

(No Model.)

2 Sheets—Sheet 1.

F. FITT.

WATCH.

No. 358,925.

Patented Mar. 8, 1887.

Fig. 1.

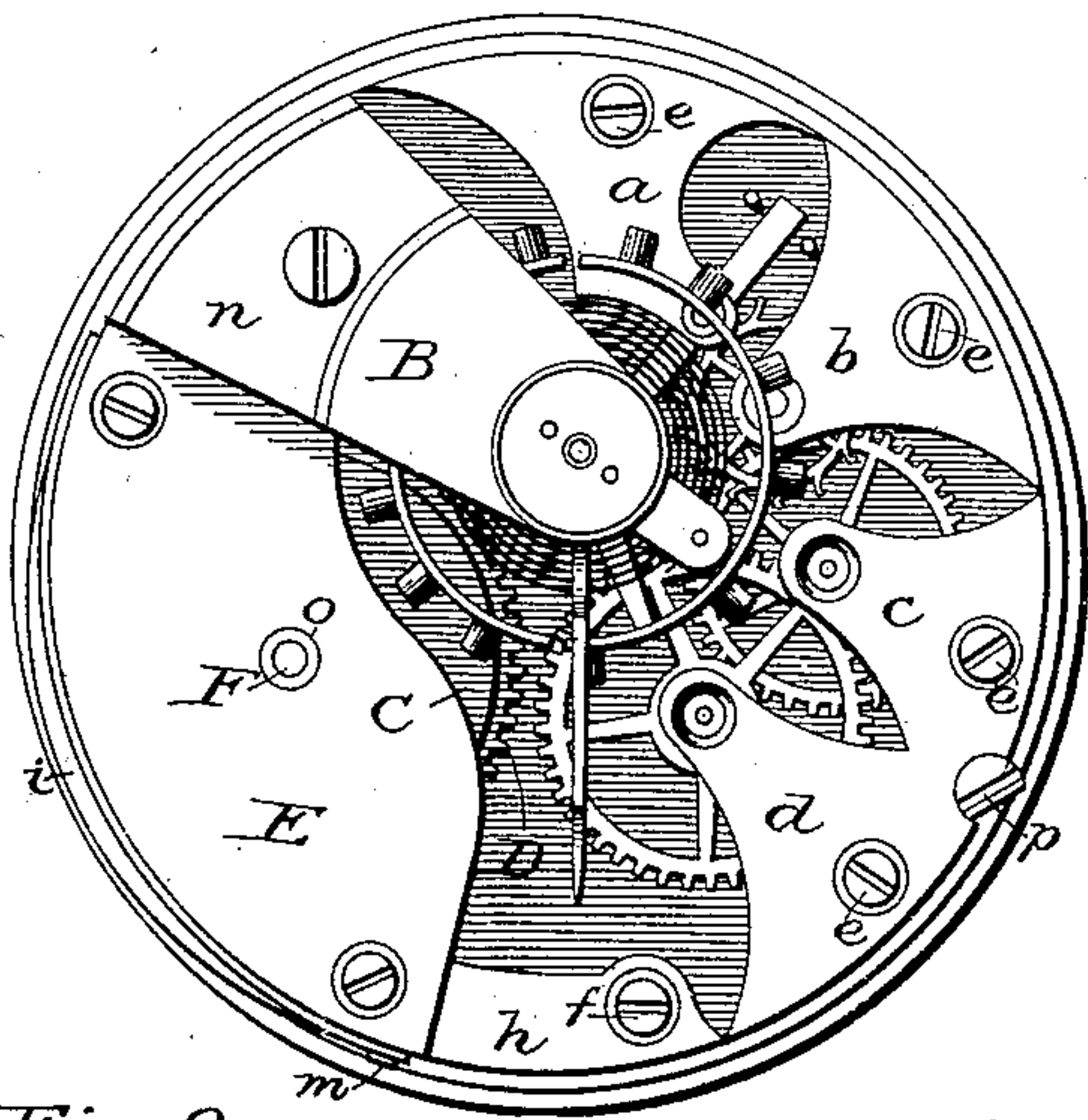


Fig. 2.

