

(No Model.)

2 Sheets—Sheet 1.

J. V. MERRICK.
Journal Box.

No. 232,049.

Patented Sept. 7, 1880.

FIG. 1.

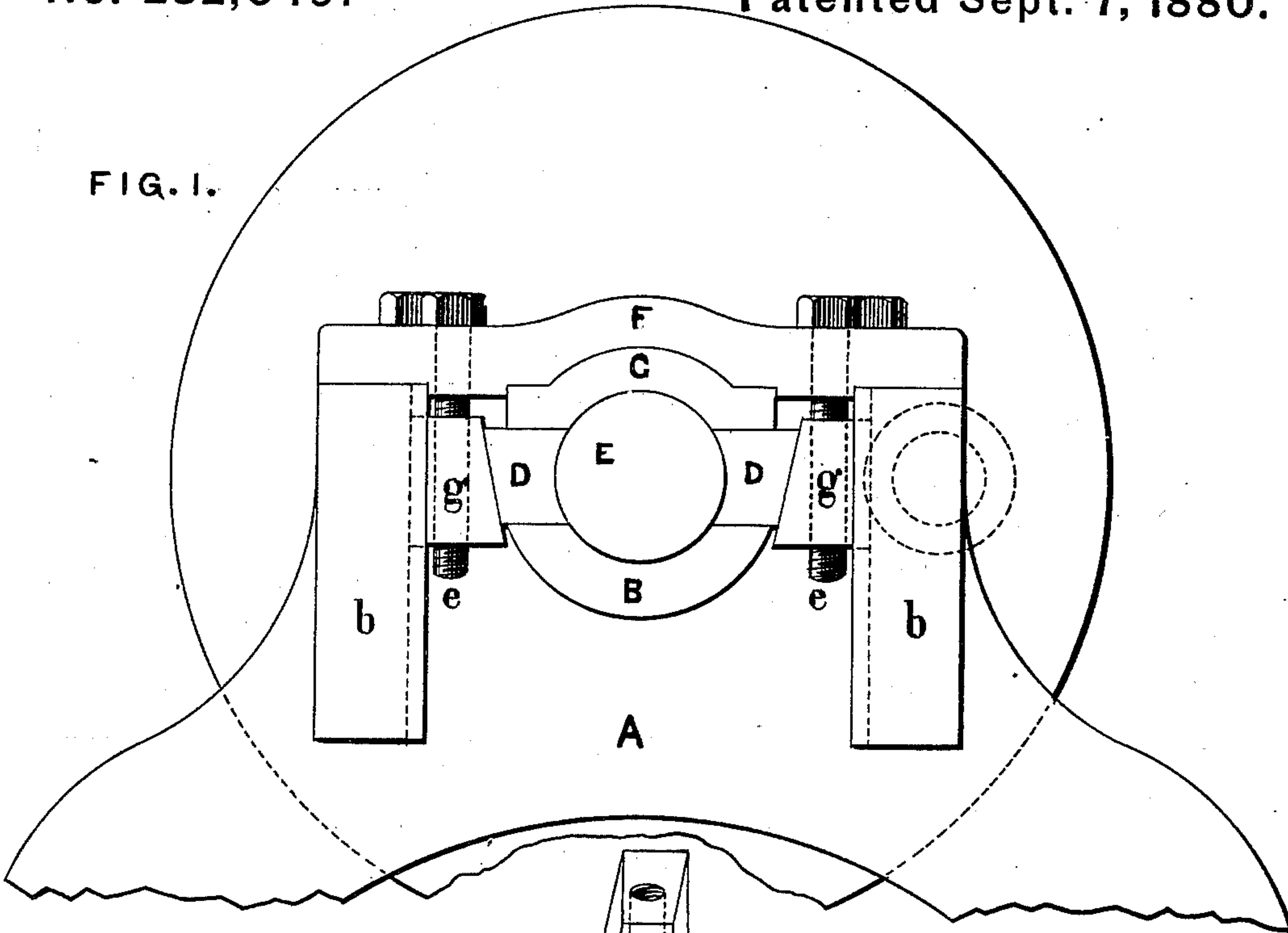


FIG. 3.

