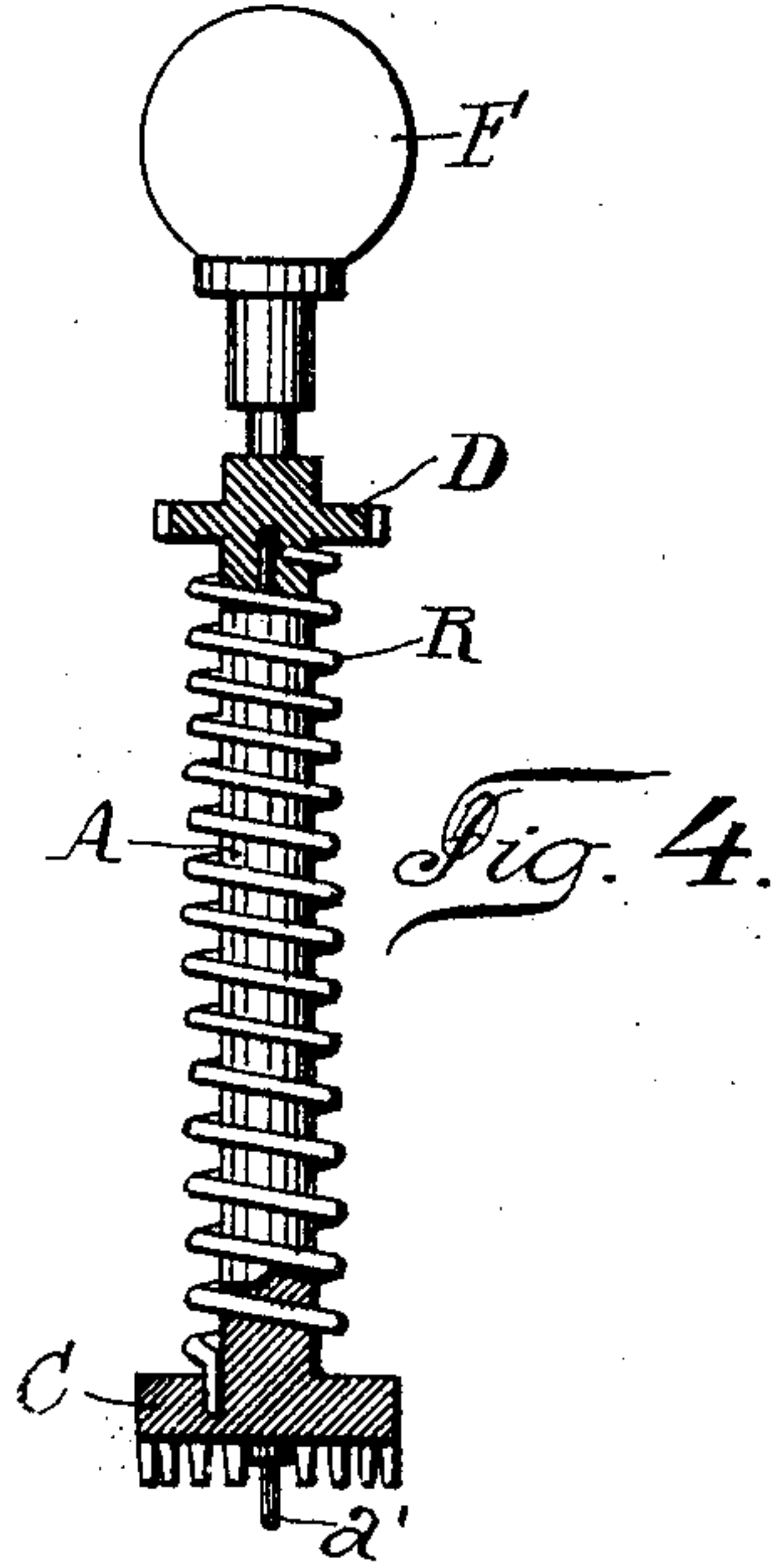
