

(No Model.)

H. A. FELT.
WATCH.

No. 494,919.

Patented Apr. 4, 1893.

Fig. 1.

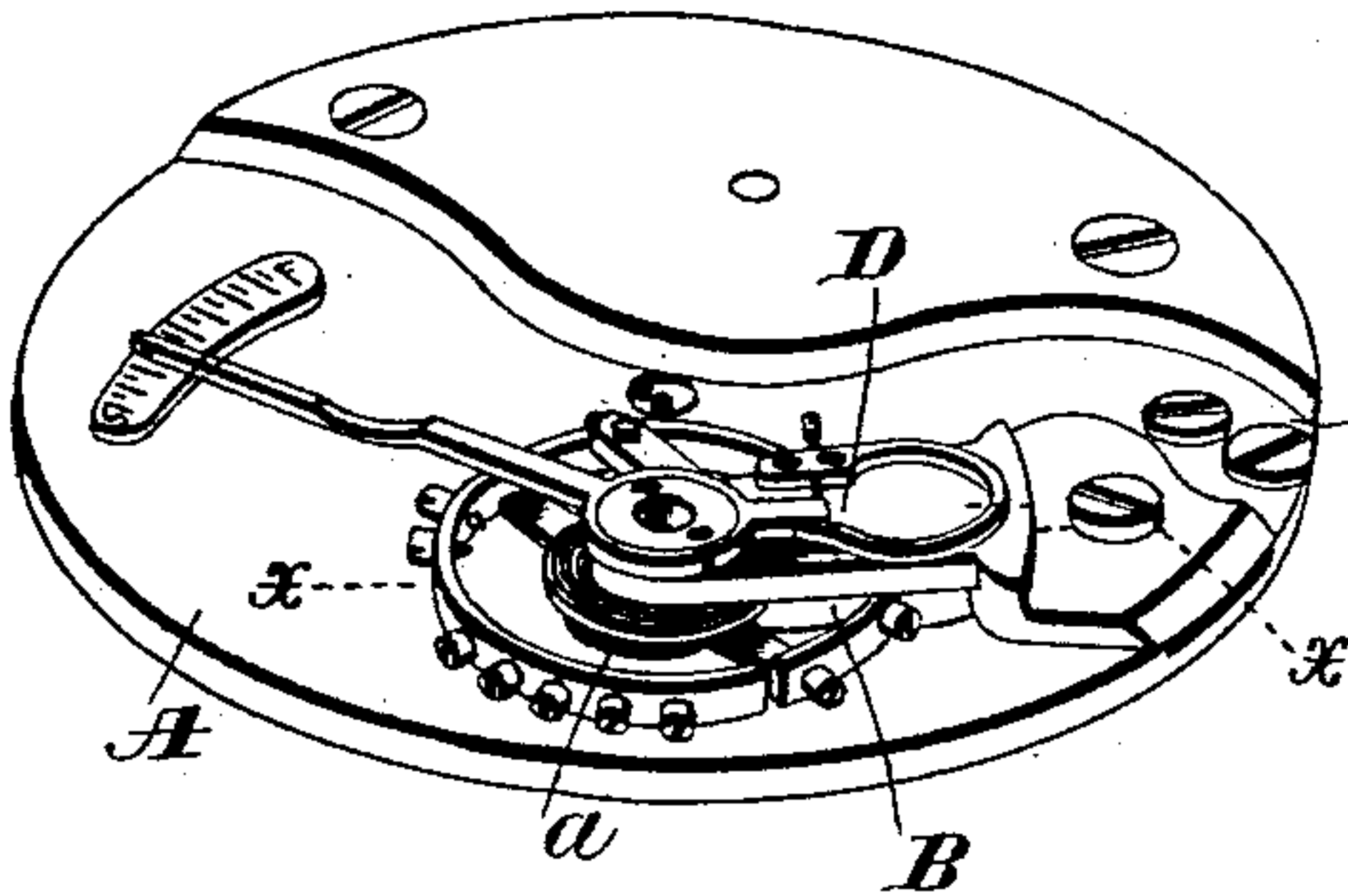


Fig. 2.

