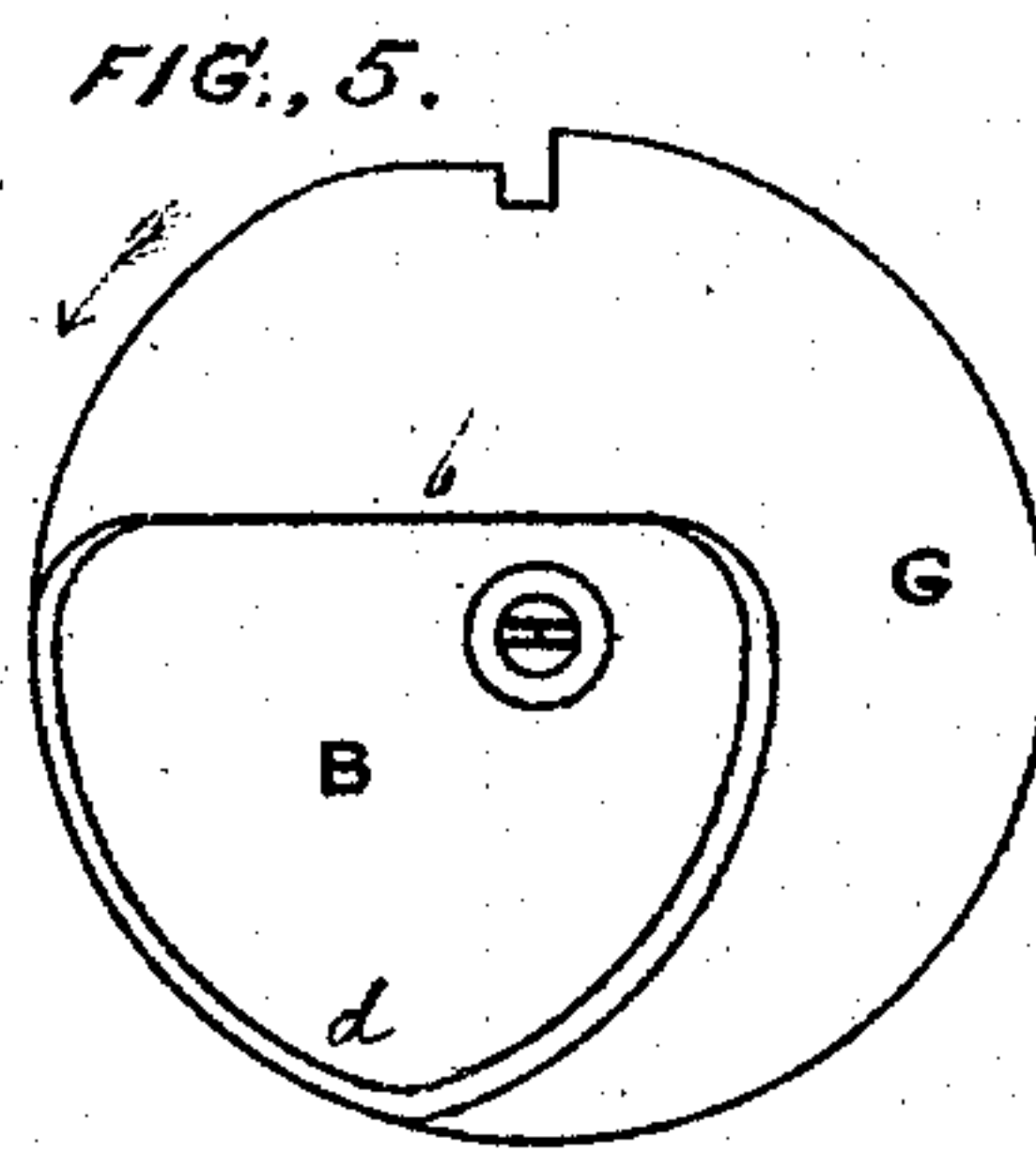
