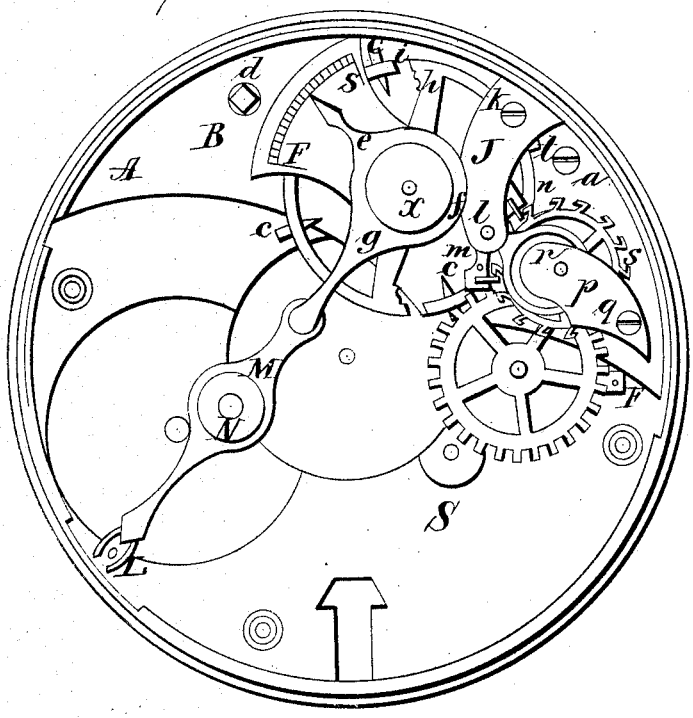
2 Sheets--Sheet 1.

F. FITT.

Independent Escapement for Watches.

No. 167,089. Patented Aug. 24, 1875.

Fig. 1.



ATTEST:

Edith Brookes

James Maddren

INVENTOR:

Fredric Fitt

by his Attorney

Colborne Brookes

F. FITT.

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Fig. 3.

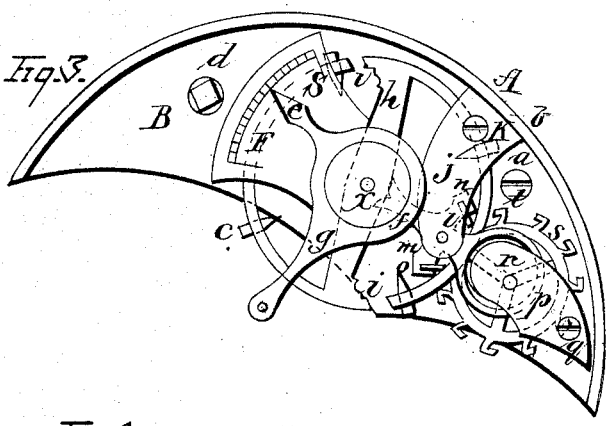


Fig. 2.

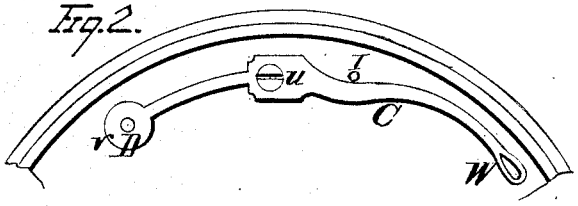


Fig. 5.

Fig. 4.

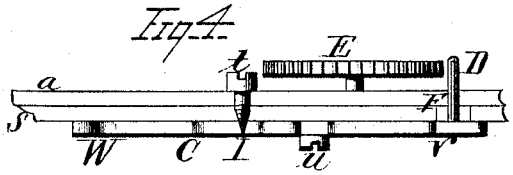


Fig. 6.

