

(No Model.)

2 Sheets—Sheet 1.

J. L. PACKARD.

TREAD GUARD FOR CUTTER HEADS.

No. 388,578.

Patented Aug. 28, 1888.

Fig. 1.

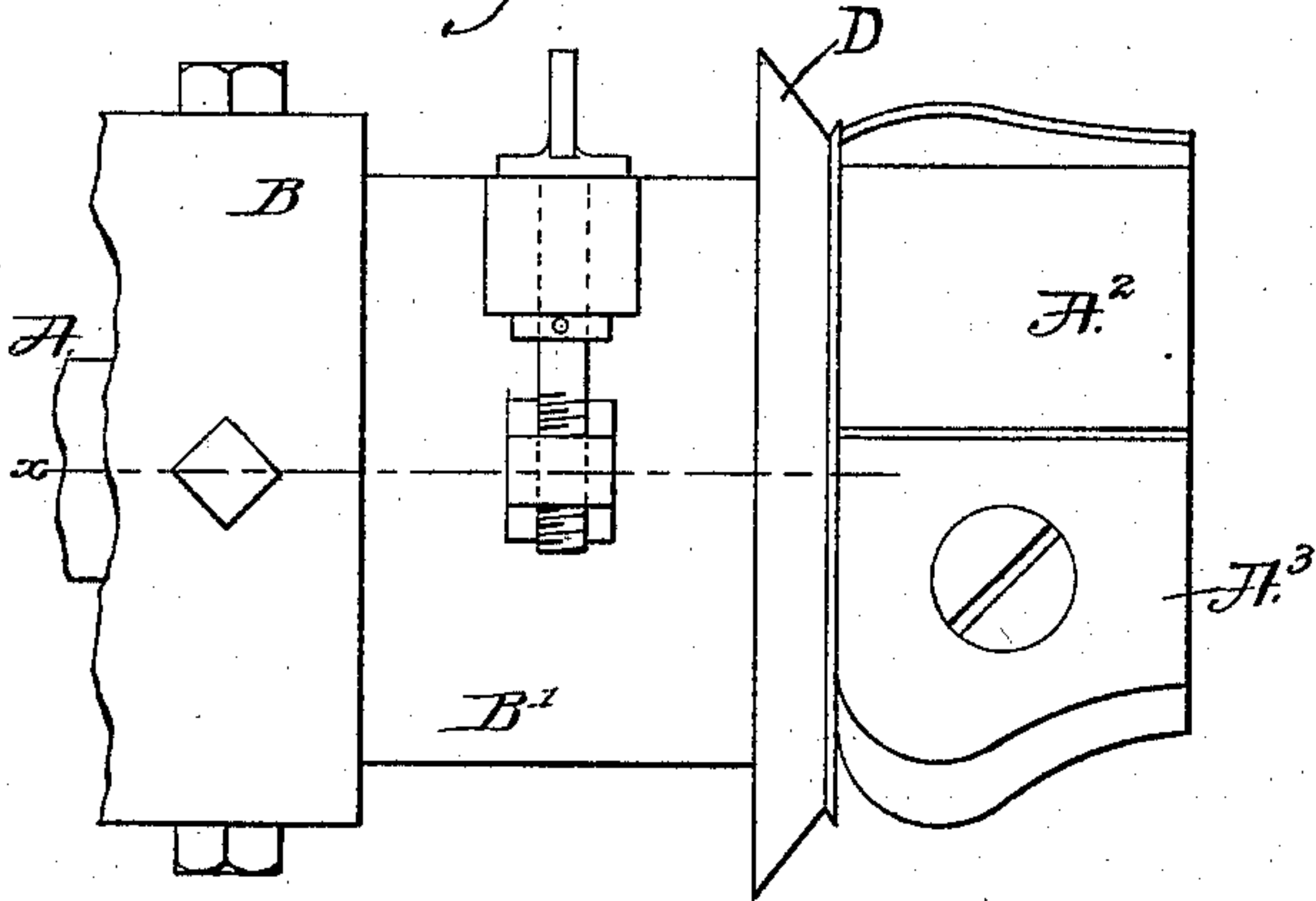


Fig. 2.