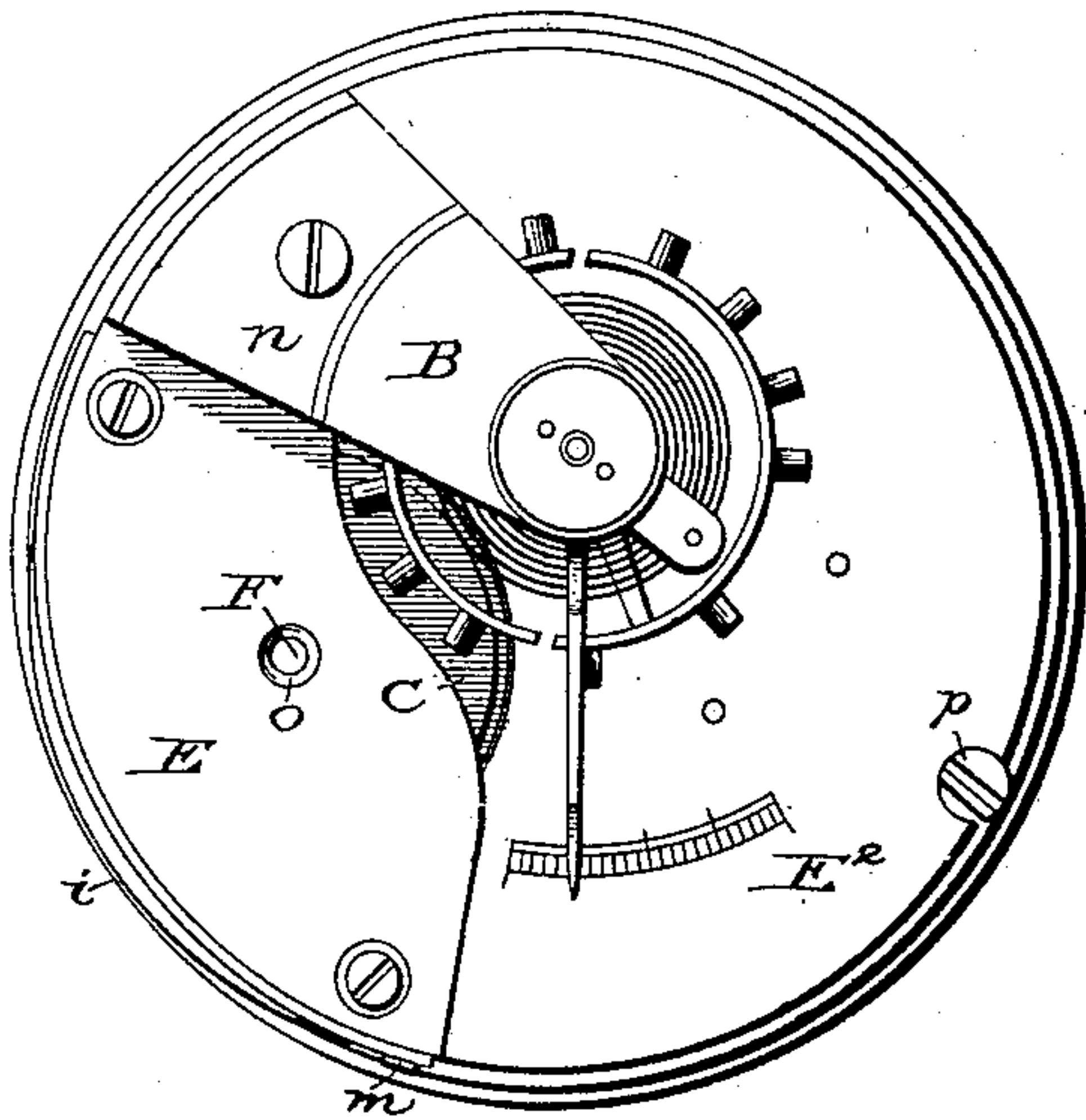


Fig. 9.

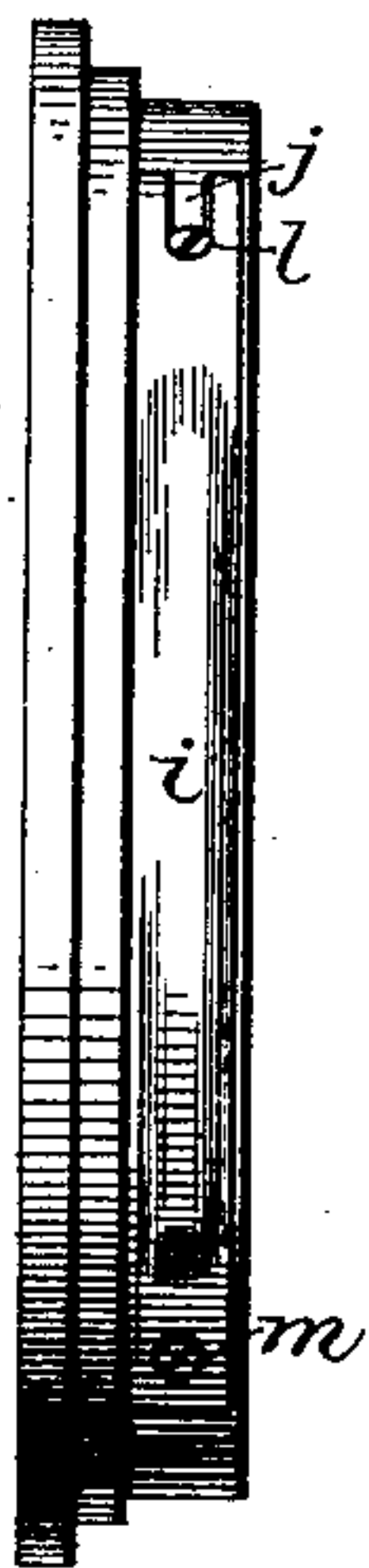


Fig. 4.

