

H.R. Smith & R. Folsom.

No. 119,889.

Patented Oct. 10, 1871.

WATCH.

Fig. 1.

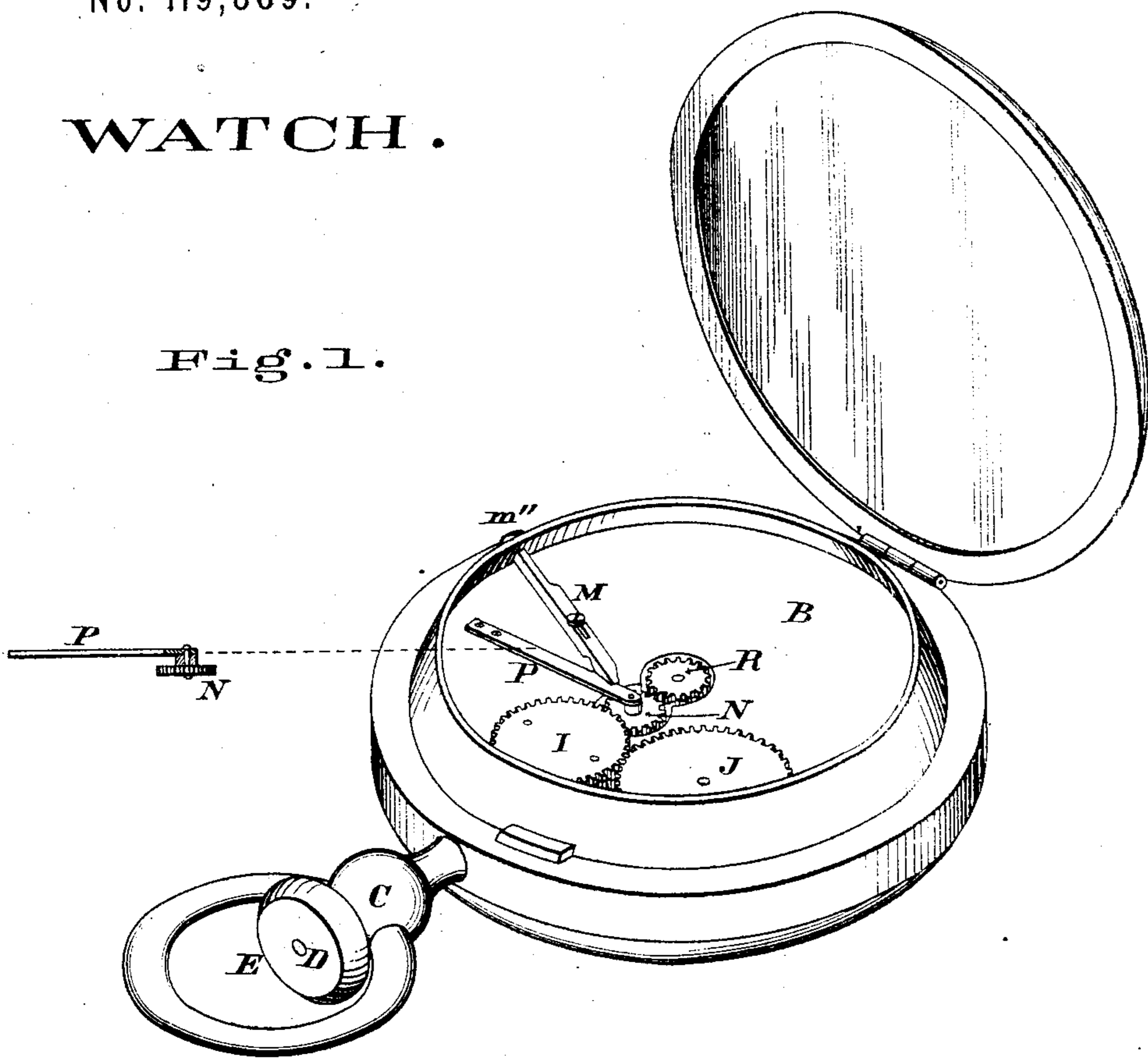


Fig. 2.

