(No Model.)

L. VAN BEMMEL.

WATCH BARREL.

No. 327,359. Patented Sept. 29, 1885.

FIG. 1

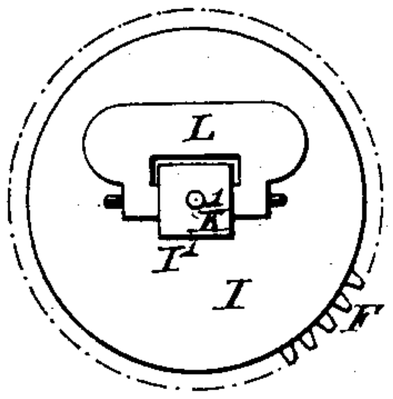


FIG. 2

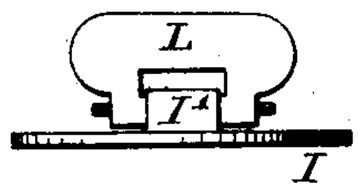


FIG. 3

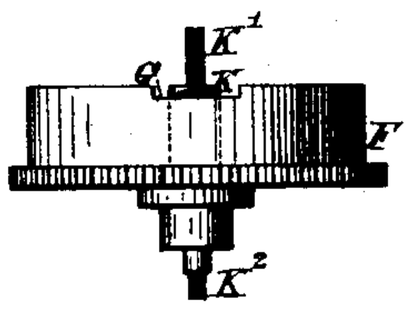


FIG. 4

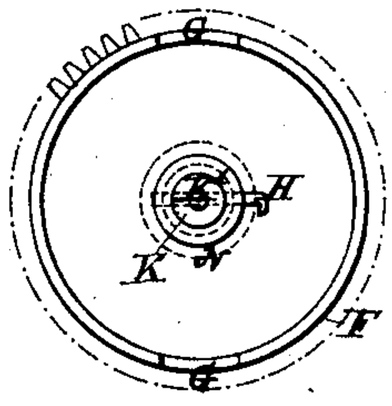


FIG. 5

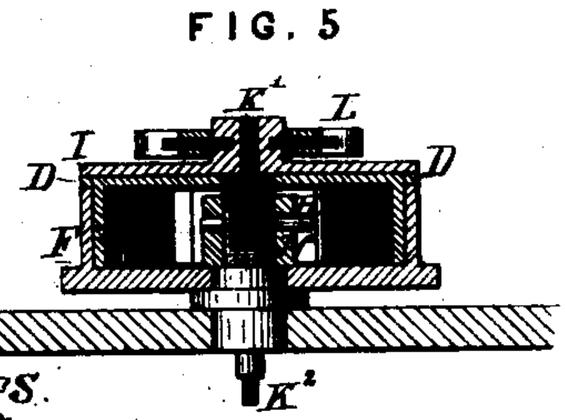


FIG. 6

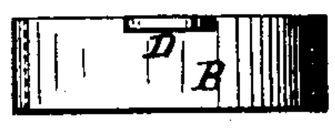


FIG. 7

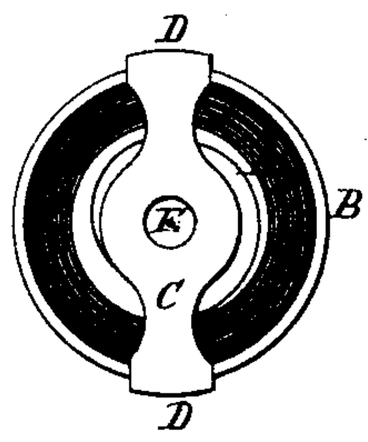


FIG. 8

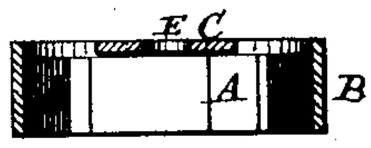


FIG. 9

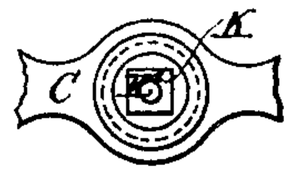
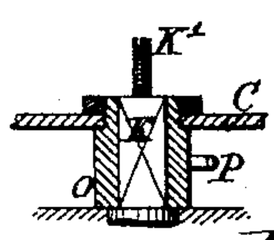


FIG. 10



Witnesses.
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J. A. Rutherford

Inventor.
Louis Van Bemmel,
By James L. Norris Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

LOUIS VAN BEMMEL, OF MAESTRICHT, HOLLAND.

WATCH-BARREL.

SPECIFICATION forming part of Letters Patent No. 327,359, dated September 29, 1885.

Application filed May 19, 1885. (No model.) Patented in Belgium September 24, 1884, No. 66,412, and in England May 2, 1885, No. 5,438.

To all whom it may concern:

Be it known that I, LOUIS VAN BEMMEL, a citizen of Holland, residing at Maestricht, in the Kingdom of Holland, have invented a new and useful Improvement in Watches, Clocks, and other Mechanism Driven by Coiled Springs, (for which I have applied for a patent in Great Britain, dated May 2, 1885, No. 5,438, and obtained a patent in Belgium, dated September 24, 1884, No. 66,412,) of which the following is a specification.

