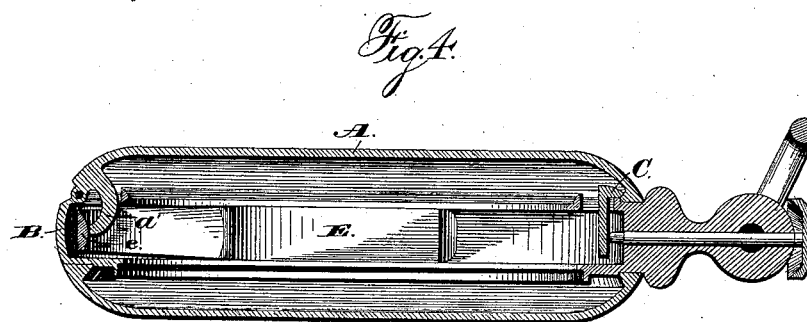
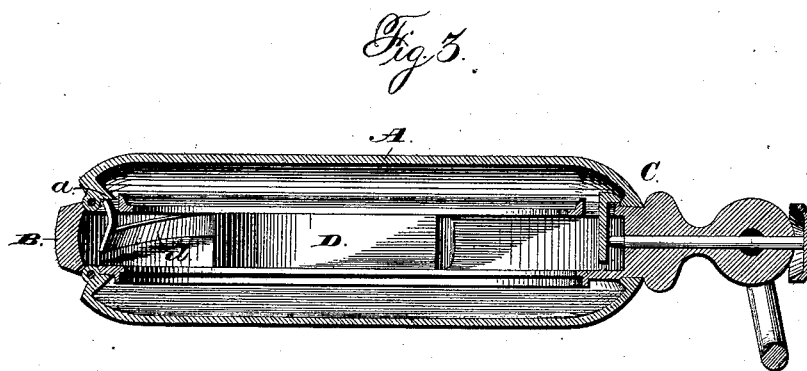
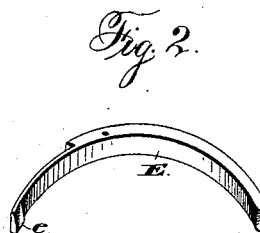
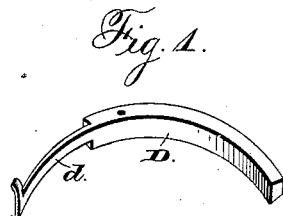


(No Model.)

R. J. QUIGLEY.
WATCH CASE SPRING.

No. 306,955.

Patented Oct. 21, 1884.



Witnesses:
Jas. C. Hutchinson
Henry C. Hazard

Inventor:
Robt. J. Quigley, by
Cindle and Russell, his Attys

UNITED STATES PATENT OFFICE.

ROBERT J. QUIGLEY, OF TORONTO, ONTARIO, CANADA.

WATCH-CASE SPRING.

SPECIFICATION forming part of Letters Patent No. 306,955, dated October 21, 1884.

Application filed March 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. QUIGLEY, of Toronto, in the county of York, and in the Province of Ontario, Canada, have invented certain new and useful Improvements in Watch-Case Springs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of an ordinary lifting-spring separated from its case. Fig. 2 is a like view of my lifting-spring. Fig. 3 is an axial section of a watch-case containing the ordinary spring shown in Fig. 1, and Fig. 4 is a like view of a case containing my improved lifting-spring.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to lessen the cost, to simplify the construction, and to increase the durability and efficiency of springs used for opening the covers of watches; to which end said invention consists, principally, in combining with the hinged cover of a watch-case a spring which at its free end has a movement only in a plane parallel with the plane of either face of the watch-case center, adapted to open the cover by pressure which is inward and radial to the case-center, substantially as and for the purpose hereinafter described.

