

(No Model.)

A. N. GAUTHIER.
ROLLER JEWEL PROTECTOR FOR WATCHES.

No. 525,264.

Patented Aug. 28, 1894.

Fig. 1.

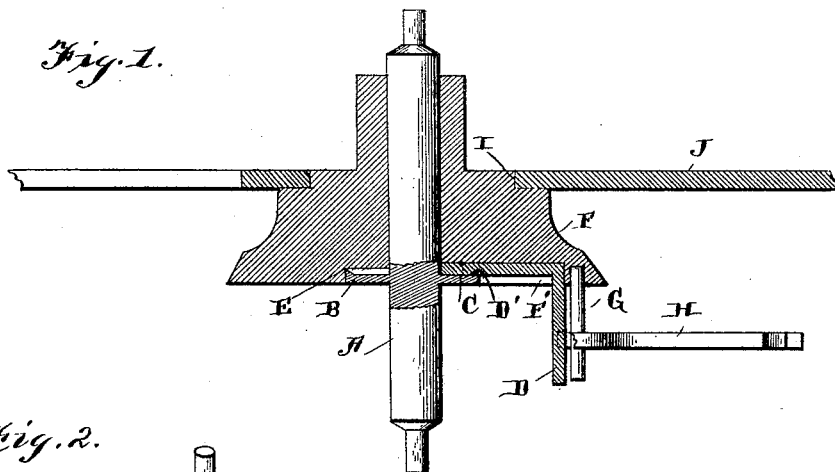


Fig. 2.

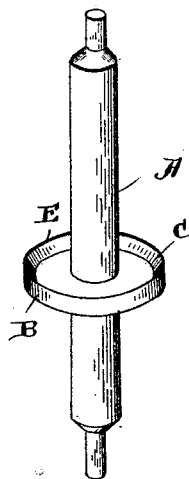


Fig. 3.

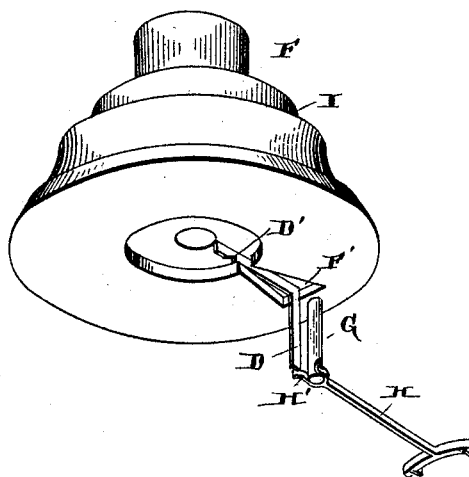
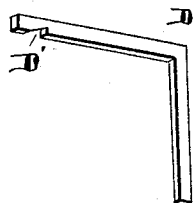


Fig. 4.



WITNESSES-

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ROLLER-JEWEL PROTECTOR FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 525,264, dated August 28, 1894.

Application filed August 30, 1893. Serial No. 484,392. (No model.)

To all whom it may concern:

Be it known that I, AGILE N. GAUTHIER, of New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new
5 and useful Improvements in Roller-Jewel Protectors and Interchangeable Staff-Arbors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled
10 in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved roller
15 jewel protector and interchangeable staff arbor, and the object of the same is to so construct the staff that the roller jewel may be readily applied thereto and held positively in place, together with the jewel protector, while
20 either of the said parts above mentioned may be removed or replaced without the necessity of removing the other elements.

Referring to the accompanying drawings: Figure 1, is a vertical sectional view of my
25 improved staff, the roller jewel, the jewel protector and balance wheel in position thereon. Fig. 2, is a detached perspective view of the balance staff. Fig. 3 is a perspective view of the balance mechanism. Fig. 4 is a
30 similar view of the jewel protector.

A is the balance staff reduced at its upper and lower ends to fit the usual bearings, and formed between its ends is the annular flange B, having the annular beveled recess C in its
35 upper side as shown.

