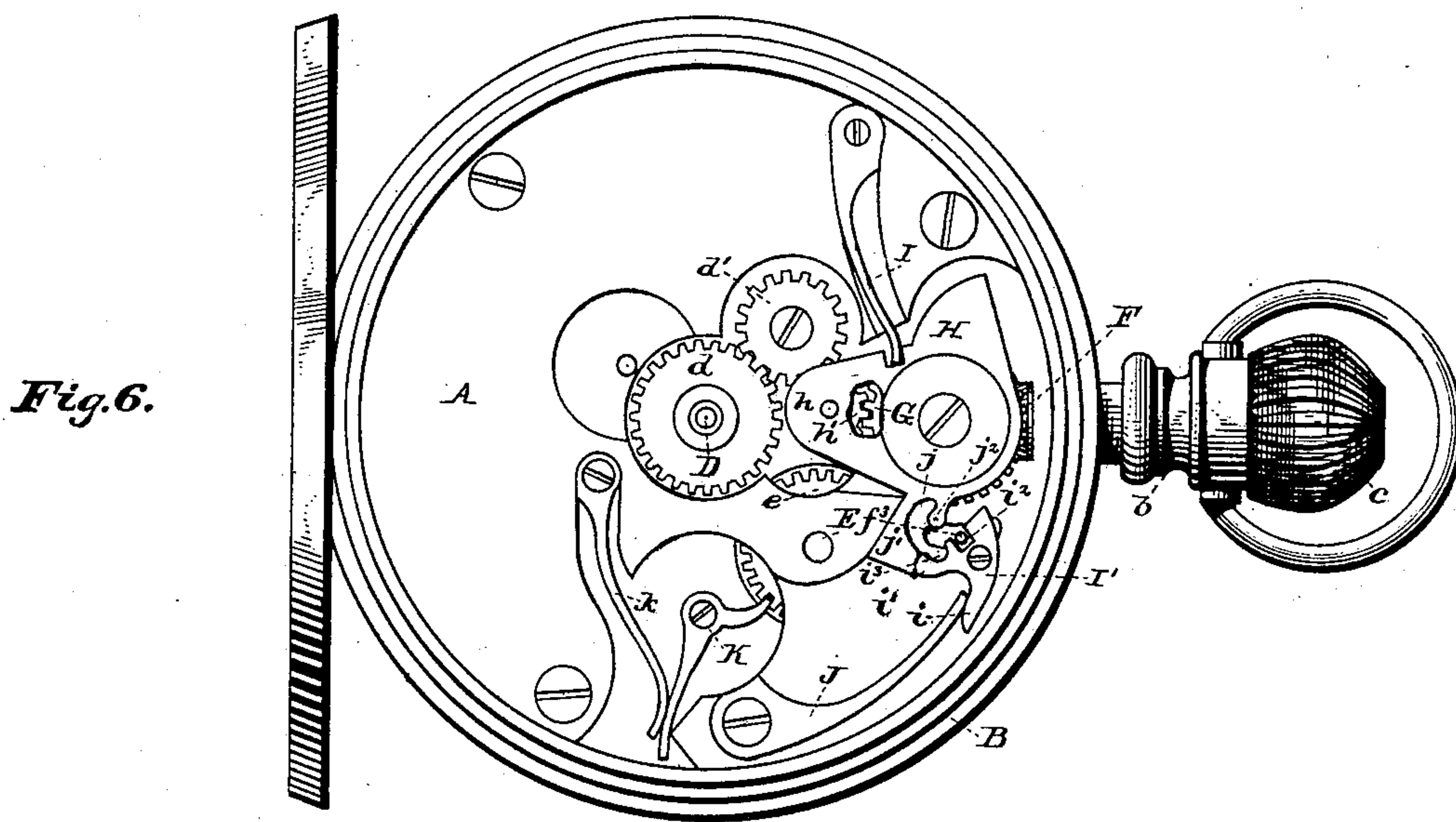
2 Sheets—Sheet 2.

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WITNESSES

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ATTORNEYS

UNITED STATES PATENT OFFICE.

PHILIP H. WHEELER AND HENRY BARBIER, OF COLUMBUS, OHIO, ASSIGN-
ORS TO THE COLUMBUS WATCH COMPANY, OF SAME PLACE

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 361,658, dated April 19, 1887.

Application filed August 28, 1886. Serial No. 212,106. (Model.)

To all whom it may concern:

Be it known that we, PHILIP H. WHEELER and HENRY BARBIER, citizens of the United States, residents of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Stem Winding and Setting Devices; and we do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a plan view of a watch, showing the front plate. Fig. 2 is a bottom or reverse view of the same. Fig. 3 is a broken view of same showing some of the parts in section. Fig. 4 is a detail edge view, and Fig. 5 is a detached view, of the vibrating plate and detent or dog. Fig. 6 is a plan view of a watch, showing the front plate.

The invention relates to improvements in stem winding and setting watches; and it consists in the construction and novel arrangement of parts, hereinafter described, and pointed out in the claims.

Referring by letter to the accompanying drawings, A designates the pillar-plate of the watch-movement frame.

B is the ring of the watch-case, having the usual hinged lids and the pendant-sleeve *b*, provided with a pendant-ring of common construction.

