

(No Model.)

H. KNICKMAN.

JEWEL SUPPORT FOR THE BALANCE STAFFS OF WATCHES.

No. 372,269.

Patented Oct. 25, 1887.

Fig. 1.

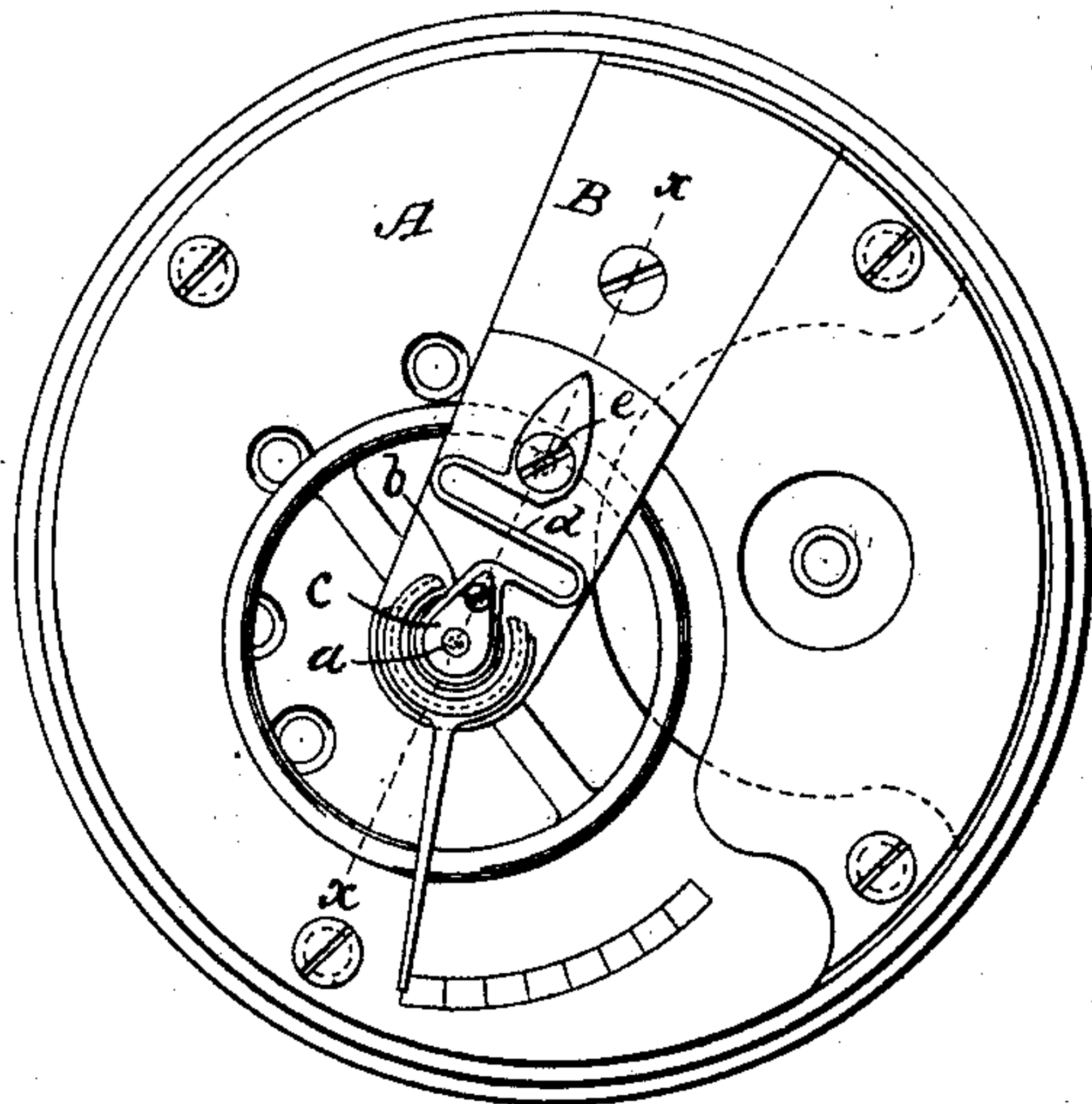


Fig. 2.

