

No. 861,727.

PATENTED JULY 30, 1907.

E. HUBSCHER & A. MAURER.

WATCH MOVEMENT.

APPLICATION FILED JAN. 31, 1906.

Fig. 1.

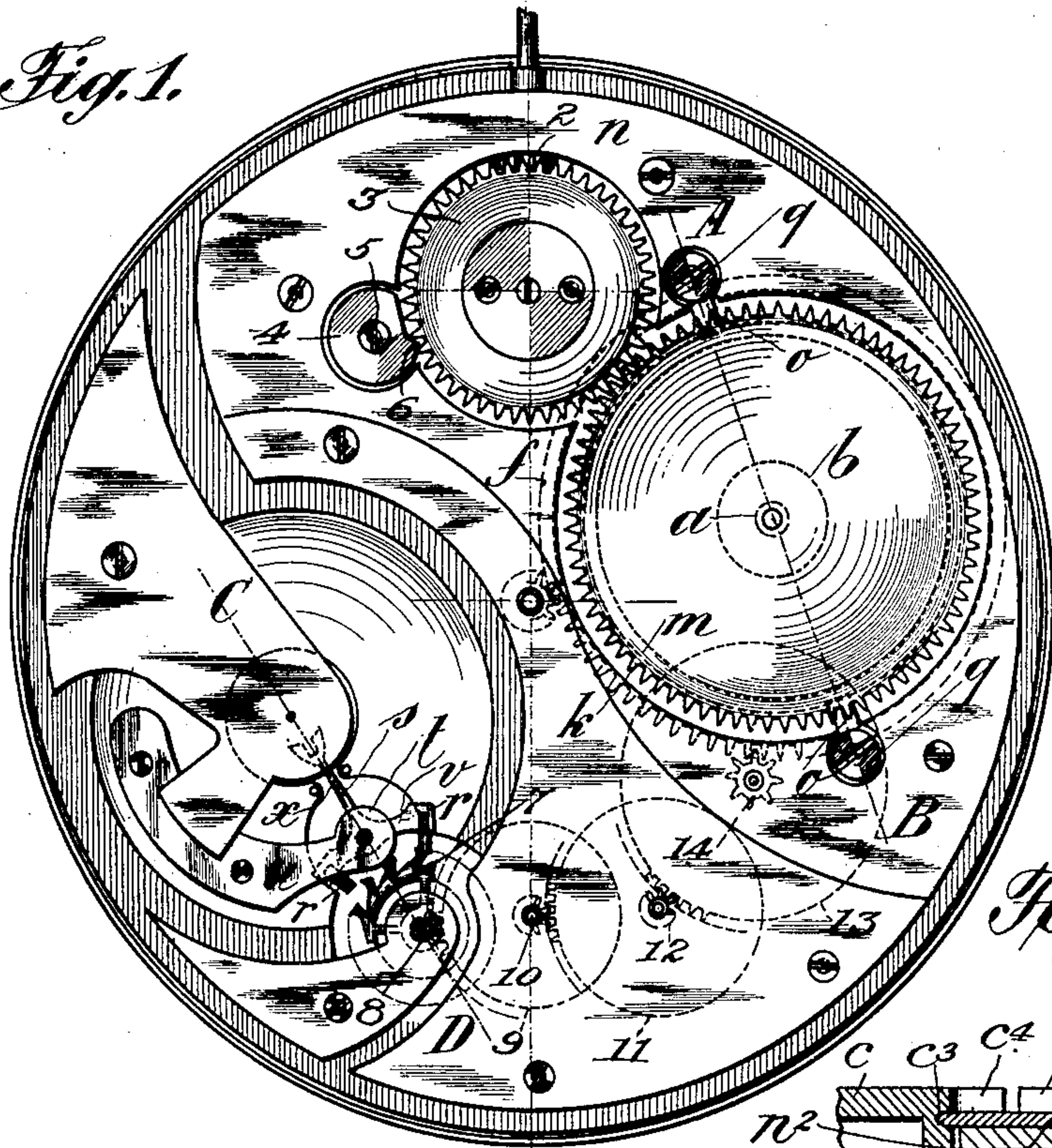


Fig. 4.

