

(No Model.)

L. C. FORWOOD.

REVERSING MECHANISM FOR ENGINES.

No. 353,850.

Patented Dec. 7, 1886.

Fig. 1.

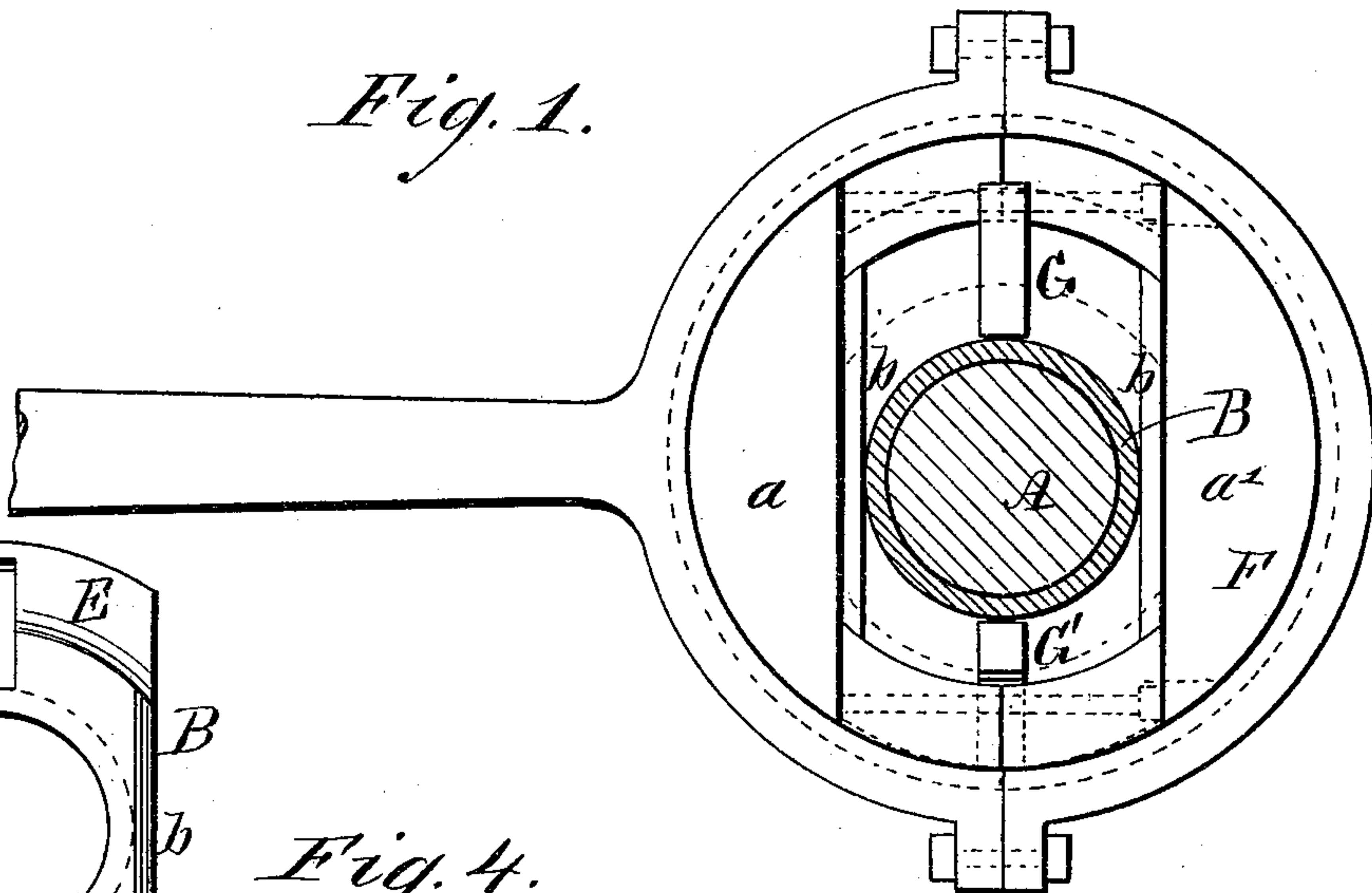


Fig. 4.