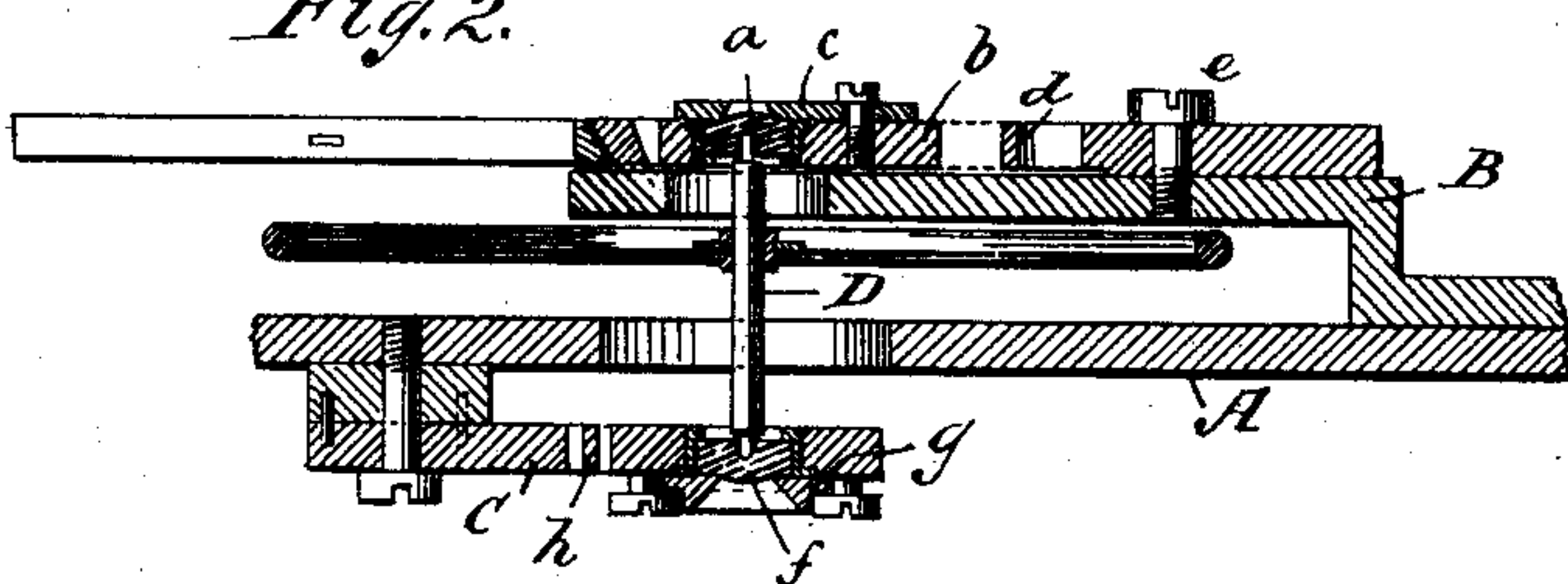
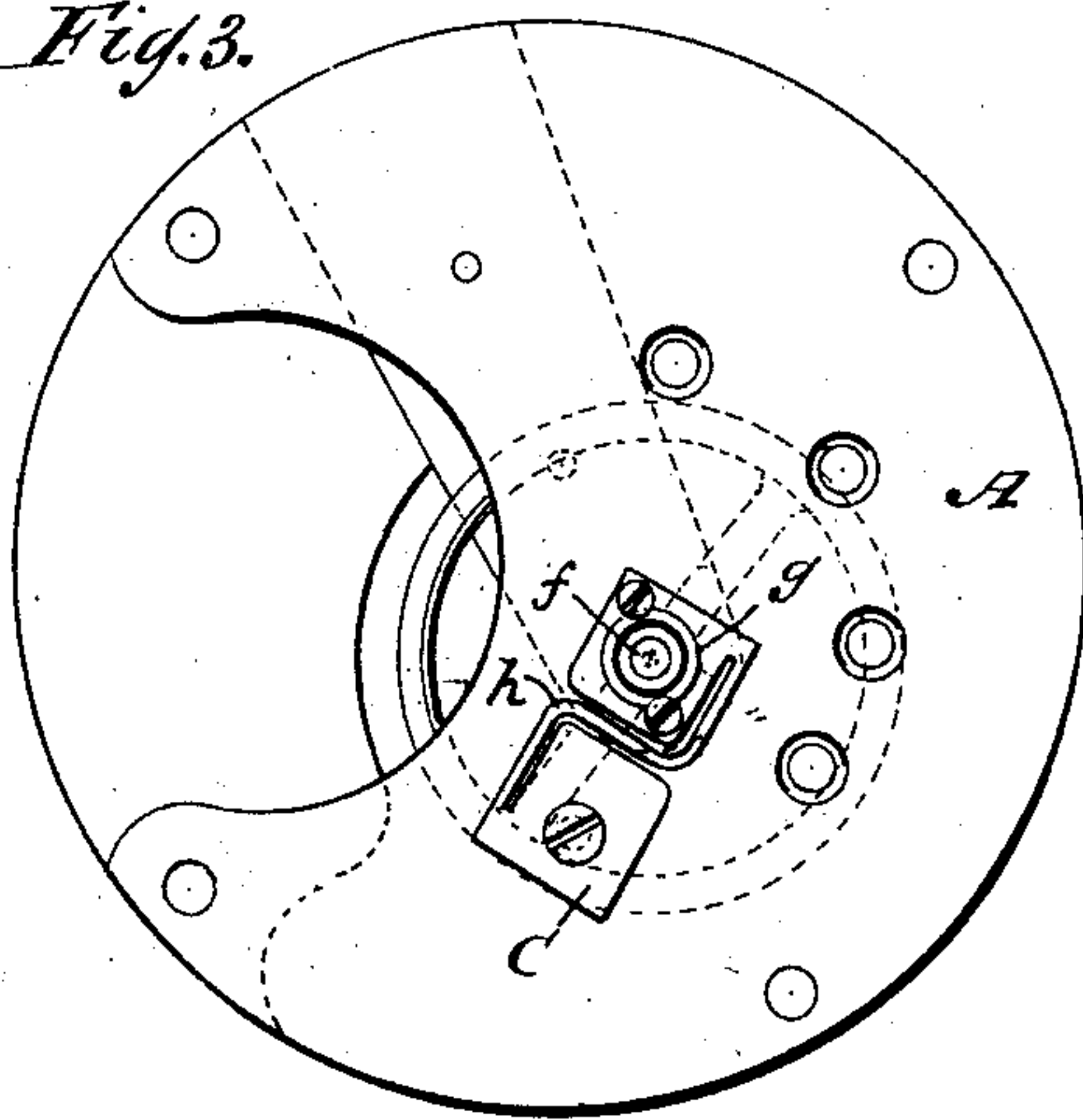


