

No. 637,987.

Patented Nov. 28, 1899.

H. DECK.

ADJUSTABLE BALL BEARING FOR LAWN MOWERS.

(Application filed Aug. 14, 1899.)

(No Model.)

FIG. 1

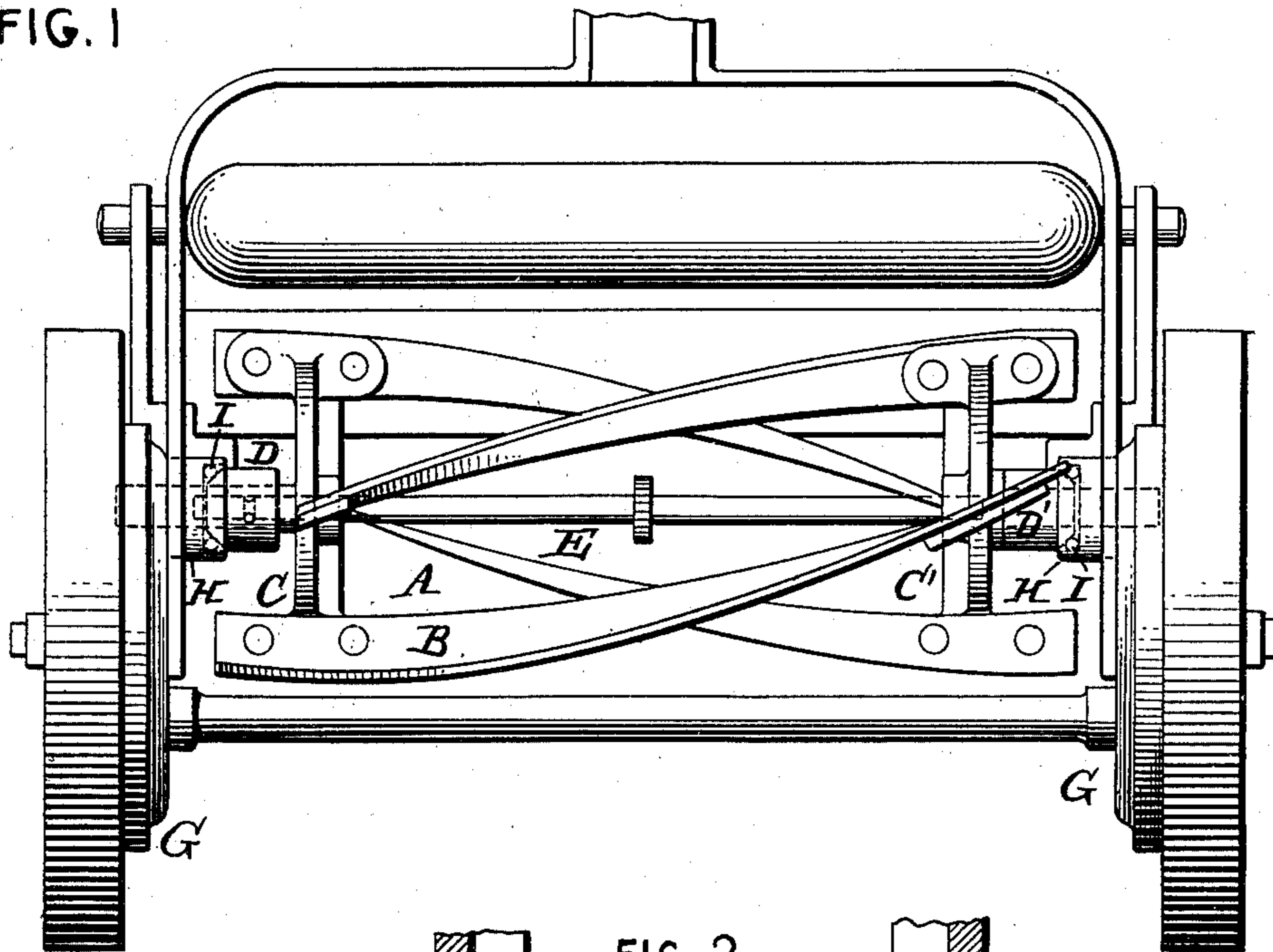


FIG. 2

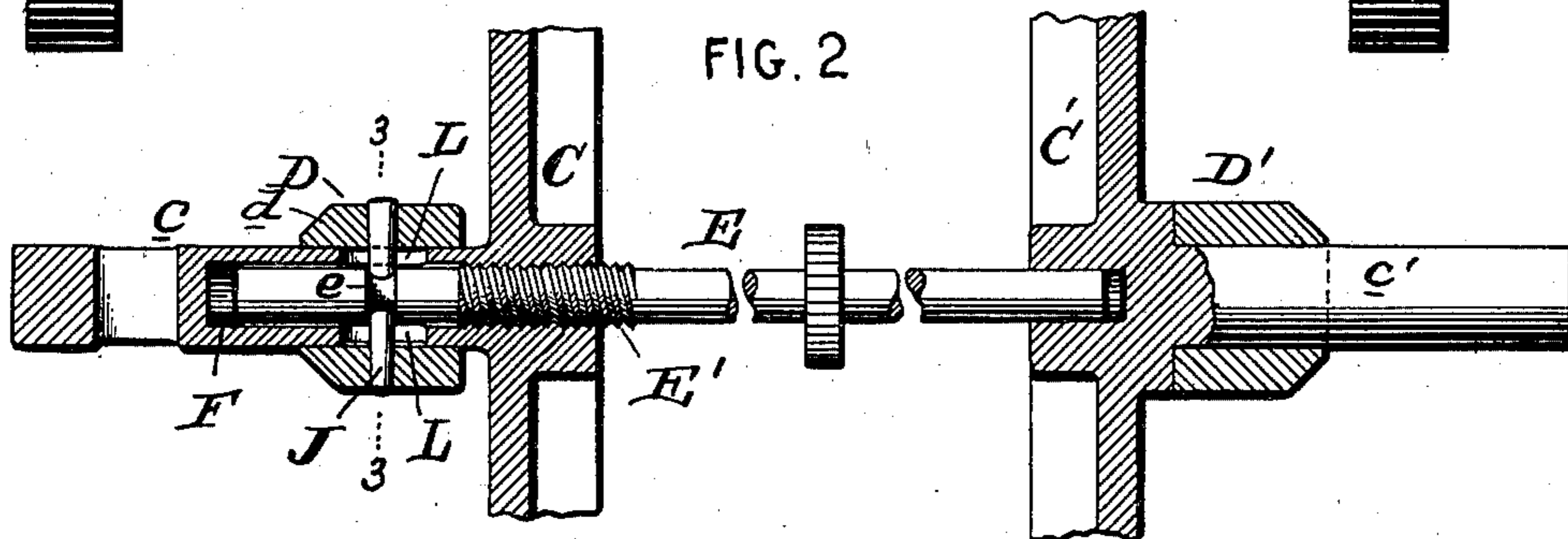


FIG. 3