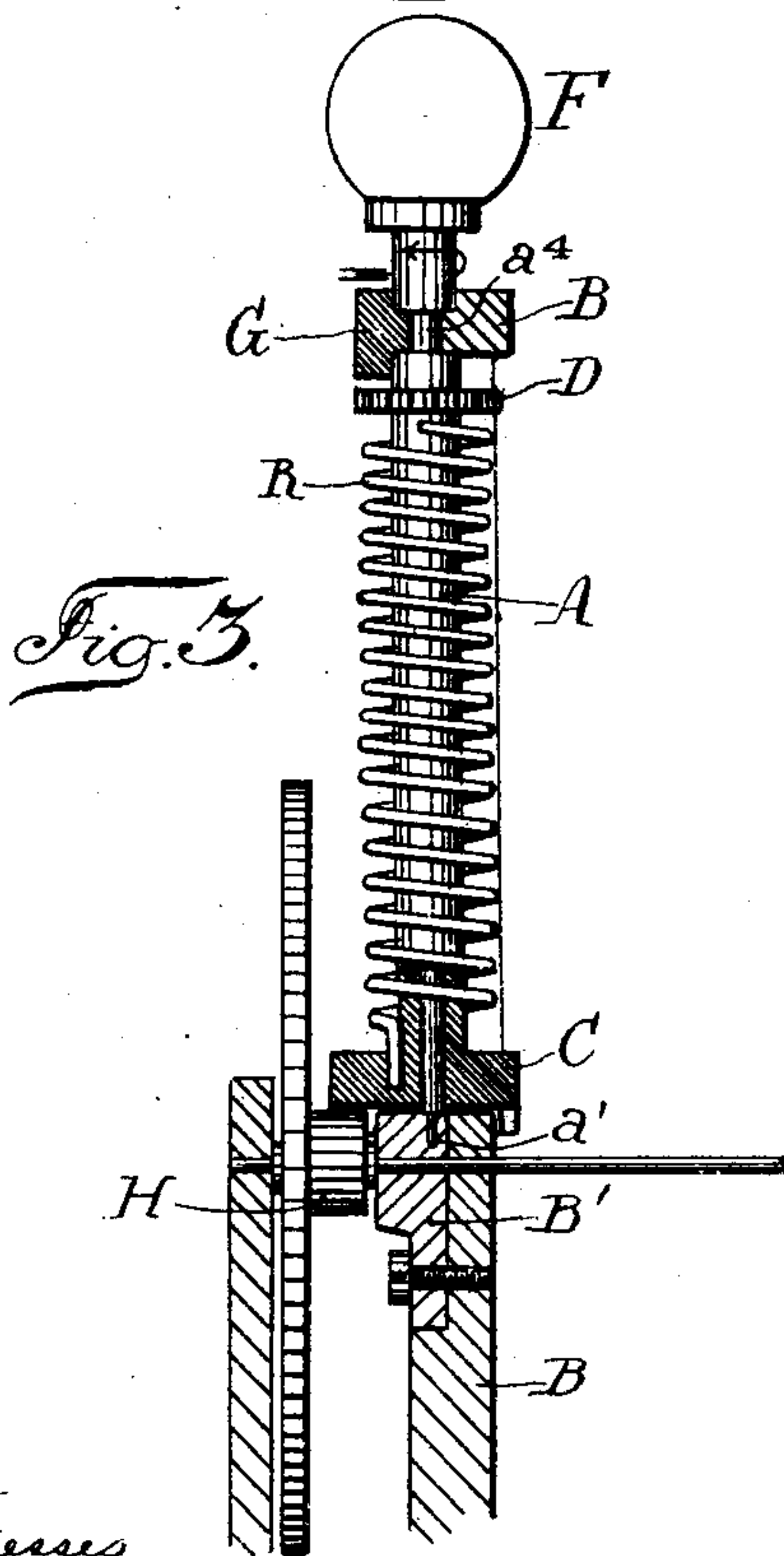
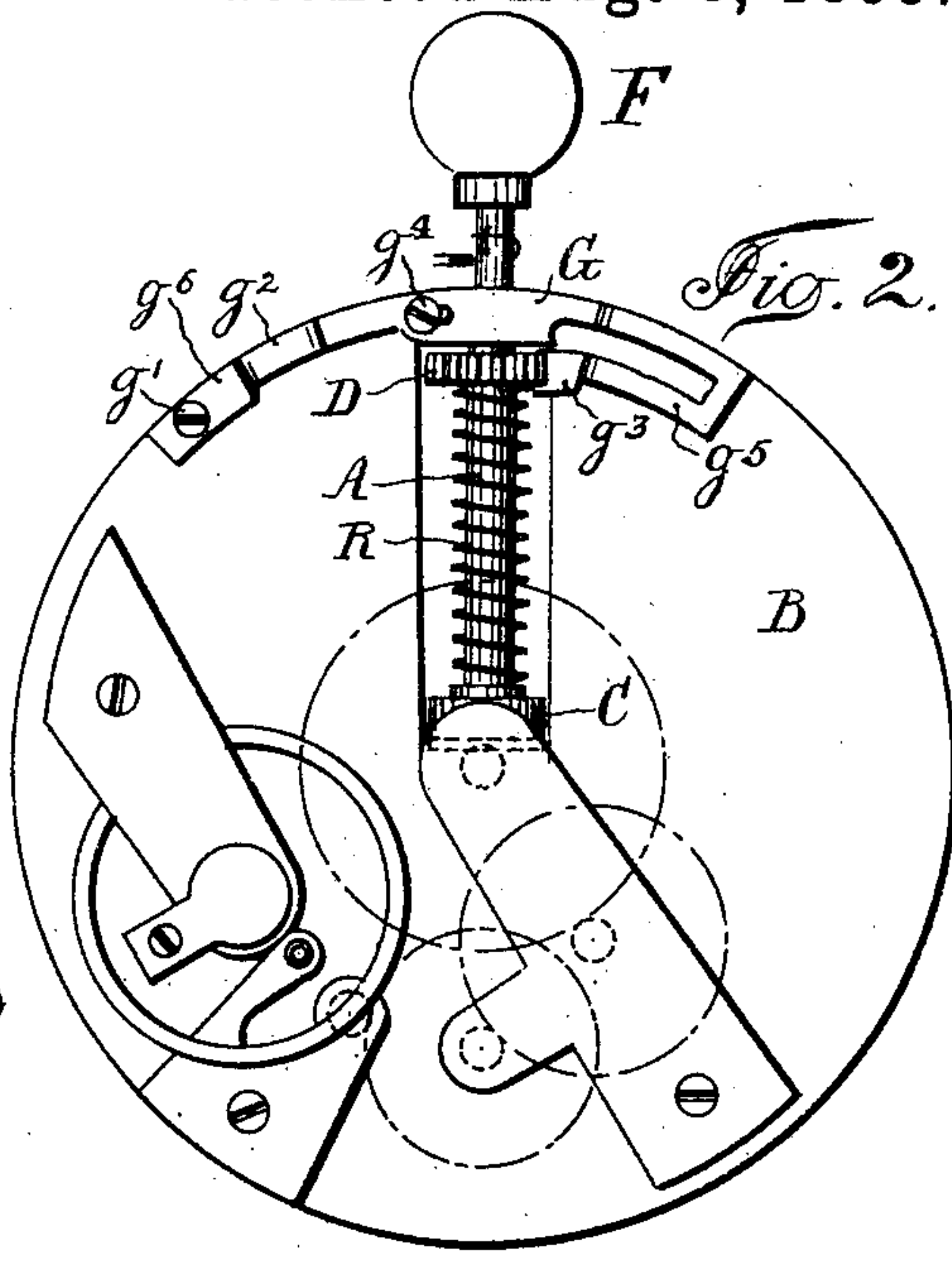