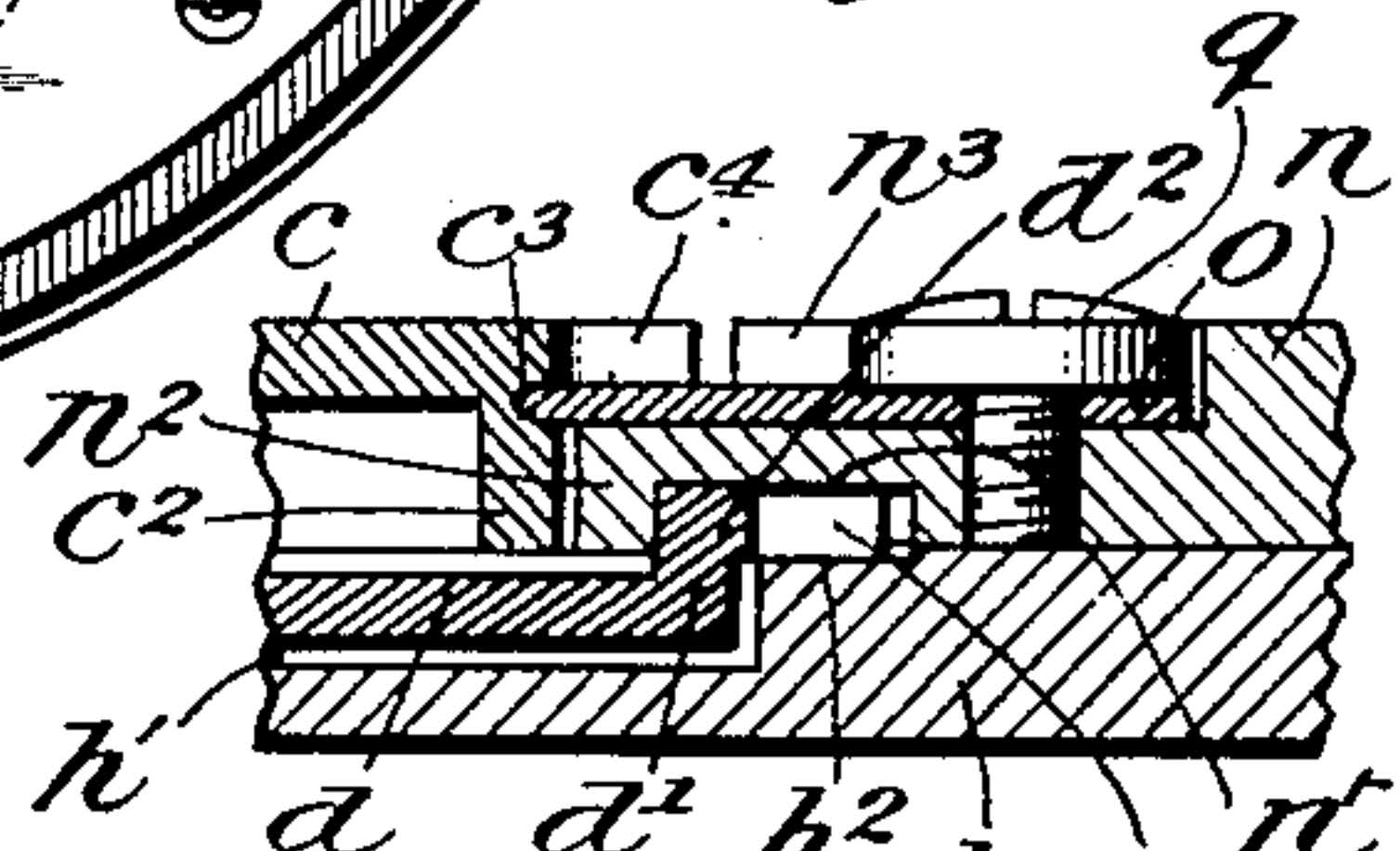


Fig. 2.

