

(No Model.)

G. M. MULLEN.  
ANTIFRICTION BLOCK.

No. 541,331.

Patented June 18, 1895.

Fig. 1.

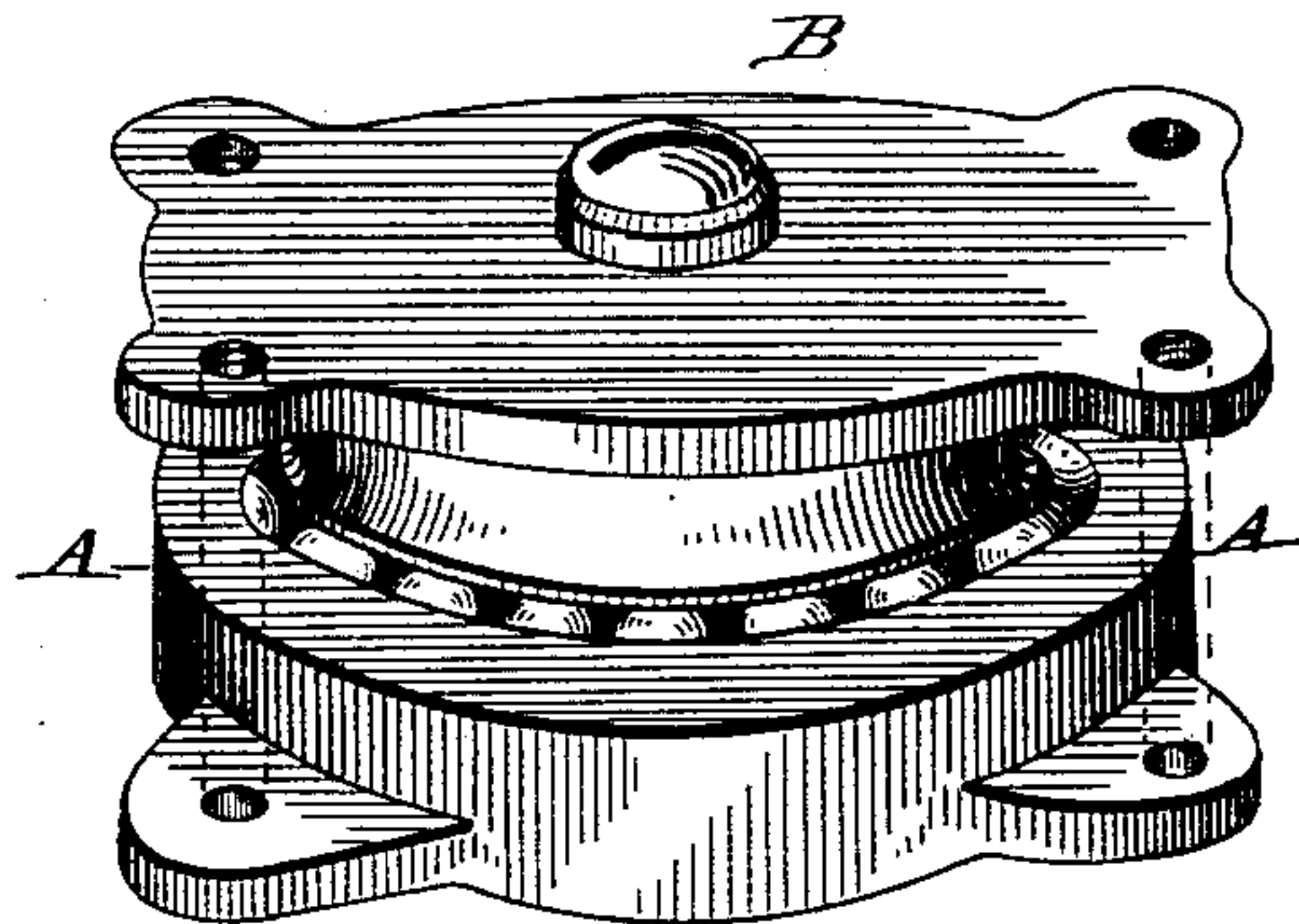


Fig. 2.