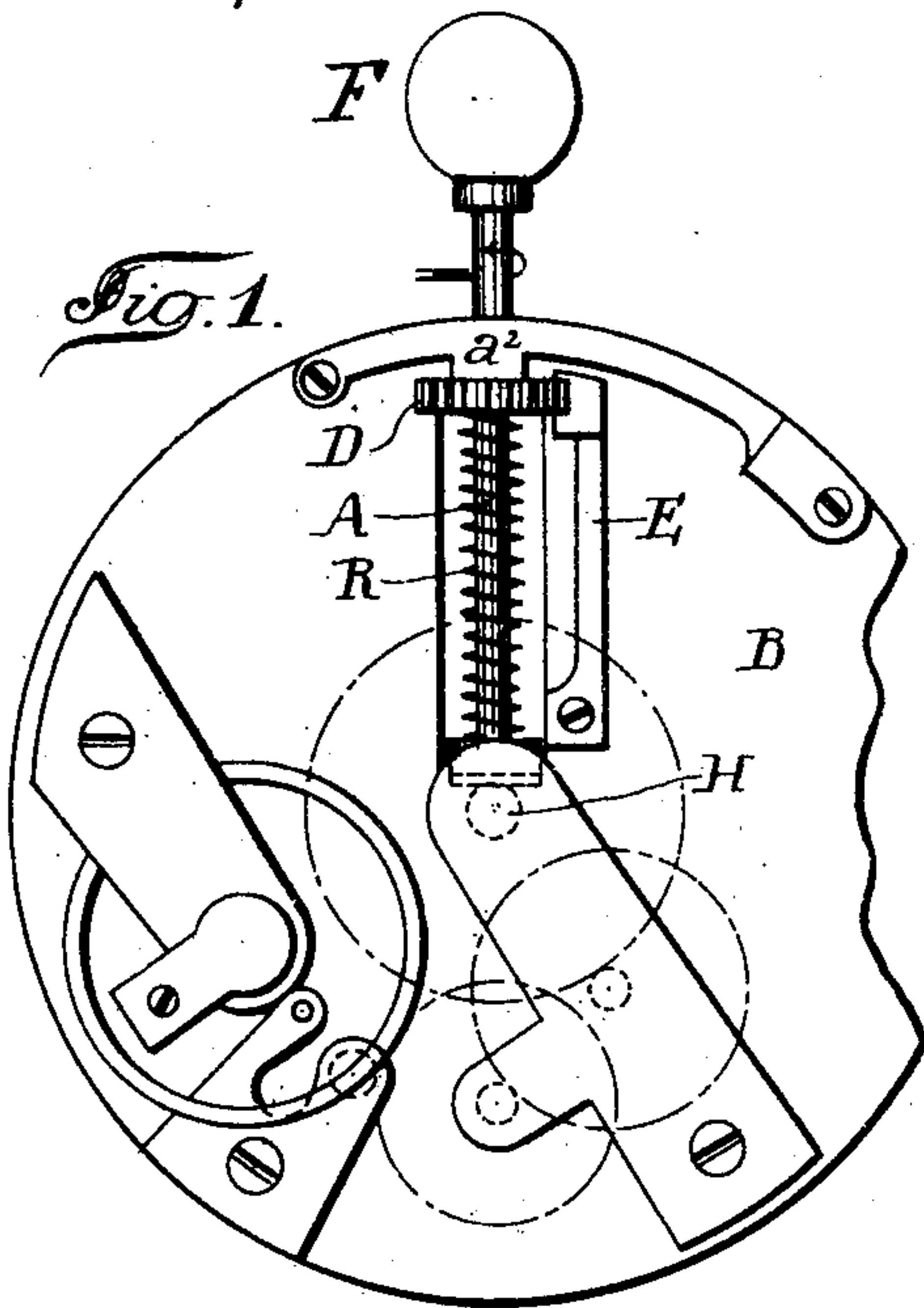


