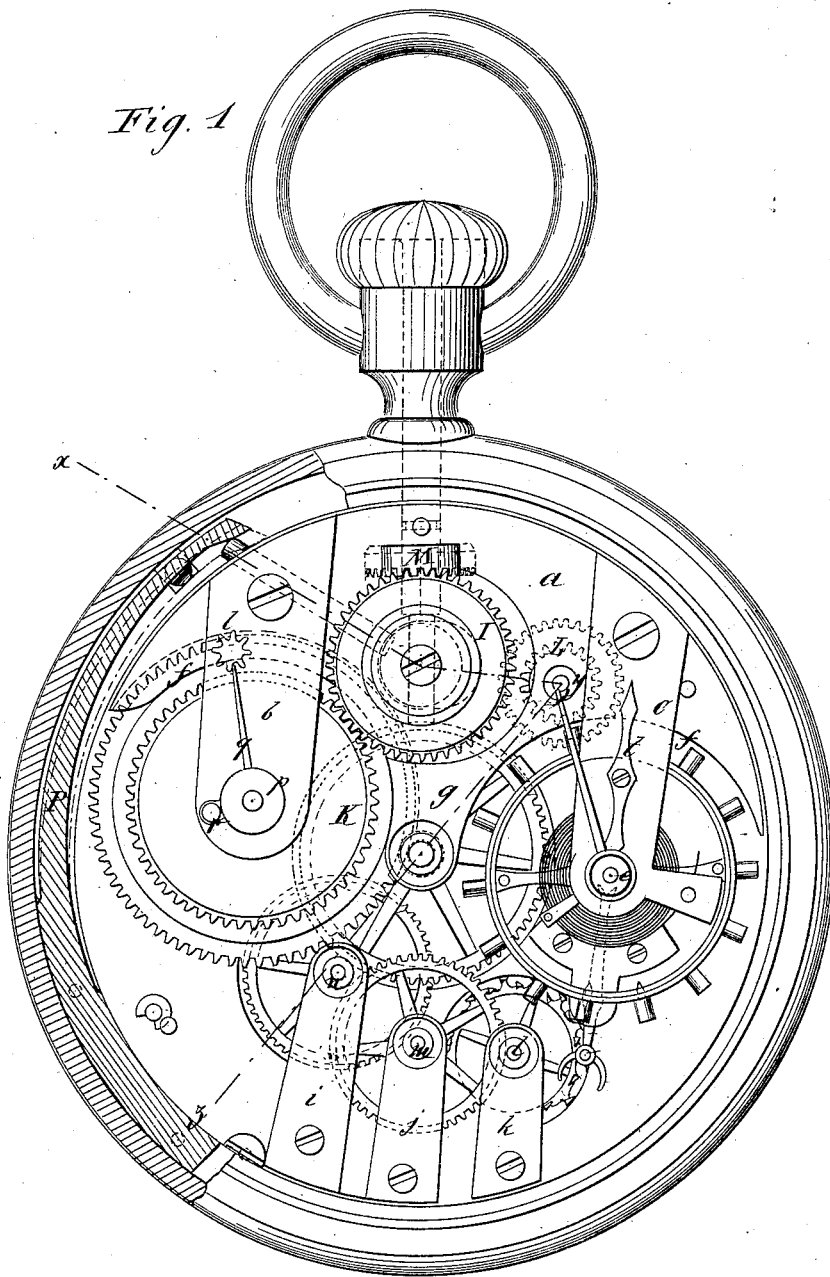


E. BOURQUIN.  
Escapement for Watches.

No. 167,872.

Patented Sept. 21, 1875.

Fig. 1



WITNESSES:

*C. Xevaux*  
*A. F. Terry*

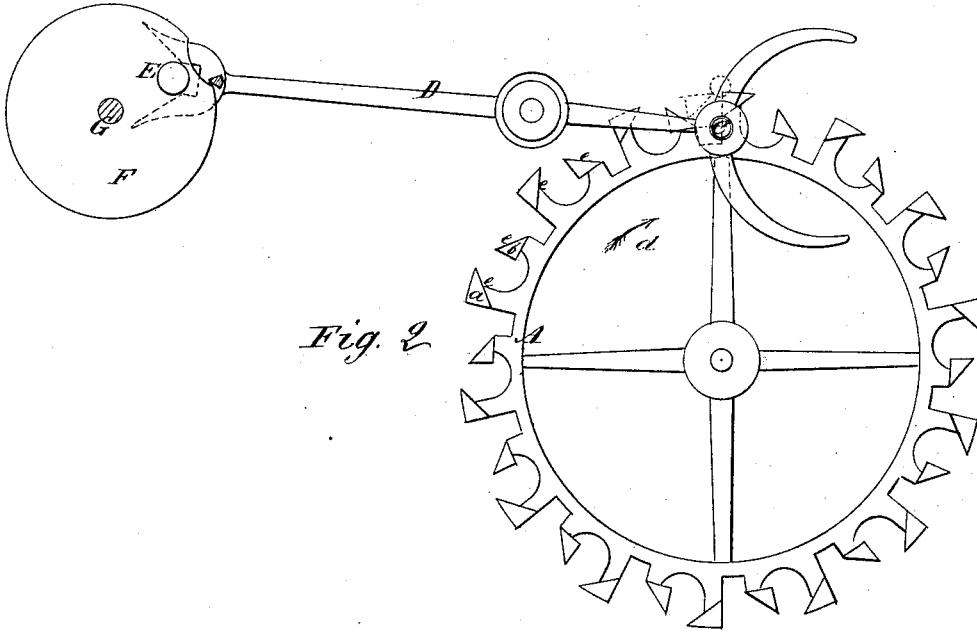
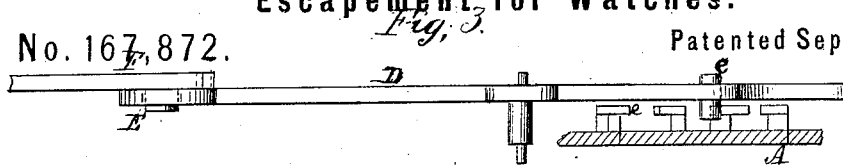
INVENTOR:

*E. Bourquin*  
BY *Munnell*  
ATTORNEYS.

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**BY**

*Munnell*

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# UNITED STATES PATENT OFFICE.

EDOUARD BOURQUIN, OF LA HEUTTE, SWITZERLAND.

## IMPROVEMENT IN ESCAPEMENTS FOR WATCHES.

Specification forming part of Letters Patent No. 167,872, dated September 21, 1875; application filed July 24, 1875.

### *To all whom it may concern:*

Be it known that I, EDOUARD BOURQUIN, of La Heutte, near Bienne, in Switzerland, have invented new and useful Improvements in Watches, of which the following is a specification:

This invention is an improvement in the escapement whereby one pallet is made to serve the purpose of the two commonly used, and so arranged that it works with less friction and is more certain in its action than the common arrangements, and is simpler to construct and repair.

Figure 1 is mainly a plan of the interior of the watch, looking at the back, and partly a horizontal section of the rim and the spring for gearing the stem with the setting-wheel. Fig. 2 is a plan of the scape-wheel and lever, and Fig. 3 is a side elevation of the lever and pallet.

Similar letters of reference indicate corresponding parts.

A is the scape-wheel, which has its teeth on one side instead of the face, as they have been arranged heretofore, and they are divided into two rows, *a* and *b*, in different circles, the former being in the outside and the latter in the inside circle.

The inside of the outer teeth and the outside of the inner teeth are inclined or beveled alike, but in opposite directions, for impelling the lever forward and backward by the impulses they give to the pallet C in the lever D.

The wheel turns in the direction of the arrow *d*, throwing off the pallet from the inclined sides *e* of the tooth onto the point of the next tooth, as seen in Fig. 2, where it is locked until the recoil of the hair-spring, which detaches the pallet from the point and carries it onto the side *e*, where it gets the impulse as above stated. The pallet is carried a trifle beyond its center on the points of the teeth to make the lock and prevent the untimely slipping off of the teeth.

E is the ruby-pin in the disk F of the balance-wheel G, which acts on the lever. It will be seen that this is a very easy and cer-

tain motion, which is not liable to cramp and bind as the ordinary two-pallet escapement, nor does it require so fine adjustment, and is much cheaper to construct and repair.

In respect of the economy of construction and simplicity of adjustment as compared with the common escapement, it may be stated that in this case there is only one pallet, and it is of the simplest form to make and connect with the lever, being merely a round pin fitted in a bored hole in the lever, while in the common escapement there are two pallets of a peculiar and difficult form to make, and they are connected to the lever by one piece, which has, in the connection, to be adjusted relatively to the teeth of the scape-wheel and its position on the lever at the same time, which is difficult to do, and in case it happens to be set so as to engage too deep, or not deep enough, it has to be changed, which is very difficult to do. No such emergency occurs with my escapement, for, being set a little farther one way or the other in the direction of the lever or the wire in which the pallet acts on the teeth, makes no difference.

I propose to take out a design patent for subject-matter illustrated in Fig. 1 of drawing.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. Two rows of reversely-inclined teeth, *a b*, on the side of the scape-wheel, in combination with a single pallet, C, in the lever, substantially as specified.

2. The teeth *a b*, arranged to receive and lock the pallet by their points, and give the impulse by their inclines, substantially as specified.

3. An escapement-lever and pallet, consisting of a simple lever, D, and a pin, C, attached to the lever by fitting in a hole, as described.

EDOUARD BOURQUIN.

Witnesses:

JOS. STEINMANN,  
W. BRUNNER.