A. FRANKFELD.

Watches.

No. 144,270. Patented Nov. 4, 1873.

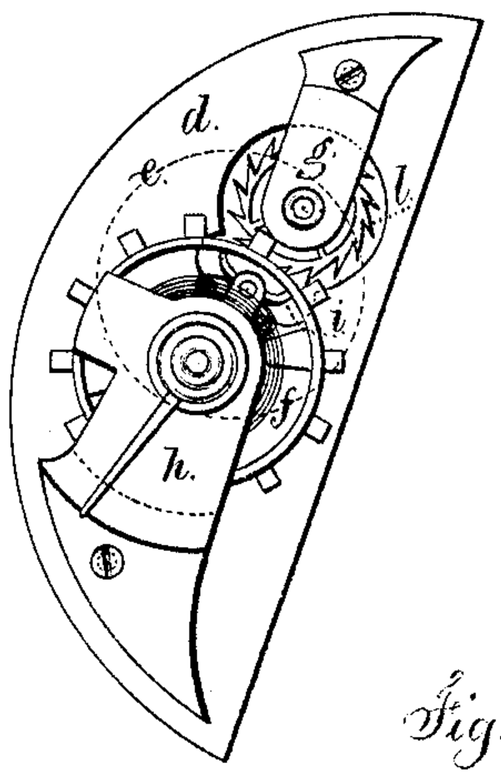

Fig. 2.

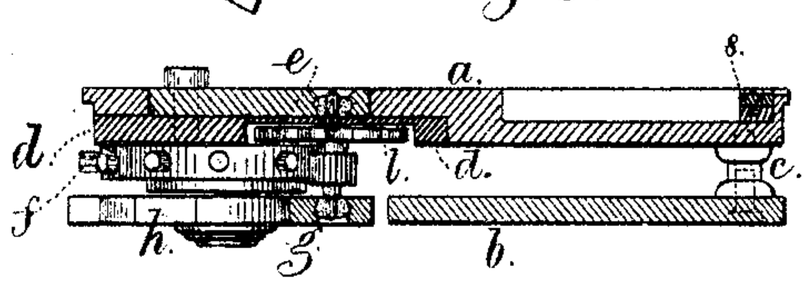

Fig. 3.

