

(No Model.)

W. H. KAYE.
CRANK FOR MACHINERY.

No. 397,367.

Patented Feb. 5, 1889.

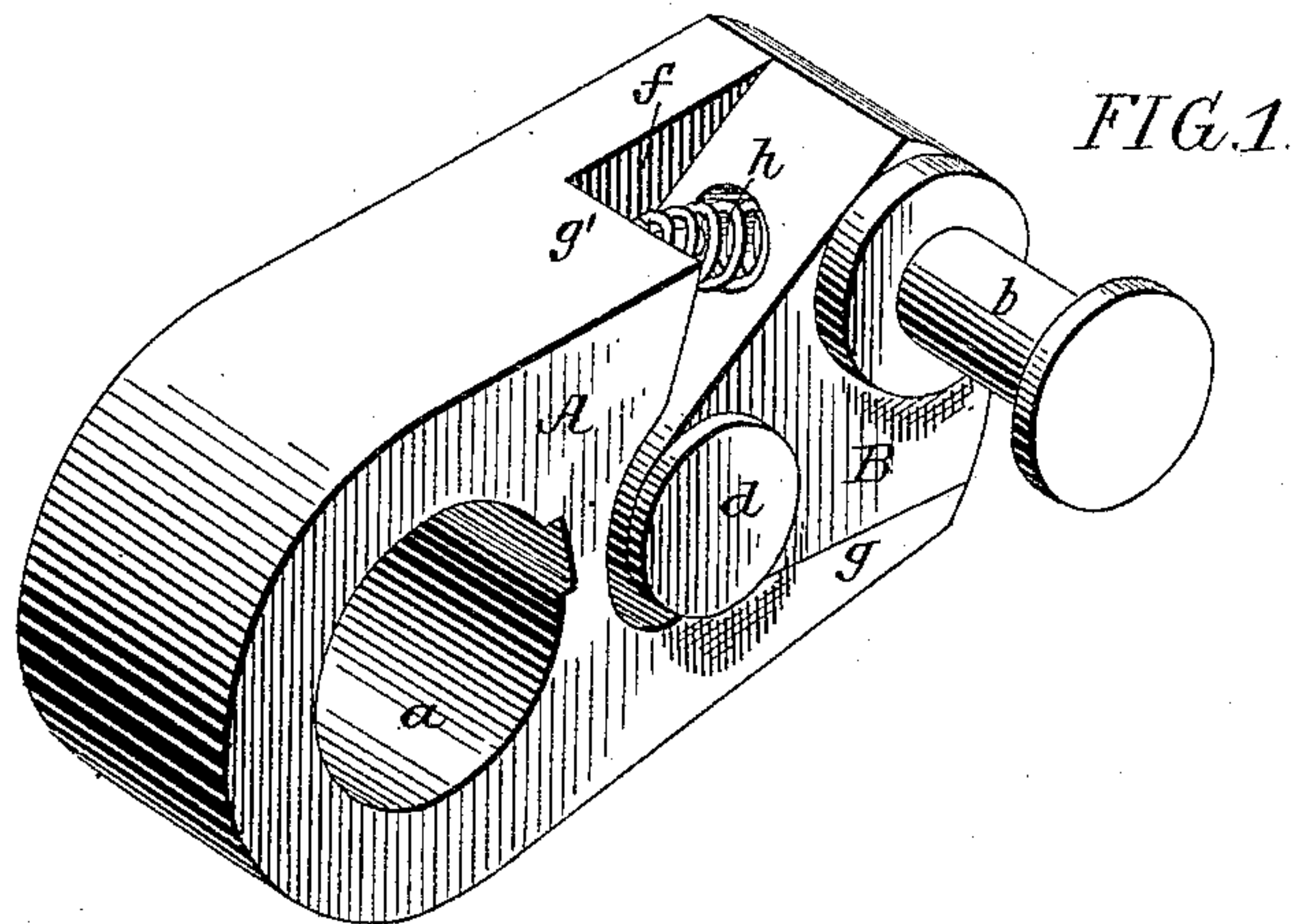


FIG. 2.