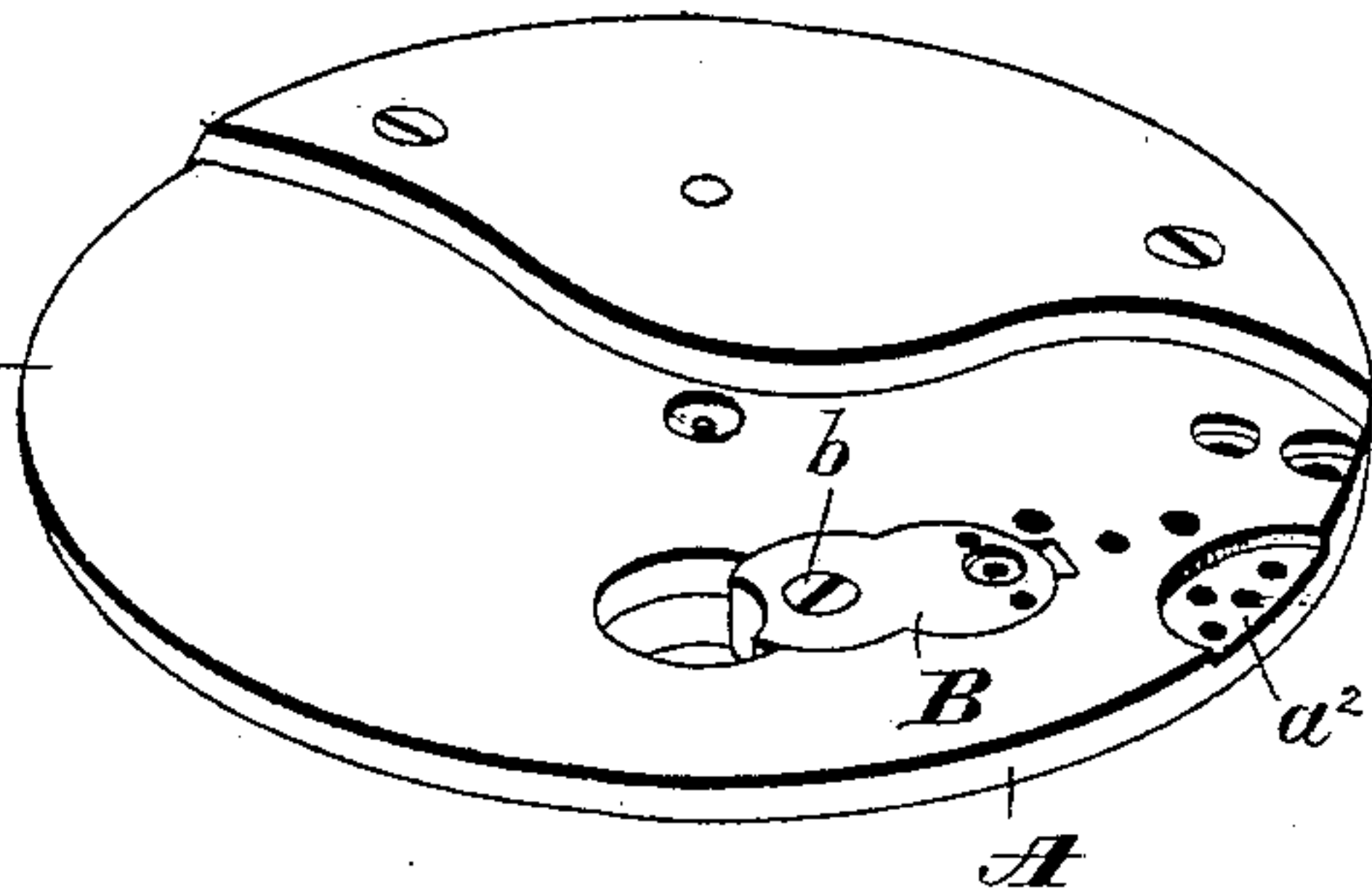


Fig. 3.