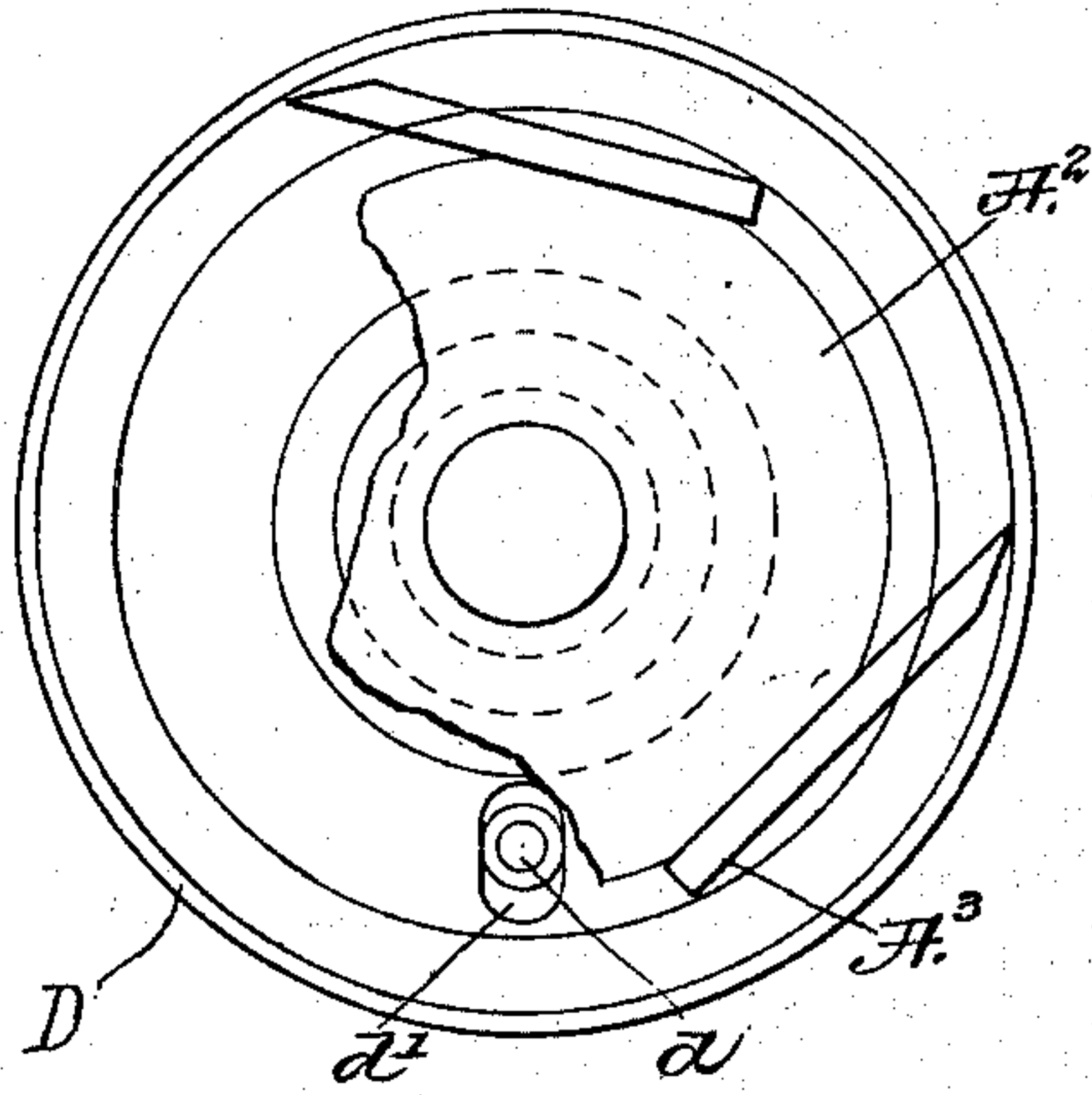


Fig. 3.

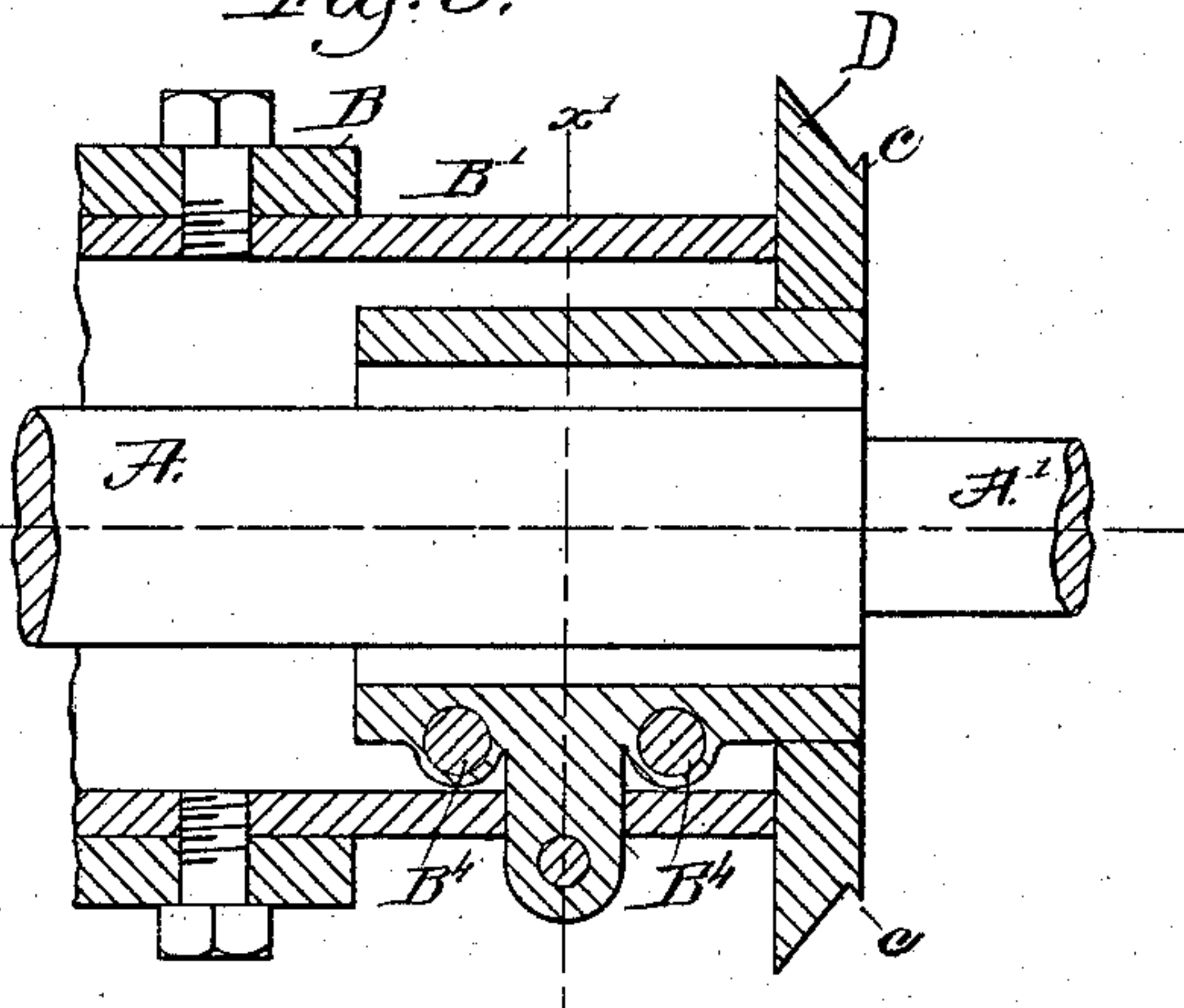


Fig. 4.