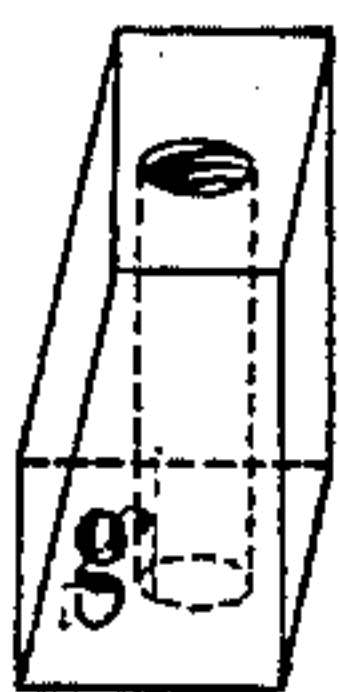
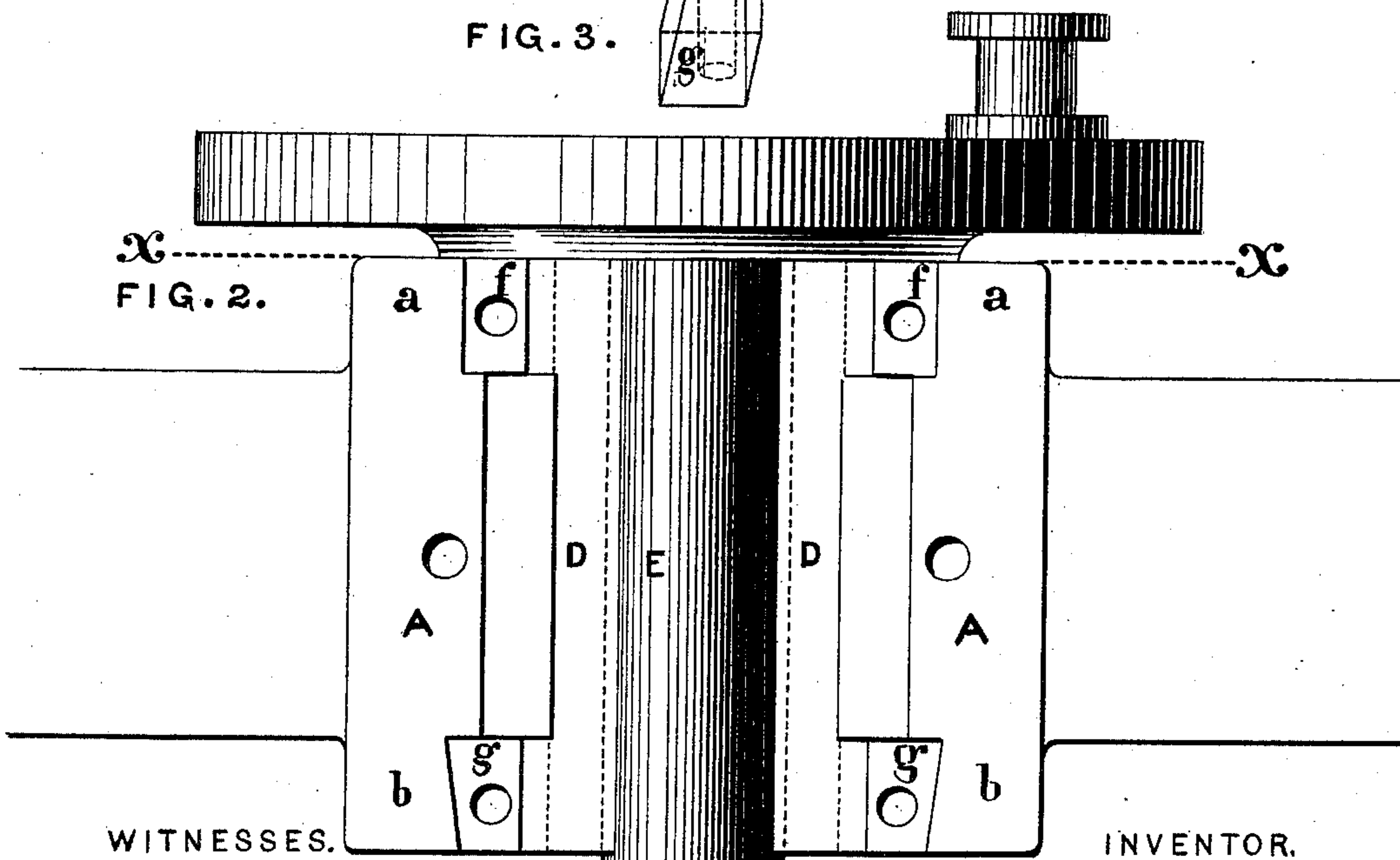


FIG. 2.