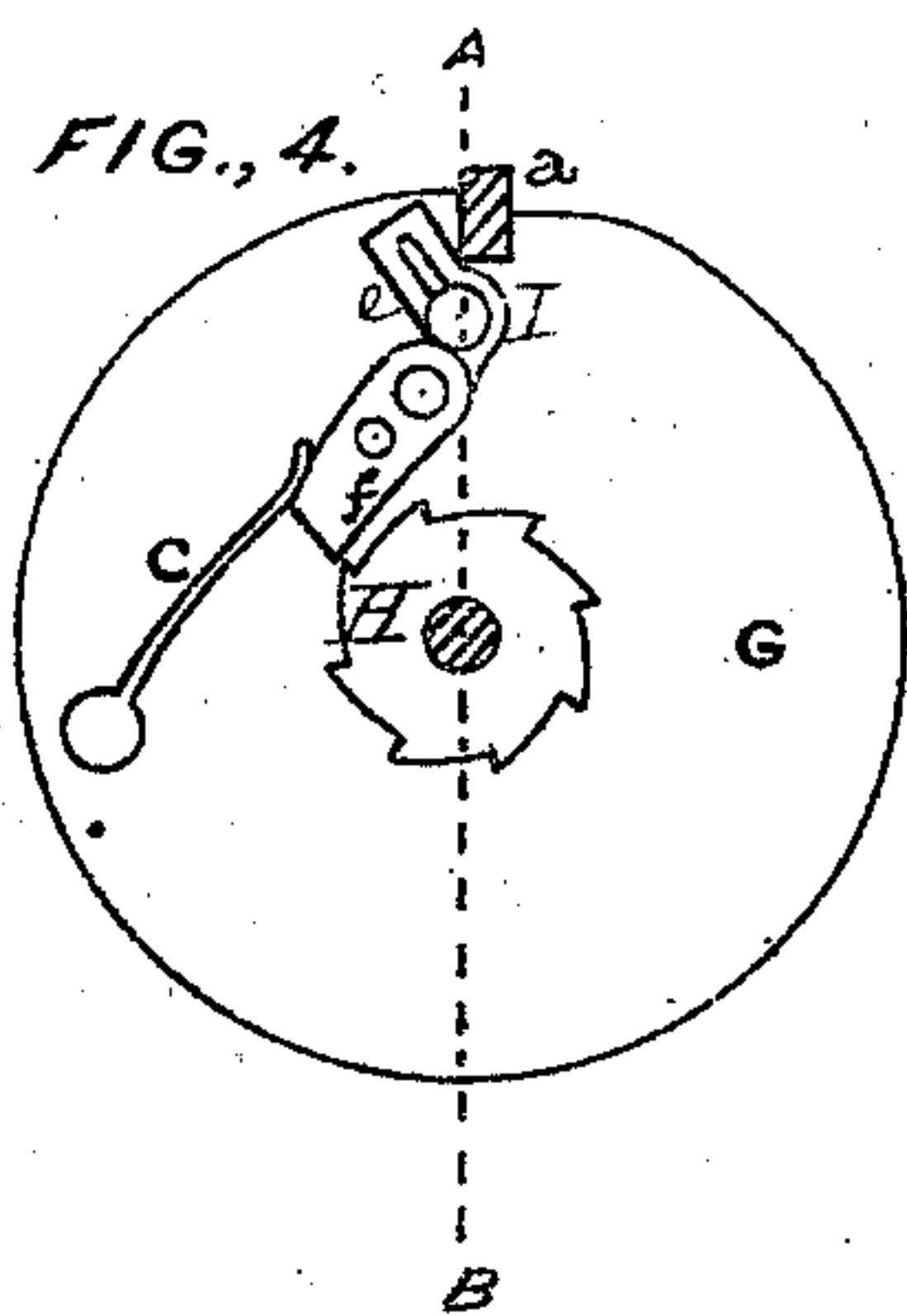
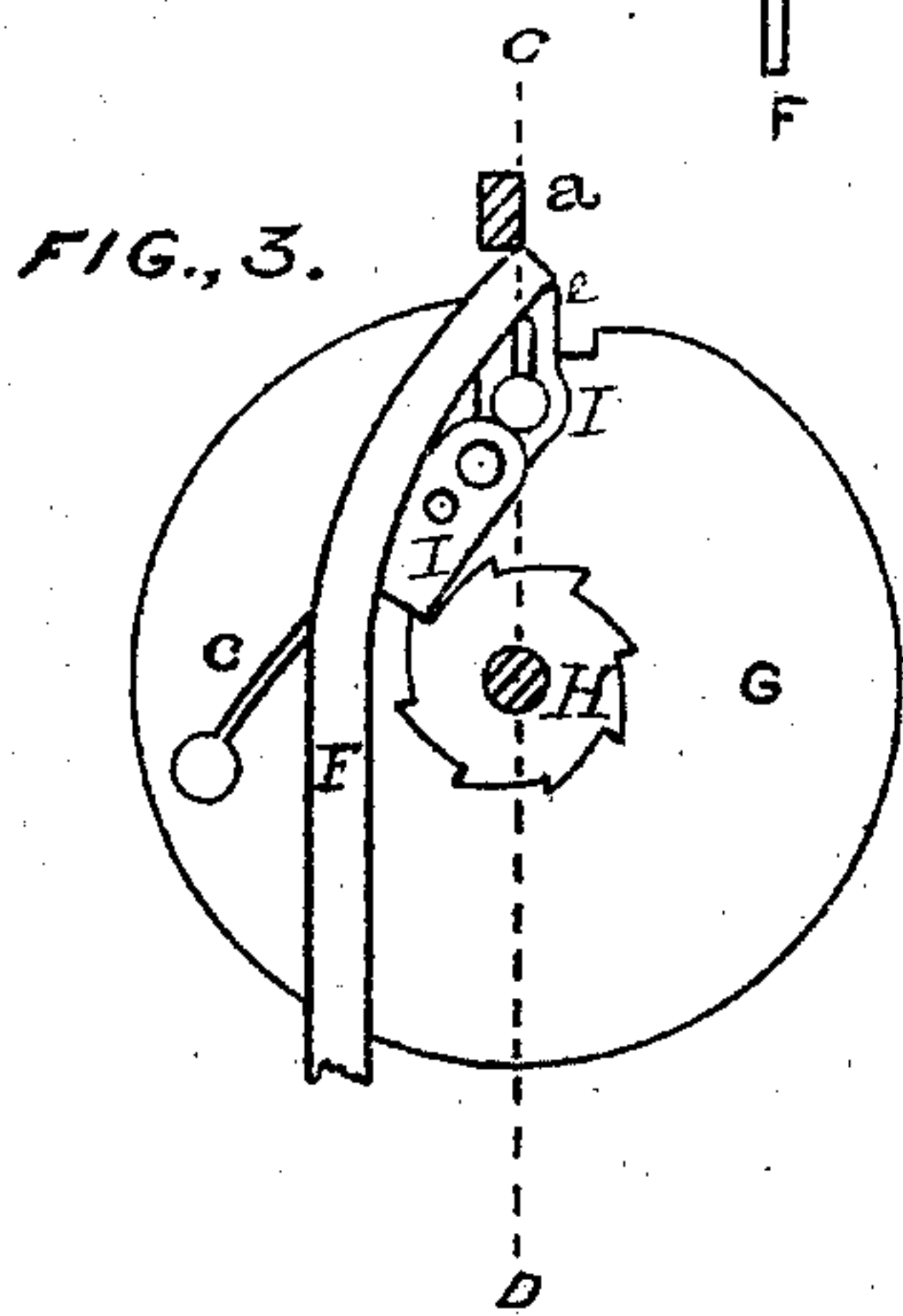