Fig. 3.



WITNESSES:

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HENRY KNICKMAN, OF EAST NEW YORK, N. Y.

JEWEL-SUPPORT FOR THE BALANCE-STAFFS OF WATCHES.

SPECIFICATION forming part of Letters Patent No. 372,269, dated October 25, 1837.

Application filed May 14, 1887. Serial No. 238,229. (No model.)

To all whom it may concern:

Be it known that I, HENRY KNICKMAN, a citizen of the United States, residing at East New York, in the county of Kings and State of New York, have invented new and useful Improvements in Bearings for Balance-Staffs of Time-Pieces, of which the following is a specification.

This invention relates to elastically-supported bearings for the balance-staff of a time-piece, so that when the time-piece is exposed to a sudden shock the bearings of the balance-staff are free to give, and the balance-staff is not liable to break.

In the accompanying drawings, Figure 1 represents a rear view of the back plate of a watch-movement. Fig. 2 is a vertical section in the plane $x x$, Fig. 1. Fig. 3 is a front view of the back plate.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the back plate of a watch-movement. To the rear surface of this plate is firmly secured the bridge B, and to its front side is fastened the bridge C. The bridge B contains the bearing for the rear end of the balance-staff D, while the bridge C contains the bearing for the front end of said staff, and both these bearings are elastically supported, so that they are able to yield laterally in all directions, and consequently the balance-staff is not liable to break if the time-piece is exposed to a sudden shock.

By referring to the drawings it will be seen that in the example shown in Figs. 1 and 2 the bearing for the rear end of the balance-staff consists of a jewel, a , which is secured in a plate, b , on which is fastened the covering-plate c .

The plate b is provided with an elastic S-shaped tail, d , the outer end of which is fast-

ened to the bridge B by means of a screw, e . By means of the elastic tail d the plate b , together with the jewel a , (which latter forms the bearing for the rear end of the balance-staff,) can give laterally in any direction. 45

In Figs. 2 and 3 the bearing for the front end of the balance-staff is shown, and in the example shown in these figures this bearing consists of a jewel, f , which is secured in a plate, g , and this plate connects with the bridge C by means of a Z-shaped spring, h . In the example shown in the drawings the bridge C, spring h , and plate g are made integral of one and the same piece of metal, and by means of the spring h the plate g , together with the jewel f , are able to give laterally in any desired direction. If the bearings of the balance-staff are rigidly supported and the watch falls to the ground or is exposed to a sudden shock in any manner, the gudgeons of the balance-staff, which are very fine, are liable to snap, thereby causing expensive repairs. By my elastically-supported bearings this danger is avoided, or at least greatly reduced. 60

What I claim as new, and desire to secure by Letters Patent, is— 65

The combination, with the balance staff D and the jewels a and f , of the plate b , having an elastic S-shaped tail, d , secured to the bridge B, and the bridge C, plate g , and connecting Z-shaped spring h , said bridge, plate, and spring being formed integral, substantially as described. 70

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses. 75

HENRY KNICKMAN. [L. S.]

Witnesses:

W. C. HAUFF,

E. F. KASTENHUBER.