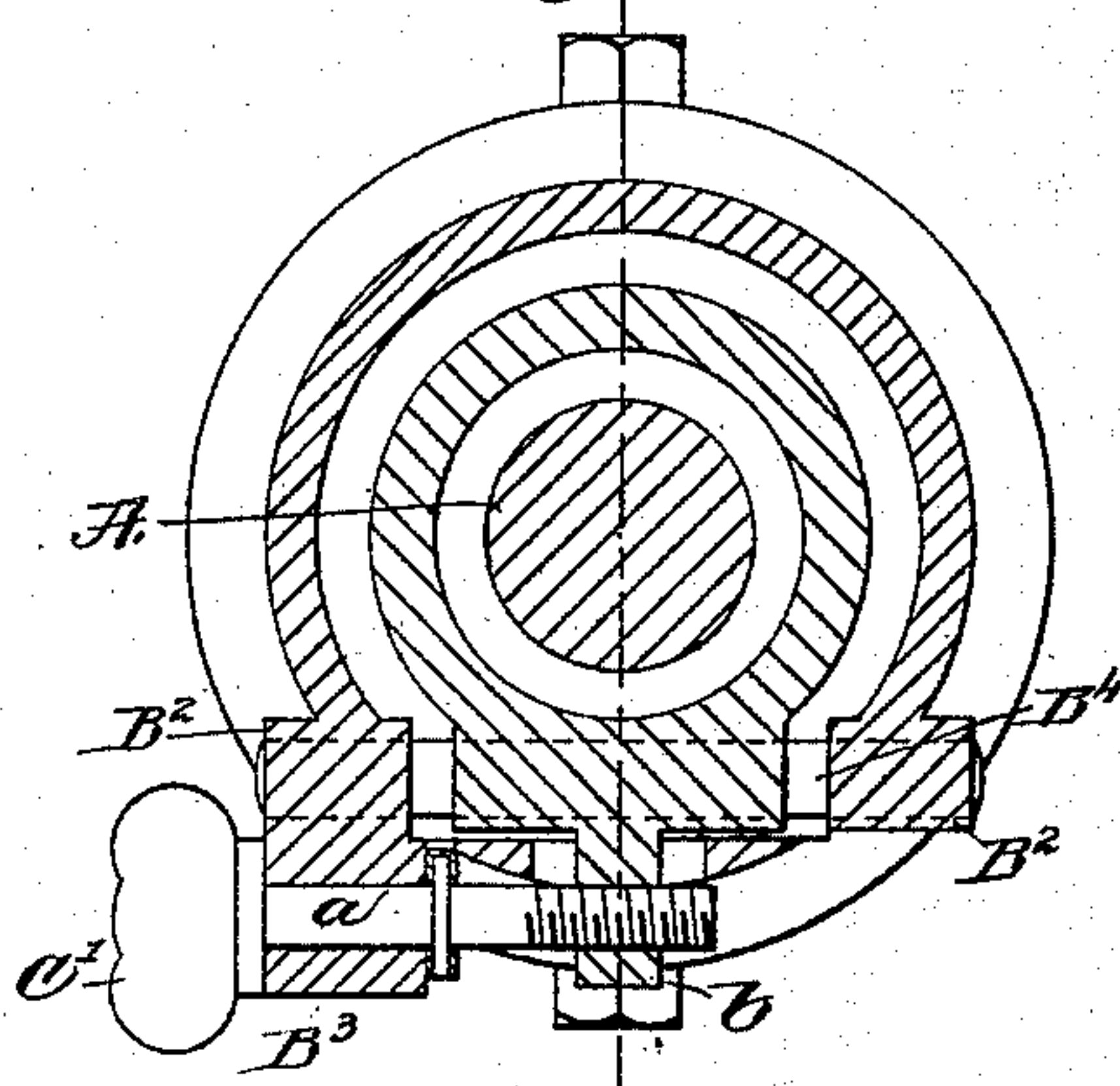


Fig. 6.