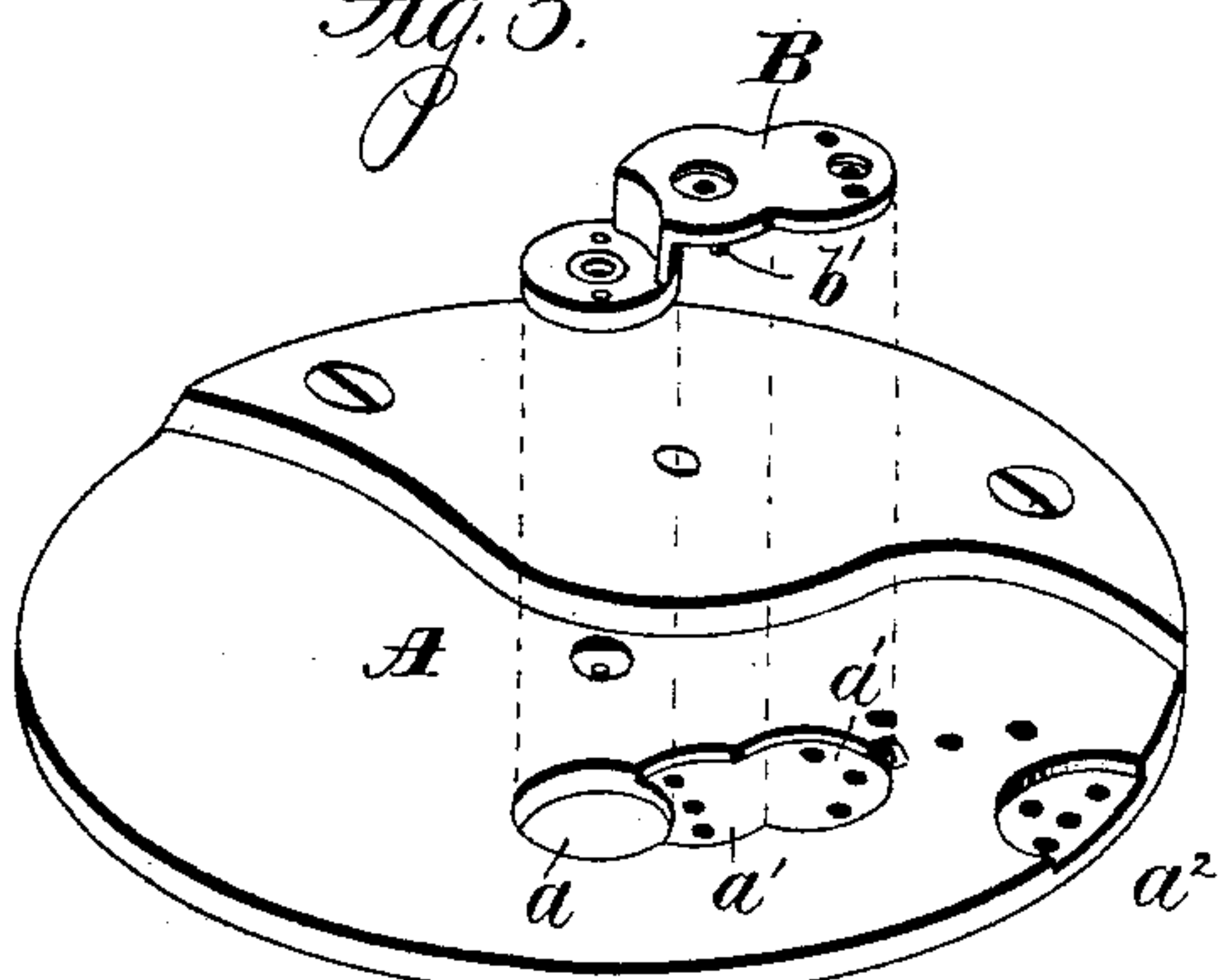


Fig. 4.