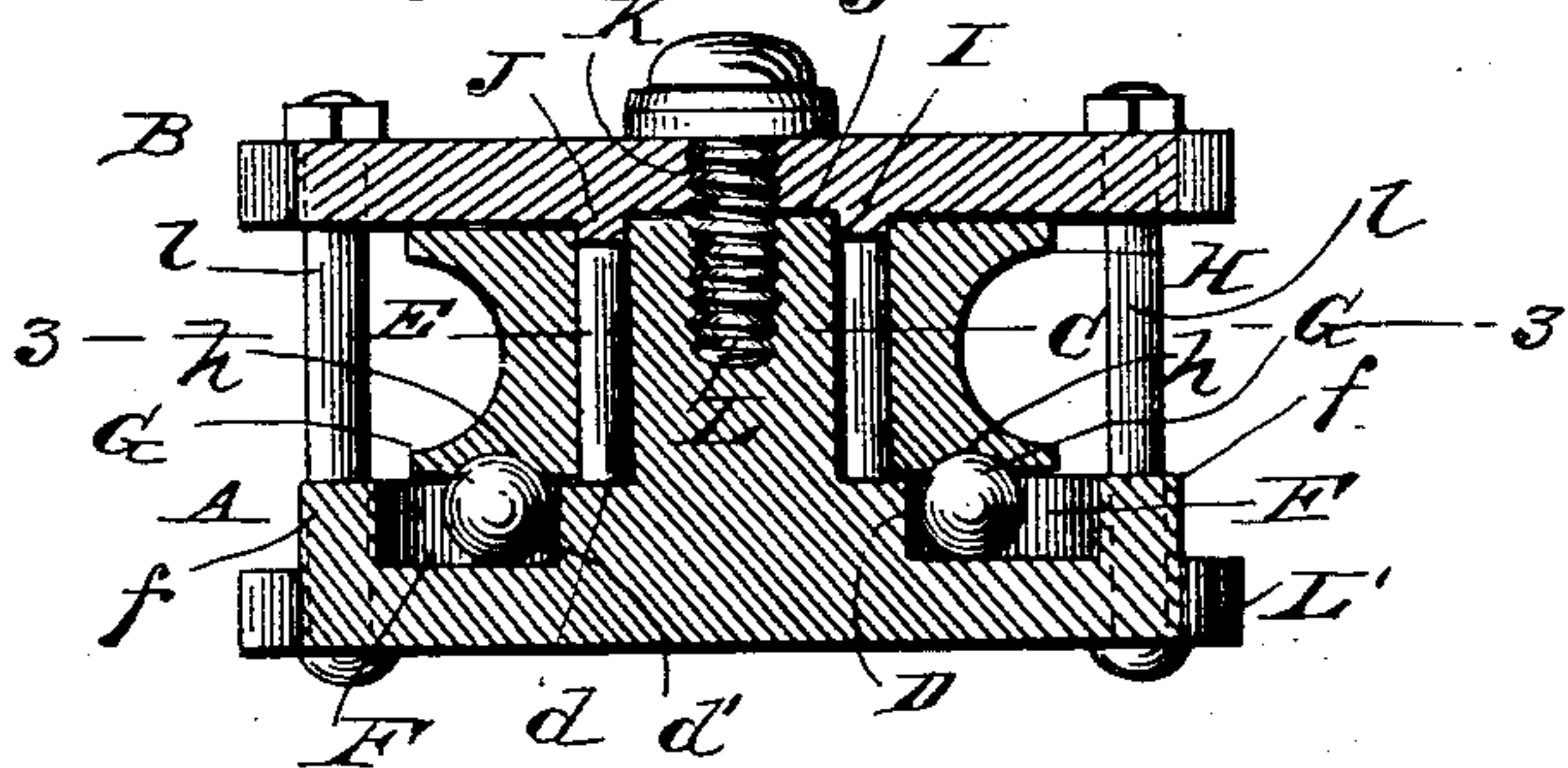


Fig. 3.

