

(No Model.)

S. ROSS, Jr.
ABRASIVE ROLL OR WHEEL.

No. 494,892.

Patented Apr. 4, 1893.

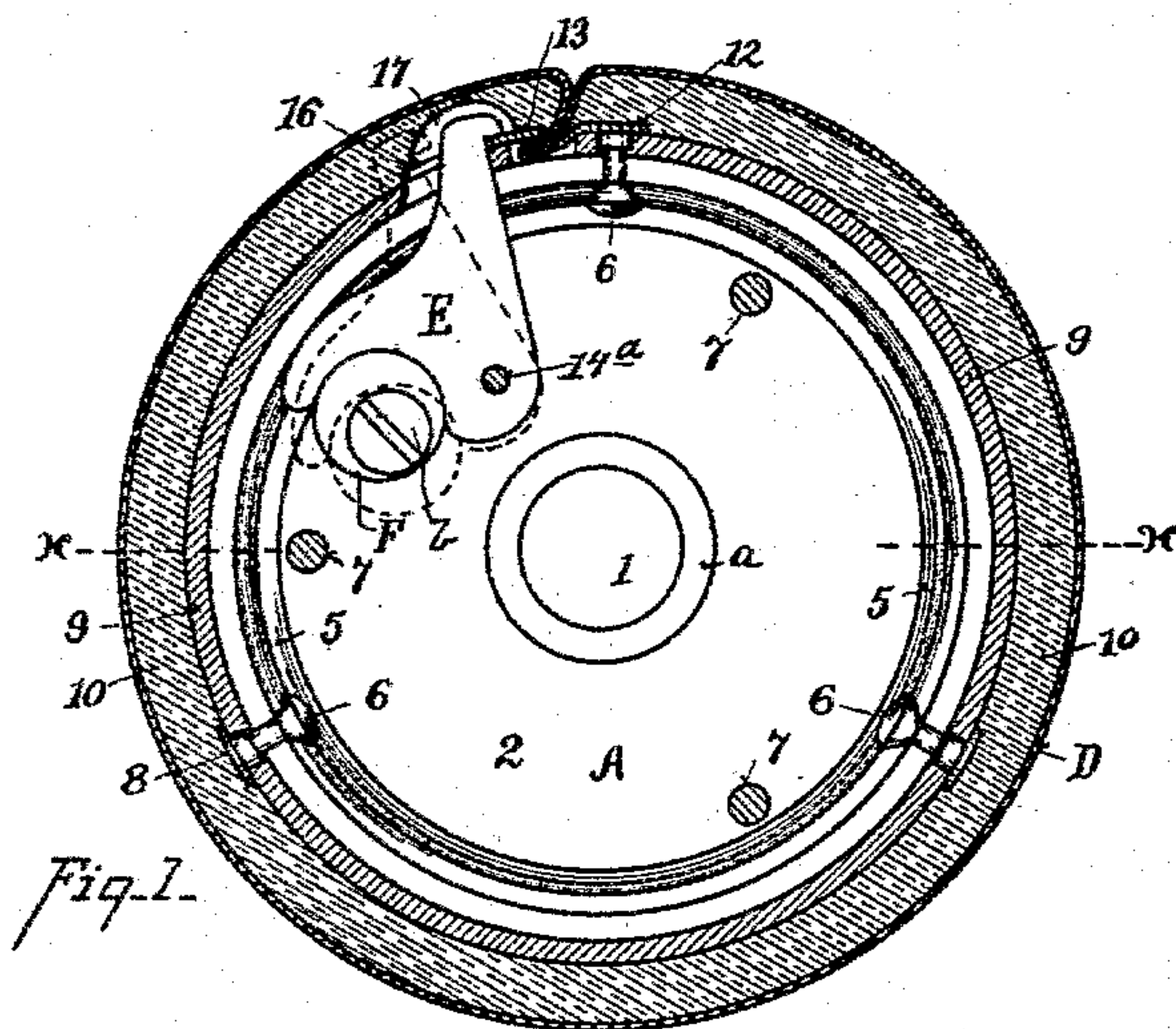


Fig. 1-

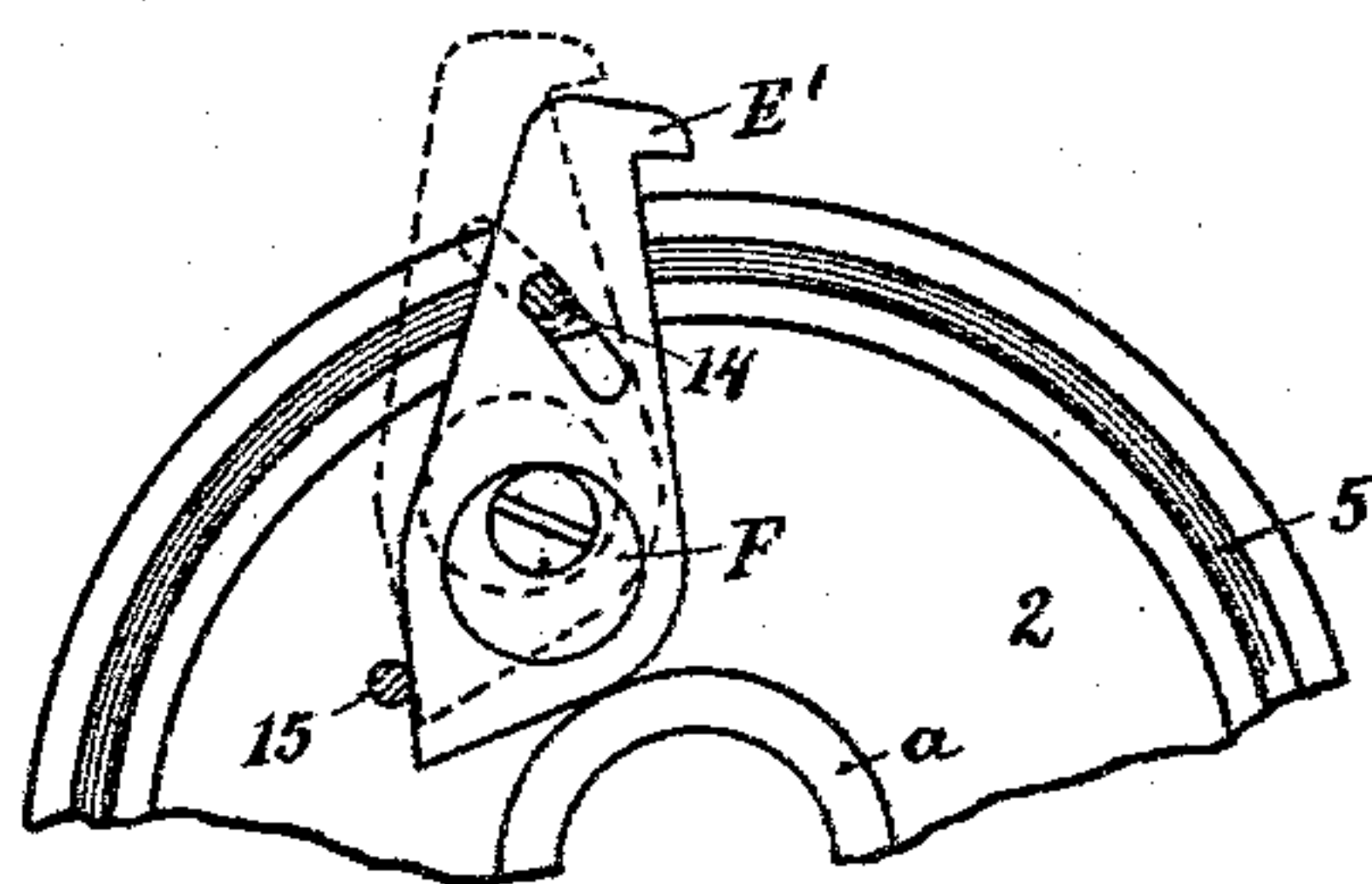