D designates the angular jewel protector which tapers inward from its outer end and formed upon its under side is the notch D' where it fits over the wedge shaped edge
40 E of flange B. It is thus held positively from longitudinal movement and at all times in a proper and exact position with relation to the staff and jewel.

The hub F which is adapted to fit down
45 over staff A is provided with a tapering recess F' on its under side, so as to incase the horizontal portion of the jewel protector, and depending from the under side of the hub near its periphery and in line with the pro-
50 tector is the roller jewel G, the same being

secured at its upper end in a recess in the hub by means of shellac in the usual manner.

In case the watch should be so jarred as to disengage the jewel from the forked end of the escapement lever H, the former will not
55 be struck by the outer side of the fork prong H' upon the ensuing revolution of the balance staff, but the shock will be broken by the depending protector which, engaging the end of said fork, will save the delicate jewel
60 from any engagement whatever with the escapement lever during the aforesaid derangement. The outer edge of the escapement lever is slightly recessed as shown with its
65 prong projecting laterally, so as to be first engaged by the protector and also to form a place of safety for the jewel where it cannot be reached by the lever. The upper end of the balance hub is reduced as shown at I, to
70 accommodate the balance wheel J which may be secured thereon in any suitable manner. Thus it will be seen that when hub F is pushed down in place over flange B and the jewel protector, the latter is held from vertical displacement. When it is desired to remove the roller
75 jewel protector for the purpose of repair or when a new one is to be substituted all that is necessary is to lift the balance hub when the protector may be readily removed and a new one substituted in its place.
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As the flange B is made integral with the staff the possibility of longitudinal play upon the latter of the balance hub and protector is effectually obviated.

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

1. The combination of a balance staff, a support projecting therefrom, a jewel protector extending outward from said support, a balance mechanism adapted to hold the protector in position, and a jewel depending from said mechanism, substantially as shown and described.

2. The combination of a balance staff, an
95 annular flange thereon between its ends, an angular jewel protector resting at its inner end upon the said flange, a balance mechanism adapted to move downward upon the shaft and rest on the protector and thereby hold it
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in position, and a jewel depending from the balance mechanism, substantially as shown and described.

3. The combination of a balance staff, an annular flange thereon which is recessed upon its upper side, an angular jewel protector which is recessed upon its under side where it rests down upon the flange of the staff, a balance mechanism adapted to be supported by the flange and rest upon the protector thereby holding it in position, and a jewel depending from the mechanism, substantially as shown and described.

4. The combination of a balance staff, an annular flange thereon between its ends which is formed with a beveled depression upon its upper side, an angular jewel protector having on the under side of its inner end a beveled recess which fits down over said flange, a balance mechanism adapted to be supported by the flange and rest upon the protector thereby holding the same in position, and a jewel depending from the mechanism, substantially as shown and described.

5. The combination of a balance staff, a support carried thereby, a jewel protector adapted to rest on the support, a hub recessed upon its underside which is adapted to move downward upon the shaft and incase the support and one arm of the jewel protector, a

jewel, and a balance wheel carried by the hub, substantially as shown and described.

6. The combination of a balance staff, a balance mechanism carried thereby, a jewel depending from the mechanism, a jewel protector arranged between the jewel and the shaft, substantially as shown and described.

7. The combination of a balance staff, a balance mechanism carried thereby, a jewel depending from the mechanism, an angular jewel protector having its vertical arm adjacent the jewel and its horizontal arm incased by the said mechanism, substantially as shown and described.

8. The combination of a balance staff, a balance mechanism supported thereby, a jewel depending from the said mechanism near its periphery, an angular jewel protector arranged adjacent the jewel with its horizontal portion extending inward toward the staff, the same being held rigid with the balance mechanism and having its vertical arm depending adjacent the jewel, substantially as shown and described.

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

A. N. GAUTHIER.

Witnesses:

E. BOISSON,
LEON LACHOT.