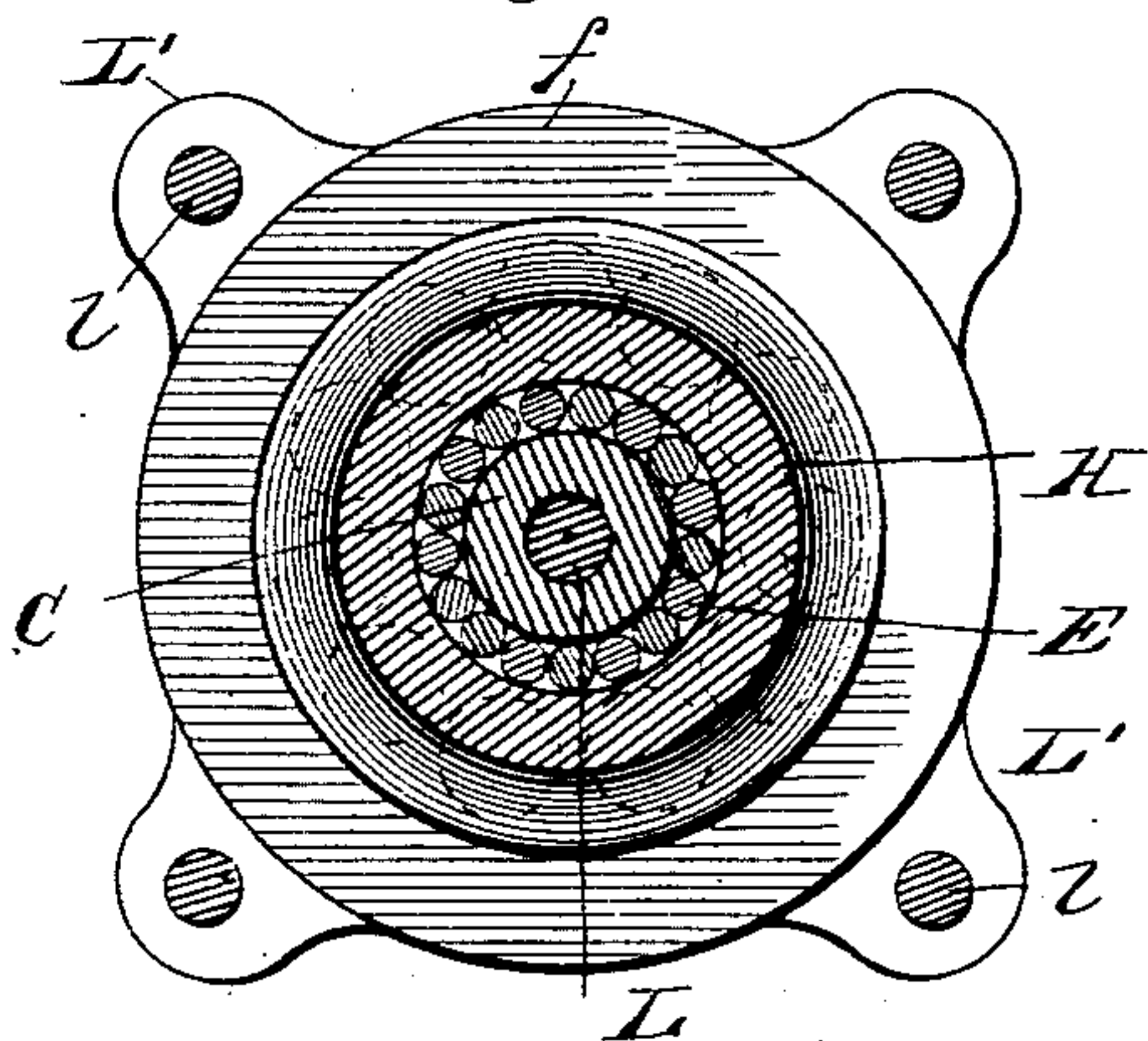
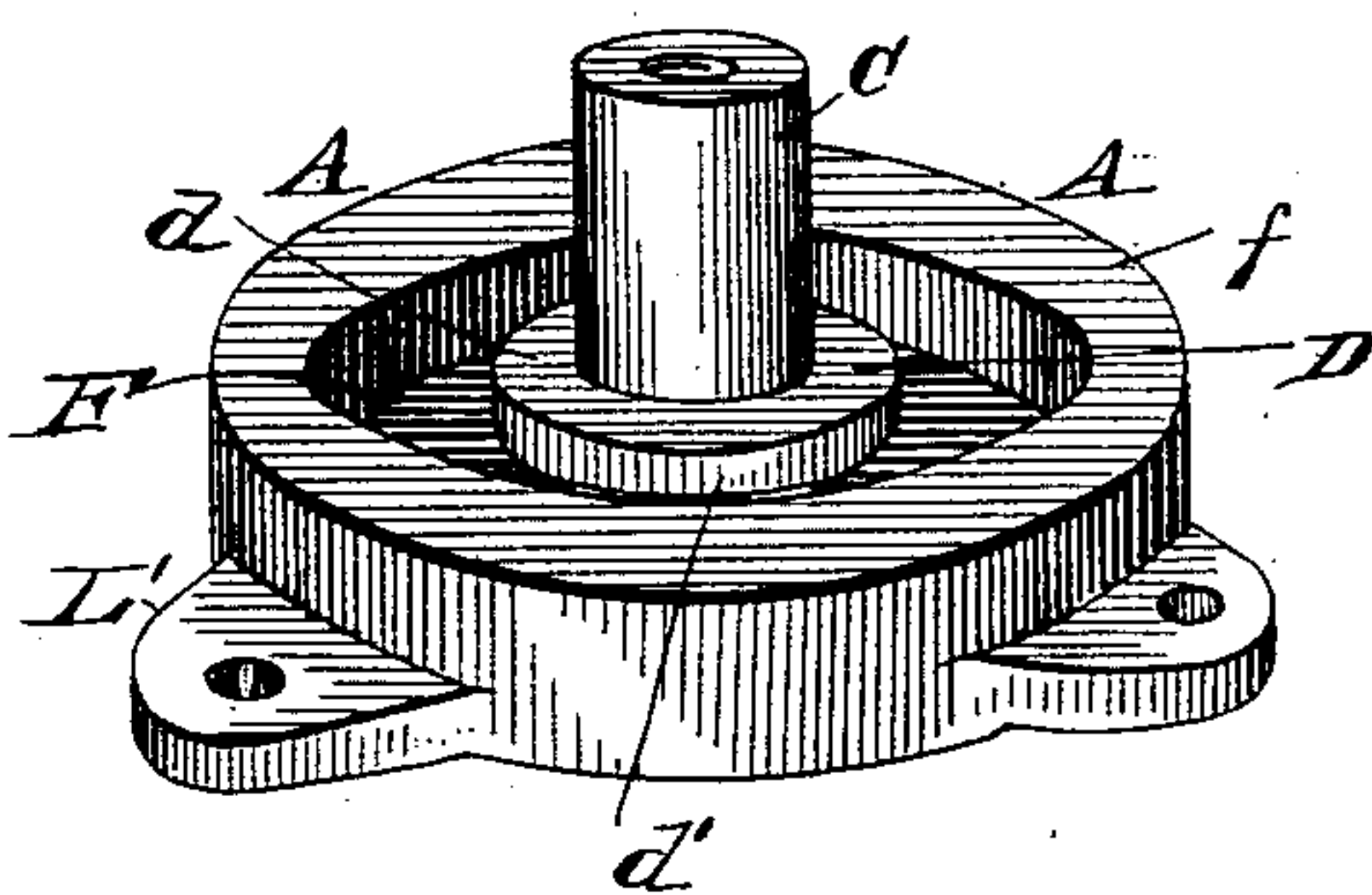


