

No. 659,915.

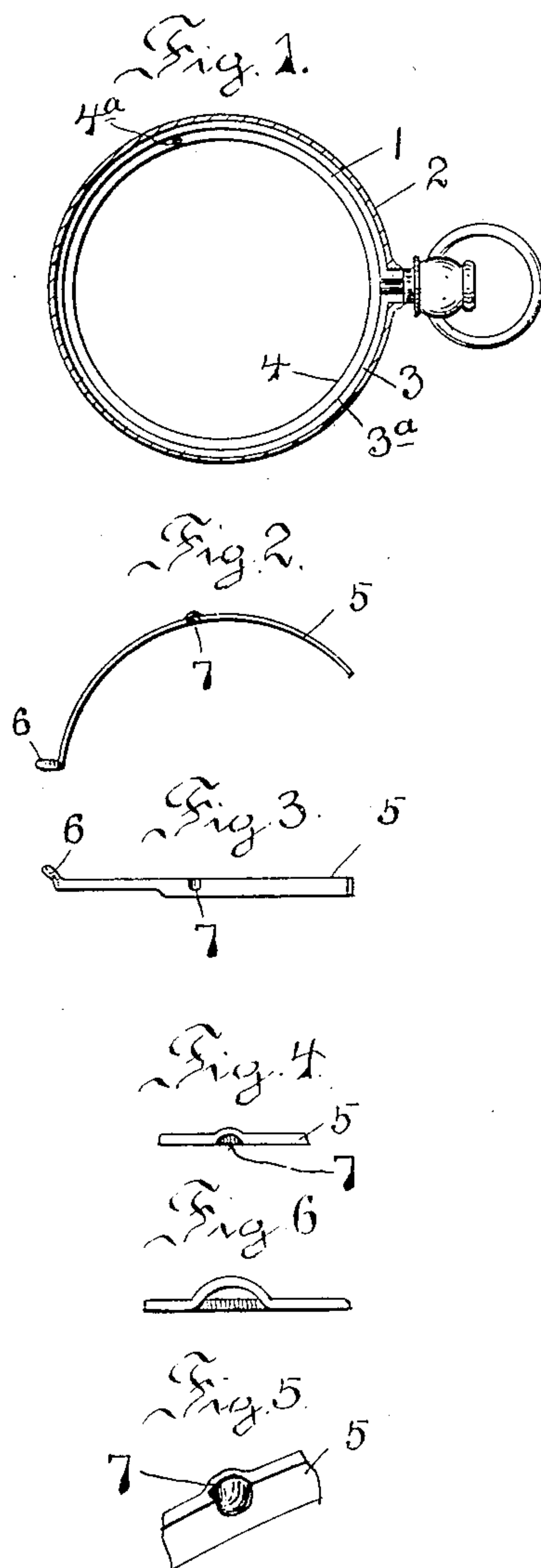
Patented Oct. 16, 1900.

W. COLLEY & C. NOBS, JR.

WATCHCASE SPRING.

(Application filed May 21, 1900.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## WATCHCASE-SPRING.

SPECIFICATION forming part of Letters Patent No. 659,915, dated October 16, 1900.

Application filed May 21, 1900. Serial No. 17,324. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM COLLEY and CHARLES NOBS, Jr., citizens of the United States, and residents of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Watchcase-Springs, of which the following is a specification.

Our invention relates generally to springs, and more particularly to springs used in watchcases to lock and open the lids of the same.

In the most common type of watchcase-spring a holding-pin is used to fasten the same to and to keep it in position in the annular recess formed in the case. Where this construction is used, it is necessary to form the spring in such a manner that it will be adapted to engage with the pin, and this has given rise to various forms of structures, which our invention contemplates to improve.

In order to appreciate our invention fully, it will be necessary to call attention in a brief manner to the modern construction of watchcases.

As is well known, the upper and lower side walls of the annular recess of a watchcase are provided each with an annular ledge or shoulder, against which the watchcase-springs are made to rest, the hole for the holding-pin being drilled so as to be immediately in front of said ledge. Owing to the tendency to make watches smaller and smaller, the manufacturers of the same are constantly on the alert for opportunities to dispense with unnecessarily-large elements and to substitute others of a smaller size. On account of this the width of the space in front of the annular ledges or shoulders aforementioned is constantly being diminished and the watchcase-center brought closer and closer to the outside edge of the said annular ledges or shoulders. As a matter of fact, the width of this space is just large enough to allow the hole for the holding-pin to be drilled through the same.