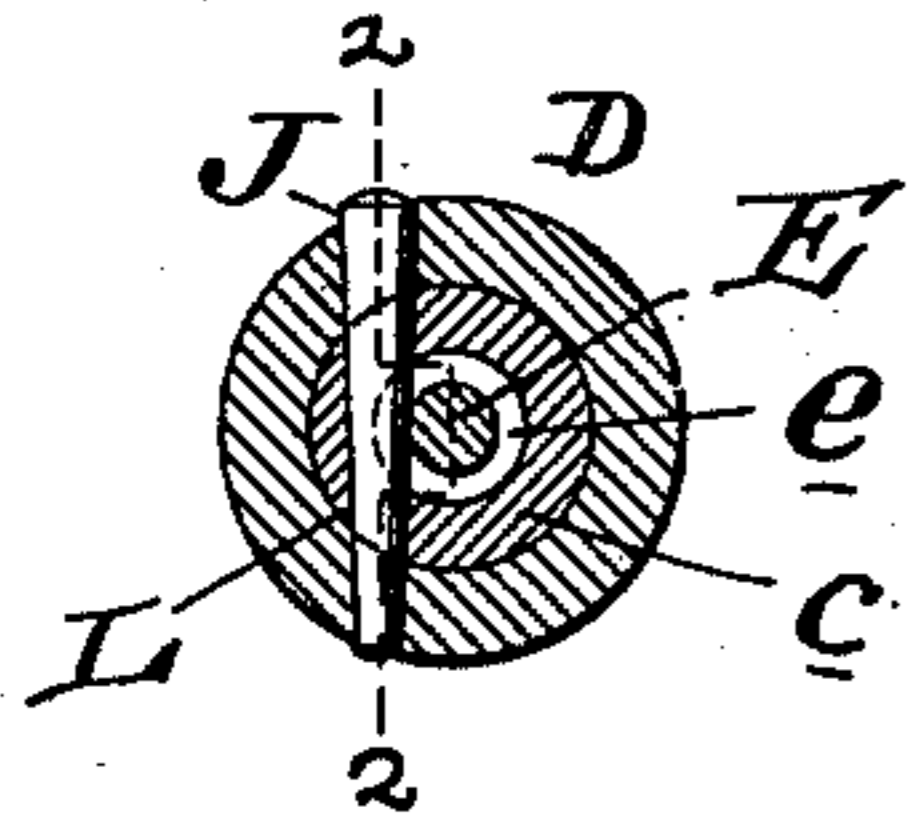


FIG. 4

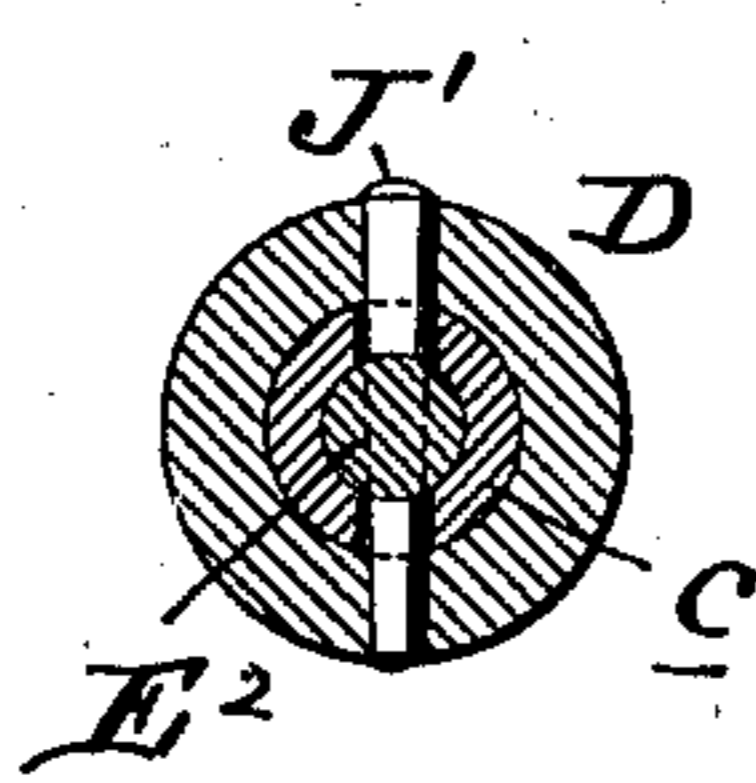
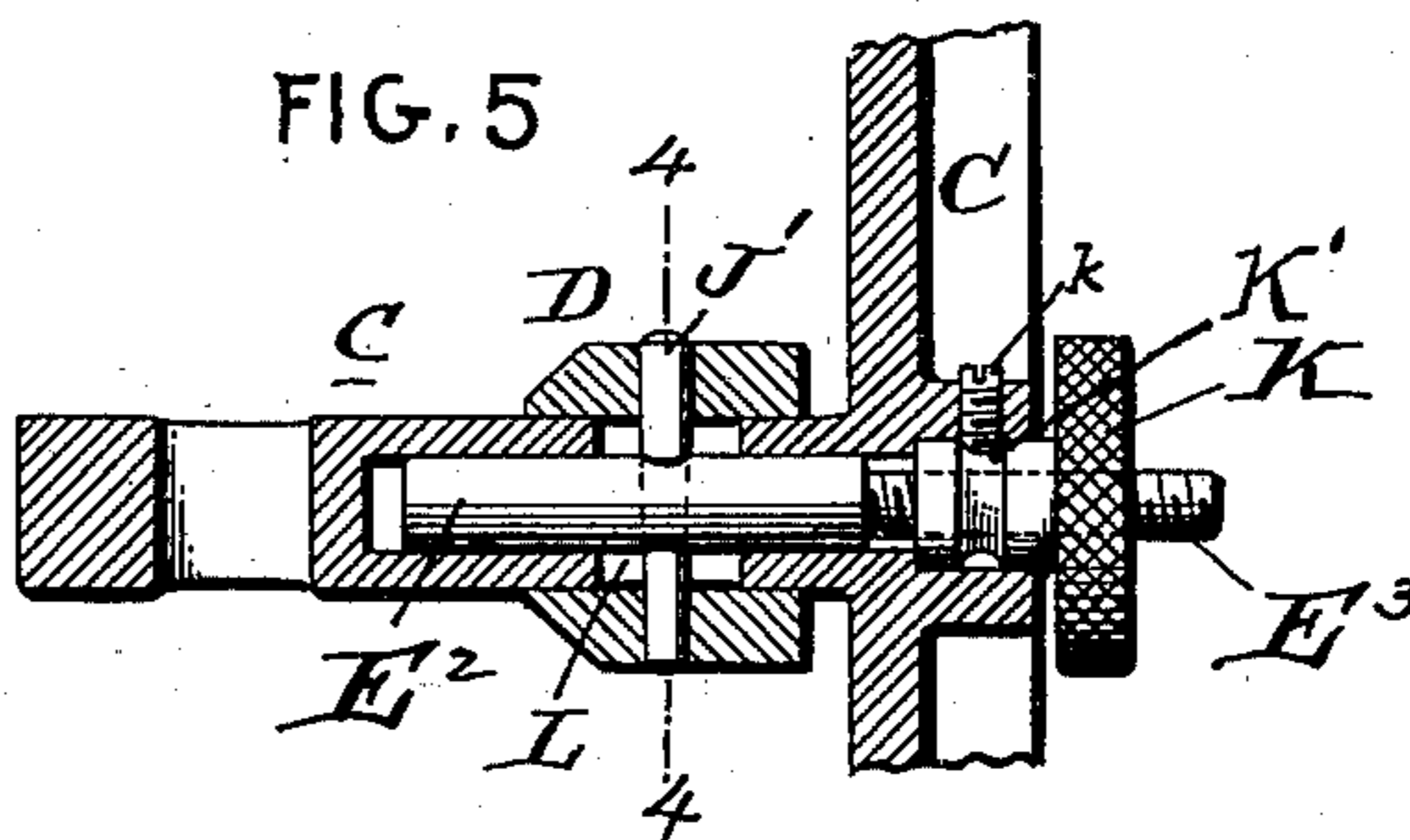