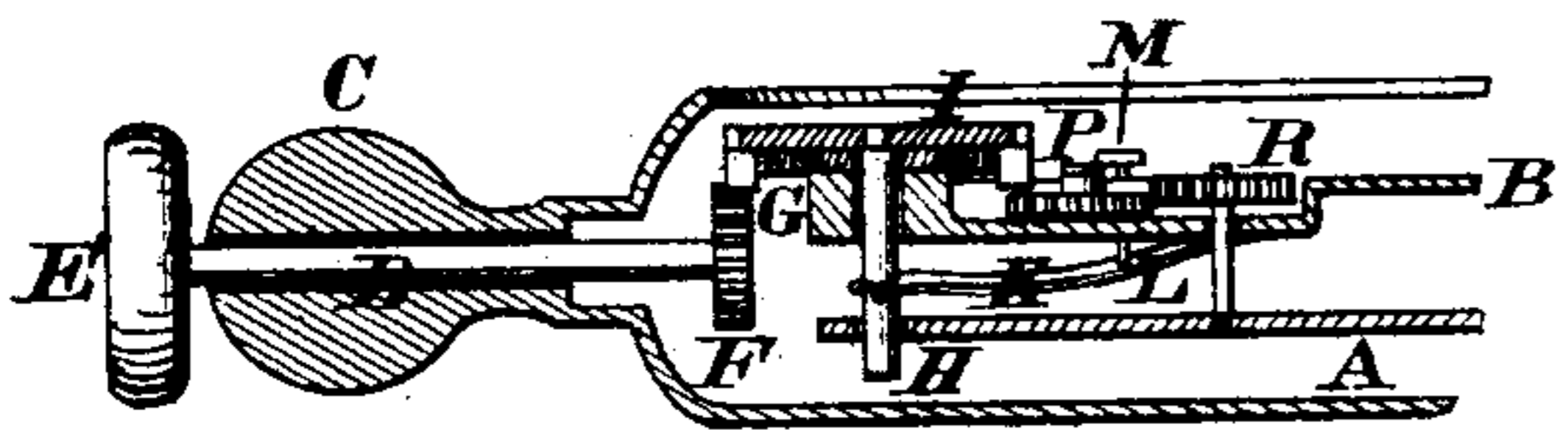


Fig. 3.