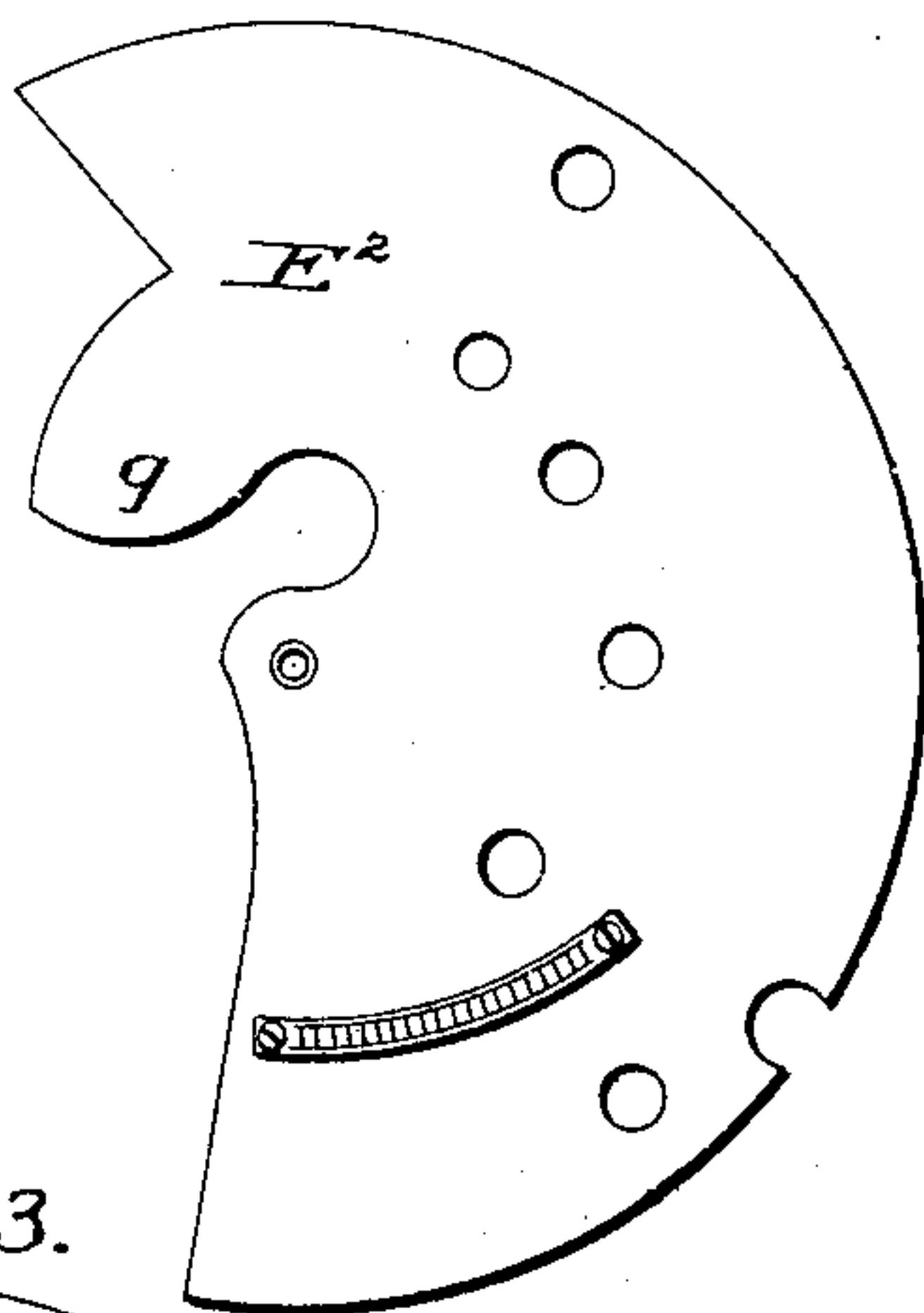
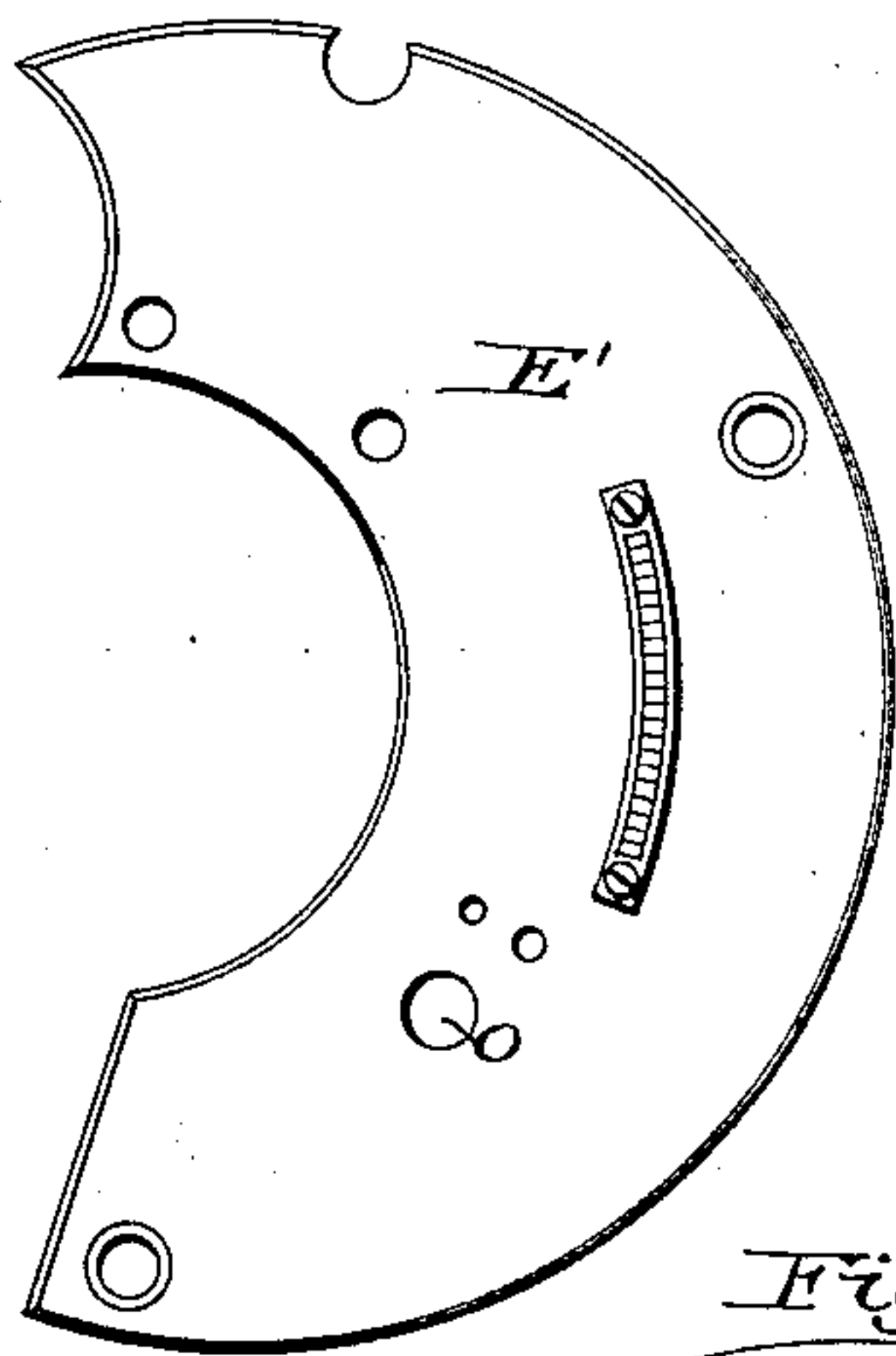