Fig. 3-

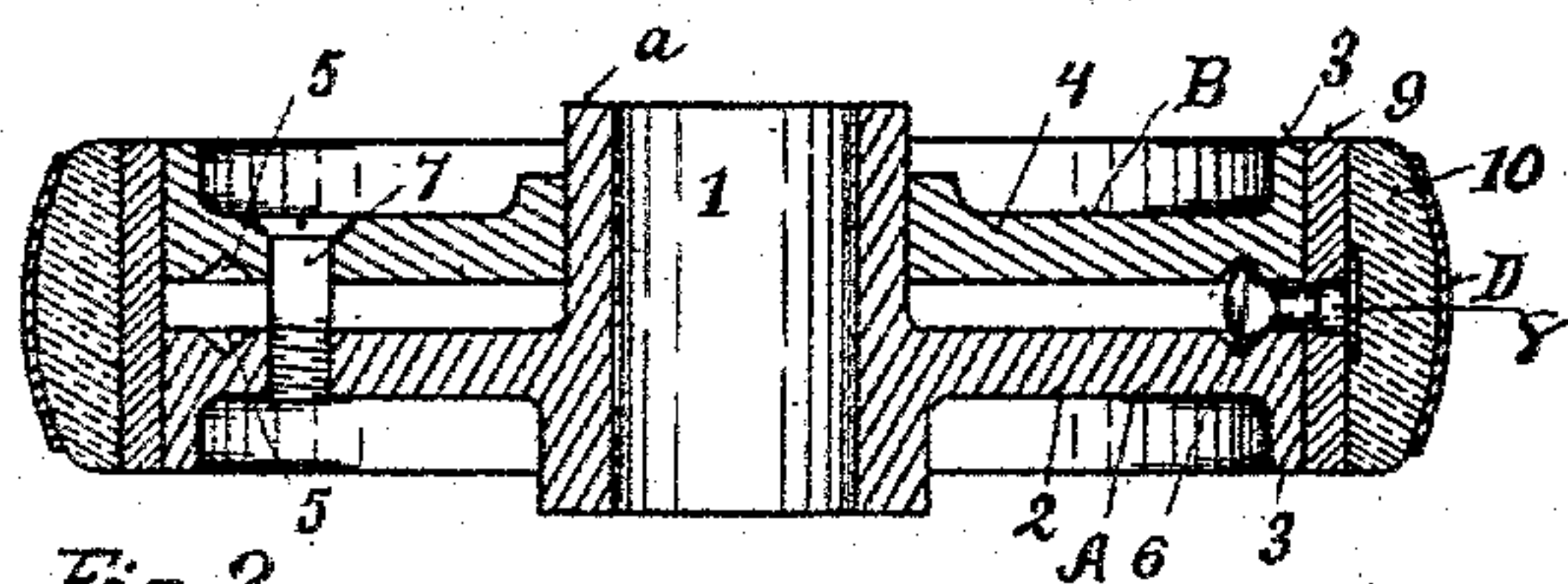


Fig. 2-