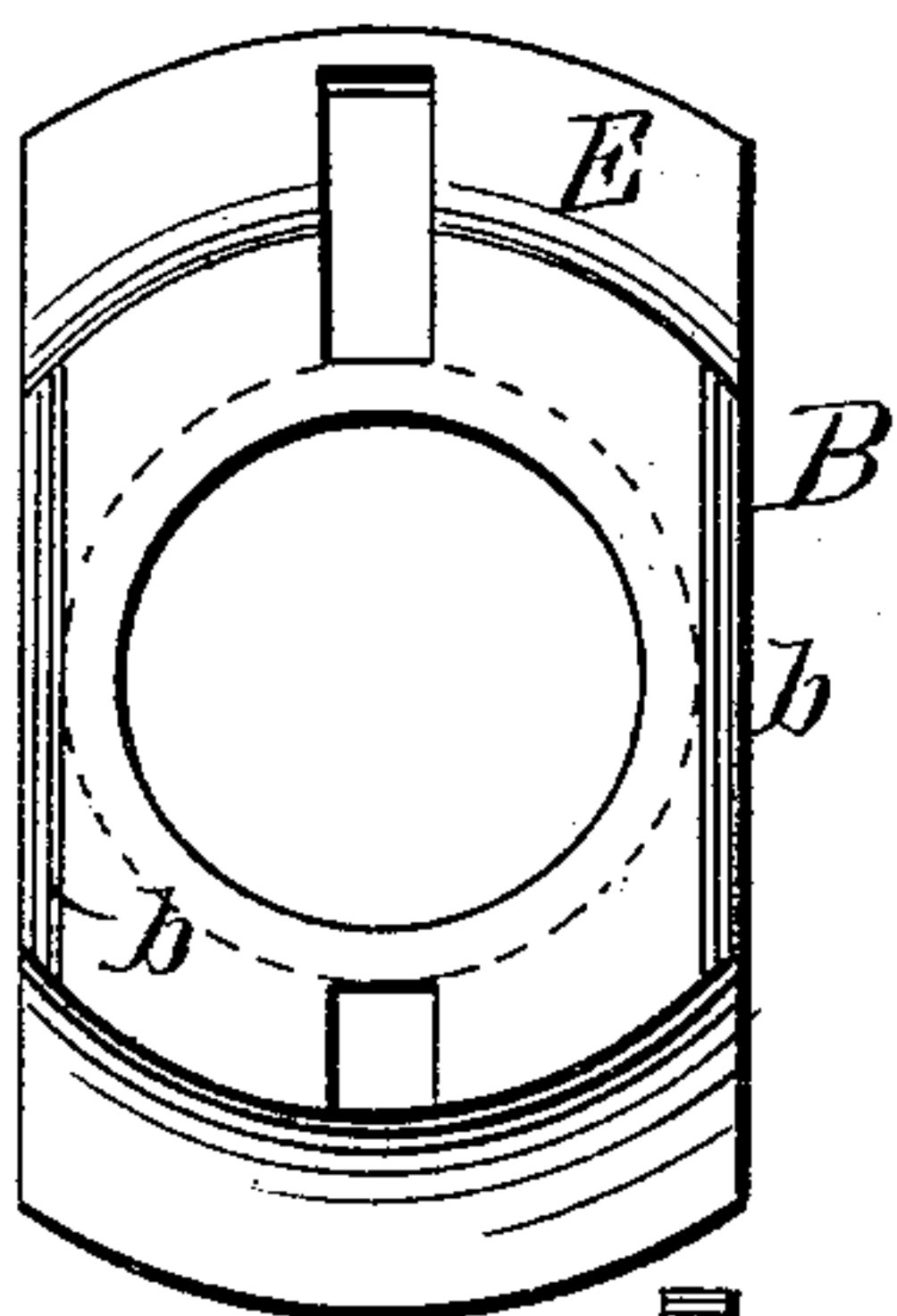


Fig. 2.