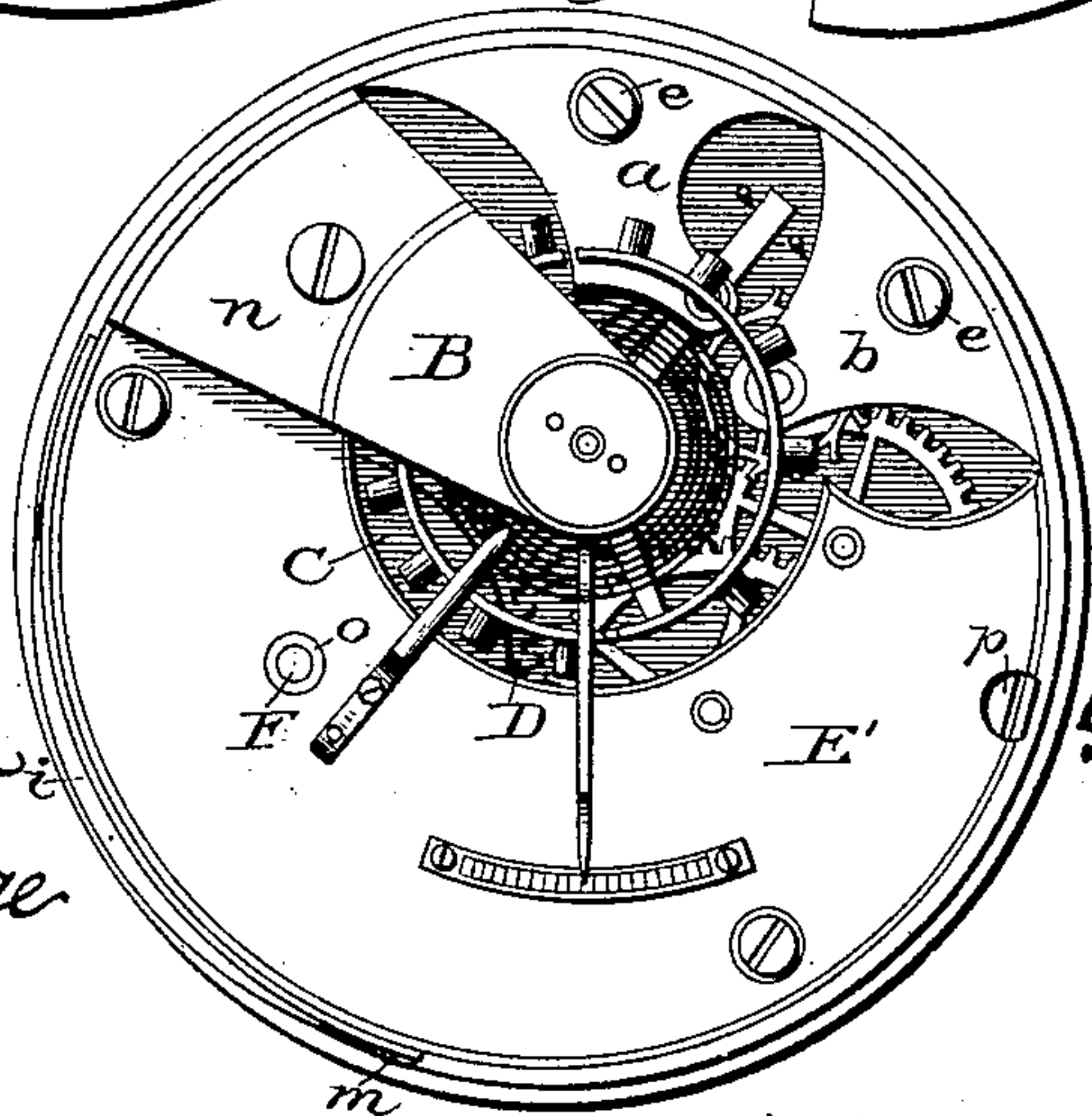