It consists, further, in combining with the hinged cover of a watch-case a spring which is located within the watch-case center and has its free end movable only in a plane parallel to the upper or lower face of the case-center, adapted to exert a pressure radially inward with reference to such center upon a lug that projects from said cover below its pivotal or hinge bearing into the recess of the center, substantially as and for the purpose hereinafter described.

It consists, finally, in combining with the watch-case center the cover hinged thereto, and provided with a lug curved downward and extending from its under side down into the recess in the center, and the spring within the case-center, having its free end movable only in a plane parallel to the upper or lower face of the center, and adapted to exert a

pressure upon the end of the lug in a direction inward and radial to the case-center to open the cover, substantially as and for the purpose hereinafter described.

In cases as ordinarily constructed the cover A is hinged at its rear edge to or upon the case-center B, and is automatically opened, when released by the catch C, by means of a spring, D, which is secured within the recessed interior of said center, and, as seen in Figs. 1 and 3, has a reduced portion, *d*, that at its end extends in a curve upward and outward and engages with the hinge-lug *a* at the point of the attachment of the latter to said cover, and by torsional strain exerts the pressure necessary to open said cover. The spring thus constructed and operating has proved to be very objectionable, for the reason that it is expensive in construction, is easily broken, and as its action upon the cover is at a point very near the pivotal bearing of the latter the effect of its constant pressure is to cause an injurious lifting-strain upon said bearing, which not only materially increases the wear at such point, but also operates to lift the rear portion of said cover from its seat upon the case-center whenever from wear said pivotal bearing has become loose, whereby dirt and dust are permitted to pass into the interior of said case.

In the carrying into effect of my improvement I secure to the rear edge of the cover A at the point where the hinge-lug *a* is attached a lug or arm, *a'*, which extends in a curve inward, downward, and outward into the recess of the center B, and within said recess I secure a spring, E, that has its body adapted to and fitted within the same, and is provided with a thinned or reduced section, which extends to and has its end *e* in engagement with the outer side at the lower end of said lug *a'*. The spring E exerts an inward pressure against the lug *a'*, and operates to open the cover A when the same is released from the catch C; but in addition to such direct pressure upon said lug said spring, by having its end *e* rounded upward and outward, acts as a cam, and by the same inward movement operates as a cam upon said arm and moves the latter inward and upward. The spring E is so simple and plain in form as to render its construction easy

and cheap, and as it operates in a direct line and with but slight range of motion little or no liability exists for breakage. In addition to such advantages said spring does not, as in case of the ordinary spring, act to lift the cover A and injuriously affect the joint between the same and the center B.

I am aware that it is not new in watch-cases to use springs which exert their pressure both inward and upward when acting to open the case. This upward or lifting pressure on the cover, or a portion of it, is what I especially desire to avoid.

I do not claim, broadly, herein, in combination with the hinged cover of a watch-case, a spring whose free end is movable only in a direction parallel to the plane of the case-center, adapted to open the cover by pressure radial with reference to the case-center, substantially as shown and described.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the hinged cover of a watch-case, a spring which at its free end has a movement only in a plane parallel with the plane of either face of the watch-case center, adapted to open the cover by pressure which is inward and radial to the case-center, substantially as and for the purpose described.

2. In combination with the hinged cover of a watch-case, a spring which is located within the watch-case center, and has its free end movable only in a plane parallel to the upper or lower face of the case-center, adapted to exert a pressure radially inward with reference to such center upon a lug that projects from said cover below its pivotal or hinge bearing into the recess of the center, substantially as and for the purpose described.

3. In combination with the watch-case center, the cover hinged thereto, and provided with a lug curved downward and extending from its under side down into the recess in the center, and the spring within the case-center, having its free end movable only in a plane parallel to the upper or lower face of the center, and adapted to exert a pressure upon the end of the lug in a direction inward and radial to the case-center to open the cover, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of March, A. D. 1884.

R. J. QUIGLEY.

Witnesses:

GEO. S. PRINDLE,

HENRY C. HAZARD.