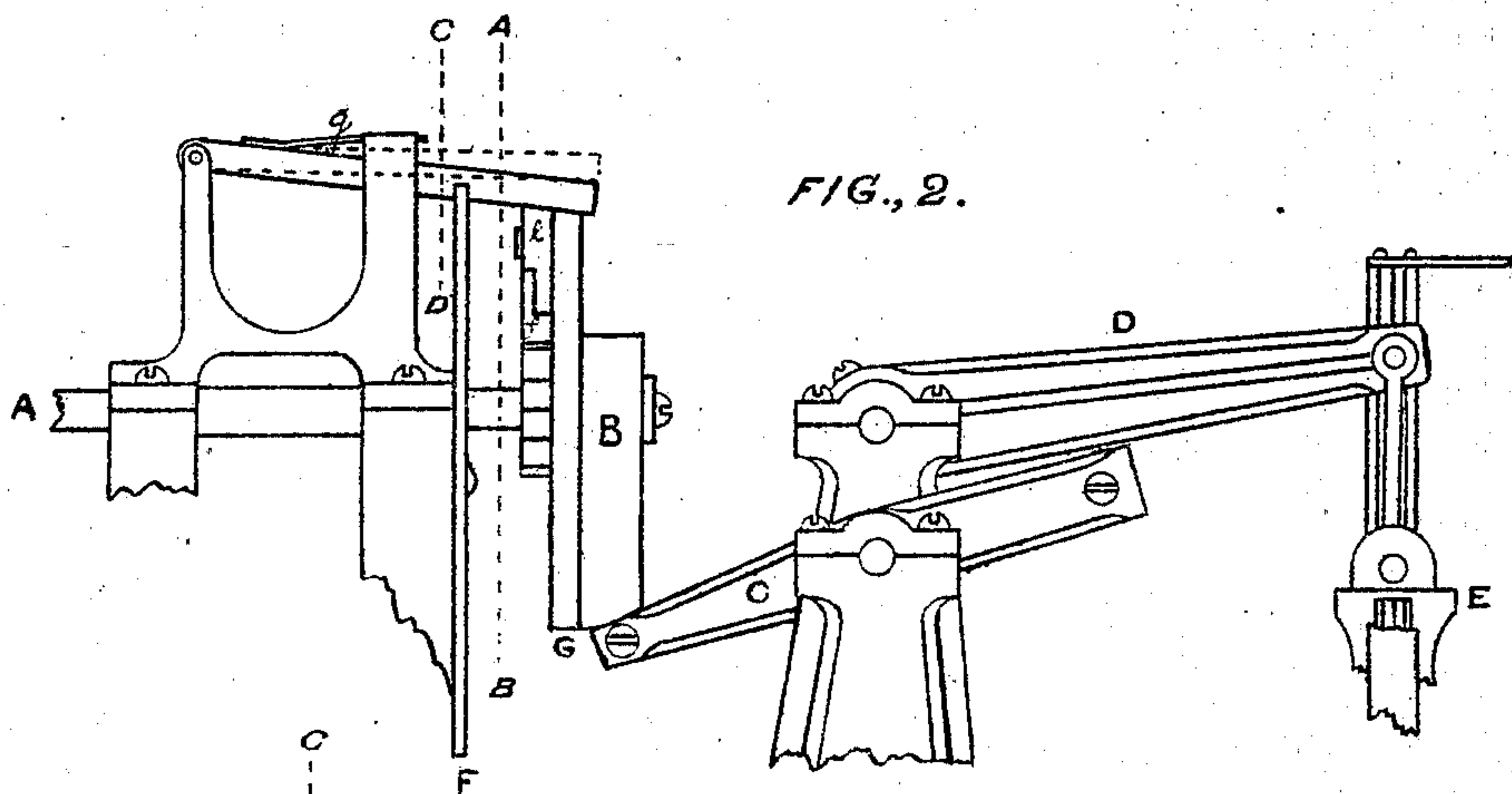