Bearing the foregoing in mind, it may be well to study for a moment the construction of watchcase-springs existing at the present time and to point out the reasons why they cannot be used in cases having a narrow space

for the springs. One type is made by stamping out the material so that a large and protruding loop is formed on the convex side of the spring for the accommodation of the holding-pin. When this is fitted into the watchcase, it is found that, owing to the diminishing in size of the space for the springs and owing to the fact that the hole for the holding-pin cannot be drilled farther toward the side peripheral wall without intruding on and thus marring the appearance of the visible portion of the case, the spring projects out over the watchcase-center, and thus crowds the works of the watch, thereby causing an inefficient operation of the same.

In the present style of watchcases the width of the space for the springs is but a trifle larger than the thickness of the stock of which the spring is made. Consequently when the material is stamped out to form the loop the thickness of the spring at that point is increased to twice that of the thickness of the stock plus the size of the holding-pin. This abnormal projection, as before stated, interferes with the perfect operation of the watch and is therefore highly undesirable.

If it were possible to drill the hole for the holding-pin on the extreme part of the side peripheral wall of the case, as noted above, this improvement would not be necessary; but this cannot be done without spoiling the appearance of the case and is consequently not to be thought of; nor can the thickness of the stock of which the spring is made be lessened, for the requisite tension would not then be obtained. Moreover, in stamping out the loop the cohesion is destroyed and the molecules displaced in the material, and the spring is as a consequence greatly weakened at that point. Furthermore, when the holding-pin becomes worn it will fall through the loop into the watchcase, thus entailing considerable labor in order to remove the same and fitting in another one.

Various other forms of springs might be described, such as the form where the stock is provided with a horizontal lug pierced by an aperture for the holding-pin. This, however, is unnecessary, since the imperfections noted in connection with the description of the loop-



spring are typical and representative of them all, each form possessing one or more of these said imperfections.

The object of our invention is to remedy these several faults and to produce a spring which is adapted to compensate for the changes which have taken place in the structure of watchcases; and it consists in the novel structure and particular features, as will be hereinafter described.

In the drawings, Figure 1 is a sectional plan view of a watchcase. Fig. 2 is a plan view of our improved spring. Fig. 3 is a side view of the same. Fig. 4 is a top view, on a large scale, of a portion of our improved spring. Fig. 5 is an enlarged perspective view of the same. Fig. 6 is a top view, on the same scale as Fig. 4, of a portion of an old-style spring.

Similar numerals of reference indicate corresponding parts in the different views.

We shall describe a watchcase-spring embodying our invention, and incidentally a watchcase, and afterward point out the novelty in the claims.

Referring to Fig. 1, 1 is a watchcase, and 2 is the side peripheral wall of same. 3 indicates the annular ledge or shoulder. 4 is the watchcase-center, and 4<sup>a</sup> is the hole for the holding-pin. As has been explained above, the distance between the watchcase-center 4 and the outer edge 3<sup>a</sup> of the shoulder or ledge 3 has been greatly reduced.

Referring now to Figs. 2, 3, 4, and 5, it will be seen that the spring 5 is formed with the usual spur 6 either for locking the lid or for throwing the same, and, further, with a pocket-like cavity or indentation 7, forced out from the concave side of the spring and extending to a point about half-way down through the stock. In other words, the recess is in the form of a hole extending half-way down through the stock and having one side wall missing. By this construction the objections and imperfections noted in connection with the earlier structures are overcome. The aperture for the holding-pin being formed in the spring itself, the bulkiness of the same is obviated and the spring kept on a line with

the case-center, so that it does not trespass on the space which should be occupied by the works of the watch. A further advantage in this construction lies in the fact that as the metal is merely pressed out to form the indentation the cohesion is not disturbed and the spring retains all its elasticity. Again, the aperture for the holding-pin being closed at the bottom, the said pin cannot fall through when it becomes worn and attenuated from use, and, lastly, the holding-pin can be easily removed from the concave side of the spring, one side wall being missing in the aperture, simply by inserting a fine tool and sliding it out.

From the foregoing it will readily appear that the advantages gained by utilizing our form of spring are manifold and important and that a very much superior spring as to durability, elasticity, and general utility and efficiency has been produced as compared with the style of spring shown, for instance, in Fig. 6.

Having thus described our invention, what we claim is—

1. A watchcase-spring made of a single piece of sheet metal bent into the proper curvature and provided with an engaging spur at one end, and formed with an aperture for the holding-pin extending to a point about half-way down from the upper edge of the spring, said aperture having one side wall missing and being formed with a closed bottom for the purposes as set forth, substantially as described.

2. A watchcase-spring made of a single piece of sheet metal bent into the proper curvature and provided with an engaging spur at one end, and formed with the recess 7 having a closed bottom for the purposes as set forth, substantially as described.

Signed at Newark, in the county of Essex and State of New Jersey, this 8th day of May, A. D. 1900.

WILLIAM COLLEY.  
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Witnesses:

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