WITNESSES.

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Att'y.

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FIG. 4.

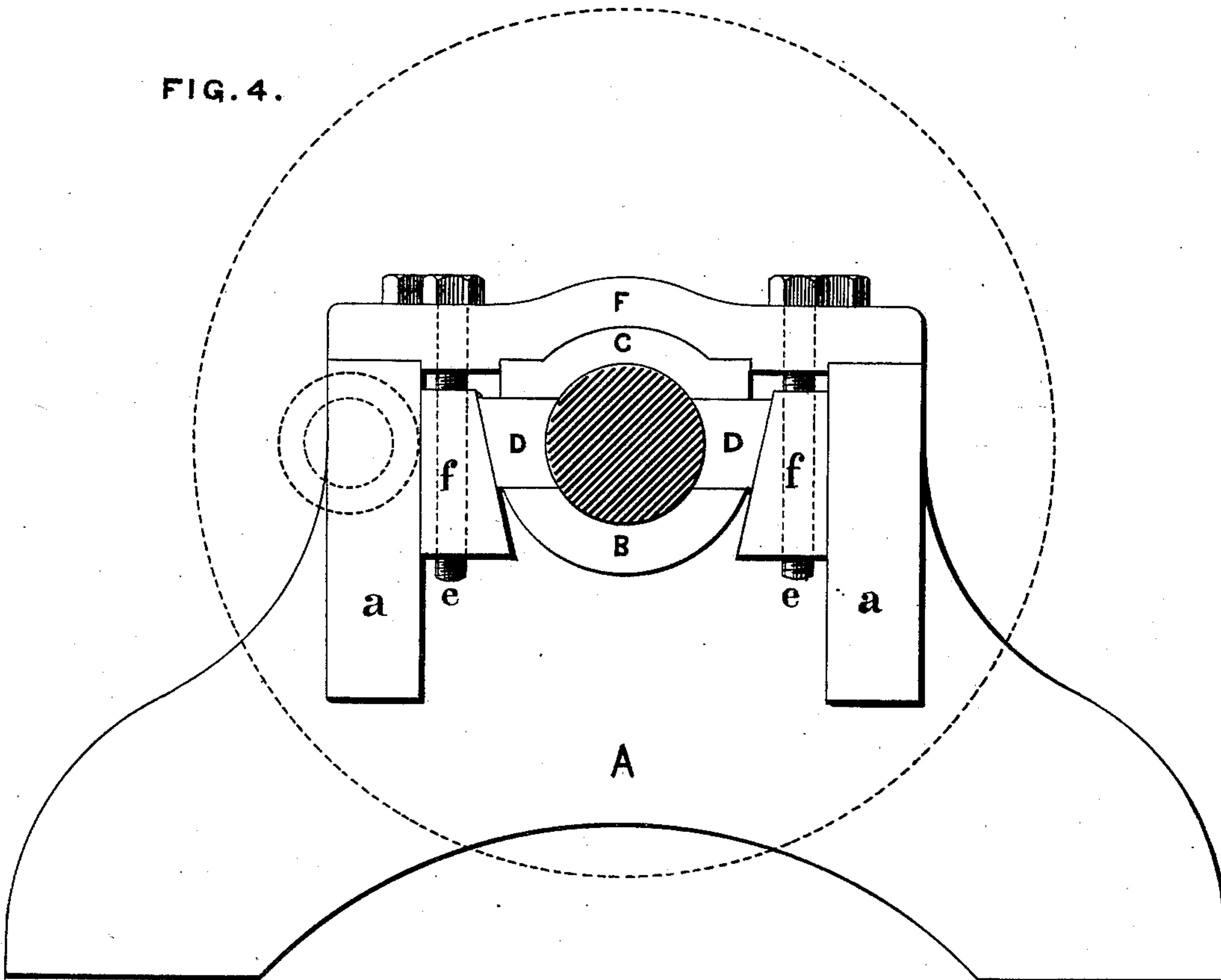


FIG. 5.