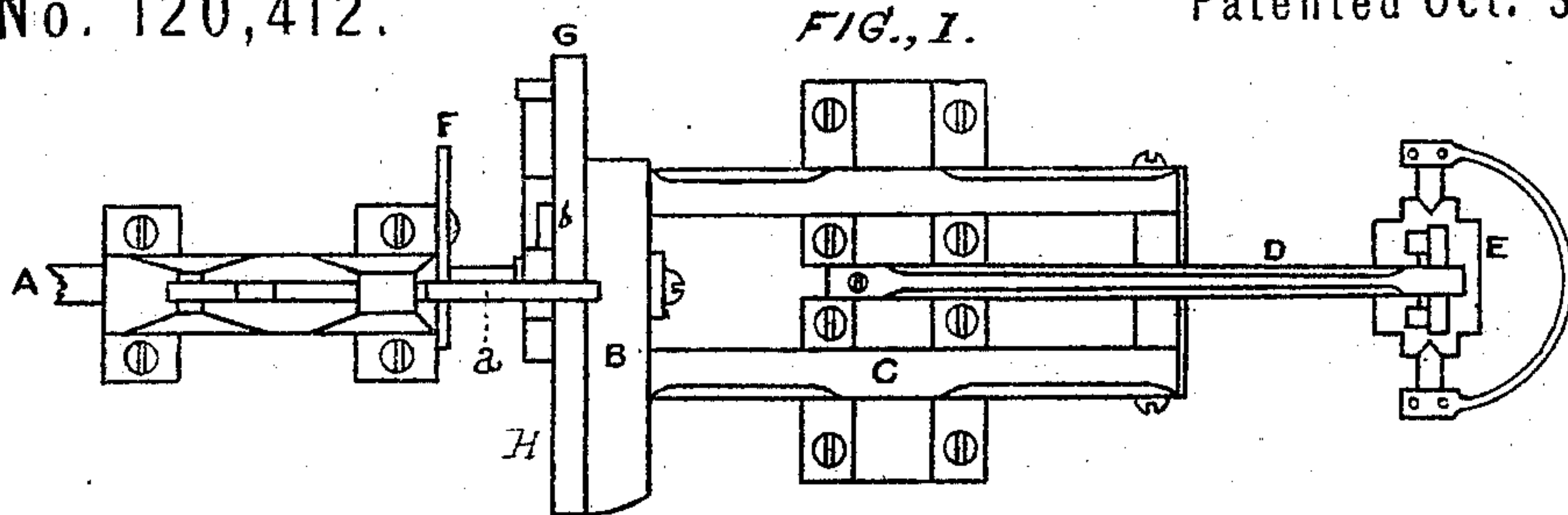