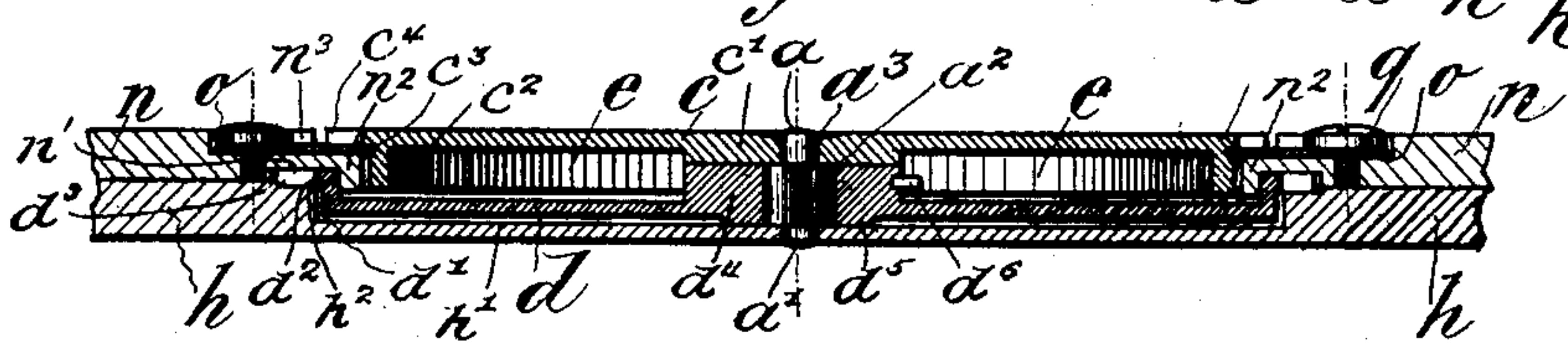
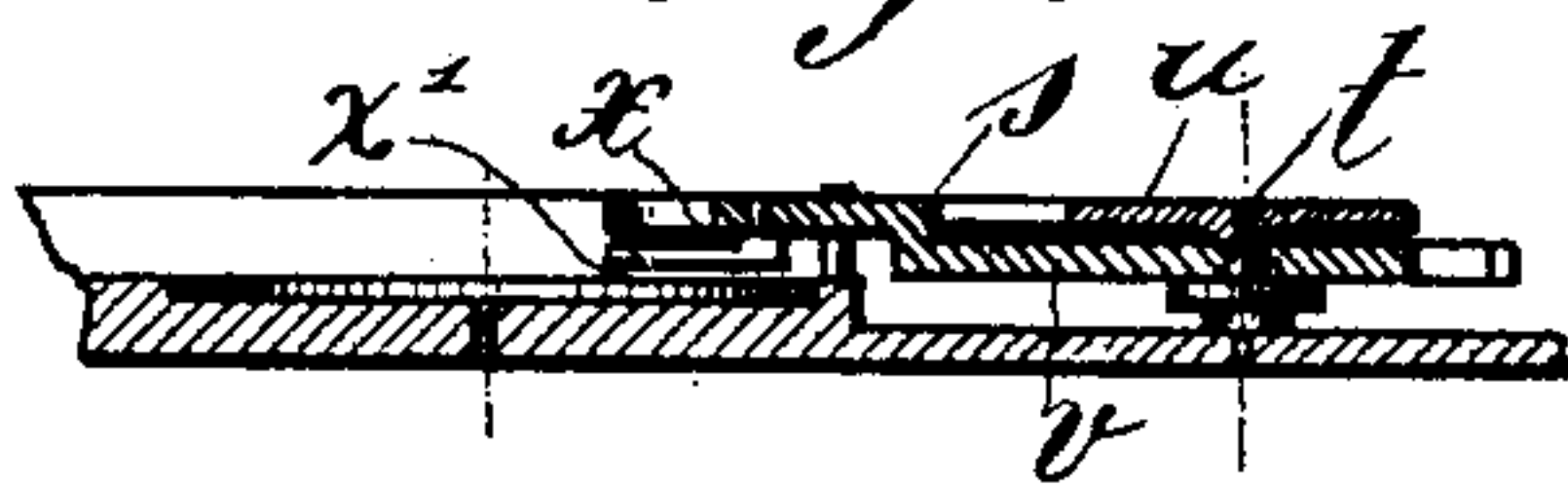


Fig. 3.