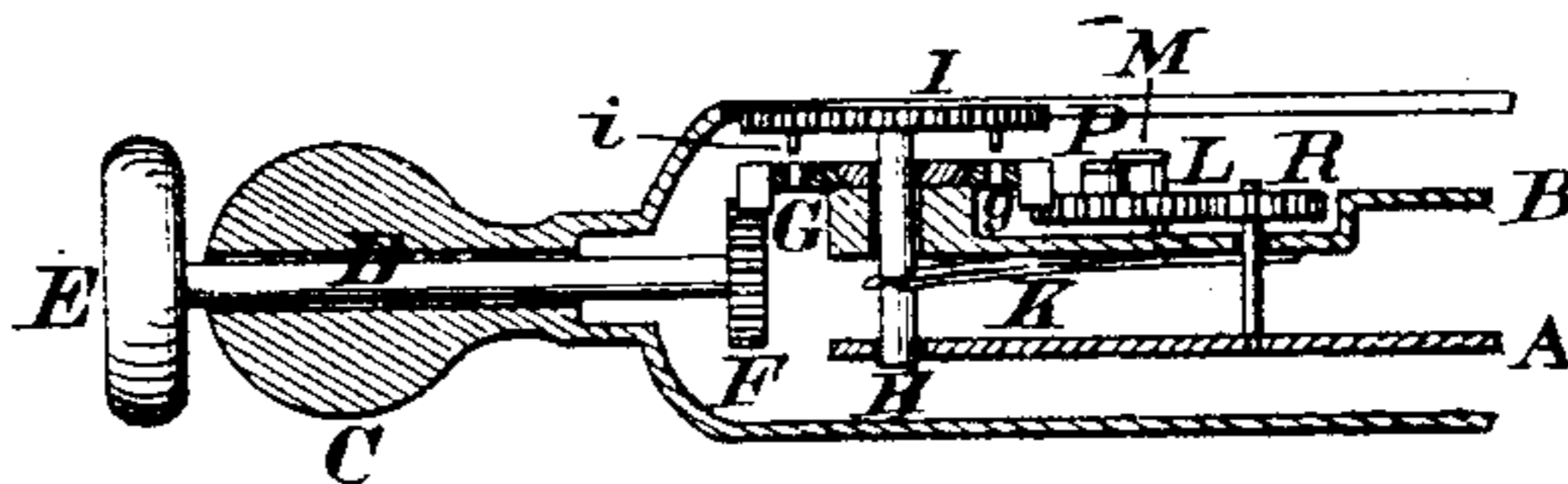


Fig. 4.