My invention has for its object to enable the mainspring of a watch, clock, or other mechanism driven by coiled springs of a similar nature to be readily removed when broken or defective, and to be replaced by a new one without requiring any other part of the watch or mechanism to be taken to pieces or interfered with for this purpose, the operation being such that it can be easily performed by the owner of the watch or other mechanician, so that practically scarcely any interruption of its movement need occur when a spring is broken.

The invention consists, mainly, in arranging the spring within a removable barrel or casing, which is introduced into the ordinary barrel of the watch, and is held therein in such a manner that the outer end of the spring imparts its motion, when wound to the main barrel, through the medium of the inner barrel, while the winding up of the inner end of the spring is effected by means of the central spindle of the main barrel. The construction of the parts for effecting this purpose will be readily understood from the accompanying drawings, in which—

Figure 1 shows a plan view of the main barrel, with cover and the flap or handle laid flat. Fig. 2 shows a side view of the cover detached; Fig. 3, a side view of the main barrel without the cover; Fig. 4, a plan of the main barrel with the cover removed; Fig. 5, a cross-section of the main barrel and removable barrel with spring fitted thereto; Fig. 6, a side view of the removable barrel; Fig. 7, a plan of the same with spring, and Fig. 8 a cross-section of the same. Figs. 9 and 10 show, respectively, a plan and a section of a modified arrangement for connecting the inner end of the spring to the spindle.

The mainspring A is coiled within the removable barrel B, which is open at both ends, but has at top a bridge-piece, C, that projects slightly beyond the barrel on each side at D D, and that has a central opening, E, through which passes the screwed end of the axis or spindle K, on which the barrels F and B are mounted. The main barrel F is mounted loose on the spindle K, but it is held thereon by the nut or cylinder N, screwed on the spindle and secured by a pin, H, passing through both. The barrel B, with its spring A, is inserted into the barrel F so that its projections D D fit into the notches G in the upper edge of F, so that the impulse of the spring when wound is transferred by the projections D of barrel B to the barrel F, which imparts its motion to the clock-work by a toothed ring, in the usual manner. On introducing the barrel B, the inner free end of the spring A, having a slotted hole, catches upon the end of the pin H, projecting from the nut N of the spindle K, so that on turning this spindle the spring is wound up. The barrel B having been inserted into F, it is secured in position by a cover, I, with boss I′, which is screwed onto the small projecting end K′ of the spindle. To the boss I′ is pivoted a flap or handle, L, which serves both to facilitate the screwing on of the cover and also to wind up the spring by the rotation of the spindle K in case the usual remontoir mechanism of the button of the watch, which actuates the other end, K^2, of the spindle in the usual manner, should fail to act.

From the above construction it will be seen that should the spring A be broken it is only necessary to unscrew the cover I and remove the barrel B, with the spring, and introduce in its place another barrel with spring, which parts are separately manufactured, and one or more of which may be kept in stock by the owner of the watch or other mechanism. The cover being screwed on again and the spring wound up, the watch is again in working order.

It will readily be understood that when the above-described arrangement is applied to springs of more powerful action than is required in watches, the details of construction may be variously modified to afford the neces-

sary strength of parts; but the essential feature of the invention—namely, the inclosure of the spring in a removable barrel and its temporary connection to the outer barrel and central spindle—would remain the same in all cases.

In Figs 9 and 10 is shown the modified arrangement for connecting the inner end of the spring A to the spindle K, whereby any difficulty that might arise in causing the inner end of the spring to catch onto the pin H of the former arrangement would be avoided. In this case the cylinder N is attached to the bridge-piece C of the barrel B, and has the inner end of the spring A connected to a stud, P, thereon. Its central hole is of square or polygonal cross-section, and when the barrel B is inserted into F it slides upon a correspondingly square or polygonal part of the spindle K, instead of being screwed thereon, as in the former arrangement. The barrel B is secured in position by means of the cover I, screwed onto the part K′ of the spindle, as before.

Having thus described the nature of my invention and the best means I know for carrying the same into practical effect, I claim—

1. The combination of the main barrel F, formed with notches G, the inner barrel, B, open at top and bottom and provided at its top with bridge C, extending beyond the sides of the main barrel and fitting in the notches of the latter, spindle K, passing through barrel F and bridge C, and the spring A, connected with spindle K and the inner barrel, substantially as described.

2. The combination of the main barrel F, formed with notches G, cylinder N, having a pin projecting therefrom, spindle K, inner barrel, B, formed with projections D fitting in notches G, spring A, connected at one end to the inner barrel and at the other end to said projecting pin, and cover I, fitting over barrel B, and having boss I′, fitting to spindle K, substantially as described.

3. In combination with the cover I for securing the removable barrel B in position, the flap or handle L, serving both to screw on the cover and to wind up the watch.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 27th day of April, A. D. 1885.

LOUIS VAN BEMMEL.

Witnesses:
GUSTAV MÜLLER,
CARL H. SPRINGMANN.