(No Model.)

I. GRASSET & A. MEYLAN
WATCH WINDING DEVICE.

No. 502,884.

Patented Aug. 8, 1893.



Witnesses
Charles Smith
J. Stait

Inventors.
Isaac Grasset
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Att'y.

UNITED STATES PATENT OFFICE.

ISAAC GRASSET AND AUGUSTE MEYLAN, OF GENEVA, SWITZERLAND.

WATCH-WINDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 502,884, dated August 8, 1893.

Application filed October 4, 1892. Serial No. 447,793. (No model.) Patented in Switzerland May 28, 1892, No. 5,019.

To all whom it may concern:

Be it known that we, ISAAC GRASSET and AUGUSTE MEYLAN, citizens of Switzerland, residing at Geneva, Switzerland, have invented an Improvement in Motive Devices for Watches, (for which Letters Patent have been granted in Switzerland, dated May 28, 1892, No. 5,019,) of which the following is a specification.

10 The invention consists of an improved motive device for watches, which is combined so as to considerably cheapen the manufacture of the latter and to act upon the watchwork with great regularity and to insure its going
15 for the same length of time as usual mainsprings do.

Our improved motive device is composed of a helical spring around a stem the geometrical axis of which is parallel, or nearly so, to
20 the plate of the watchwork, which stem forms the winding-up-stem of the watch.

The invention further comprises a very convenient click-device for the holding of the above-mentioned mainspring-axis in the di-
25 rection of rotation.