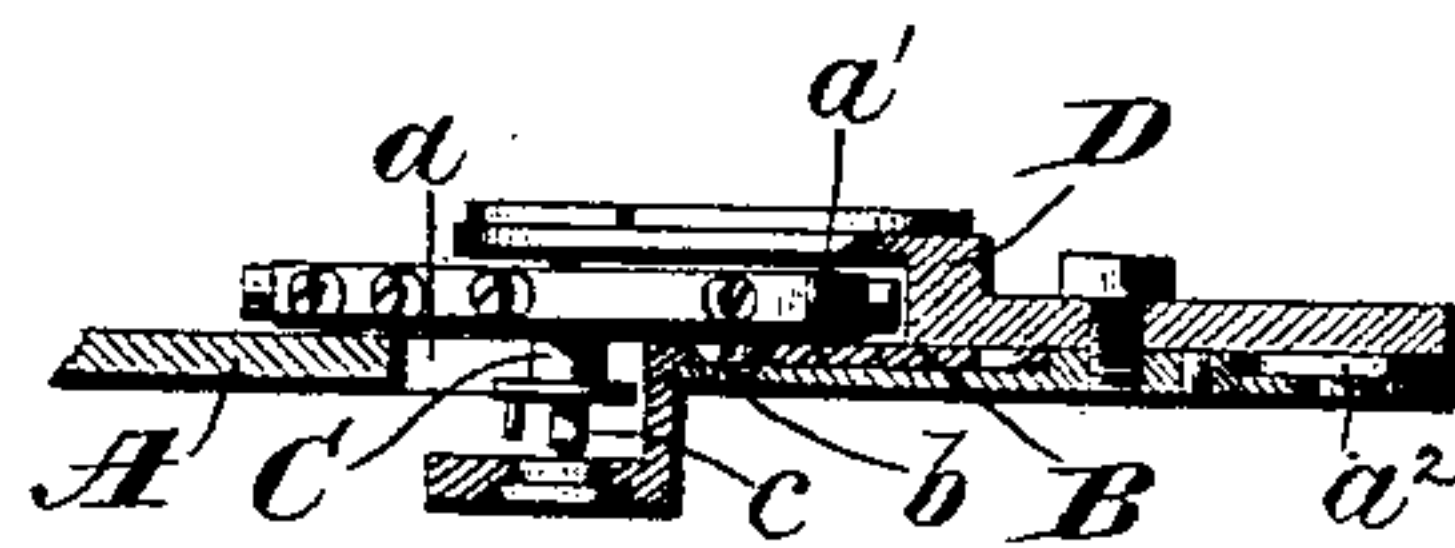


Fig. 6.

