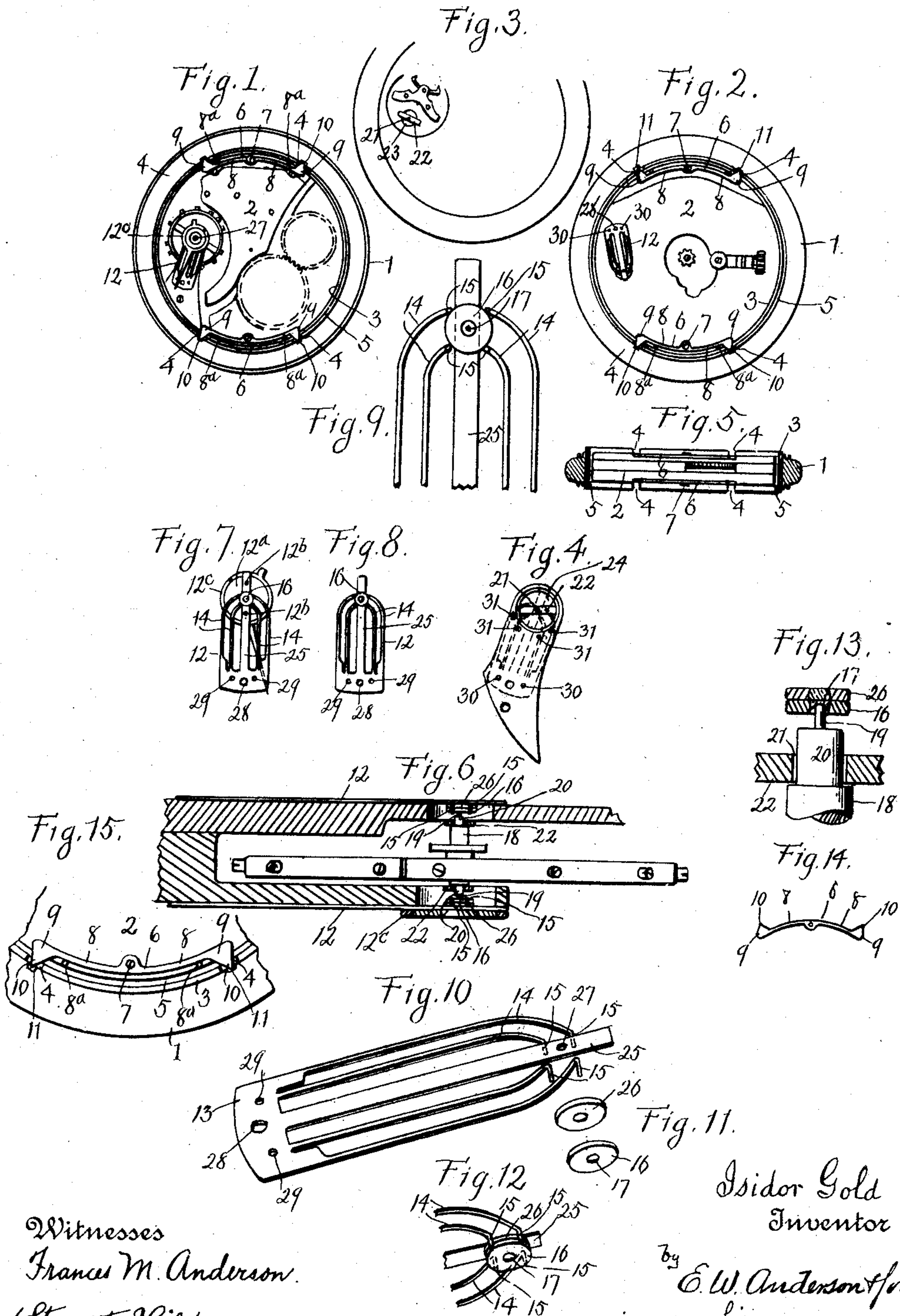


I. GOLD.
WATCH.

APPLICATION FILED SEPT. 20, 1910.

985,739.

Patented Feb. 28, 1911.



Witnesses
Francis M. Anderson.
Stuart Hilder.

Isidor Gold
Inventor
by E. W. Anderson & Co.
his Attorney

UNITED STATES PATENT OFFICE.

ISIDOR GOLD, OF NEW YORK, N. Y.

WATCH.