FIG. 5



Witnesses:  
Henry Dwyer  
A. M. Kelly.

Inventor:  
Henry Deck.  
By his attorney *[Signature]*

# UNITED STATES PATENT OFFICE.

HENRY DECK, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOHN BRAUN & SONS.

## ADJUSTABLE BALL-BEARING FOR LAWN-MOWERS.

SPECIFICATION forming part of Letters Patent No. 637,987, dated November 28, 1899.

Application filed August 14, 1899. Serial No. 727,098. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY DECK, of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Adjustable Ball-Bearings for Lawn-Mowers, of which the following is a specification.

My invention has reference to lawn-mowers, but more particularly to the means for properly supporting and adjusting the revolving cutter upon the main frame of the machine, all of which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

In carrying out my invention I journal the revolving cutter upon ball-bearings at each end and provide an adjustable sleeve upon the revolving cutter, which shall also act as one of the bearings which revolves in contact with the antifriction-balls. By adjusting the sleeve longitudinally upon the shaft of the cutter all wear in the bearings may be compensated for and the machine kept in perfect running order. The adjustment of the sleeve is made by means passing through the head of the cutter. The means for securing this adjustment of the sleeve preferably consists of a screw-shaft arranged axially upon the revolving cutter, extending through a tubular aperture in the driving-shaft on one of the heads, and combined with means connecting with the sleeve through slots in said driving-shaft, whereby the sleeve may be adjusted longitudinally upon the driving-shaft of the revolving cutter by simply adjusting the screw-shaft longitudinally in its bearings.

My invention will be better understood by reference to the drawings, in which—

Figure 1 is a plan view of a lawn-mower embodying my improvements. Fig. 2 is a sectional elevation of a portion of the revolving cutter structure. Fig. 3 is a cross-section of same on line 3 3. Fig. 4 is a cross-section of Fig. 5 on line 4 4, and Fig. 5 is a sectional elevation corresponding to the left half of Fig. 2 and showing a modified form of the means for adjustment.