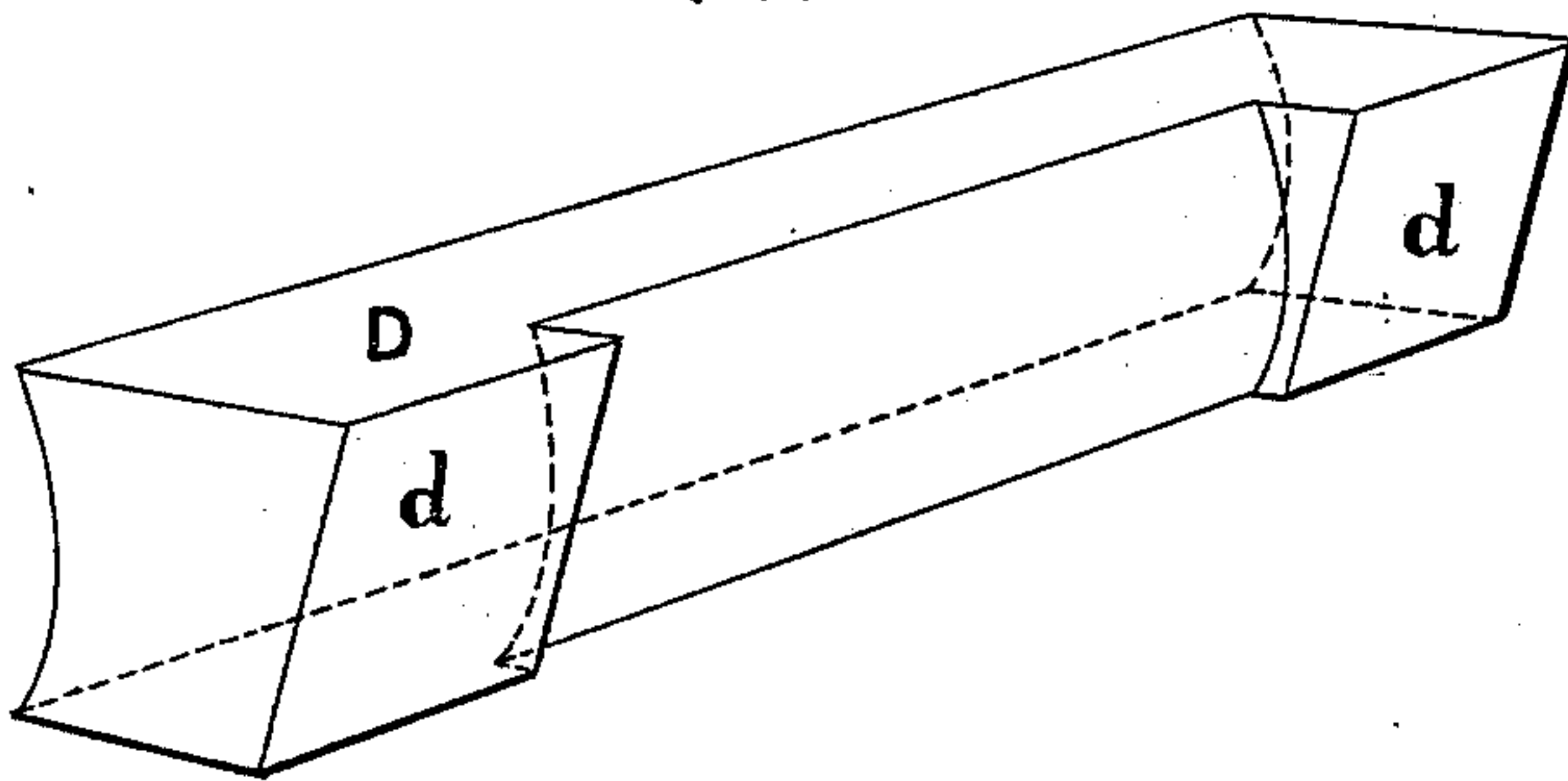
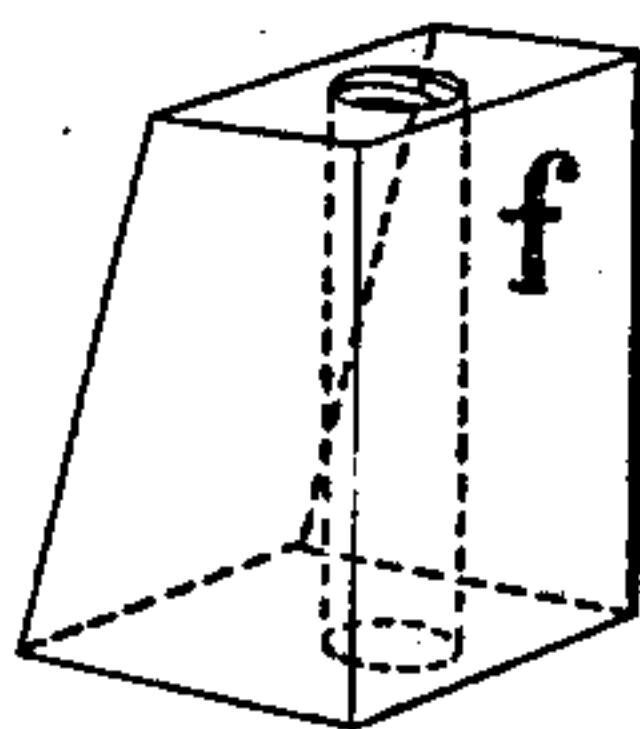