PATRICK BREEN.  
Improvement in Tilt Hammers.  
No. 120,412. Patented Oct. 31, 1871.



WITNESSES.

Benj. F. Naele  
Henry Hall

INVENTOR.

Patrick Breen

# UNITED STATES PATENT OFFICE.

PATRICK BREEN, OF AUBURN, NEW YORK.

## IMPROVEMENT IN TILT-HAMMERS.

Specification forming part of Letters Patent No. 120,412, dated October 31, 1871.

*To all whom it may concern:*

Be it known that I, PATRICK BREEN, of Auburn, in the county of Cayuga and State of New York, have invented an Improved Tilt-Hammer; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 represents a top view of my improved mechanism for operating tilt-hammers. Fig. 2 is a side view of the same. Figs. 3 and 4 are back views of the notched disk carrying the operating cam. Fig. 5 is a face view of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to produce a mechanism to be connected with a tilt-hammer of suitable kind for retaining the drop on its rebound and prevent it from falling again after the main stroke. The pattering of the drop on its return stroke is, in many cases—as, for instance, in minting—injurious, spoiling the fine execution of the main fall. To avoid this, I have arranged a peculiar cam, which acts on the hammer or drop so as to catch it with a short arm on the rebound and prevent it from falling again. My invention consists in a new combination of mechanism, whereby said cam is enabled to act on the drop, and in a new general arrangement of parts for moving or locking said cam, as may be desired.

A in the drawing represents the shaft, which operates the mechanism. It has its bearings in a suitable frame, and carries at its end a disk, G, that hangs loose upon it. To the face of the disk G is affixed the cam B, shown in Fig. 5. This cam is so disposed with reference to the axis of the shaft A that it forms a long arm, K, and a short arm, L, both being at one side connected by a straight portion, b, and at the other side by a convex portion, a. H is a ratchet-wheel, firmly mounted upon the shaft A directly back of the disk G. I is a jointed pawl af-

fixed to the back of the disk G. This pawl consists of two links, e and f, of which each is separately pivoted to the back of G, while their contiguous ends are joined by a pivot, as shown in Figs. 3 and 4. A spring, c, bears against the lower link f of the pawl, with the tendency of holding the same in contact with the edge of the ratchet-wheel. If, as in Fig. 3, the latter is thus locked to the disk G, the shaft will impart rotary motion to the disk G and cam B, when such motion is to be arrested. A latch, a which, by a rod, F, is connected with a treadle or other device, is permitted to drop into a notch of the disk G, as in Fig. 4, a spring, g, bearing upon it to force it down into said notch. The latch a will in this position bear against the upper link e of the jointed pawl and swing it so as to carry the lower link f clear of the ratchet-wheel. The disk will consequently not only be locked by the latch, but also disengaged from the shaft, not to receive further motion therefrom, whenever the latch is permitted to drop. The spring g is so much stronger than the spring c that it will overcome the same whenever the latch is free to drop into the notch; but when, by means of the device connected with F, the catch is raised out of the notch, the spring c is again free to hold the pawl against the ratchet-wheel and lock the cam and disk to the shaft. The cam B bears upon one end of a beam, C, whose other end works under a lever, D, which is connected with the drop E of suitable kind; when, by means of the convex part d of the cam, the same rotating in the direction of the arrow, shown in Fig. 5, the lever C has been so swung as to raise the drop, the latter will, as the point K of B reaches the lever C, be suddenly released, and fall upon the bed to produce the desired impression or other effect. While the drop falls the cam continues to turn, its flat edge b not affecting the position of the lever C, until, at the rebound of the drop, the short arm L of the cam bears upon the beam C and thereby prevents the drop from redescending.

In this manner the drop is always held up



on its rebound and cannot patten on the work, which it shaped properly by its main stroke or fall.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the cam B having the long arm K and short arm L, with the beam C and lever D, for the purpose of arresting and holding up the drop E on its rebound, as specified.

2. The combination of the latch *a* with the jointed pawl I, spring *c*, ratchet-wheel H, notched disk G, cam B, and shaft A, in the manner and for the purpose specified.

PATRICK BREEN.

Witnesses:

BENJ. F. HALL,  
HENRY HALL.

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