Fig. 3.



Witnesses:

Joe. F. Duff
Matter S. Dodge

Inventor:

Fredrick Fitt,
by Dodge Son,
his Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

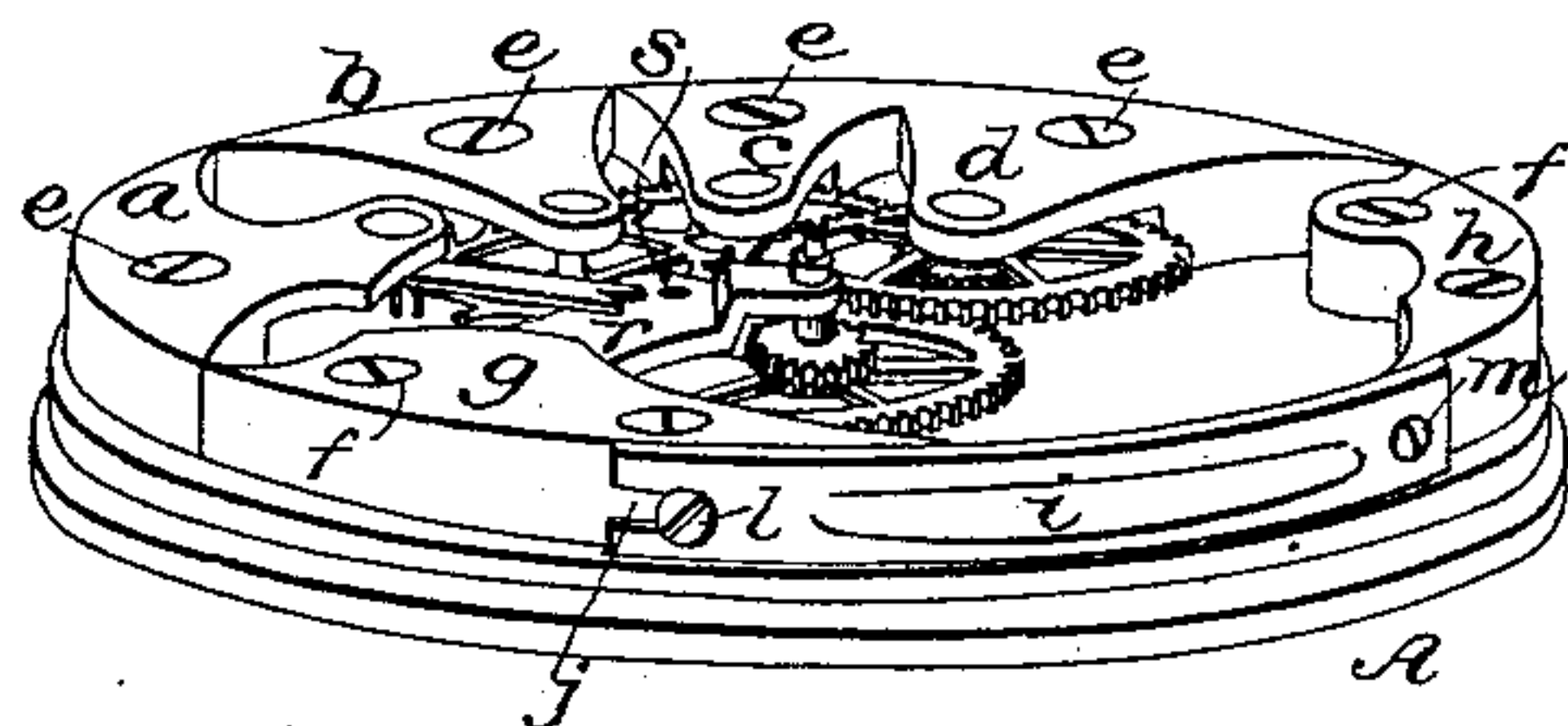


Fig. 6.

