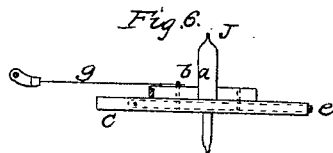
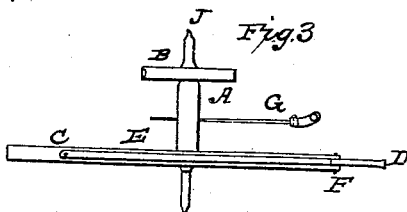
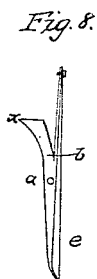
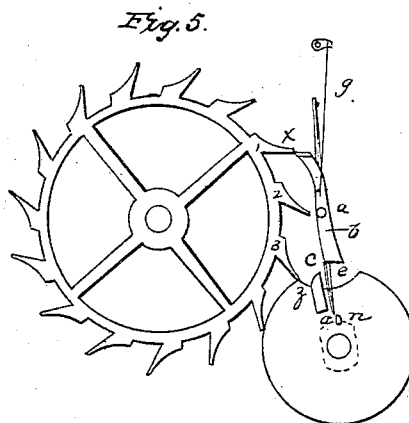
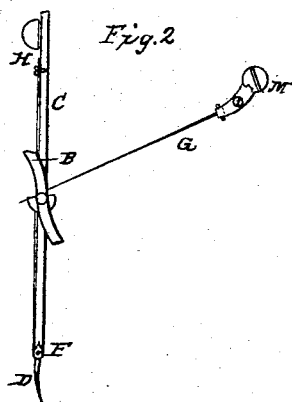
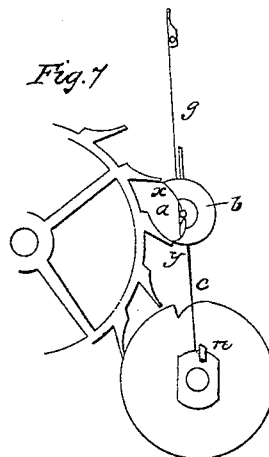
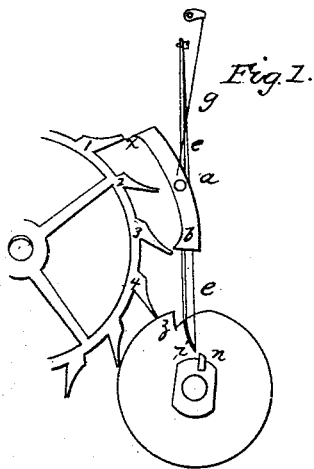


J. KARR.
Chronometer Escapement.

No. 51,191.

Patented Nov. 28, 1865.



Witnesses
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UNITED STATES PATENT OFFICE

JACOB KARR, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN CHRONOMETER-ESCAPEMENTS.

Specification forming part of Letters Patent No. 51,191, dated November 28, 1865.

To all whom it may concern:

Be it known that I, JACOB KARR, of Washington, D. C., have invented an Improvement upon my Chronometer-Escapement for which I received Letters Patent No. 44,317, dated September 20, 1864; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification.

Figures 1 and 5 show the lever form, and Fig. 7 the cylinder form of my invention in its true position with the improvement. Fig. 6 shows the lever detached from the other works. Fig. 8 shows a simple modification of the lever. Figs. 2 and 3 represent the lever form, and Fig. 4 the cylinder form of my invention patented September 20, 1864.

The construction and position of my improved escapement is identical with that of my former invention, above mentioned, with the exception of the following specific particulars: I dispense with the short lever D, Figs. 2 and 3. I make the lever or lance C of sufficient length, and place the spring E on the opposite side of the lance C in such a manner that it will extend a little past the end of the lever or lance C, and in such manner and position that it will perform all the functions of the short lever, D, in its action with the other works for the purpose of escapement. I construct the detent or pallet plate B with or without the pallet-point *y*, Figs. 1, 5, and 7, (both in the lever and cylinder.) The pallet-point *y* and the locking-spring *g* perform the same action, and they may be used separately or combined. The lock-spring *g* may be made spiral in form.

I will proceed to describe the action of my improved escapement.

Referring to Fig. 1, the balance-wheel, in its forward or unlocking motion, strikes with its pallet *n* the end of the spring *e*, which rests against the point *i* of the lance C. The result of the blow is to move the lever on its axis *a* so far as to disengage or unlock the pallet *x* of the detent, or pallet-plate *b* from the tooth 1 of the escapement-wheel, and allow the pallet *n* to pass the end of the lever. As soon as the escapement-wheel is unlocked, tooth 4 catches

the pallet *z* of the coming balance and carries it forward. At the expiration of two-thirds of the time in which the pallet *z* of the balance is being carried forward by tooth 4 of the escapement-wheel, tooth 2 strikes the pallet-point *y* of the detent *d*, and returns the lever to its lock position, aided by the lock-spring *g*. Either the pallet *y* or the spring *g* will accomplish the lock position of the lever, but where both are used greater certainty in the action of locking is attained. The contact of the pallet *y* with the tooth 2 and the tooth 4 of the escapement-wheel with the balance-pallet *z* ceases at the same instant. The balance being disengaged from the escapement-wheel by the full power of its spring, is driven backward in its reverse motion, the pallet *n* encountering only the spring *e*, which gives back sufficiently to let it pass without disturbing the lock position of the lever, when it is again ready to execute the forward unlocking motion.

Referring to Fig. 5, the action is the same as above described, except that immediately after the unlocking of tooth 1 tooth 3 of the escapement-wheel acts upon the balance-pallet *z*, and the lock position of the lever is secured only by the lock-spring *g*, the pallet-point *y* being left off of the detent *d*.

Referring to the cylinder form of my invention, Fig. 7, tooth 1 acts on both the pallets *x* and *y* of the detent *b* in the action of escapement.

From actual trial I find that my improvement above described is practically superior in its action to my invention patented September 20, 1864.

I claim—

1. Providing the detent *b*, in both its lever and cylinder form, with the additional pallet *y*, for the purposes substantially as above described.

2. In combination, the lever with its lance C, spring *e*, and detent *b*, the pallet *z*, and pallet *n* of the balance, and the lock spring *g*, operating in the manner above described.

J. KARR.

Witnesses:

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