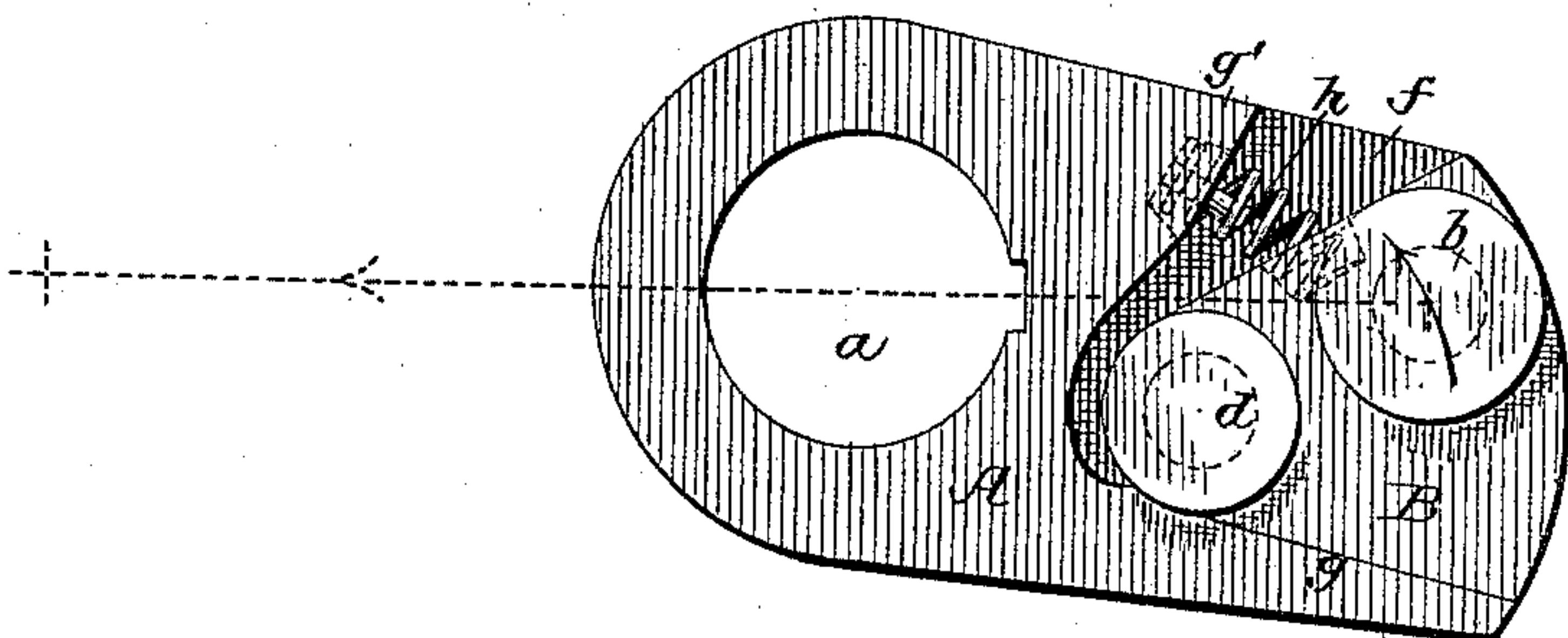
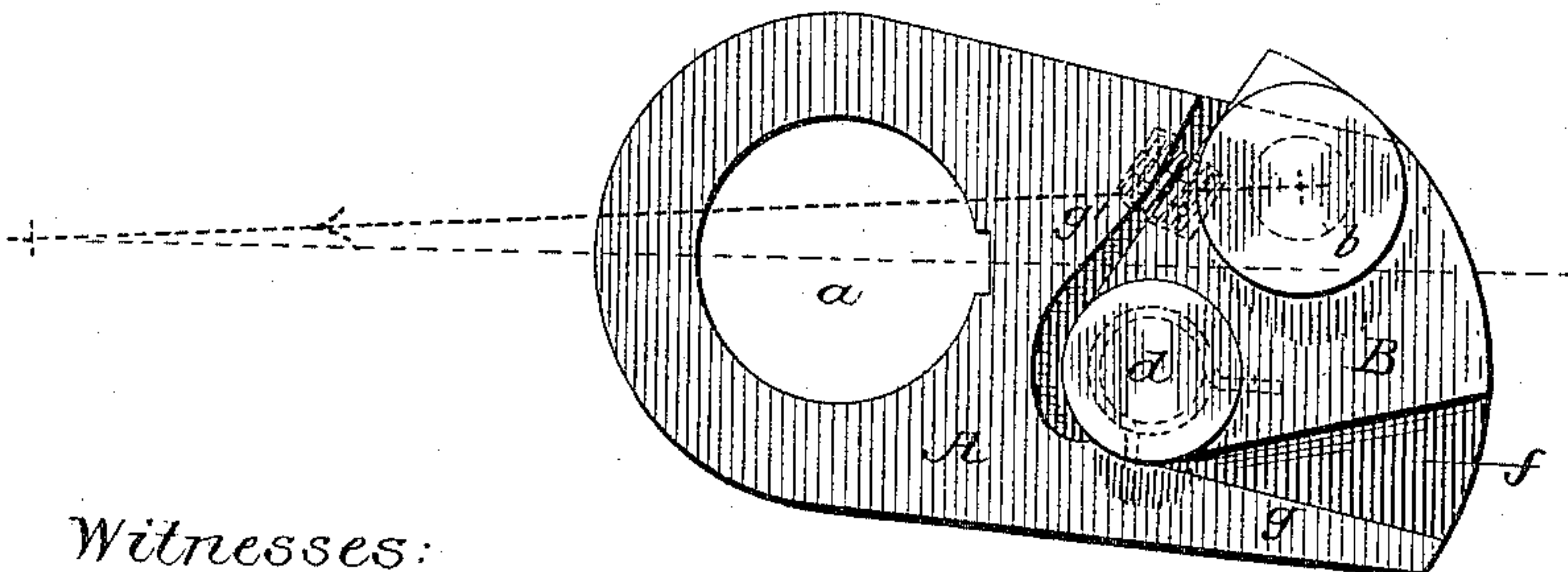