FIG. 6.



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UNITED STATES PATENT OFFICE.

J. VAUGHAN MERRICK, OF PHILADELPHIA, PENNSYLVANIA.

JOURNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 232,049, dated September 7, 1880.

Application filed July 20, 1880. (No model.)

To all whom it may concern:

Be it known that I, J. VAUGHAN MERRICK, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Journal-Boxes for Revolving Shafts, of which improvements the following is a specification.

My invention relates to that class of journal-boxes in which, as heretofore constructed, the journal for the revolving shaft is composed of four parts or pieces—to wit, a bottom piece, a top piece, and two side pieces or cheek-pieces—the bottom piece being formed in or secured to the pillow-block, the top piece being formed in or secured to the cap-plate which closes the top of the box, and the two side pieces being detached and separately adjustable to the shaft by means of wedges. Heretofore these cheek-pieces have been adjusted and kept in place by wedges inserted between the cheek-pieces and the adjacent sides of the pillow-block, with the thick ends of the wedges uppermost, these wedges being kept in place by screws passing through the cap-plate and into the thick ends of the wedges.

Three prominent objections to this system are, first, that the wedges can only be put in place when the cap-plate is removed; second, that if one of the wedges gets detached from its screw the wedge works down against the cheek-piece, and thus cramps and heats the shaft; and, third, these wedges are only applied at a point between the ends of the box, and accordingly afford but a limited support to the shaft against endwise thrust, because the resistance to flexure of the shaft depended solely on the stiffness of the journal-box between the wedges and the ends.

In another construction two of these objections were obviated—that is, the wedges were inserted between the cheek-pieces and the pillow-block with the thick ends of the wedges downward, so that when they became detached from their screws the wedges would drop down and release the pressure upon the shaft, which would, by its jarring, notify the engineer that the cheek-piece had become loosened, and the wedges were placed at one end of the box, so that they afforded a firm support to the shaft at that point; but with all this there remained the objection that the wedges could

not be applied, removed, or replaced except when the cap-plate was removed, and in order to use the wedges with the thick ends downward this system required the use of thickening-pieces or “gibs” to supplement the wedges in bearing upon the cheeks. These gibbs or thickening-pieces required to be nicely fitted, and, like the wedges, could not be applied, removed, or replaced except when the cap-plate was removed.

It is the object of my improvements to make these adjustments of the cheek-pieces of a four-part journal-box by means of wedges, each consisting of a single piece, applied and removed and replaced without removing the cap-plate, and which are thus applied at the extremities of the box, so as to give greater steadiness to the shaft, and to afford greater resistance in the line of thrust, as well as to avoid the cramping and heating of the shaft by jamming in case the wedges or any of them become loosened.