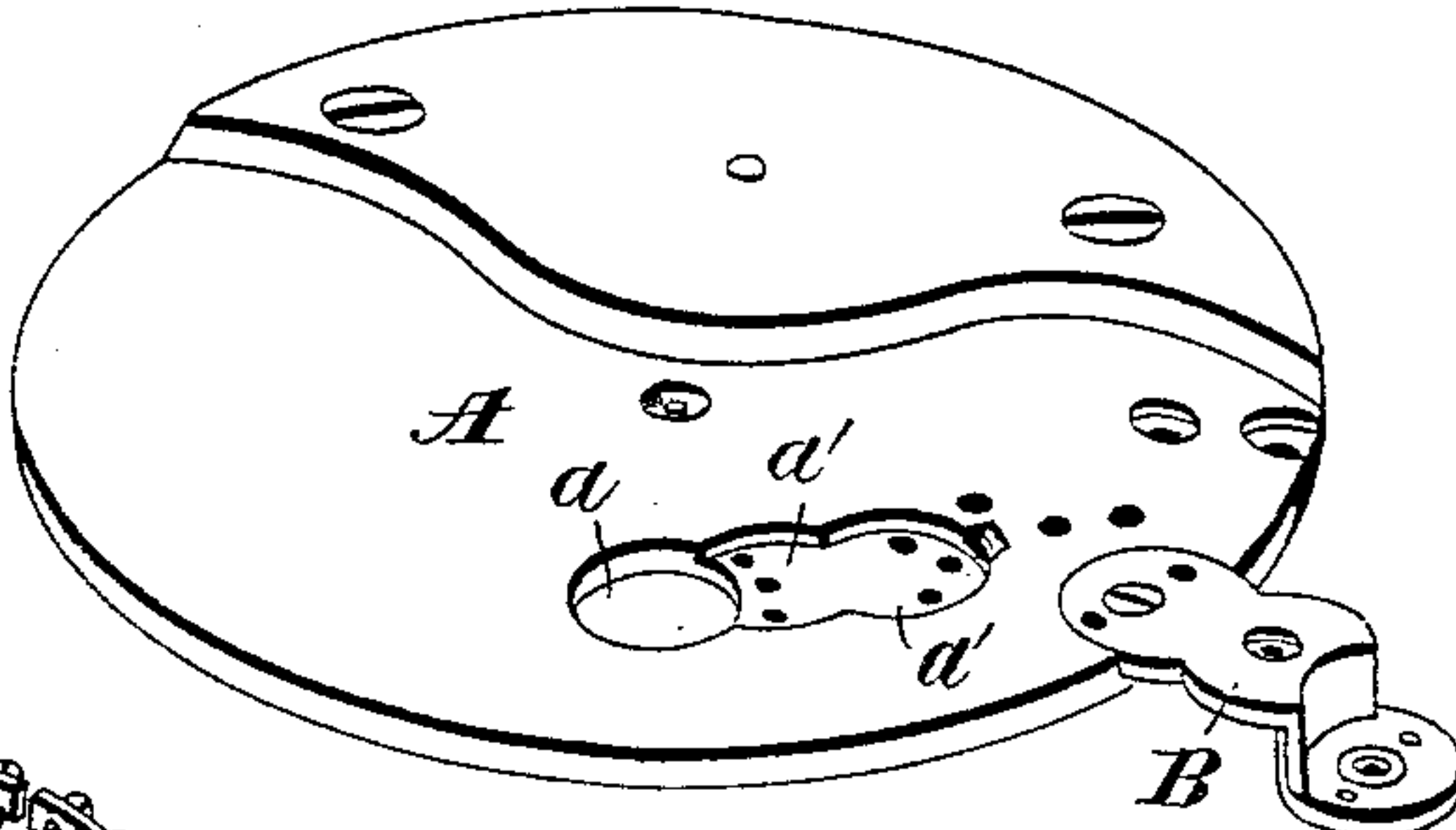


Fig. 5.