FIG. 3.



Witnesses:
David S. Williams
Alex. Barkoff

Inventor:
William H. Kaye
by his Attorneys
Howson and Howson

UNITED STATES PATENT OFFICE.

WILLIAM H. KAYE, OF WENONAH, NEW JERSEY.

CRANK FOR MACHINERY.

SPECIFICATION forming part of Letters Patent No. 397,367, dated February 5, 1889.

Application filed November 1, 1888. Serial No. 289,705. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. KAYE, a citizen of the United States, and a resident of Wenonah, Gloucester county, New Jersey, have invented an Improved Crank for Machinery, of which the following is a specification.

The object of my invention is to so construct a crank for machinery that there will be no "dead-center" point, as in the usual crank; and this object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a crank for machinery constructed in accordance with my invention. Fig. 2 is a face view of the same, and Fig. 3 is a similar view showing the crank-pin in a different position from that shown in Fig. 2.

A is the crank-arm, having the usual opening, *a*, for the reception of the crank-shaft.

Instead of connecting the crank-pin *b* directly to the crank-arm, however, as usual, I connect said crank-pin to a block, B, the pivot *d* of which is offset in respect to a line drawn through the center of the crank-shaft opening and through the center of the crank-pin.

The block B is contained within a recess, *f*, in the face of the crank, this recess terminating in shoulders *g g'*, and between the block B and the shoulder *g'* is interposed a spring, *h*, the opposite ends of which are preferably let into sockets or recesses in the block and shoulder, as shown in Figs. 2 and 3. The tendency of this spring is to maintain the block B in its normal position—that is to say, with one face of the block in contact with the shoulder *g*, as shown in Fig. 2—the spring being such that it will not be compressed when the only obstacle to the movement of the crank is the load due to the work. Yielding of the block B in the direction of the arrow, Fig. 2, however, is permitted when there is more than the normal resistance to the movement of the crank-arm.

It will be seen that owing to the offsetting of the pivot of the block B in respect to a line drawn through the centers of the crank-shaft and crank-pin there can never be any dead-

center point in the movement of the crank, for if the crank-pin occupies such relation to the crank-shaft that the line of pull is directly through the center of the crank-shaft, as shown in Fig. 2, the crank-pin will, owing to the offset pivot of the block B, be at liberty to move independently of the crank, so as to shift the line of pull, as shown in Fig. 3, and thus cause the crank to turn.

Although it is preferred to use a spring interposed between the pivoted block and a bearing on the crank-arm, other means may be employed for retaining the block in its normal position, if desired. For instance, a spring coiled around the pivot of the block and engaging with the block and crank-arm, as shown by dotted lines in Fig. 3, may be employed.

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

1. The combination of the crank, the crank-pin carried by a block pivoted to the crank at a point offset in respect to a line between the centers of the crank-shaft opening and crank-pin, and a spring acting upon the block to preserve it in its normal position, all substantially as specified.

2. The combination of the crank-arm, the crank-pin carried by a block pivoted to the crank-arm at a point offset in respect to a line between the centers of the crank-shaft opening and crank-pin, and a spring interposed between said pivoted block and a bearing on the crank-arm, all substantially as specified.

3. The combination of the crank-arm having a recessed face, a block carrying the crank-pin and pivoted in said recess at a point offset in respect to a line between the centers of the crank-shaft opening and crank-pin, and a spring interposed between said block and a shoulder on the crank-arm, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. KAYE.

Witnesses:

WILLIAM D. CONNER,
HARRY SMITH.