Fig. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GREGORY M. MULLEN, OF BALTIMORE, MARYLAND.

## ANTIFRICTION-BLOCK.

SPECIFICATION forming part of Letters Patent No. 541,331, dated June 18, 1895.

Application filed December 24, 1894. Serial No. 532,805. (No model.)

*To all whom it may concern:*

Be it known that I, GREGORY M. MULLEN, of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Antifriction-Blocks, of which the following is a specification.

My invention is an improvement in blocks and has for an object to provide a novel construction of block which will be simple, strong and economical and in which the friction will be so materially reduced as to permit the free and easy movement of the sheave.

The improved block is especially designed for use in guiding the tiller ropes of tugs, yachts and other vessels but manifestly can be used in other locations where desired.

The invention consists in certain novel constructions and combinations of parts as will be hereinafter described and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of the improved block. Fig. 2 is a longitudinal section thereof; Fig. 3, a cross-section on about line 3 3 of Fig. 2. Fig. 4 is a detail view of the main jaw of the block.

The block has two jaws A and B the former of which carries the axle or journal and may be termed the main jaw while the other jaw B may be designated as the cap jaw.

The main jaw has the fixed, preferably integral, axle or journal C projecting from a central raised boss D which upon its surface *d* forms a bearing or support for one end of the side rollers E while the other surface *d'* of the boss D forms the inner wall of the cup or cavity F for the balls G the outer wall of such cavity being a projecting flange *f* upon the jaws A.

The sheave H fits over the side rollers E and rests at one side down upon the balls such side being grooved or channeled at *h* to receive said balls and form a bearing for one side thereof. At its opposite side the sheave terminates short of the upper end of the journal C and the side rollers are made of such length that they terminate a short distance below the side of the sheave forming a circu-

lar way or space I into which projects a flange or rib J on the cap jaw such jaw being also provided centrally with a socket or cavity J' into which the upper end of the journal or axle projects. This cap jaw B has a central opening K through which a screw L passes into the end of the journal and together with the flange J and socket J' tend to brace the cap jaw firmly to the end of the journal; but it is preferred in practice to provide both jaws A and B with coincident perforated lugs L' for bolts *l* by which the jaws A and B are stayed in position and which may also operate if desired to secure the block to any suitable support.

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

1. In a block substantially as described the combination of the main jaw, the journal, the sheave, the side rollers between the sheave and journal and terminating short of the end of the said sheave whereby is provided an annular cavity surrounding the journal and the cap jaw having a flange or rib entering said cavity substantially as and for the purposes set forth.

2. The improved block herein described consisting of the main jaw having a central boss, a channel surrounding the same and a journal projecting from said boss, the sheave having its under side channeled, the balls fitting between said sheave and the main jaw, the side rollers between the journal and sheave, rested at one end on the boss of the main jaw and terminating at their other ends below the end of the sheave, the end of the journal being extended above the sheave and the cap jaw having a socket receiving the end of the journal and having a flange or rib fitting down within the end of the bore of the sheave substantially as set forth.

GREGORY M. MULLEN.

Witnesses:

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PERRY B. TURPIN.