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UNITED STATES PATENT OFFICE.

EMILE HUBSCHER AND ALFRED MAURER, OF LA CHAUX-DE-FONDS, SWITZERLAND.

WATCH-MOVEMENT.

No. 861,727.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed January 31, 1906. Serial No. 298,890.

To all whom it may concern:

Be it known that EMILE HUBSCHER and ALFRED MAURER, watchmakers, citizens of the Republic of Switzerland, and residents of La Chaux-de-Fonds, Canton of Neuchatel, Switzerland, have invented a new Watch-Movement, of which the following is an exact specification.

This invention relates to watch movements and has to do more particularly with the construction and operation of the spring barrel and has for one of its objects the provision of an improved spring barrel so constructed as to facilitate removal of parts thereof in cases of repair or renewal.

The invention will be more fully described in connection with the accompanying drawing and will be more particularly pointed out and ascertained in and by the appended claims.

In the drawing: Figure 1 illustrates a watch movement embodying the main features of our invention. Fig. 2, is a sectional view on line A—B of Fig. 1. Fig. 3, is a sectional view on line C—D of Fig. 1. Fig. 4 is a sectional detail.

Like characters of reference designate similar parts throughout the different figures of the drawing.

As shown in the drawing: n designates a bridge-plate or other fixed part of the movement and h designates the pillar-plate, the bridge-plate herein shown being superposed upon the pillar-plate in direct contact therewith and secured thereto by plurality of pillar-post or screws as clearly shown in Fig. 1. The winding train comprises a stem 1, provided with a stem pinion 2 meshing with and operating a barrel pinion 3.

4 designates a locking device pivotally mounted at 5 and provided with a projection 6 adapted to lock the barrel pinion 3 and prevent reverse movement thereof under the influence of the main spring. Said locking device may be held in a locking position by a spring or equivalent means not herein shown.

The time train comprises an escapement wheel 7 provided with a pinion 8 which operates wheels 9, 10, 11, 12, 13 and 14, the latter, like the barrel pinion 3 being driven by the spring-barrel which will now be described in detail.

According to this invention the spring-barrel is formed of two members, one of which will be termed a winding train spring container and the other of which will be termed a time spring container, the former driving the barrel pinion 3 and the latter driving the time wheel 14. The pillar-plate h is provided with relatively deep and shallow annular recesses h' and h^2 respectively. The time container, which is indicated by d is seated and revolvably mounted in recess h' and is provided with an annular vertical extension d' which in turn is provided with an annular flange d^2 in which is formed gear teeth d^3 adapted to mesh with wheel 14 and to operate in the shallow recess h^2 .

The bridge-plate n is provided with a recess n' registering with the recess h^2 and serving to inclose the teeth d^3 . Said bridge-plate n is provided with a bearing portion n^2 which overhangs the gear teeth d^3 and engages the vertical extension d' . By means of the complementary recesses n' , d^2 and the bearing flange n^2 , the barrel d is effectively held in operative relation to the time wheel 14. The barrel d is provided with a hub d^4 having a boss d^5 adapted to engage the pillar plate h and support the main body portions of the spring barrel d out of contact with said pillar-plate. An arbor a is provided with a reduced lower end a' journaled in the pillar-plate h and is also provided with an enlargement or hub a^2 to which the container d is rigidly secured. The upper end of said arbor a is reduced at a^3 to receive the winding train container c the latter being loosely mounted on said arbor. Said container c which is provided with a hub portion c' which engages the hub portion d^4 and is also provided with an annular flange c^2 projecting into said container d and forming therewith a chamber c for the reception of the mainspring (not shown). One end of the mainspring is adapted to be secured in any desirable manner to the flange c^2 and the other end is adapted to be secured to the hub d^4 by means of a pin d^6 or an equivalent or similar device, said mainspring thereby serving to rotate said barrels in opposite directions. Said barrel c is provided with an annular retaining recess c^3 and the bridge-plate n is provided with retaining strips o seated in recesses c and n^3 and anchored therein by screws q or other similar means. Said strips o lie flat upon the bearing flange n^2 and project beyond the same and into the annular recess c^3 . Said barrel c is provided with gear teeth c^4 adapted to mesh with and drive the barrel pinion 3 and to engage and bear upon the strips o .