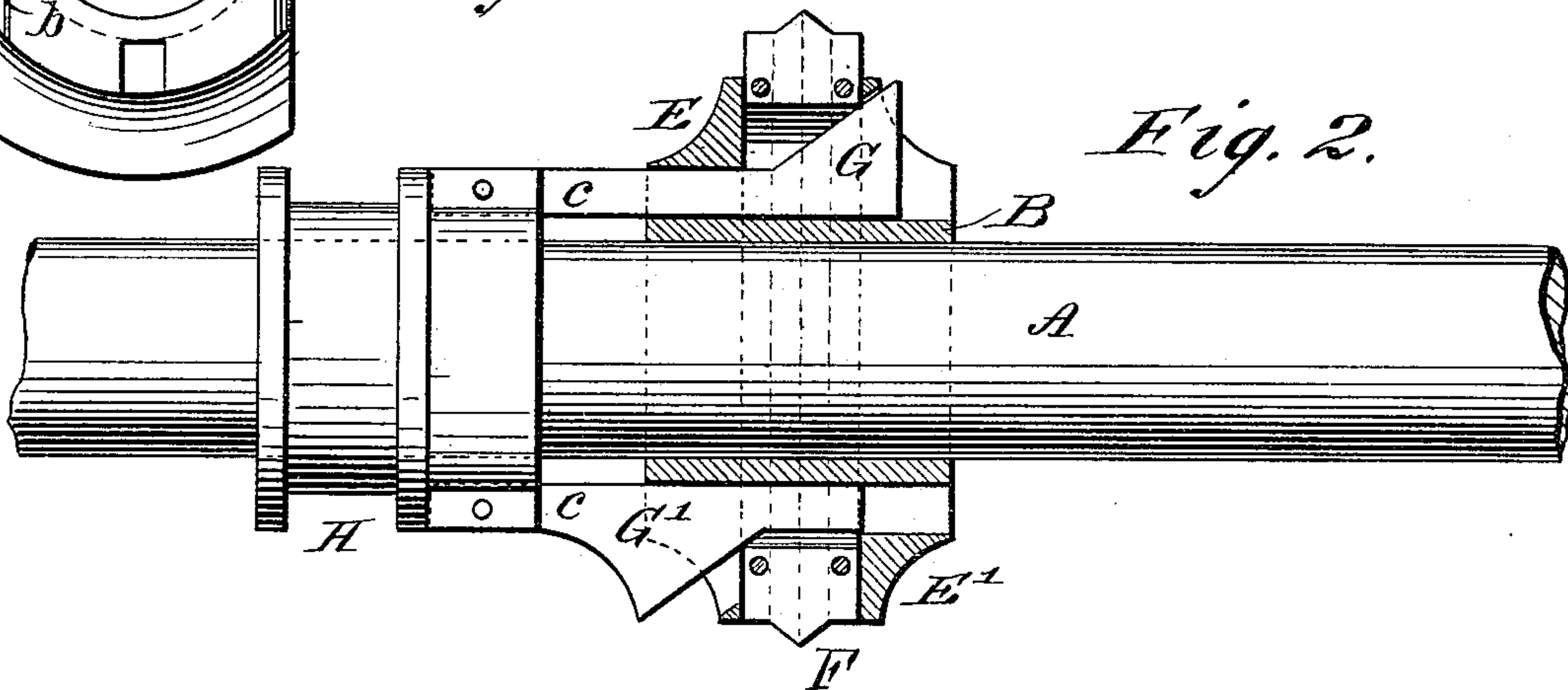
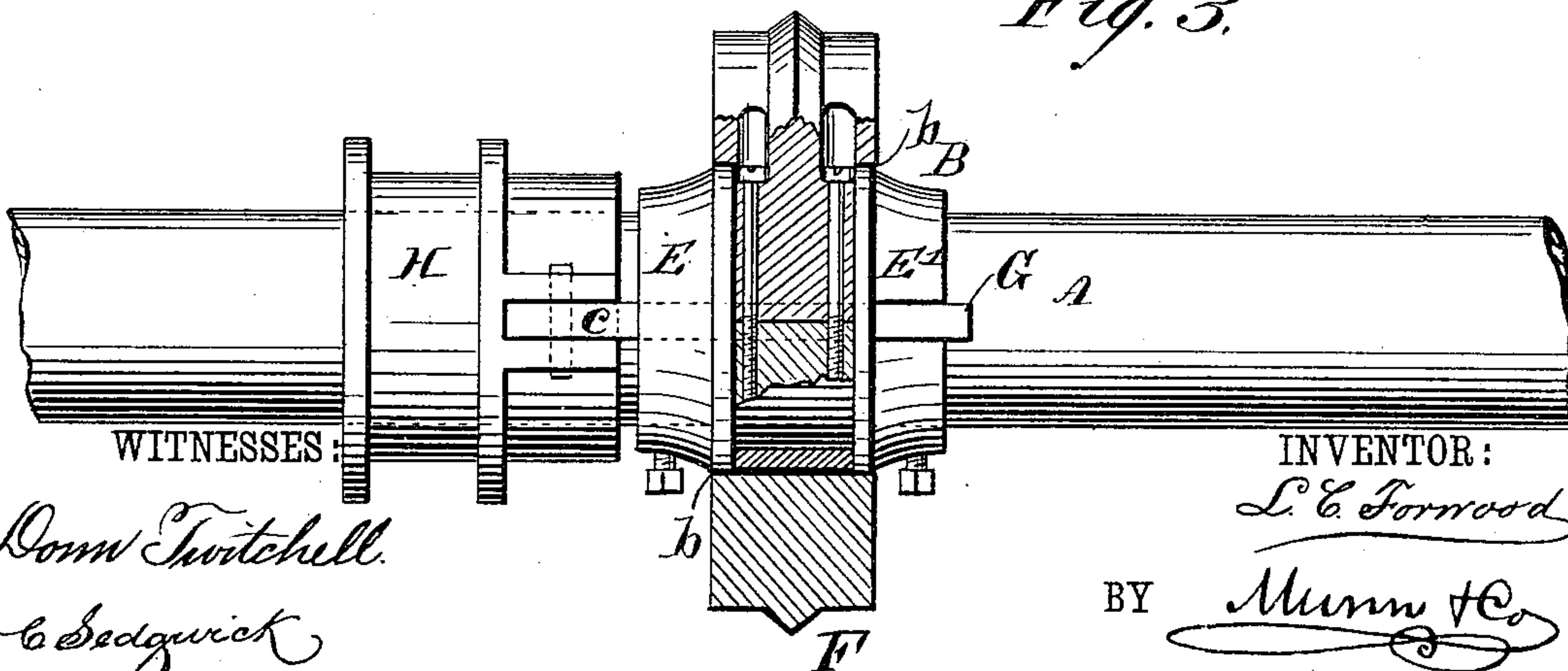