985,739.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed September 20, 1910. Serial No. 582,955.

To all whom it may concern:

Be it known that I, ISIDOR GOLD, a subject of the Czar of Russia, resident of New York, in the county of New York and State of New York, have made a certain new and useful Invention in Watches; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, 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 is a rear view of a watch, having my invention applied thereto, parts of the watch movement not being shown; Fig. 2 is a front view of a watch with parts omitted, having my invention applied thereto; Fig. 3 is a front view of a watch with parts omitted, and designed to show in detail one of the cross bars having a bearing perforation for the balance wheel staff; Fig. 4 is a detail view of the balance bridge with parts omitted, and designed to show in detail the other cross bar having a bearing perforation for the balance wheel staff; Fig. 5 is a side view or edge view of the watch movement, with the case in section, and showing the opposite springs which act to suspend the watch movement in its case; Fig. 6 is a detail central cross section of the watch movement taken centrally of the balance wheel, and showing the staff bearings therefor with parts adjacent thereto; Fig. 7 is a detail rear view of the spring device for the balance wheel staff bearing at the rear of the movement; Fig. 8 is a similar view of the other spring device at the front of the movement; Fig. 9 is a detail rear view of one end portion of the last named spring device, showing the jewel carried thereby; Fig. 10 is a detail perspective view of the last named spring device; Fig. 11, illustrates in detail the jewel in its case and the protector for the jewel; Fig. 12 is a detail perspective view of one end portion of the spring device at the front of the watch movement, showing the jewel and its protector, carried thereby; Fig. 13 is a detail sectional view of one end of the balance wheel staff bearing; Fig. 14 is a detail view of one of the springs which act to suspend the watch movement in its case; and Fig. 15 is a detail view on a larger scale showing

the engagement of one of the springs with the annular band of the case.

The invention has relation to means for cushioning the watch movement and the bearings of the different wheel shafts thereof against such injury as is likely to be caused by a shock or concussion should the watch accidentally fall to the ground or be otherwise subjected to jar, and has particular relation to the provision of yielding spring bearings for the jewels in which the balance wheel staff is mounted, these balance wheel staff bearings being the parts most likely to get out of order and thus interfere with the proper working of the watch.

With this object in view, the invention consists in the novel construction and combinations of parts as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the numeral 1 designates the case of the watch, and 2 the movement, of somewhat smaller diameter than the inside diameter of said case, which is provided with an inner annular band 3 forming a rigid part thereof and provided with slot seats or notches 4, 4, an annular interval 5 intervening between the watch movement and the inside of said band.

In order to suspend the movement within the case and to preserve this interval, the movement is provided at its outer rim or marginal portion with springs 6, 6, arranged in pairs diametrically opposite to each other upon the two sides of the movement, each spring having a central securing screw 7 and oppositely extending spring arms 8, 8 provided with outward extending end heads 9, 9, each head having an outer reduced extremity 10 fitting detachably in one of the slot or notch seats 4, 4 of the annular band of the case.

In placing the movement in the case the end heads of the spring arms will enter the open ends or sides of the notches and their reduced extremities will enter notches 11 in the inner rim of the case opposite to the notches 4. Stop pins 8^a, 8^a upon the movement and engaging the outer edges of the spring arms serve to accurately adjust the spring arms in position and to limit the outward movement thereof.

When subjected to shock or jar the spring arms will yield to allow a slight movement of the watch movement within its case, un-

der the tension of the spring arms in which the movement is held suspended, said spring arms acting to immediately restore the movement to its normal position in the case.

5 Referring now to the special spring bearing for the balance wheel staff jewels, a spring device 12 is provided at each side of the watch movement, said device being composed of a body 13 having four elongated
10 spring fingers 14 arranged in pairs at each side of the same and provided each with an inward offset or angularly bent end 15, the four offset ends 15 embracing the annular mounting or case 16 of the jewel 17 and being
15 located ninety degrees apart to hold said mounting or case at four points. As stated, the jewel is mounted in a small annular case 16, held within the spring arms. The balance wheel staff 18 has slender main
20 bearing ends 19, which are journaled within seats of the jewels, and larger and stronger supplemental or second bearing end portions 20, located within the bearing ends and loosely engaging apertures 21 of cross
25 bars 22 at each side of the watch movement, said cross bars being arranged diametrically of larger apertures 23 and 24 of the front of the movement and the balance bridge at the back of the movement, the spring fingers
30 14 fitting loosely in said apertures 23 and 24 and holding the jewels as stated. The larger and stronger supplemental or second bearing end portions of the balance wheel staff fit within the apertures of the cross
35 bars to leave a small annular interval between the same and the sides of the apertures, whereby the staff is allowed a slight movement in its spring bearings, and serving at the same time to prevent too great
40 movement of the staff and to provide strong true bearings for the balance wheel staff should the main bearings in the jewels be disturbed.