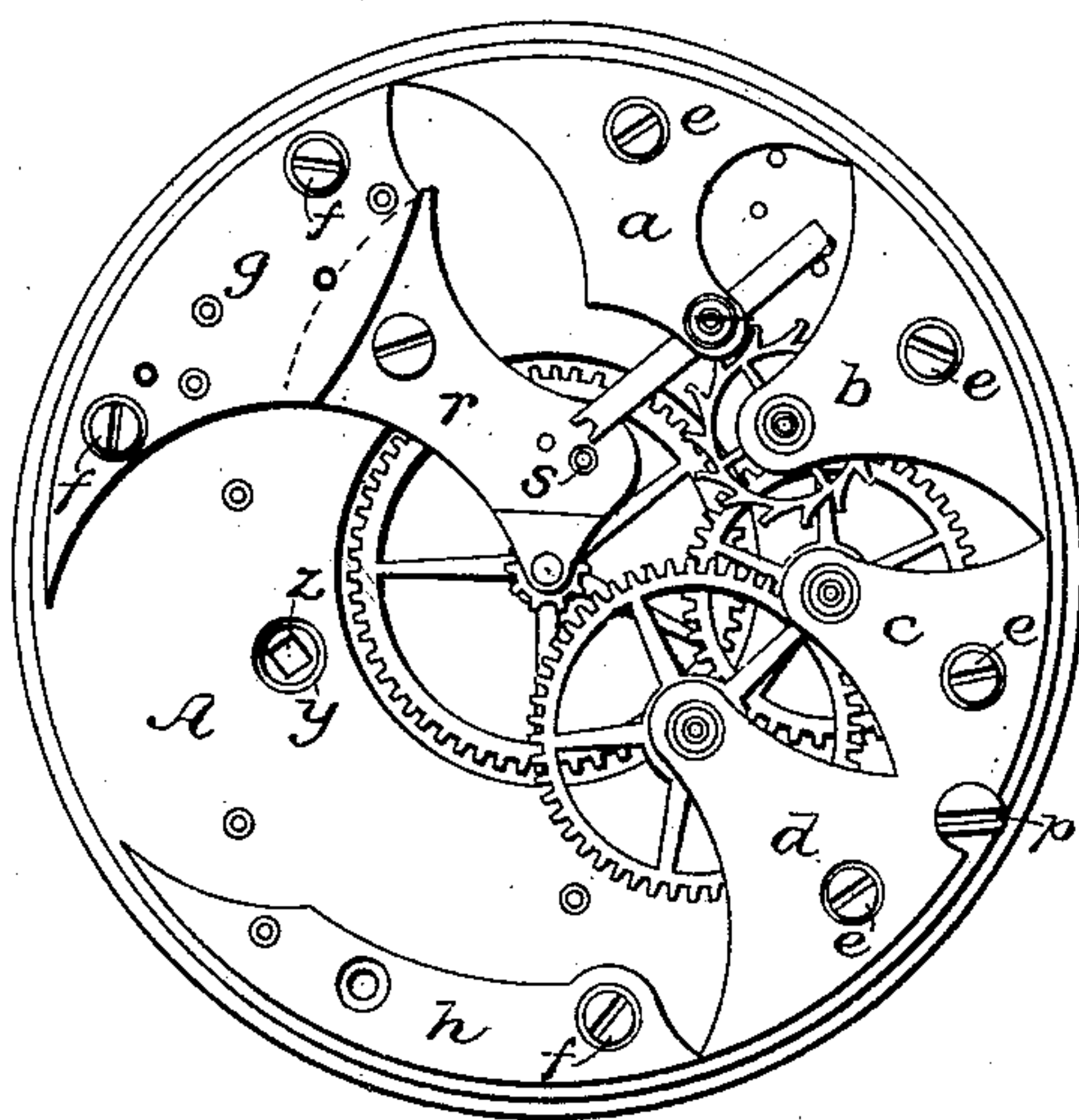
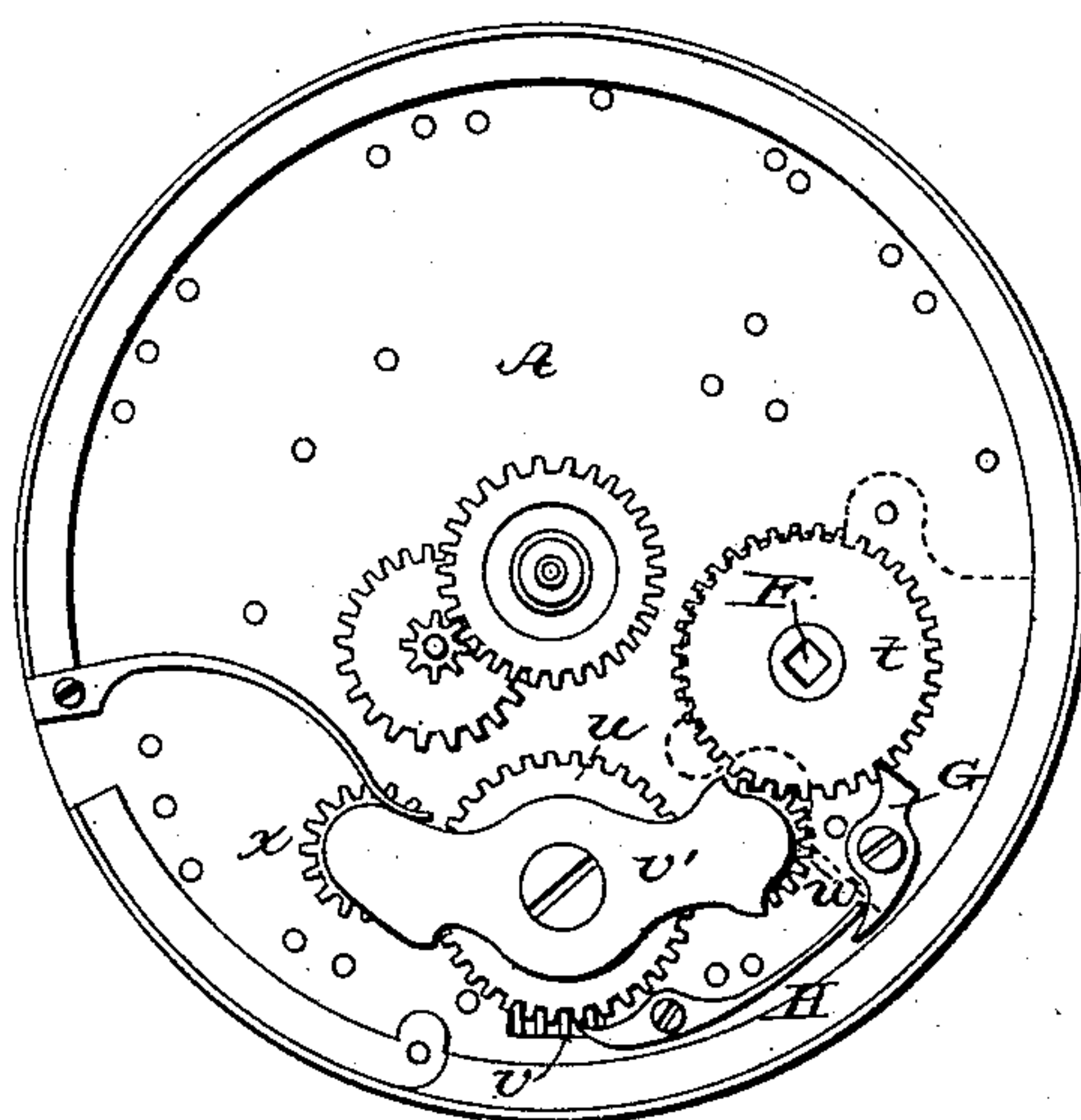


Fig. 7.



UNITED STATES PATENT OFFICE.

FREDERICK FITT, OF CHAUX-DE-FONDS, NEUFCHÂTEL, SWITZERLAND,
ASSIGNOR TO SARAH ANN FITT, OF LONDON, ENGLAND.

WATCH.

SPECIFICATION forming part of Letters Patent No. 358,925, dated March 8, 1887.