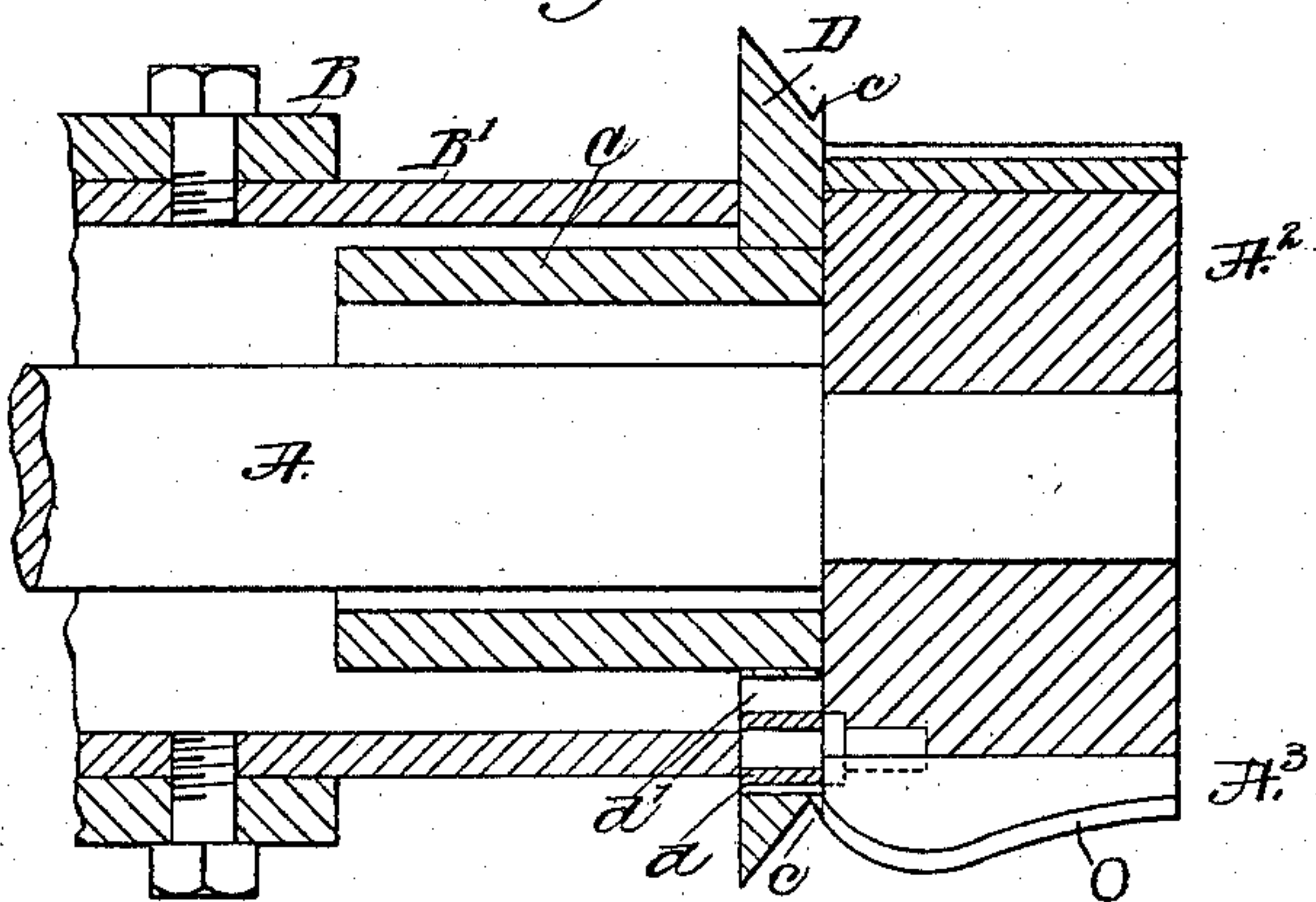
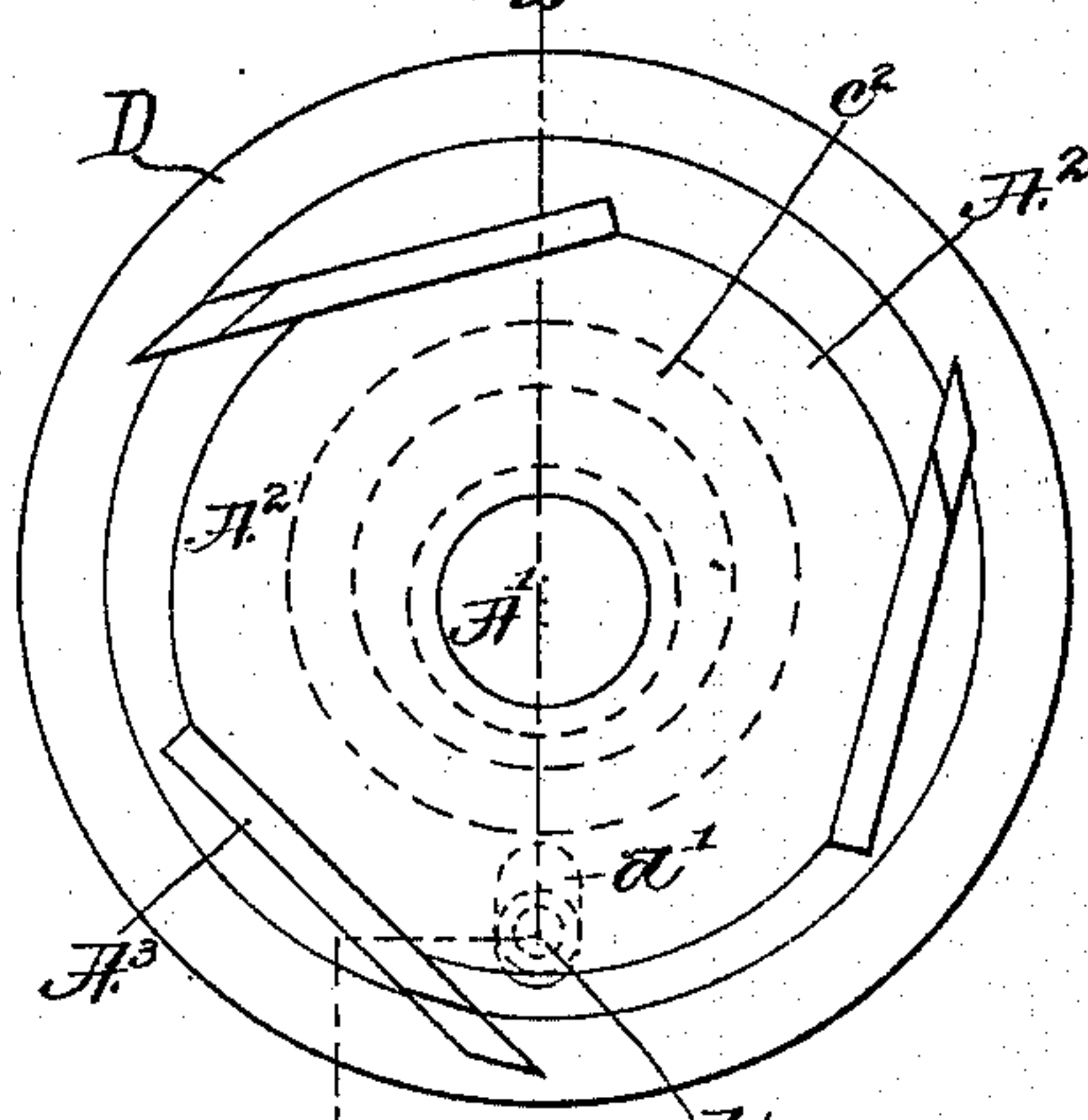


Fig. 5.



Witnesses.

Fred. S. Greenleaf.

Fredrick L. Emery.

Inventor.

Jerome L. Packard.

by Lemmy Gregory. atty.

(No Model.)

2 Sheets—Sheet 2.

J. L. PACKARD.

TREAD GUARD FOR CUTTER HEADS.

No. 388,578.

Patented Aug. 28, 1888.

Fig: 8.