In the accompanying drawings, which form part of this specification, I have shown my improvements applied at each end of the box, the adaptations to the respective ends being such as to keep the wedges securely in place.

Figure 1 is a front elevation of the journal-box and crank-wheel, showing the application of my improvements at the end of the box farthest from the crank. Fig. 2 is a plan view of Fig. 1 with the cap-plate and top piece removed. Fig. 3 is a view, in perspective, of one of the wedges applied in Fig. 1. Fig. 4 is a transverse sectional view on the line *xx* of Fig. 2, showing the application of my improvements at the end of the box next the crank-wheel. Fig. 5 is a view, in perspective, on an enlarged scale, of one of the adjustable side pieces or cheeks of the journal-box; and Fig. 6 is a view, in perspective, of one of the wedges applied in Fig. 4.

Upon the outer faces of the pillow-block A, I cast or secure strong vertical cleats or extension-pieces *a a b b*, and I make the bottom piece, B, and the top piece, C, of the journal of such corresponding length that they extend beyond the pillow-block as far as the outer faces of the cleats *a a b b*. The side pieces or cheeks, D, Fig. 5, are of the same length as the bottom piece and the top piece, and with those pieces

complete the journal or bearing, the interior of which, as thus made up, fits snugly upon the shaft E. The back of each cheek D is recessed between its ends, so as to fit over the face and ends of the pillow-block, and against these ends of the pillow-block the shoulders on the back of the cheek-piece have a strong purchase for resisting end-thrust. The cap-plate F is fastened down upon the top piece, (or the top piece may be cast upon the cap-plate or otherwise secured to it,) and this completes the box.

To provide for the adjustment of the side pieces or cheeks, D, I form upon the back of their projecting ends *d*, beyond the pillow-block, inclined faces, against which I bring to bear, by means of the screws *e e*, the reversed inclines of the inner faces of the wedges *f f g g*.

It will be seen that the open spaces under the cap-plate and between the cleats and the cheek-pieces admit of the wedges being inserted in these spaces from below, with their thinner edges upward, and, being drawn up by the screws *e e*, the cheek-pieces will be forced inward and held in place upon the shaft. It remains, however, to provide against the lateral displacement of the wedges thus applied at the outer ends of the box and to prevent their being forced or working out laterally from between the cleats and the cheek-pieces. I effect this in one of two ways, according to the end of the box at which this provision is required—that is to say, at the end of the box next the crank-wheel I can use the inner surface of the hub of the wheel to cover and retain the wedges *f f* in place, and at this end of the box I therefore require only a straight face on the cleats *a a* and a bevel on the face of the wedge corresponding with the bevel on the adjacent face of the cheek-piece D. At the other end of the box, however, it is necessary to have some other provision for the performance of this duty, and

at this end of the box I therefore provide a dovetail bevel on the face of the cleats *b b*, as shown in Figs. 1 and 2, and a corresponding dovetail bevel on the adjacent faces of the wedges *g g*, while the other faces of these wedges are beveled to correspond with the adjacent faces of the cheek-pieces against which they bear.

By this construction of the parts it will be seen that as the wedges are in all cases composed of a single piece each, and as each wedge is in all cases applied with its thinner end uppermost, it can readily be inserted from underneath in its place between the cleats and the cheek-piece after the cap-plate has been fastened down, and will be firmly held up by the screws *e e* and firmly held in by the face of the crank-wheel at one end of the box and by the dovetail bevels at the other end of the box, and in case any one of these wedges gets loose from the screws *e e* it will drop down and out from between the cleat and the cheek-piece, and the jar of the shaft following upon this loosening of the bearing will attract the attention of the engineer, who can replace it from beneath without removing the cap-plate.

Having thus described the nature and objects of my improvements, what I claim herein as new, and desire to secure by Letters Patent, is—

1. The combination, with the pillow-block, of the extension-pieces or cleats, substantially as and for the purposes described.

2. The combination, with the pillow-block, the extension-pieces or cleats, and the adjustable cheeks, of the wedges having faces with reversed inclines or bevels, substantially as and for the purposes described.

J. VAUGHAN MERRICK.

Witnesses:

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GEO. F. FINDLAY.