The spring fingers 14 provide for a side-
45 wise yielding movement of the staff in the plane of the watch and in any direction in said plane, and in order to provide for a yielding movement of the staff bearings at right angles to the plane of the watch, each
50 spring device is provided with a central elongated spring finger 25, shown as of flat character, located between the pairs of fingers 14 and against which the outer faces of the small jewel mountings or cases bear, through
55 the medium of a small protector 26 of similar form and size to the jewel mounting, having a central glass insertion, and located within and carried also by the offset ends of the spring fingers. The central spring
60 finger 25 is provided with a small aperture 27 in its free end portion, overlying the jewel. The spring device 12 at the back of the movement is provided with a circular attachment plate or disk 12^a, which is riv-
65 eted to the central spring finger 25 at 12^b;

the regulator 12^c surrounding the disk and being carried thereby.

In assembling the parts, each spring device has in its body or carrying portion a small perforation 28 for a securing screw 70 and smaller lateral perforations 29, 29 forming seats for small pins 30 upon the front of the case and upon the balance bridge, whereby the spring fingers are accurately adjusted to position, this adjustment being further
75 assisted by small stop pins 31 upon the front of the case and upon the balance bridge, fitting against the inner edges of the lateral spring fingers.

If desired the watch crystal may be made 80 of unbreakable material such as transparent celluloid or the like.

My invention will be found of simple and practical nature, readily applied to any watch, and will effectually guard against 85 injury through careless handling or accident.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a watch movement, a balance wheel, 90 a device upon each side of the watch movement having lateral spring fingers movable in the plane of the watch, and a central spring finger movable at right angles to the plane of the watch, and balance wheel staff 95 jewels carried by said spring fingers.

2. A watch movement having an aperture at the front thereof provided with a cross bar having a bearing perforation, and a balance bridge having an aperture provided 100 with a cross bar having a bearing perforation, devices upon the front of the watch movement and upon the balance bridge at the rear of the watch movement provided each with spring fingers, balance wheel staff 105 jewels carried by said spring fingers, and a balance wheel staff having slender end bearing portions engaging said jewels, and larger and stronger bearing portions loosely engaging the bearing perforations of the 110 balance bridge and at the front of the watch movement and forming strong true bearings for the balance wheel staff should the main bearings thereof in the jewels be disturbed.

3. A watch movement having an aperture 115 at the front thereof provided with a cross bar having a bearing perforation, and a balance bridge having an aperture provided with a cross bar having a bearing perforation, devices upon the front of the move- 120 ment and upon the balance bridge provided each with lateral spring fingers movable in the plane of the watch and having angularly bent ends and a central spring finger movable at right angles to the plane of the watch, 125 balance wheel staff jewels carried by the spring fingers, a balance wheel staff having slender end bearing portions engaging said jewels, and larger and stronger bearing portions loosely engaging the bearing perfora- 130

tions of the balance bridge and at the front of the watch movement and forming strong true bearings for the balance wheel staff should the main bearings thereof in the jewels be disturbed, and a regulator carried by the central spring finger of the spring device upon the balance bridge.

4. A watch movement having a bearing perforation at the front thereof, a balance bridge having a bearing perforation, devices upon the front of said movement and upon the balance bridge provided each with lateral spring fingers movable in the plane of the watch provided with angularly bent ends and a central spring finger movable at right angles to the plane of the watch, bal-

ance wheel staff jewels carried by the spring fingers of each device, and a balance wheel staff having slender end bearing portions engaging said jewels and larger and stronger bearing portions engaging the bearing perforations of the balance bridge and at the front of the watch movement, and forming strong true bearings for the balance wheel staff should the main bearings thereof in the jewels be disturbed.

In testimony whereof I affix my signature, in presence of two witnesses.

ISIDOR GOLD.

Witnesses:

JULIEN E. MATTERN,
GEORGE M. ANDERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