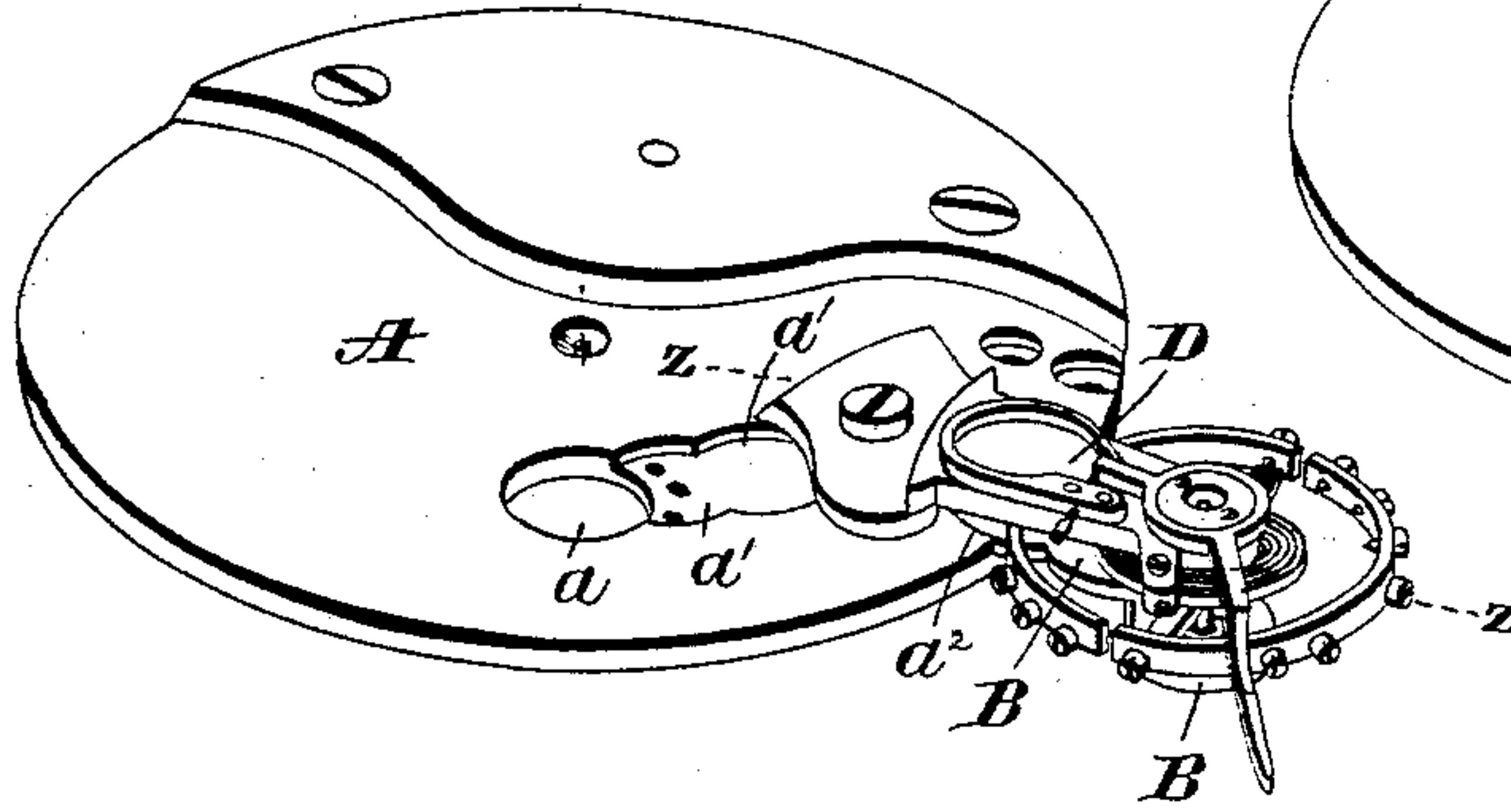
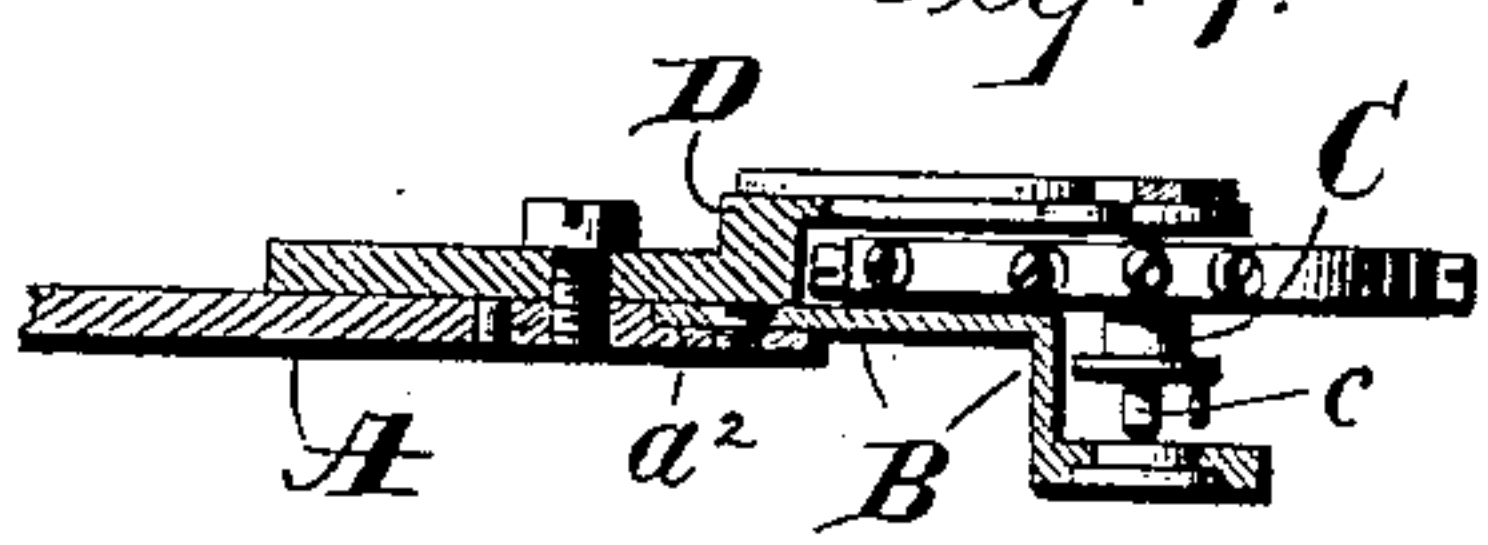


Fig. 7.



Witnesses:
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UNITED STATES PATENT OFFICE.

HOWARD A. FELT, OF OSHAWA, CANADA.

WATCH.

SPECIFICATION forming part of Letters Patent No. 494,919, dated April 4, 1893.

Application filed November 2, 1891. Serial No. 410,692. (No model.)