C is the pendant-stem, having its inner end squared, as shown, for a purpose hereinafter explained, and with its outer end screwing into the cap *c*, the edge of which surrounds the cylindrical outer end of the pendant-sleeve. The pendant-stem thus turns on its axis with the cap *c*, and has, moreover, a certain degree of longitudinal movement in the sleeve *b* by the following means:

c' is a hollow cylindrical block screwing into the outer end of the sleeve *b*, and provided with the longitudinal chamber *c''*. The pendant-stem C passes through the said chamber, and is provided within it with the circumferential shoulder *c'''*, which, by striking against

the ends of the chamber *c''*, limits the longitudinal movement of the pendant-stem.

D is the arbor for the hands, journaled centrally in and between the plates and balance-wheel plate, and having upon it outside of the former the gear-wheel *d*, which rests in a recess in the front surface of the plate A.

d' is a pinion journaled also in a recess in the said plate and meshing with the wheel *d*.

E is the mainspring-arbor, journaled in and between the pillar-plate and balance-wheel plate, and carrying a gear-wheel, *e*, which rests in a slot in the plate A.

F is a bevel-pinion, which turns in bearings in a bracket, *f*, secured to the rear side of the plate A, near the edge of the same and radially inward from the pendant-stem. The said bevel-gear has its axis hollow and the upper part squared within, so as to receive the squared end of the pendant-stem and be turned thereby. The edge of the gear-wheel passes through a slot in the plate A, and meshes with a wheel, hereinafter described.

f' is a vibrating angular lever pivoted on the rear side of the plate A, with one arm, *f''*, passing into the hollow axis of the bevel-gear F, so as to be impinged upon by the end of the pendant-stem, and a pin, *f'''*, on the end of the other arm, which pin passes through a slot in the plate A, and engages in a notch in a vibrating piece, hereinafter described.

G is a contrate gear-wheel, the teeth of which mesh with the pinion F, and with another pinion, hereinafter described. The wheel G is pivoted in a suitable recess in the front surface of the plate A, and has a vibrating plate, H, pivoted upon its boss *g*. On the end of the arm *h* of said plate is pivoted a pinion, *h'*, which always meshes with the wheel G, and is adapted to mesh with either the pinion *d'* or the wheel *e* on the mainspring-arbor, according to the position of the plate H.

I is a spring secured in a recess in the plate A, with its end engaging in a notch in the edge of the plate H, and bending to force said plate over toward the wheel *e* on the spring-arbor.

I' is a vibrating detent or dog pivoted in the recessed surface of the plate A. The said dog is of curved form, having the two arms *i'* and

the two notches $i^2 i^3$. A spring, J, pivoted to the recessed surface of the plate, bears on the arm i to force it outward, while the arm i' enters a curved notch, j , in an extension, j' , of the plate H. The notch i^2 engages the pin f^3 of the pivoted lever f' . A stop, j^2 , on the edge of the plate H enters the notch i^3 of the plate I, so as to limit the motion of the dog, and by contact with the arm i' force the plate H to one side, so as to entirely disengage the setting-gear.

The wheel e on the mainspring-arbor is prevented from rotating in the wrong direction by the pivoted pawl K and spring k of the same.

When the pendant stem is shoved inward in its sleeve, its end presses downward the arm f^2 of the angular lever f' , and consequently moves the pin f^3 outward on the other arm of the same. This motion causes said pin to rotate the dog I', by means of the notch i^2 , against the action of the spring J, so that the arm i' enters the notch j in the plate H, and the spring I is free to force the arm h of said plate in the direction to engage the gears h' and e , so that turning the pendant-stem will wind the watch. When the stem is turned in the wrong direction, the teeth of the gear h' bounce over those of the gear e , the spring I giving sufficiently, and the latter is not turned.

Upon pulling the stem outward the arm i' is caused, by the action of the spring J, to ride out to the end of the extension j' and force the plate H in the direction to engage the gears h' and d' . The watch is then in condition for setting. The notch i^2 also carries the lever i' into its former position by means of the pin f^3 . The arm i' supplements the spring I, and by striking against the stop j^2 insures the disengagement of the setting-gears.

Having described this invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of the angular pivoted lever provided with the pin f^3 , passing through a slot in the plate A, the vibrating dog provided with a notch in which said pin engages, the vibrating plate provided with the extension and notch, upon and in which, respectively, an arm of the dog acts, the train connected with the vibrating plate, the setting-gears, and springs, substantially as described, to force the vibrating plate into either of its two positions, substantially as specified.

2. The combination, with the setting-gears, the vibrating plate provided with the stop j , and the train connected to said plate, of the oppositely-acting springs I and J, the vibrating dog provided with an arm to strike against the stop j^2 , and means, substantially as described, to actuate said dog, substantially as specified.

3. The combination of the pivoted lever f , provided with the arm f^2 and pin f^3 , the vibrating dog I', provided with the arms $i i'$ and notches $i^2 i^3$, the vibrating plate H, provided with the extension j' , notch j , and stop j^2 , with the oppositely-acting springs I J, the train connected with the vibrating plate, and the setting-gears, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

PHILIP H. WHEELER.
HENRY BARBIER.

Witnesses:

J. N. BEENER,
J. H. SHARP.