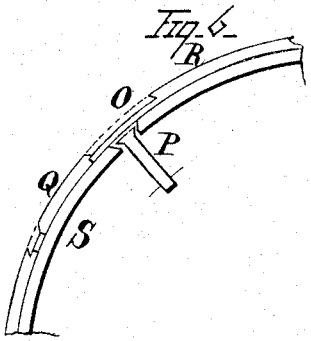
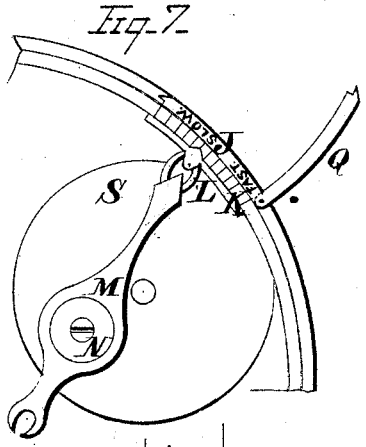


Fig. 7.



ATTEST:

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INVENTOR:

Frederic Fitt

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UNITED STATES PATENT OFFICE.

FREDERIC FITT, OF OTTAWA, CANADA, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM FINGLAND AND BENJAMIN J. DRAPER, OF SAME PLACE.

IMPROVEMENT IN INDEPENDENT ESCAPEMENTS FOR WATCHES.

Specification forming part of Letters Patent No. **167,089**, dated August 24, 1875; application filed June 2, 1875.

To all whom it may concern:

Be it known that I, FREDERIC FITT, of Ottawa, in the county of Carleton, in the Province of Ontario, in the Dominion of Canada, have invented an Independent Escapement for Watches, of which the following is a specification:

The first part of my invention relates to the combination of an independent escapement in such a manner that the said escapement is secured to the pillar-plate of a watch or chronometer and unfastened therefrom by a screw; the object of this part of my invention being to have an escapement made independently of the other movements, and which can be easily removed.

The second part of my invention relates to a screw in such a manner that said screw will make fast the above escapement, the screw being long enough, and having a conical point, by which it works a stop-detent or spring set on the other side of the pillar-plate, to which spring a pin is attached, meshing in the teeth of the fourth-wheel; the object of this part of my invention being to gradually ease the pin in the teeth of the fourth-wheel, to stop the movements of the watch while the screw is withdrawn to remove the escapement.

The third part of my invention relates to a cavity in the rim of the case, in which is a regulator; the object of this part of my invention being to prevent the watch from being tampered with when it is necessary to regulate it.

Figure 1 represents the interior of the back part of a watch wherein the independent escapement is held fast. Fig. 2 represents the interior of the front face of the pillar-plate, to which the spring having the pin meshing in the teeth of the fourth-wheel is secured. Fig. 3 represents the independent escapement removed from the watch. Fig. 4 represents the screw fastening the escapement. Fig. 5 represents the cock-prop screw. Fig. 6 represents the push-pin. Fig. 7 represents the regulator on rim of watch.

A, Figs. 1 and 3, is an independent escapement, composed of the following parts: *a*, the escapement-plate, having an edge, *b*, by which it is set in the watch-case; B, a balance-cock; *d*, the cock-prop screw, having a square head; *e*, the regulating-indicator; *f*, circle of regulator, sliding round on cock *x*; *g*, arm of the regulator, connecting and worked by regulator, worked from the outside of the watch-case; *h*, rim of balance, having the expansion-cuts *i i* and balance-adjusting screws *c c*; *j*, pallet-cock and cock-screw *k*; *l*, pivot of pallet-staff; *m*, lever and pallet and pallet-stones *n o*; *p*, escape-wheel cock and cock-screw *q*; *r*, escape-wheel pivot; *s*, escape-wheel; *t*, the fastening-screw. Other movements forming part of or constituting an escapement may, however, be employed. S is the reverse of pillar-plate to which the mechanism, wheels, pinions, &c., of the watch are secured. C, Fig. 2, is a safety-spring or stop-detent, secured by the screw *u* near the edge and to the front face of the pillar-plate S. D is the pin of stop-detent, secured to the end round plate *v* of spring C, passing through the slot or opening F of the pillar-plate S, and acting on teeth of fourth-wheel E, Fig. 1. *w* is an opening or slot at the other end of the spring C, with a screw to steady said spring and allow its operation. H is an opening through plate S for fastening-screw *t*, which acts in the curve of and on the spring C, and I is the conical point of said fastening-screw *t* of the escapement A, working the safety-spring C. J is the cavity in which the regulator and index K is set. The regulator K is connected by means of a pin or link, L, to the front end of an arm or piece, M, pivoted to the cock N. The rear end of the arm M is connected, also, by means of a pin, to the arm *g* of the regulating-indicator *e*. O is another cavity, in which a push-pin, P, is affixed, and connected to one of the hands of the watch to regulate it. Both cavities J and O are made in the rim of the watch-case, and have covering Q either hinged to the rim or sliding thereon.