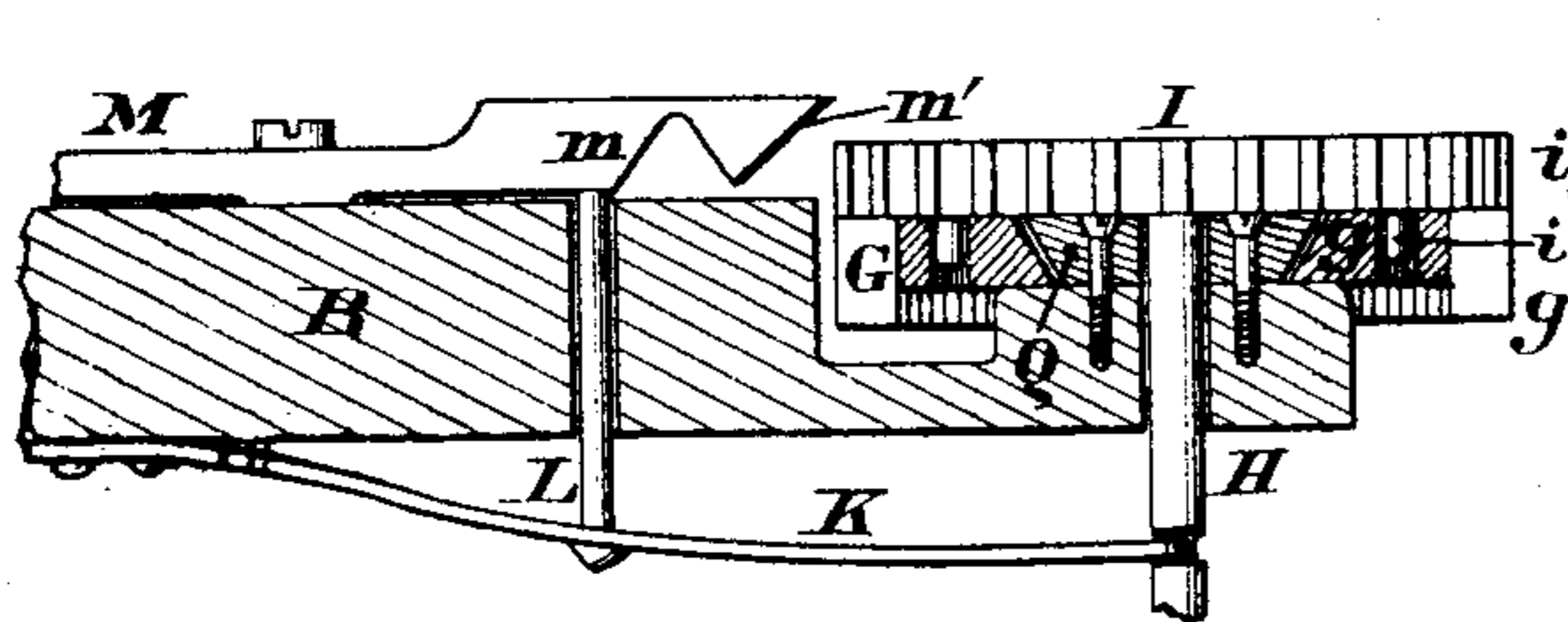
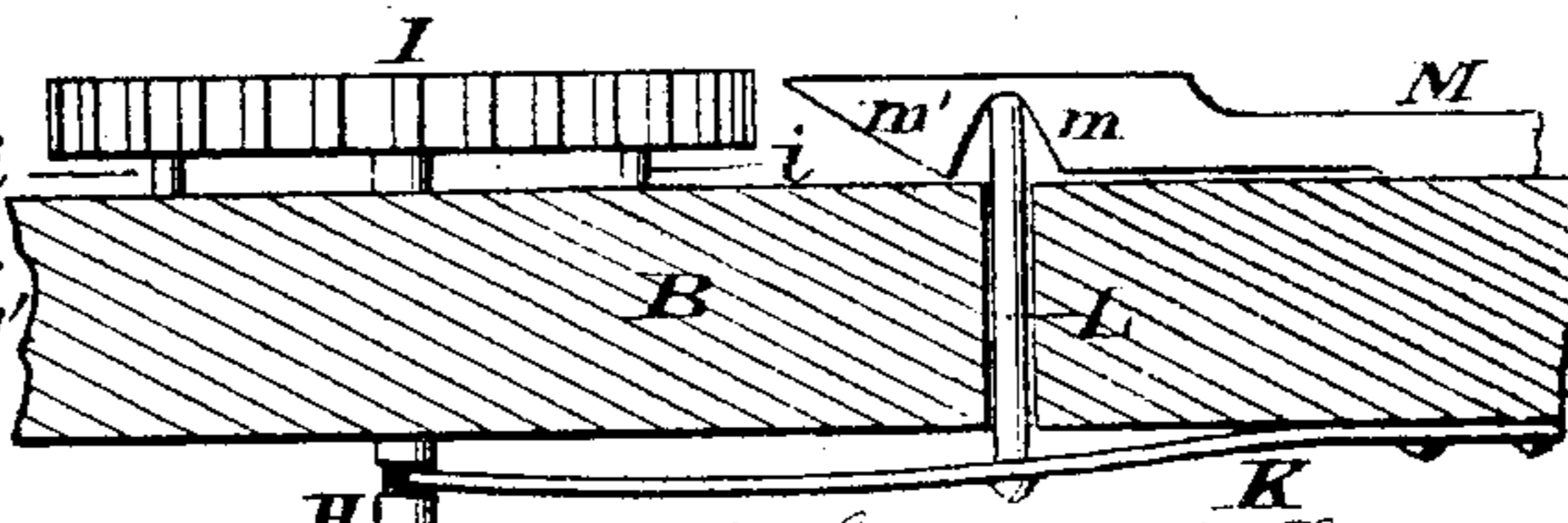


Fig. 5.



ATTEST.
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UNITED STATES PATENT OFFICE.

HARRY R. SMITH AND RUFUS FOLSOM, OF CINCINNATI, OHIO.

IMPROVEMENT IN STEM-WINDING WATCHES.

Specification forming part of Letters Patent No. 119,889, dated October 10, 1871.