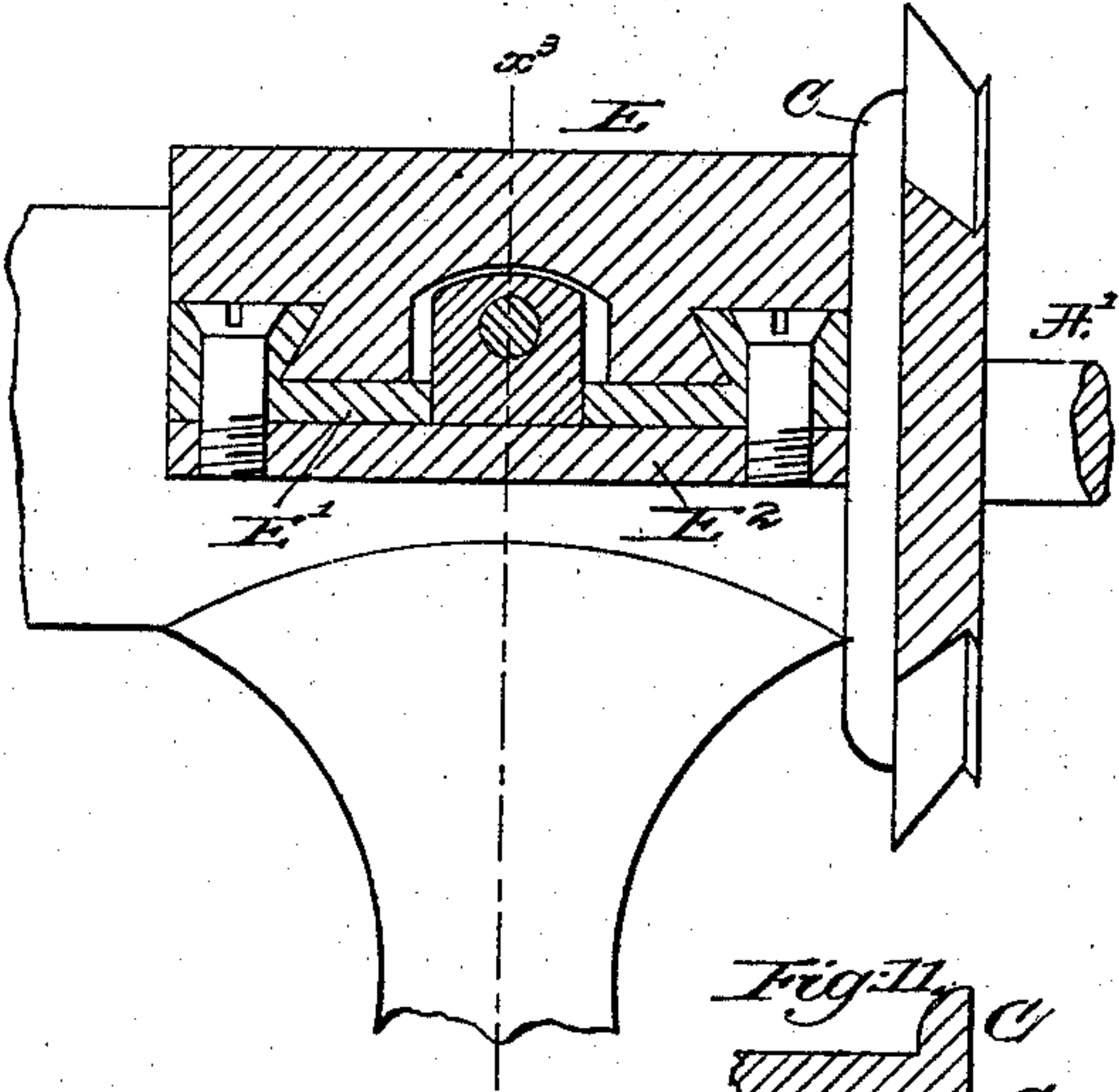


Fig: 7.

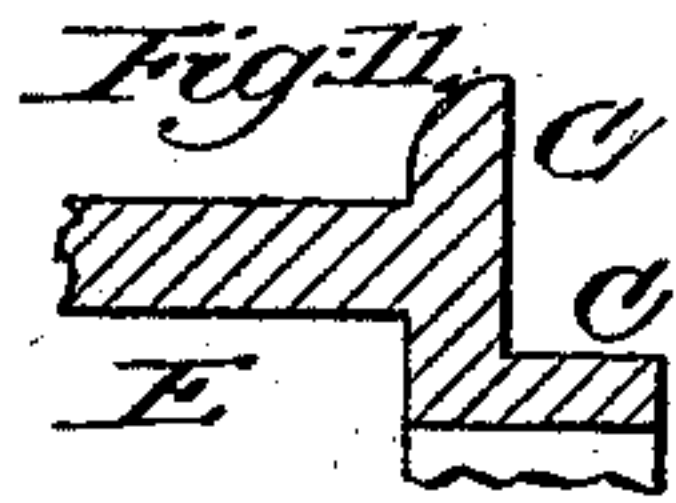
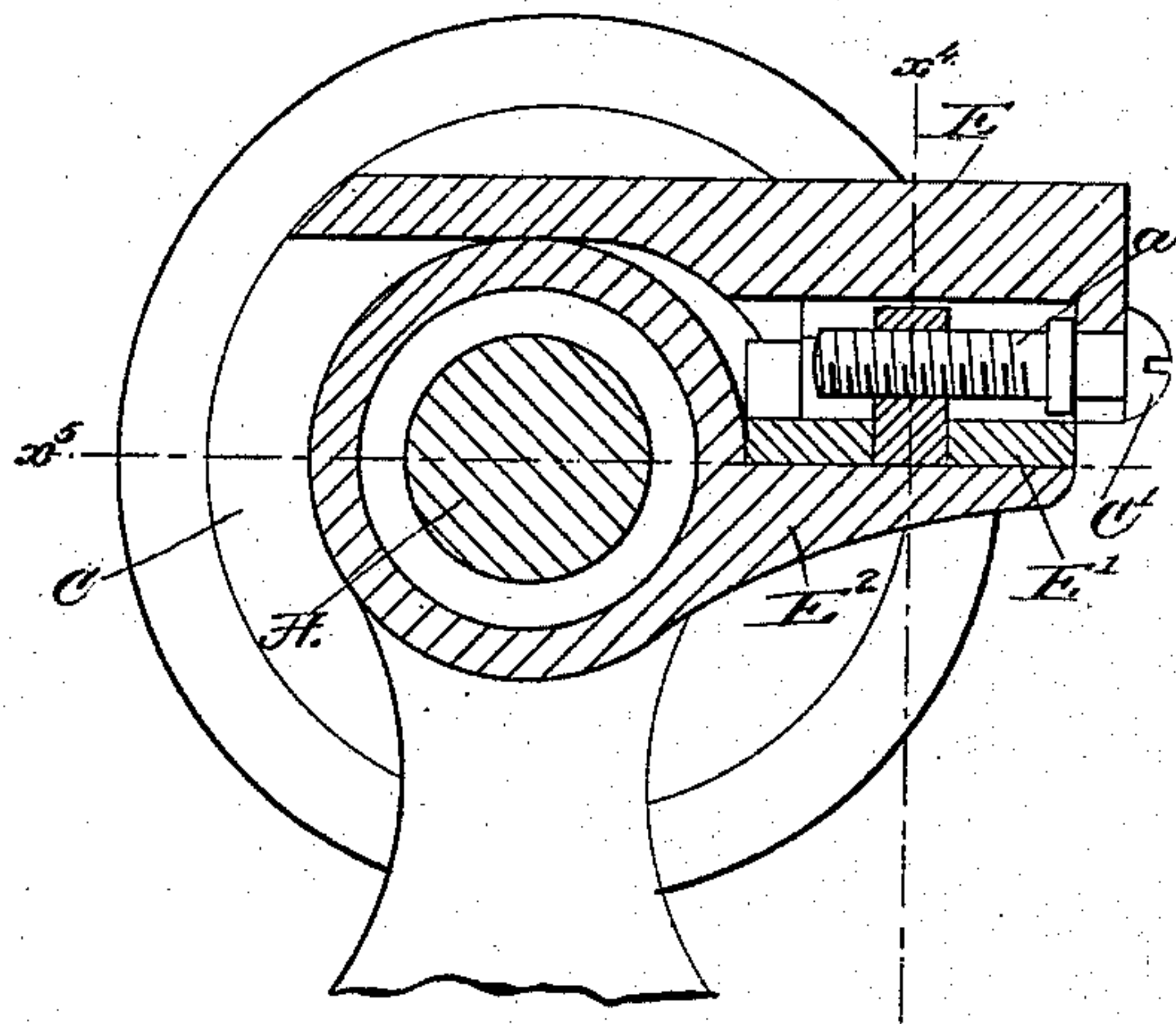