To all whom it may concern:

Be it known that I, HOWARD A. FELT, a subject of the Queen of Great Britain, residing at the town of Oshawa, Province of Ontario, Dominion of Canada, have invented certain Improvements in Watch-Movements; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the back plate of a watch movement containing my improvements. Fig. 2 is a like view of the same with the upper balance-cock and balance removed. Fig. 3 is a perspective view of said back-plate and the lower balance-cock separated from each other. Fig. 4 is a section upon line x, x , of Fig. 1. Fig. 5 is a perspective view of the back-plate and balance-cocks, as arranged for use in adjusting the balance wheel and its connected parts. Fig. 6 is a like view of the same with the upper cock and the balance removed, and Fig. 7 is a section upon line z, z , of Fig. 6.

Letters of like name and kind refer to like parts in each of the figures.

My invention is applicable to all kinds of watch movements, but is more especially intended for use in full plate movements, and has for its principal object the ready removal of the lower balance-cock for the purpose of placing in or removing from position the pivot jewels. It is also intended to provide an easy and ready means for adjusting and testing the balance and its connecting parts while held in the same relative positions which they occupied when in the movement, and to such end my said invention consists in the construction and combination of the balance-cocks and back-plate, substantially as and for the purpose hereinafter specified.

In the carrying of my invention into practice, I provide within the back-plate A of a watch-movement, immediately adjacent to and communicating with the opening a through which is to pass the balance staff, a recess a' that extends about one half way through said plate and, preferably, has the form in plan view of two circles which intersect each other and said opening a . Into the recess a' is fit-

ted a cock B, for sustaining and pivoting the lower end c of the balance arbor C, which cock while having the usual form below the plate A, has such additional length as to enable its shank to be contained within said recess, instead of being attached to the lower side of said plate. The said shank has such shape and dimensions as to cause it to substantially fill said recess flush with the upper face of said back-plate, and is held in place by means of a set screw b and the usual dowel pins b' and b'' . The upper end of the balance-staff C is pivoted within an ordinary balance-cock D which is attached to or upon the plate A in the usual manner, and covers the recess a' and the shank of the lower cock B. As thus constructed, whenever it becomes necessary to inspect or repair the lower cock, access to the same can be easily and quickly had by the removal of the upper cock and balance when, if necessary, said lower cock can also be removed without interference with the train.

When it is desired to adjust and test the balance, and its connecting parts, the balance cocks are removed, and the lower cock B is secured upon or within the edge of the plate A, the end of its shank being, preferably, placed in a correspondingly shaped recess a^2 which is provided for the purpose at such point, and secured therein by means of a screw, after which, the upper cock D is placed in position over said lower cock—with the balance in place between—and secured in position by its dowel pins and screw, for which suitable provision has been made in said plate. As thus arranged it will be seen that both cocks project beyond the movement plates with every part of the balance, and its connecting parts are in plain sight with each occupying the precise position with relation to the other parts that it sustains when in the movement, so that the operator can readily determine whether or not everything is correct, and when found to be so, can transfer the parts to their normal positions with certainty that no relative change will be caused by such transfer.

While, as before stated, I preferably provide recesses for the reception of the shank of the lower cock, such recesses are not essential, as said cock shank may, if desired, rest

upon and be fastened directly to the upper face of the movement plate.

Having thus described my invention, what I claim is—

5 1. As an improvement in watch-movements, a cock for the lower end of a balance staff which is secured upon the outer side of the back-movement plate, and extends through the same into the space provided for the train,
10 substantially as and for the purpose specified.

2. As an improvement in watch-movements, in combination with the back plate of a watch movement, a cock for the lower end of a balance staff which is secured upon the outer side of
15 and projects through such plate, and a cock for the upper end of such staff that is fastened to and projects above the outer face of said

plate, substantially as and for the purpose shown.

3. As a means for testing and adjusting a 20 watch balance and its connecting parts, the combination with a back movement plate, of balance staff cocks, which are each secured upon the rear face of such plate, and are adapted to be turned outward so as to bring 25 the balance outside of the edge of the movement, substantially as and for the purpose set forth.

In testimony whereof I hereunto set my hand this 29th day of October, A. D. 1891.

H. A. FELT.

Witnesses:

E. O. FELT,

J. P. PALMER.