

A. M. CHURCH.

Improvement in Watch-Case Springs.

No. 130,699.

Patented Aug. 20, 1872.

Fig. 1.

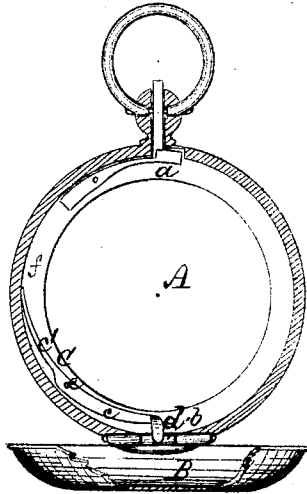


Fig. 2.

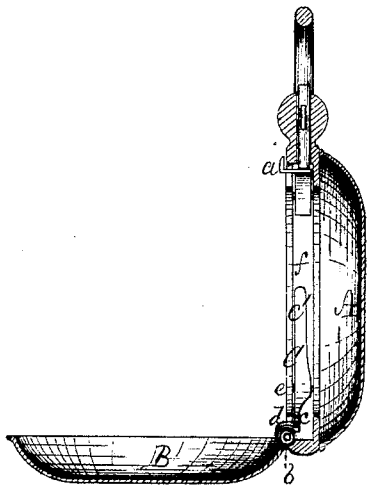


Fig. 3.

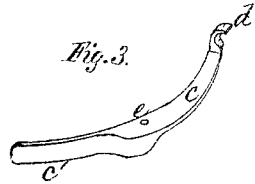
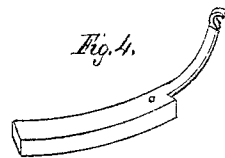


Fig. 4.



Inventor:

A. M. Church

By

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Witnesses.

Chas. D. Sizer,  
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# UNITED STATES PATENT OFFICE.

ALBERT M. CHURCH, OF APPLE RIVER, ILLINOIS.

## IMPROVEMENT IN WATCH-CASE SPRINGS.

Specification forming part of Letters Patent No. 130,699, dated August 20, 1872.

### SPECIFICATION.

*To all whom it may concern:*

Be it known that I, ALBERT MARION CHURCH, of Apple River, in the county of Jo Daviess and State of Illinois, have invented a certain new and useful Improvement in Springs for Watch-Cases, of which the following is a specification:

#### *Nature of the Invention.*

My invention consists in so shaping the case-lifting spring of a watch that it is rendered double-acting in raising the cover, by being made elastic at both ends and pivoted near the center, as hereinafter described.

#### *General Description.*

In the drawing, Figure 1 is a sectional elevation of a watch-case with my spring applied thereto; Fig. 2, a vertical cross-section of the same; Fig. 3, a perspective view of my improved spring removed from the watch-case; Fig. 4, a similar view of the common form of spring.

A is a watch-case of ordinary construction, having the usual spring-catch, *a*, for retaining the cover B when closed. This cover B is hinged to the case in the ordinary manner. A spring, C, pivoted at *e* in the space *f* of the watch-case, is provided on one side of the pivot, with a broad flattened surface, *e*, having a loop or catch, *d*, at the end which clasps the middle section *b* of the hinge, which supports the leaf B. The spring C, on the opposite side of the pivot, is gradually tapered into a thin, broad arm, *e'*, whose plane is at right angles to that of the arm *e*, and bears against the inner periphery of the watch-case, as shown in Fig. 1.

The action of the spring C is similar to that

of the usual form, shown in Fig. 4, with the very important exception that it is double-acting, the arm *e'* serving as a secondary spring or elastic cushion to throw the cover B open.

The advantages of this over the ordinary form of springs are important. My double spring admits of a lighter and more graceful form, and at the same time secures the maximum degree of elasticity in the minimum degree of space. By flattening and tapering the end of the spring furthest from the hooked point which engages with the cover, I secure a double-action of the spring upon the cover, so that springs of much smaller size can be used than heretofore, an advantage of no little value in the construction of watches, where economy of space is such a desideratum. As the elastic parts are made flat, the pressure on the cover is more even, and the spring itself is rendered more durable. Another advantage is that, being elastic at both ends, it will readily conform itself to cases of different sizes, thereby saving jewelers considerable time and labor in a great many instances.

What I claim as my invention, and desire to secure by Letters Patent, is—

The double-acting spring C, formed in one piece, with thin, broad, smooth-surfaced arm *e'*, whose plane is at right angles to that of the arm *e*, which latter arm is formed with the loop *d*, constructed and operating as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALBERT MARION CHURCH.

Witnesses:

W. G. CROSSLEY,  
M. B. SUTTON.