A is the revolving cutter and may be made in any of the well-known manners. As shown, the spiral cutting-blades B are secured at each end to the heads C C'. These heads are provided with shafts c c', and one of these

heads may be directly driven by gearing from the main driving-wheels in the usual manner. The main frame G of the machine is provided on each end with inwardly-extending bearings H H, in which are located antifriction-balls I. The head C' of the revolving cutter is provided with a sleeve D', having a beveled end, which runs in contact with the ball-bearings at one end of the machine, and the head C at the other end of the revolving cutter is provided with an adjustable sleeve D, having a beveled end, as at d, for working in contact with the ball-bearings at the opposite end of the machine. The sleeve D snugly fits the shaft c, with freedom of longitudinal adjustment thereon. A screw-shaft E is screw-threaded, as at E', and screwed into the head C. The end of this shaft is received in a tubular socket F in the driven shaft c. Furthermore, the end of the shaft E is provided with an annular groove e, and a pin J is passed through the sleeve D, through slots L in the shaft c, and received at its middle in the annular groove e of the shaft E. It will now be seen that by rotating the shaft E it will be adjusted longitudinally in the head C of the cutter, and by means of the pin J the sleeve D will also be adjusted longitudinally. By this means the sleeve D is adjusted to compensate for all wear in the bearings and insures the spiral cutters working in exact operative position to the stationary cutter-bar. Furthermore, all adjustment for these bearings is secured from the interior of the machine and without dismantling any of its parts.

In place of the construction shown in Fig. 2 for adjusting the sleeve the modified form illustrated in Fig. 5 may be employed. Referring to this figure, I have the sleeve D adjustable upon the shaft c, as before, and employ the adjustable screw-shaft E<sup>2</sup>, having at one end the screw-threads E<sup>3</sup> in lieu of the screw-threaded shaft E of Fig. 2. As the shaft E<sup>2</sup> in this instance does not rotate in the shaft c, the pin J' is passed through the sleeve D, through slots L in the shaft c, and through the shaft E<sup>2</sup>. The shaft E<sup>2</sup> is adjusted longitudinally by means of the adjustable nut K, carried in the head C, the rotation of which causes the shaft E<sup>2</sup>, together

with the sleeve D, to be adjusted longitudinally. The nut K is held against end movement by a screw *k* in the head C working in the groove K' in its body. In this case, as  
5 in the previously-described one, I have the adjusting-shaft longitudinally adjustable, and I have, further, the sleeve constituting a part of the bearing movable longitudinally upon the shaft *c* under the longitudinal ac-  
10 tion of the adjusting-shaft.

While I prefer the construction shown, I do not limit myself to the details thereof, as they may be modified in various ways without departing from my invention.

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

1. In a lawn-mower, the combination of the main frame having inwardly-directed  
20 bearings at each end, a revolving cutter having two end heads formed integral with short outwardly-extending shafts, outwardly-directed bearings on each shaft operating in conjunction with the bearings on the main  
25 frame and one of said bearings being made longitudinally adjustable, and means for adjusting the said bearing to the revolving cutter consisting of a longitudinal adjustable shaft extending through the inner end face  
30 of one of the end heads of the revolving cut-

ter and its shaft so as to be exposed for adjustment between the said heads, and means extending through the cutter-shaft for connecting the adjustable bearing with the ad-  
35 justable shaft.

2. In a lawn-mower, the combination of the main frame having two oppositely-directed and inwardly-extending bearings, a rotating cutter formed of two end heads connected by the cutter-blades and each provided with a  
40 short outwardly-directed shaft, a fixed bearing on one of said shafts working in connection with one of the bearings of the main frame, an adjustable bearing sleeved upon the other of said short shafts working in con-  
45 nection with the other bearing on the main frame, a longitudinal short adjusting-shaft concentric with the two short driving-shafts of the revolving cutter and having its ends  
50 extending through the heads from the inner part so as to be journaled in the revolving cutter and be exposed for adjustment, and means connecting said adjusting-shaft with the adjustable sleeve for adjusting it.

In testimony of which invention I have  
55 hereunto set my hand.

HENRY DECK.

Witnesses:

ALBERT E. MILLER,  
JOHN F. BRAUN.