Fig: 10.

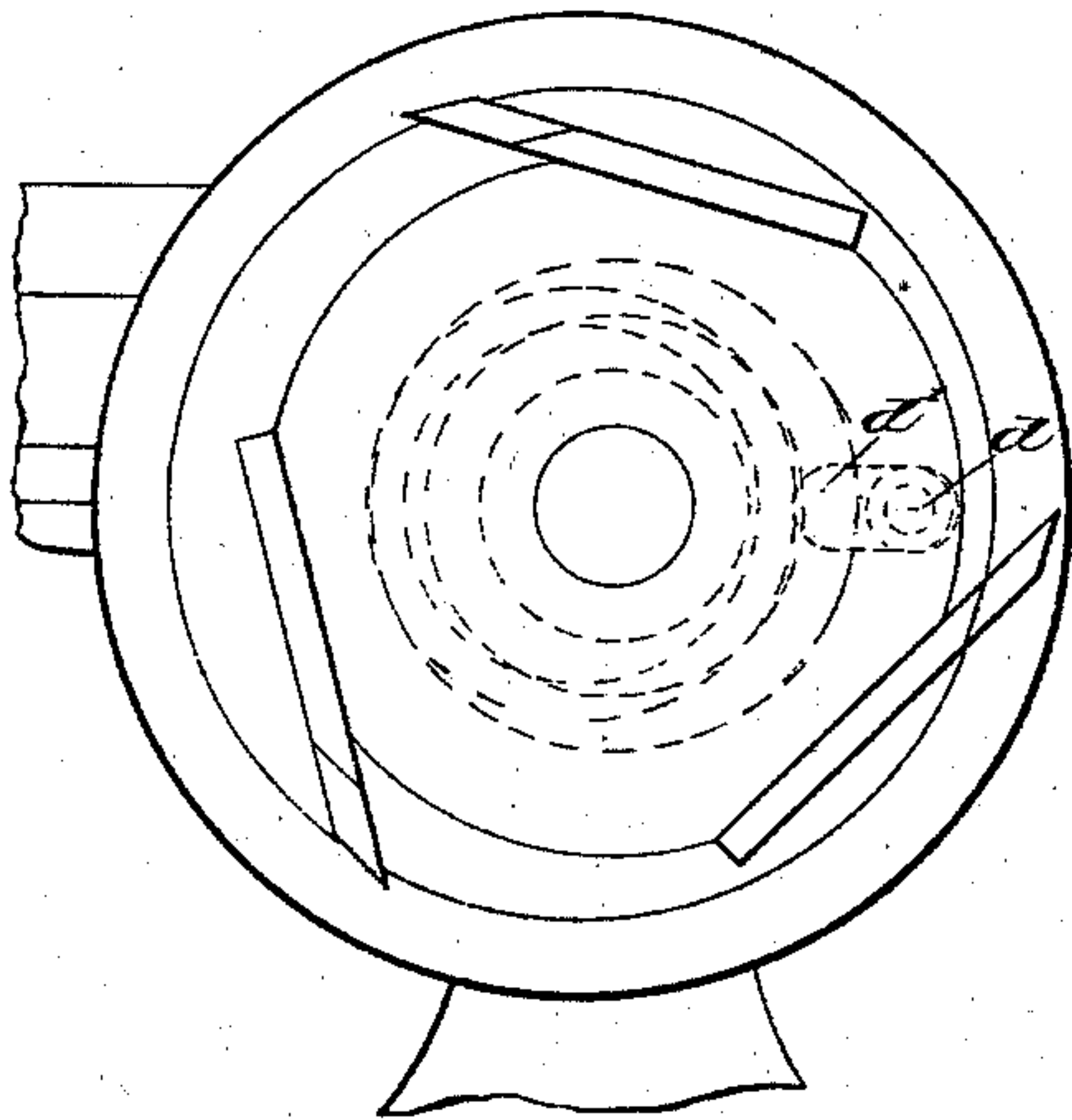
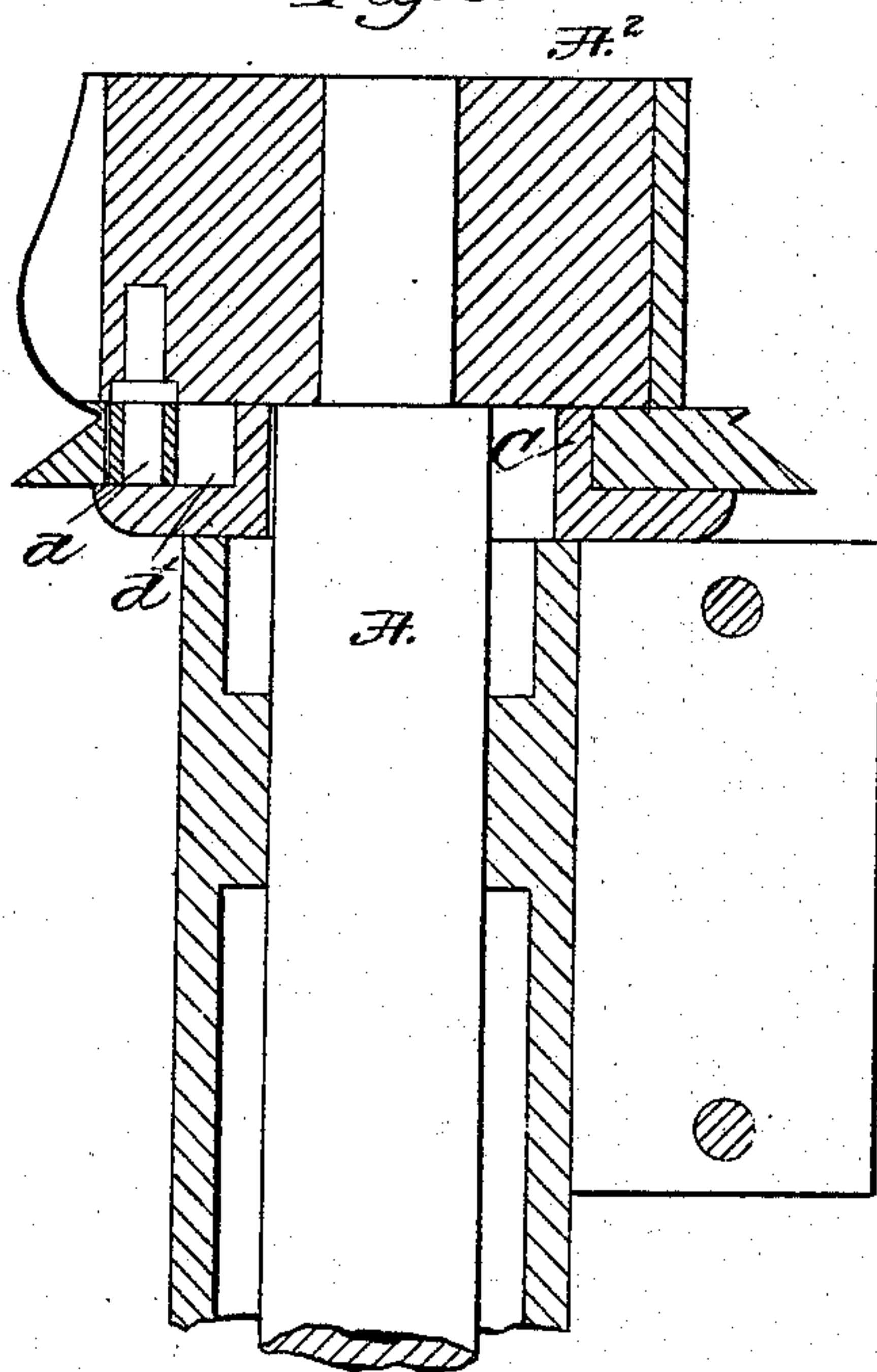


Fig: 9.



Witnesses.

Fred. S. Green of
Frederick H. Emery.

Inventor.

Jerome L. Packard.
by Crosby & Gregory, Attys.

UNITED STATES PATENT OFFICE.

JEROME L. PACKARD, OF BOSTON, ASSIGNOR TO JAMES W. BROOKS,
TRUSTEE, OF CAMBRIDGE, MASSACHUSETTS.

TREAD-GUARD FOR CUTTER-HEADS.

SPECIFICATION forming part of Letters Patent No. 388,578, dated August 28, 1888.

Application filed March 24, 1888. Serial No. 268,380. (No model.)

To all whom it may concern:

Be it known that I, JEROME L. PACKARD, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Tread-Guards, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The invention herein contained is designed as an improvement more especially on that kind of trimming-machine employed for boot and shoe work, the cutter employed being of the class known as a "rotary," the type of such machine being represented in the so-called "Busell machine."

In the class of machine referred to, and especially in the Busell machine, the so-called "tread-guard" or "rest" is concentric with relation to the shaft for actuating the cutter, and in practice each cutter has to have a tread-guard or rest of a size especially adapted to it, and as the blades of the cutter are worn away by use or ground back different tread-guards or rests have to be used, thus requiring frequent change of tread-guards or rests and necessitating a large number of such guards or rests.

The chief object of my invention is to enable the same tread-guard or rest to be used in connection with cutters of different diameters, and this I accomplish by mounting the tread-guard or rest in such manner that the support or race on which it rotates at one end of the usual cutter is made adjustable with relation to the axis of rotation of the cutter-carrying shaft, so that the said race or support may be adjusted to occupy a position either concentric with or more or less eccentric with relation to the center of the shaft for actuating the rotary cutter.