Fig. 3.



WITNESSES:

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LORIN C. FORWOOD, OF SHIPMAN, ILLINOIS.

REVERSING MECHANISM FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 353,850, dated December 7, 1886.

Application filed November 24, 1885. Serial No. 183,861. (No model.)

To all whom it may concern:

Be it known that I, LORIN C. FORWOOD, of Shipman, in the county of Macoupin and State of Illinois, have invented a new and useful
5 Improvement in Reversing Mechanisms for Steam-Engines, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

10 Figure 1 is a side elevation. Figs. 2 and 3 are sectional views showing the working parts of the reversing mechanism, and Fig. 4 is an end view of the hub which carries the eccentric.

15 Similar letters of reference indicate corresponding parts in the different figures.

The object of my invention is to provide for steam-engines a device in which the reversing of the valve motion is effected by shifting the
20 eccentric transversely on a shaft.

My invention consists in an eccentric held between collars secured to the main shaft of the engine, and in sliding wedges arranged to move the eccentric transversely across the
25 shaft.

To the shaft A of the engine is secured a hub, B, having collars E E', between which is placed the eccentric F, which is preferably formed of two parts, *a a'*, secured together by
30 bolts. The eccentric has a central aperture with parallel sides, and slides on guides *b*, formed on the parallel edges of the collars E E', and the adjustment of the eccentric relative to the crank of the engine is secured by
35 turning the hub B upon the shaft A. Wedges G and G' are fitted to mortises formed in diametrically-opposite sides of the hub B and flanges attached thereto, and are provided with stems *c*, which are connected with a circumferentially-grooved slide, H, placed loosely on
40 the shaft. The larger end of the wedge G is remote from the slide H, while the larger end of the wedge G' is near the slide H, so that the wedges G and G' are oppositely arranged with respect to each other. The inclined surfaces
45 of the wedges G and G' engage the inner surface of the eccentric F in the ends of the slot formed in the eccentric, so that by moving the slide H lengthwise upon the shaft A one
50 of the wedges will be drawn into the eccentric and the other will be removed therefrom, so that the eccentric will be moved transversely with reference to the shaft A. The propor-

tion of the wedges is such as to admit of moving the eccentric, in the manner already described, sufficiently to reverse the engine, and to give its valve as much stroke as may be required.

When the slide H is moved so as to place the eccentric F in a central position, its periphery will be concentric with the shaft, and the eccentric strap and rod connected therewith will not be moved. By moving the slide H in one direction or the other any desired amount of throw may be given to the eccentric-rod.

For convenience in moving the slide H, I provide a forked arm of the usual description, and arrange in connection therewith any of the well-known devices for retaining the arm in
70 the position in which it may be placed.

The advantage secured by my improvement is, that the joints and rods required where links are used are entirely avoided, and a correct movement of the valve is always secured.

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

1. The tubular hub B, having diametrically-opposite slots parallel with its axis, and collars E E', provided with parallel guiding-edges, in combination with the eccentric F between the collars and guided by the said edges, the wedges G G', oppositely arranged with respect to each other and working in the slots in the hub
80 against the inner edges of the eccentric, and the sliding collar H, to which the wedges are joined, substantially as set forth.

2. The combination, with the shaft A and the tubular hub B, secured thereon to revolve
90 therewith and having the diametrically-opposite slots parallel with the axis, and the collars E E', having parallel guiding-edges *b*, of the eccentric F, formed in two parts, *a a'*, secured together between the collars E E', and
95 with an opening having parallel sides sliding on the guides *b b*, the oppositely-arranged wedges G G', working in the slots in the hub against the inner edges of the eccentric opposite those engaging the edges *b*, and having
100 stems *c c*, and a collar, H, substantially as set forth.

LORIN C. FORWOOD.

Witnesses:

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