Application filed June 11, 1885. Renewed October 12, 1886. Serial No. 216,075. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK FITT, of Chaux-de-Fonds, in the Canton of Neuchâtel and Republic of Switzerland, have invented
5 certain new and useful Improvements in Watches, of which the following is a specification.

My invention relates to watches, and is designed to facilitate the ready conversion of an
10 open or exposed movement into a three-quarter plate, full-plate, or other style of movement at trifling expense, and also to enable the spring-barrel to be removed from the watch without displacing the dial. These objects I
15 attain by a novel construction which will be pointed out and explained in connection with the annexed drawings, in which—

Figure 1 is a back face view of the movement; Fig. 2, a like view with the fashion-
20 plate applied to convert it into a full-plate movement; Fig. 3, a similar view showing the three-quarter-plate form; Fig. 4, face views of the fashion-plates for three-quarter and full-plate watches; Fig. 5, a perspective view
25 of the movement with the balance-cock, wheel, hair-spring, and mainspring-barrel removed. Fig. 6 is a face view of the same; Fig. 7, a front face view of the pillar-plate, showing the parts between the same and the dial; Fig. 8, a view
30 showing various parts detached; Fig. 9, an edge view of movement.

Owing to the difference in taste and to the various opinions held as to the comparative merits and advantages of open, three-quarter,
35 full plate, and other styles of watch-movements it is found necessary to dealers to carry a stock of the several kinds, or else the purchaser is compelled to wait for one to be sent from the factory or supplying establishment.
40 The first of these plans involves the carrying of a larger stock than is sometimes desirable, especially with small dealers, and the second often causes the loss of a customer. Moreover, while better protecting the works from
45 dust and dirt than the open movement, full-plate and three-quarter plate movements require the taking down of the entire watch to give access to any of its parts, and often after the work of cleaning or repairing is completed
50 it is found necessary to again take off the plate, and thus take down the movement in order to

remove some stain from the plate. By my plan all these difficulties and objections are overcome, as I will now explain.

A indicates the pillar-plate or dial-plate of 55 the movement, to which I secure a series of pivot-supports, *a*, *b*, *c*, and *d*, by means of screws *e*. The supports *c* and *d* may be made in one piece or separate, as preferred. In like manner I secure to the plate A, by means of 60 screws *f*, two blocks or pieces, *g* and *h*, the first of which serves to support the balance-cock B, and which jointly serve to support the fashion-plate to form the walls of a chamber to receive the spring-barrel C, and to com- 65 plete the periphery of the frame of the movement.

The several parts *a*, *b*, *c*, *d*, *g*, and *h* each have their outer faces curved on the arc of a circle of given radius, and abut closely against each 70 other when secured in position, thus forming jointly a regular and uniform surface concentric with the pillar-plate and nearly completing the circle.

The only point at which the circle is broken 75 is between the blocks *g* and *h*, where I find it usually more convenient to leave an opening for the master-wheel D to project through. This may in some cases be overcome by reducing the size of the wheel and barrel or enlarg- 80 ing the diameter of the movement; but I prefer the construction shown. To close this space or opening, I employ a light covering-plate, *i*, (shown in position in Figs. 1, 2, 3, 5, and 9, and detached in Fig. 8,) said plate be- 85 ing provided with a slot, *j*, at one end and a hole, *k*, at the other, so that the slotted end may be slid under the head of a screw, *l*, and the other end then secured by a screw, *m*, as shown in Fig. 5. This construction entirely 90 obviates the necessity of the common dust-band, is cheap, and effectually excludes dust and dirt. It also causes each part to brace and support those next it, and to prevent the parts being thrown out of position by the in- 95 sertion of the fastening-screws in the event of slight inaccuracy in tapping the holes or cutting the screws, since the parts can only be brought to place and screwed fast when each is in its exact position. 100

The blocks or supports *a*, *b*, *c*, *d*, *g*, and *h* are all of equal height, and when screwed to plate

A present a uniform surface, upon which the balance cock or prop B is secured, as shown in Figs. 1, 2, and 3.

The base *n* of the cock B is made of a prescribed thickness, which corresponds to the thickness of the fashion-plates to be used with the movement when desired; hence, when a fashion-plate is applied the face thereof will be flush with the face of base *n* of the balance-cock.

In Fig. 1 a small fashion-plate, E, is shown extending from the top of block *g* to the top of block *h*, covering and inclosing the spring-barrel C, and containing a pivot hole or bearing, *o*, for the shaft or arbor F. In this form the movement constitutes what I term the "standard" movement, being complete in itself and ready for mounting in a case for use or for conversion into other desired style by the application of the required fashion-plate. If, now, it be desired to convert the watch into a three-quarter-plate movement, the plate E is removed and plate E', Fig. 4, is applied, as shown in Fig. 3. Plate E' contains a pivot hole, *o*, located precisely as in plate E, and is also, by preference, furnished with holes directly over each of the pivots of the supports *c* and *d*, to preserve the usual appearance of the watch. These latter holes are, however, dummies, made for appearance only, and do not serve to receive the pivots or journals of the wheel-spindles.

The plate E' is screwed fast to the blocks *g h*, using the same screws that served to hold plate E, and inserting one of them into the hole in block *h* in place of the screw *f*, previously used to hold said block in place. The case-fastening screw *p* also aids in securing the plate in position.

When a full-plate movement is desired, the plate E is retained and the plate E² applied in addition thereto, as shown in Fig. 2, one end abutting against the end of plate E and the other end fitting closely against the balance-cock B, while the spur *q* passes beneath the overhanging arm of said cock or prop B.