To make the proper connection between the cutter-stock and the said guard or rest, in order that the latter may be actuated by or made to follow the cutter-stock in its rotations, I have provided the cutter-stock with a roller-stud or projection which enters a radial slot in the said guard or rest, the slot being of greater length than the diameter of the said roller-stud or projection, the lost motion of the stud in the slot enabling the said stud to properly engage and rotate the guard or rest, notwithstanding the latter may be supported eccen-

trically with relation to the axis of rotation of the cutter carrying or driving shaft.

My invention consists, essentially, in the combination, with a rotary cutter and its shaft, of a tread-guard or rest and an independent race or support therefor, made adjustable at right angles to the axis of the rotary cutter, whereby the said guard or rest may be placed in proper working position with relation to the said cutter.

My invention also consists in the combination, with the rotary cutter, its shaft, and a tread-guard or rest, of a race or support therefor, and a stud-and-slot connection between the said cutter and guard or rest; also in the combination, with a rotary cutter, its shaft, and a tread-guard or rest, of a race or support therefor and means for adjusting the said race or support eccentrically with relation to the said cutter, substantially as will be described.

Other features of my invention will be pointed out in the claims at the end of this specification.

Figure 1 in plan view represents a sufficient portion of a trimming-machine with my invention added to enable my said invention to be understood. Fig. 2 is a front end elevation of the contrivance shown in Fig. 1, but partially broken out. Fig. 3 is a section of Fig. 1 in the line x , the cutter-stock being omitted. Fig. 4 is a section of Fig. 3 in the line x' . Fig. 5 is an end view showing the guard or rest adjusted into an eccentric position with relation to the cutter-carrying shaft; Fig. 6, a section of Fig. 5 in the dotted line x^2 ; and Figs. 7 to 10 are modifications to be described—Fig. 7 a section on the line x^3 , Fig. 8 a section on the line x^4 , and Fig. 9 a section on the line x^5 . Fig. 10 is a right-hand elevation of the apparatus shown in Fig. 9; and Fig. 11 is a partial sectional detail taken through the race and the slide E, from which it extends.

The shaft A may be supposed to be that of any usual trimming-machine employed for boot and shoe work, it having at its outer end a reduced portion, as A', upon which will be placed the stock A² of any usual cutter, it having blades A³ of any desired shape, that depending upon the class of work to be done. The shaft A has usual suitable bearings, (not shown,)

one of said bearings having an extended flange or portion, B, to which is secured in suitable manner a sleeve, B', having, as herein shown, suitable lugs or thickened portions, as B² B³, (see Fig. 4,) the former receiving through them and holding fixedly suitable guide-rods, B⁴, upon which slides and may be adjusted the race or support C, on which is loosely mounted the tread-guard or rest D.

10 The lug B³ receives in it the shank *a* of an adjusting-screw, C', adapted to be freely rotated, but restrained from longitudinal motion in the said sleeve, the threaded part of the said screw entering a threaded hole in the ear *b*, forming part of the race or support C, rotation of the said screw enabling the said race or support to be adjusted to occupy a position more or less eccentric with relation to the center of rotation of the shaft, in order that some one portion of the rand-guard *c* for a short distance about the periphery of the guard or rest D may coincide with the path of movement of the inner edges of the blades A³ in their rotation, notwithstanding the eccentricity of the guard or rest D. This point of coincidence may be at the front side of the cutter, or where the operator holding the shoe stands, the said point being designated by O in Fig. 6, it being immaterial in an operative sense what may be the difference in position between the edge of the rand-guide and the path of movement of the cutting-edges of the blades at the opposite or rear side of the cutter, such divergence being represented in Fig. 6, wherein the guard or rest is adjusted to occupy an eccentric position. (See, also, the line *c*², Fig. 5.)

20 The stock A² of the cutter is herein shown as provided with a roller-stud or projection, as *d*, it entering a radial slot, *d'*, in the guard or rest, the length of the said slot in excess of the diameter of the roll or stud therein being twice the distance between the concentric position of the race and its position of maximum eccentricity, so that as the said stock is rotated the said roller or other stud in the said slot serves to rotate the said guard or rest about the race or support, the said roll or stud at each rotation of the shaft traversing in the said slot.

30 If the race for the guard or rest occupies a position concentric with relation to the shaft A, then the roll or stud would stand centrally in the slot *d'*. In this way one and the same guard or rest, by merely adjusting the independent race or support on which it rotates more or less out of central position with relation to the center of the shaft A, may be

used with a cutter of any usual diameter, whereas prior to my invention the tread-guard or rest has been fixed to and rotated with the cutter, and consequently has had to correspond in size with the size of the cutter being used.

In the modification, Figs. 7 to 10, the race or support C, made as a ring, is extended from a horizontally-movable slide, E, dovetailed in cross-section, to slide in a correspondingly-shaped groove cut into a bed-plate, E', supported on the bracket E², forming part of the frame-work containing the bearings for the main shaft A. This slide has connected with it an adjusting screw, C', which performs for it the same function performed by the screw C' in Figs. 1 to 6—viz., it by its rotation effecting the adjustment of the race or support for the guard or rest eccentrically with relation to the center of rotation of the shaft A.

Believing myself to be the first to support the tread-guard or rest independently of the cutter-stock, and also to adjust the said guard or rest independently at right angles with relation to the cutter-stock, so as to enable a single guard or rest to be employed with the cutter, being used irrespective of the size within certain limits, I do not desire to limit my invention to the exact construction of mechanism herein shown for effecting the adjustment of the tread-guard or rest.

I claim—

1. The combination, with a rotary cutter and its shaft, of a tread-guard or rest and an independent race or support therefor, made adjustable at right angles to the axis of the rotary cutter, whereby the said guard or rest may be placed in proper working position with relation to the said cutter, substantially as described.

2. The combination, with a rotary cutter, its shaft, and the tread-guard or rest, of a race or support therefor, the stock of the cutter and the guard or rest being connected by a stud-and-slot connection, substantially as and for the purpose described.

3. The combination, with a rotary cutter, its shaft, and tread-guard or rest, of the race or support therefor, with means for adjusting the said race or support eccentrically with relation to the said cutter, substantially as described.

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

JEROME L. PACKARD.

Witnesses:

BERNICE J. NOYES,
C. M. CONE.