It will be seen from the foregoing that means are provided for effectively maintaining the peripheral or driving portion of the barrels c and d in operative relation with the barrel pinion 3 and time wheel 14.

It will also be obvious that the foregoing construction will permit of ready and convenient removal of the barrel c in case the mainspring breaks, without necessitating the removal of other parts of the watch movement.

It will also be noted that reliance is not placed wholly in the arbor a to retain the barrels in operative relation with parts driven thereby and this construction carries with it great practical advantages in that it not only sustains the strain at points where the same is imposed but it also avoids the usual complicated and bulky structure heretofore necessary to support the main arbor.

This invention further consists in an improved construction of the escapement lever designed to enable a more compact form of a watch movement. As shown the escapement lever v is pivotally mounted at t in the bridge u and pillar-plate h and is provided with the

usual pallets *r* for engagement with the escapement wheel 7 and an impulsed pin *x* for engagement with the balance mechanism *x'*. The novelty of this feature consists in off-setting or bending the escapement lever 5 as at *s* in such a manner that said escapement lever can be mounted beneath a relatively low bridge *u* and extend above the escapement mechanism in a manner to permit a relatively high mounting for the latter.

I claim:—

- 10 1. A watch movement comprising in combination, a pillar plate provided with relatively deep and shallow annular recesses, a time train spring barrel adapted to seat in said deep recess and having gear teeth projecting into said shallow recess, a bridge-plate mounted on said
- 15 pillar-plate and having a complementary shallow recess and a bearing flange engaging said barrel, said bridge-plate having oppositely disposed retaining recesses, retaining strips anchored in said recesses and projecting outwardly therefrom, a winding train spring barrel provided with an annular recess for receiving said strips and
- 20 having gear teeth bearing in said strips, said winding and time train barrels being arranged in superposed relation and forming a chamber adapted to receive a spring, and an arbor journaled in said pillar plate at one end
- 25 and projecting through said time train barrel and bearing at its other end in said winding train barrel.
2. A watch movement comprising in combination, a spring barrel composed of superposed winding and time barrels, an arbor for said barrels, and means engaging the
- 30 peripheral or driving portions of said barrels forming bearings for the same and serving to hold said barrels in a given driving relation.
3. A watch movement comprising in combination, a pillar-plate, a bridge-plate, a spring barrel composed of
- 35 superposed winding and time barrels, and bearing portions

and devices for said bridge and pillar-plates adapted to engage the peripheral portions of said barrels to hold the same in a given driving relation.

4. A watch movement comprising in combination, a pillar-plate, a bridge-plate, a spring barrel composed of 40 superposed winding and time train barrels, an arbor forming a central bearing for said barrels and mounted at one end in the pillar-plate, said pillar-plate having bearing portions engaging the peripheral portions of said time train barrel, and bearing devices for said bridge-plate 45 adapted to engage the peripheral portions of said winding train barrel to hold the same in a given driving relation.

5. A watch movement comprising in combination, a pillar plate provided with a relatively deep annular recess, a time train spring barrel adapted to seat in said 50 recess and provided with gear teeth, a bridge-plate mounted on said pillar plate and having a bearing flange engaging said barrel peripherally, retaining strips anchored to said bridge-plate, a winding train spring barrel, provided with an annular recess receiving said strips and having 55 gear teeth, and an arbor for said time train and winding spring barrel.

6. A watch movement comprising in combination, a pillar plate, a time train spring barrel mounted thereon and having gear teeth, a bridge-plate provided with a 60 bearing flange engaging said barrel peripherally, a winding train barrel superposed on said time train barrel and provided with a peripheral recess, and retaining members engaging said recess.

In testimony whereof we affix our signatures in presence 65 of two witnesses.

EMILE HUBSCHER.
ALFRED MAURER.

Witnesses:

JEAN JAQUET,
CHARLOTTE L. PHILLIPS.