To all whom it may concern:

Be it known that we, HARRY R. SMITH and RUFUS FOLSOM, both of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Stem-Winding Watches, of which the following is a specification:

The invention relates to a class of watches whose winding and setting are effected wholly through the push-stem, which, by reason of its actuating-pinion projecting but slightly into the interior of the watch, is never disturbed by the removal or replacement of the "works," and a shifting mechanism which, through the medium of a train of wheels that revolve parallel and are shiftable perpendicularly to the pillow-plate, is capable of being connected alternately with the winding-and-setting mechanism of the watch. One advantage of such arrangement of the intermediate wheels is that the act of ungearing does not at all disturb the hands from their adjusted position, as do those arrangements whose wheels shift in direction of their planes, and in which the precise position to which the hands have been set is liable to be disturbed in the operation of ungearing. The intermediate wheels being all parallel with the pillar-plate, are readily applicable to watches already in the market, without any disarrangement or change of their internal mechanism, so that ordinary key-winding watches can, on our plan, be readily converted to stem-winders.

Figure 1 is a perspective view of a watch embodying our improvement. Fig. 2 is an axial section through the push-piece, the parts being in position for winding. Fig. 3 is a similar section with the parts in position for setting. Fig. 4 is an enlarged axial section through the double wheel in its connected condition. Fig. 5 is a section, showing the upper member of the double wheel elevated.

A represents the pillow-plate or back-plate, and B the dial-plate or front plate of a watch movement or "works." The pendent C is traversed axially by a cylindrical stem or pusher, D, capable of rotation in said pendent, as well as of being pushed inward in the ordinary way to operate the cap-spring. The outer extremity of the pusher has a knob or milled head, E, and its inner end a pinion, F, which gears with a contrate-wheel, G, that revolves loosely upon an under-cut hub, Q, which surrounds a shaft,

H, whose spur-wheel I gears with a wheel, J upon the mainspring arbor. The shaft H, with its wheel I, is capable of a slight longitudinal motion or shift, and is provided with pins or clutches *i*, which, when said wheel and shaft are depressed by engaging with the depressions *g* in the contrate-wheel, G cause the wheels to revolve as one. The arrangement G H I we call our double wheel. The depression and elevation of the wheel I are effected through the instrumentality of a spring, K, one end of which is fastened to the plate B, and the other end engages with shaft H. A pin, L, which rises from said spring K, through an orifice in plate B, being depressed by the push-piece M, causes, in turn, the depression of the spring K, and through it of the shaft H and wheel I, as already stated. In order to enable the push-piece M so to act, its under surface is of a wedge-like or chamfered form at *m*, as represented. When relieved from the pressure of the push-piece by the retraction thereof, the spring K operates to throw up the shaft H and wheel I so as to uncouple the latter from the wheel G, and consequently disconnect it from the stem or pusher D. At the same instant that this disconnection occurs a wheel, N, that revolves upon a screw or stud on spring P, (which wheel is in constant gear with a cannon pinion, R,) being acted on by chamfered end *m'* of push-piece M, is caused by said spring P to fly up into mesh with the cogged periphery *g'* of the contrate-wheel G, so as to place the stem D in communication with the said cannon pinion-wheel R, and thus enable the setting of the watch. The outer extremity of the push-piece M has a beveled head, *m''*, of such form that the act of closing the cap operates to drive in the push-piece and place the stem D in communication with the winding mechanism at all times when the watch is closed. While describing our preferred form, we reserve the right to vary the details of construction in non-essential particulars; for example, the winding-wheels corresponding to I and J may be located below the back plate A instead of the front-plate B.

We claim herein as new and of our invention—

1. In combination with the mainspring wheel and hand-setting wheel of a stem-winding watch, an intermediate wheel, rotating in a plane parallel to the watch-plate, and shiftable in a direction perpendicular thereto, for the purpose of

transmitting motion to either the winding or setting mechanism, as desired.

2. The described arrangement of pusher D E F, double wheel G H I, (whose upper member I gears with the mainspring wheel,) and shiftable pinion N gearing with the member G, and with the cannon pinion-wheel, in the described combination with the shifting-devices M, *m*, *m'*, *m''*, L, K, P, and Q, for the purpose set forth.

In testimony of which invention we hereunto set our hands.

HARRY R. SMITH.
RUFUS FOLSOM.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.

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