The escapement is made independent, and can be removed from the rest of the movements, or may be applied in one piece, as required. It is not necessary that the movements of the watch be uncased, as the whole of the escapement can be removed or replaced bodily with the movements in the case, and made fast by the screw *t*; nor is it necessary to

unwind or let the watch go down in order to remove the escapement-plate, for every danger of damaging the movements of the watch is avoided by means of the fastening-screw *t*, said screw *t* being made for a double purpose—first, to hold fast the escapement-plate A in position; secondly, the screw *t* is made long enough to pass through the pillar-plate S. This screw *t* has a conical point, I, so as to work the safety-spring or stop-detent secured to the front face of the pillar-plate below the dial, said spring having at its plate end a pin going through plate S, and acting on the fourth-wheel teeth in such a manner that when the screw *t* is withdrawn to remove the escapement-plate it gradually pushes the pin D into the teeth of the fourth-wheel, thus stopping the action of the watch and keeping it from unwinding itself, as in the case of ordinary watches, and preventing it also from damaging itself by its unwinding; and when the screw *t* is replaced to make fast the escapement-plate, said screw *t* gradually eases out the pin from the teeth of the fourth-wheel, and then the watch goes on without being wound up anew. Thus it will be seen that this independent escapement gives every guaranty of safety for the watch, for the screw *t* is self-acting on the spring, and is simple and reliable. Without this screw *t* the independent escapement would be of little value, because of the liability to accident to the watch by unwinding itself when wound up on removal of said escapement.

The advantages of the independent escapement are many to manufacturers as well as to watch-makers, and it is also very convenient to the wearer. Another advantage of it is, that the movement-makers and the escapement-makers are independent of each other, for the movements can be entirely finished and cased without the escapement, and the escapement can be finished, even-timed, and regulated ready for any movements of the same grade at immediate notice, as a duplicate movement will do for all escapements, in consequence of the simplicity of the arrangements.

The head of the cock-prop screw *d* is made square, as shown in Fig. 5, so as to facilitate the removing and replacing of the escapement by pliers or tweezers. The wearer is deterred from tampering with the mechanism of the watch, for there is no necessity to open the case, either to regulate it or to alter the hands. The watch is regulated by the regulator and index K, which are in the opening J in the rim of the watch-case, and the hands are altered by the push-pin, which is in the other opening O in said rim. By opening the hinged or sliding lid of those cavities the regulator or the push-pin is reached, regulated or set, as the case may be, and the lid shut to prevent dust getting through and into the interior of the watch. A thick flat crystal may be placed over the movements to enable the mechanism to be seen. This flat crystal is as strong as the dome or cap which it so conveniently replaces.

Having described my invention, what I claim is—

1. The combination, with a watch-movement, of an independent and removable escapement, A, held in position by a screw or pin, *t*, passing through the pillar-plate and operating a stopping device, substantially as described.

2. In combination with the retaining pin or screw *t* of an independent and removable escapement, a spring-stop detent, C, substantially as described.

3. The combination, with the fourth-wheel of a watch, of a spring-stop detent, C, operated substantially as described.

4. A watch-regulator operated by an arm, M, and link L, actuated from an opening, J, in the external case, substantially as described.

FREDERIC FITT.

Signed in the presence of—

JOHN ARTHUR WYNNE,
Of Ottawa, Law Student.

T. MERCER MORTON,
Of Ottawa, Law Student.