The construction above explained gives all the advantages of the usual open, half-plate, three-quarter, or full-plate movements with the added desirable feature of permitting the work of a three-quarter or full-plate movement to be readily inspected by merely removing the fashion-plate without "taking down" the watch, thus saving much time and labor in many instances. I wish it distinctly understood that this is not intended to be and is not in the least in the nature of a deception, but that it is merely a new and a peculiarly advantageous way of securing the benefits of the open and closed movements.

The watch is much easier to assemble than a three-quarter or full-plate watch, yet when the fashion-plate is applied the appearance of a closed or covered movement is secured, with all the advantages of protection, rigidity, and stiffness of frame-work, and symmetry and beauty of design.

The fashion-plates need not be handled further than is necessary in removing and applying them, and hence the plating may remain untarnished, and the new appearance of the watch be preserved.

As heretofore constructed watches have generally required the removal of the hands and dial preparatory to taking out the spring-barrel and spring through an opening in the pillar-plate. This entails a considerable amount of trouble and labor, which it is desirable to obviate, and which I obviate by providing the opening in the back plate of the watch, which is covered by plate E or E', and by placing the balance-cock, its balance-wheel, and hair-spring back or outside of the wheels of the watch-train, so that by withdrawing the screw which holds the balance-cock in place it may be lifted off the balance-wheel, spring, and regulating-lever. This plan gives the effect or benefits of the detachable escapements now commonly in use, but has a special importance in this connection, since it enables the watch maker or repairer to readily remove the balance-wheel, the edge of which overhangs and would interfere with the removal of the barrel. In order to render this arrangement feasible it is necessary to provide a support for the lower or inner end of the balance-spindle, which falls within the circumference of the center wheel under the present arrangement of the train. For this purpose I employ a supporting arm or plate, *r*, one end of which is screwed fast to the dial-plate, and the other end of which projects over the center wheel, which turns in a recess made in said plate. The overhanging portion of supporting-arm *r* is raised to give room for a spindle of proper length, and at one side of the raised portion is furnished with a pivot hole or bearing, *s*, to receive the end of the balance-spindle, as plainly shown in Fig. 6. By removing the supporting arm or plate *r* the center wheel can be readily taken out.

It is evident from the foregoing that the barrel C is readily accessible from the back of the watch, and that those parts covered by the barrel may also be readily removed after that is taken out. It only remains, then, to explain the manner of connecting the barrel or the spring-arbor F with the stem winding and setting mechanism. This mechanism is of ordinary construction, consisting of a click-wheel or ratchet-pinion, *t*, encircling the arbor F, a pinion, *u*, with which the pinion *v* of the winding-stem engages, a rocking plate, *v'*, carrying winding and setting pinions *w* and *x*, and the usual springs and attendant parts, all arranged immediately beneath the dial and dial-plate A.

The ratchet-pinion *t* has a cylindrical collar, *y*, which fits closely within a circular hole made through plate A, and thus serves to center and support the ratchet-pinion. Within said collar is a central, square, or polygonal hole, *z*, made to receive and closely fit the squared end of arbor F, which end projects beyond the face of the barrel and enters said

hole or socket z when the barrel is placed in position.

A click or pawl, G, controlled by a spring, H, constantly engages with the ratchet-pinion t , and when the arbor is turned holds the spring against a backward or unwinding action, so that whenever the squared or polygonal end of arbor F is inserted in the socket z of wheel t the winding operation may be performed, and the master-wheel taking into the center pinion of the train will give motion to the various parts.

The ratchet-pinion t and click or pawl G are held in place by a light covering-plate, I. (Shown in dotted lines in Fig. 7 and detached in Fig. 8.)

The simplicity, convenience, and strength of this construction and arrangement will be apparent.

I am aware that it has been proposed to apply a hinged plate or lid to the back of a watch-movement to cover and protect the works; but I am not aware that a fashion-plate has ever before been applied to a movement already complete without said plate. By this construction I not only protect the works, but I afford access thereto without disturbing any of the mechanism or its supports, and I give the watch any design or appearance preferred, as half, three-quarter, or full plate, &c.

Having thus described my invention, what I claim is—

1. A watch having a series of removable pivot or shaft supports applied to the pillar or dial plate, their sides abutting at the periphery and their outer faces forming arcs of a circle of common radius, substantially as and for the purpose set forth.

2. A watch having a series of removable pivot or shaft supports applied to the pillar or dial plate, abutting at their sides, and of uniform height.

3. A watch-movement frame consisting of plate A and blocks or supports a, b, c, d, g , and h , abutting against each other and curved on their outer edge to form a continuous arc of a circle.

4. In combination with plate A and blocks or supports a, b, c, d, g , and h , band i , all constructed and arranged substantially as described and shown.

5. In combination with plate A and pivot-supports a, b, c , and d , and blocks g, h , secured thereto, a fashion-plate secured to the outer faces of the pivot-supports and adapted to be removed therefrom at will without disturbing the working parts of the movement.

6. In combination with a watch-movement having a seat for the spring-barrel closed at the side next the dial or pillar plate, and having an opening at the rear side of the movement of sufficient size to permit the removal of the barrel and master-wheel through the back plate, a covering-plate secured to the back of the movement to retain the barrel in place.

7. In combination with plate A, ratchet-pinion t , placed in front of said plate and provided with cylindrical neck y , spring-barrel C, placed behind said plate and detachably connected with said ratchet-pinion, and a covering or retaining plate placed over or back of the barrel.

8. In combination with plate A, arm r , secured to the back thereof and projecting between the center-wheel and balance-wheel and forming a support for the spindles of both.

FREDERICK FITT.

Witnesses:

S. BOELTZ,
L. DRUYF.