In the accompanying drawings, Figure 1. is a plan view of a watch work provided with our motive device, in which the click-device is composed of an ordinary click-spring. Fig.
30 2. is a plan view of a watch work provided with our improved click-device. Fig. 3. is a section of our motive device at an enlarged scale showing one of the constructions which may be adopted for the connection of the
35 mainspring, the mainspring axis and the click-wheel. Fig. 4. shows another construction of said connection.

In all the figures the same letters of reference refer to the same parts.

40 To the plate B. of the watch there is affixed a stem or axis A. placed parallel to the plate B. and having one of its pivots a' . located in a suitable hole in a bearing B'. fixed to the plate B. or in a suitable hole of said plate B.
45 and its other pivot a^4 . is in a hole between the plate B. and the bridge a^2 . in Fig. 1. or G. Figs. 2. and 3. Said axis A. is provided with a click-wheel D. and with a crown-pinion C. which may either be constructed as shown in Fig. 3.
50 or as shown in Fig. 4. In the first case (Fig. 3), the click-wheel D. is firmly fixed to the

stem A. and the pinion C. is free to rotate upon said stem, and the helical mainspring R. is fixed with its one end to the axis A. and with its other end to the pinion C. In the second 55 case (Fig. 4), the click-wheel D. is not connected with the axis A. but the pinion C. is firmly fixed to said axis. The helical mainspring is then fixed with its one end to the click-wheel D. and with the other to the pin- 60 ion C. The pinion D. is, in the latter case, connected to the crown F.

The crown-pinion C. acts upon the pinion of a gear wheel H. the axis of which may carry the hour-hand, or which may act upon any 65 combination of gear wheels carrying the hands and connected with any suitable escapement whatever, to fulfill the usual purpose of a watch.

When the crown is rotated in the direction 70 shown by arrows in Figs. 1. 2 and 3. the torsion of the helical spring R. causes the pinion C. to be rotated in the same direction and said pinion transmits its motion to the watch- 75 work, the movement of which is regulated by a suitable escapement. The tension of the helical spring is accumulated as the crown is rotated and said accumulated tension insures the going of the watch during a certain lapse 80 of time. The backward motion of the stem is prevented by a suitable click or pawl acting upon the wheel D. Said click device may be composed of a spring E. fixed to the plate as shown in Fig. 1. and engaging at its head with the teeth of the click-wheel D; but we 85 preferably use the device shown in Fig. 2. in which the necessary click spring is combined with the bridge that holds the stem to the plate. In the construction shown in Fig. 2, the foot g^6 . of said bridge G. is fixed to the 90 plate B. by means of a screw g' .

The bridge G. is provided with a spring part g^2 . and with a bent headpiece g^5 which also forms a spring to the click or pawl g^3 . that engages the click-wheel D. The middle por- 95 tion of said bridge G., that is to say, that portion of the same which is situated between the said spring portions g^2 . and the end g^5 . is rigid and provided with a notch or recess to embrace the pivot a^4 . of the stem, as shown 100 in Fig. 3.

There is provided a screw g^4 . traversing a

slotted hole of the bridge G. and screwed into the plate B. Its head bears upon the said bridge G. and presses the latter against the face of the plate B. when screwed, causing the
5 pawl end g^5 . to engage the teeth of the wheel D. The resilience of the spring portion g^2 . causes the bridge and pawl to spring away from the plate B. when the screw g^4 . is loosened, so that the hold of the pawl or click on
10 the wheel D. may be liberated by unscrewing the screw g^4 . and the main-spring R. will be relieved and can be turned back to a point where it ceases to exert any power.

We claim as our invention—

15 1. The combination with the watch plate, of a winding stem and crown, a helical spring around the stem, a pinion with which one end of the spring is connected, a ratchet wheel and pawl for holding the stem and a bridge
20 across the stem for holding the same in posi-

tion in the watch plate substantially as specified.

2. The combination with the winding crown, of an axis connected with the crown, a helical main spring around said axis, a pinion 25 for giving motion to the watch works and with which pinion one end of the main spring is connected, a ratchet wheel connected with the other end of the main spring, and a bridge for holding the axis to the watch plate, and a 30 spring pawl formed integral with the bridge at one end thereof, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ISAAC GRASSET.

AUGUSTE MEYLAN.

Witnesses:

E. IMER-SCHNEIDER,

G. C. WEKLER.