

United States Patent Office.

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IMPROVEMENT IN MAINSPRING-BARREL ATTACHMENT FOR WATCHES.

The Schedule referred to in these Letters Patent and making part of the same

I, OLA L. ELIASON, of Salt Lake City, in the county of Salt Lake and Territory of Utah, have invented certain Improvements in Safety Mainspring Barrels for Watches, of which the following is a specification.

My invention relates to an improved construction of the several parts of the motion of a watch. Thus, the pinion or first driving-wheel transfers the forward motion, caused by the spring when wound up, but it does not in the least degree partake of the backlash, caused by the accidental breaking of the mainspring.

To prevent this backlash is to prevent considerable damage to the different parts of the train in a watch, and my method of connecting the wheel to the mainspring-barrel, by aid of ratchet-wheel and pawls, transferring only the forward motion, serves this purpose in the most perfect manner.

Description of the Accompanying Drawings.

Figure 1 is a bottom view of my improved safety mainspring barrel.

Figure 2 is a vertical central section of the same.

Figure 3 is a vertical central section of the wheel, detached from the mainspring barrel.

General Description.

A represents the barrel which incloses the mainspring.

a is the lid which closes the mainspring barrel in the usual way.

B represents the wheel, which is a toothed ring, constructed with two annular steps, *b* *b*¹.

One of these steps, *b*, is made to fit the lower end of the barrel A, and the other step, *b*¹, forms a receptacle for a ratchet-wheel, C, which is fastened by two screws, *c c*, to the bottom of the barrel A, for which purpose the said bottom is provided with a step, *a*², to make it flush with the step *b*¹, on the wheel B.

Thus the bearing or annular wearing part *b*² of the wheel B is enclosed between the bottom of the barrel and the overlapping ratchet-wheel.

The arbor D is of usual construction, as also the two stopping-wheels, E and E¹.

The square shank *d* serves the purpose of winding up.

The lower square shank has the stopping-wheel E fitted to it, and below the ratchet-wheel C there should be another ratchet-wheel on the arbor, to receive and sustain the back pressure of the mainspring upon the arbor.

I have omitted this, as I have also omitted the mainspring. They are of common construction, and I do not deem their presence necessary.

The wheel B is also provided with two pawls, F F, and two pawl-springs, *f f*.

It is plainly seen that the wheel B is, through said

ratchet-wheel and pawls, compelled to go with the barrel in its forward motion, and drive the different parts of the train in the usual way; but should the spring accidentally break, and the sudden and forcible recoil of it cause a reverse movement of the barrel, the pawls F F would slide over the teeth of the ratchet without effecting the slightest jerk upon the wheel B, thereby preventing considerable damage to the train.

I would furthermore call attention to some very important merits of my invention.

The lower recess *b*¹ of the wheel B forms a bearing against the overlapping ratchet-wheel, and the upper recess *b* of the same wheel forms the bearing against the bottom of the barrel A.

In this manner the small annular flange between the two recesses *b* and *b*¹ furnishes the only bearing-surface for horizontal bearing, while the vertical bearing is received by the cylindrical surface of the recess *b*, and the part of the spring-barrel fitted into it.

I can fit my wheel to any spring-barrel, and place it in the exact position of the old wheel, without materially changing the old spring-barrel.

I have also provided my wheel with two pawls, instead of one, because I thereby relieve it from a one-sided pressure, which would cause the wheel and barrel to jam, if, after long service, the fitted bearing should become loose. Such jam would eventually prevent the successful working of my invention.

I make my pawls short and stout, and use separate springs to actuate them.

This arrangement takes less room than a spring-pawl in one piece, which has to be strong and stout, to prevent bending or breaking, and long enough to endow it with the necessary elasticity.

It is hereby shown that my invention combines great simplicity of construction, great strength, accessibility, and liability in very small compass, and therefore great security.

The ease of its adaptation to old watches, as well as the cheapness of its construction, are so obvious to any man of the profession, that I deem it unnecessary to comment upon them.

Claim.

I claim as my invention—

The combination and arrangement of the spring-barrel A, the annular wheel B, with its annular bearing-flange, between the recesses *b* and *b*¹, its horizontal and vertical bearings, the overlapping ratchet-wheel C, and pawls F F, with springs *f f*, arranged and constructed as and for the purpose set forth.

O. L. ELIASON.

Witnesses:

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