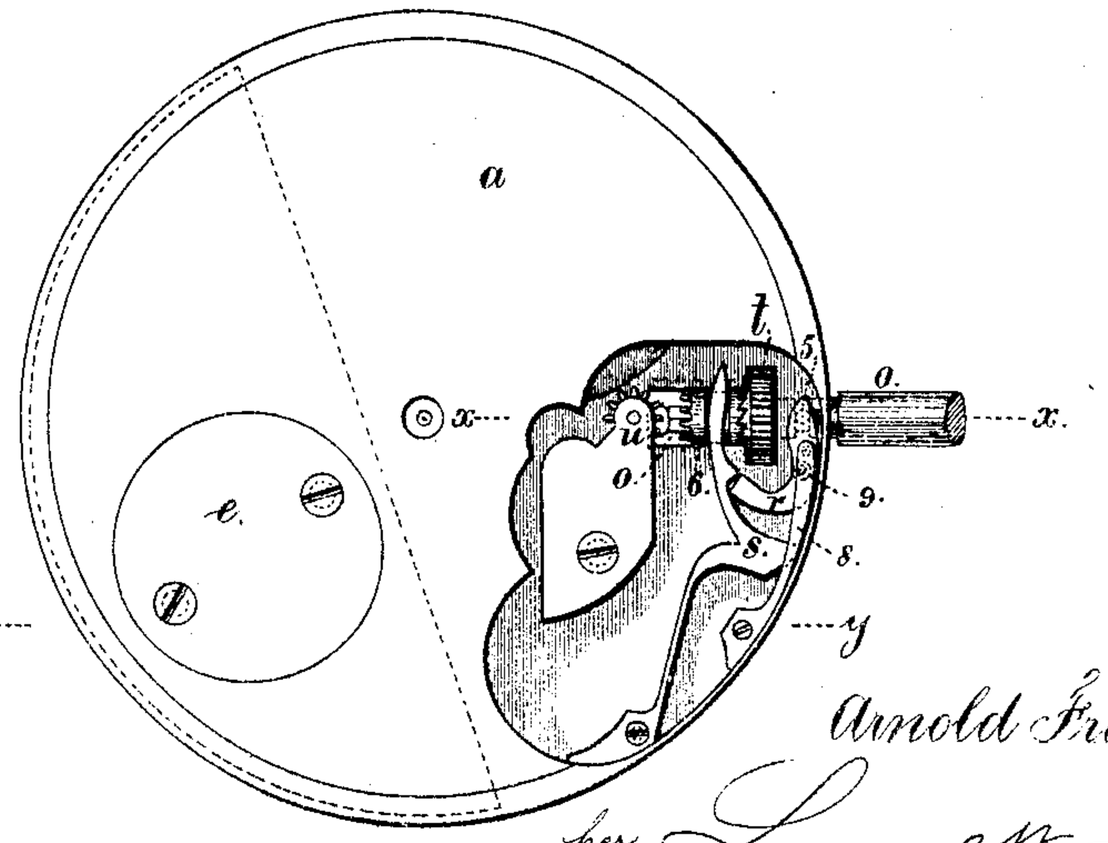

Fig. 1.

Witnesses

Chas. H. Smith

Geo. E. Pinckney

Inventor

Arnold Frankfeld.

per Lemuel W. Serrell

atty.

AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

ARNOLD FRANKFELD, OF NEW YORK, N. Y.

IMPROVEMENT IN WATCHES.

Specification forming part of Letters Patent No. **144,270**, dated November 4, 1873; application filed April 28, 1873.

To all whom it may concern:

Be it known that I, ARNOLD FRANKFELD, of the city and State of New York, have invented an Improvement in Watches, of which the following is a specification:

Watches are usually made with the parts of the escapement and balance either between the main plates of the watch or upon the same. In these positions difficulty arises in obtaining access to all the parts and carefully observing the movements in constructing and adjusting them; besides this, the movement is usually made by workmen of less skill than those employed upon the escapement and balance. This renders it necessary to construct and apply the train or movement in the watch previously to the introduction of the balance and the escapement, or else they are liable to injury, and balances of one grade of workmansip cannot be inserted in watch-movements in place of those of another grade.

My invention is made with reference to avoiding these difficulties by constructing the balance and escapement upon a detachable plate, that can be placed in or removed from the watch; thereby the balance and escapement can be more easily constructed and adjusted than heretofore, and can be removed from the other works of the watch while they are being completed or fitted into the case, and the escapement and balance can be applied in any works of corresponding size, thus allowing the escapements to be changed from one watch to another, if the grade of workmanship is required to be different.

By this improvement the different parts of the watch can be in progress of construction at the same time in the hands of different workmen, and they are afterward brought together for joint action and regulation.

In the drawing, Figure 1 shows the plate and setting mechanism. Fig. 2 is the balance, escapement, and its plate detached.

The principal watch-plate *a* and the half-plate *b* are connected together by the columns *c*, and the plate *a* is of a sufficient thickness to be recessed for receiving the different parts, or may be made of two pieces. At one side the plate *a* is made sufficiently thin to receive upon it the quarter-plate *d*, having at its back a disk, *e*, riveted or screwed securely to its place, and of a size to fit the hole that is made for it in the plate *a*. When these parts are put together, the plates fit closely and tightly, and are to be connected by screws; but the quarter-plate *d* and its disk *e* can be taken off the plate *a* and receive the escapement and balance. The balance *f*, anchor or other escapement *i*, and escapement-wheel *l* are of any usual or desired character, and *g* and *h* are the brackets for carrying the upper pivots.

It will now be seen that the quarter-plate *d* can be removed from the plate *a*, and all the parts of the balance and escapement introduced and properly adjusted, and fitted in the most accurate manner, and with opportunity to easily inspect the parts.

The length of arbors will not in any manner be lessened, because they all extend to the disk *e*, in which are the proper pivot-holes or jewels, and the thickness of the plate is such that the wheels, escapement, &c., may be recessed. This results from the disk *e* being attached to the plate *d*, and hence being in the same plane as the watch-plate, and allowing the arbors to be of the same length as usual.

I claim as my invention—

The quarter-plate *d* and disk *e*, carrying the balance and parts of the escapement, and removable from the plate *a*, substantially as and for the purposes set forth.

Signed by me this 22d day of April, A. D. 1873.

A. FRANKFELD.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.