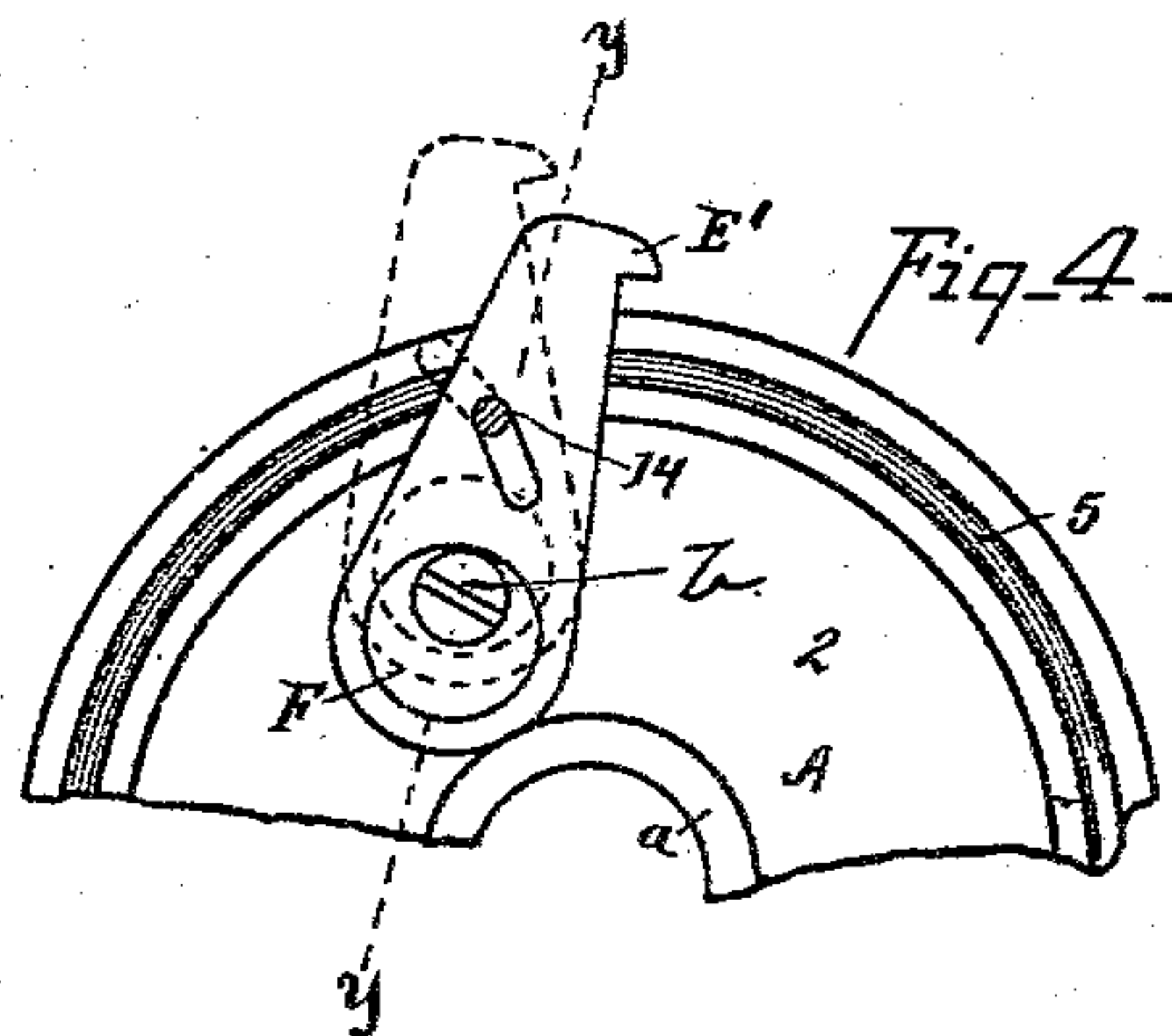


Fig. 4-

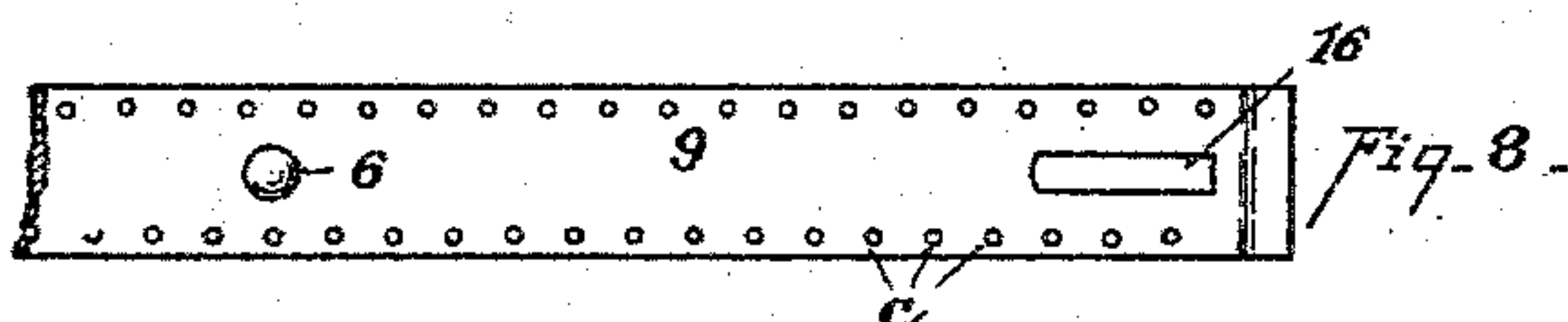


Fig. 8-

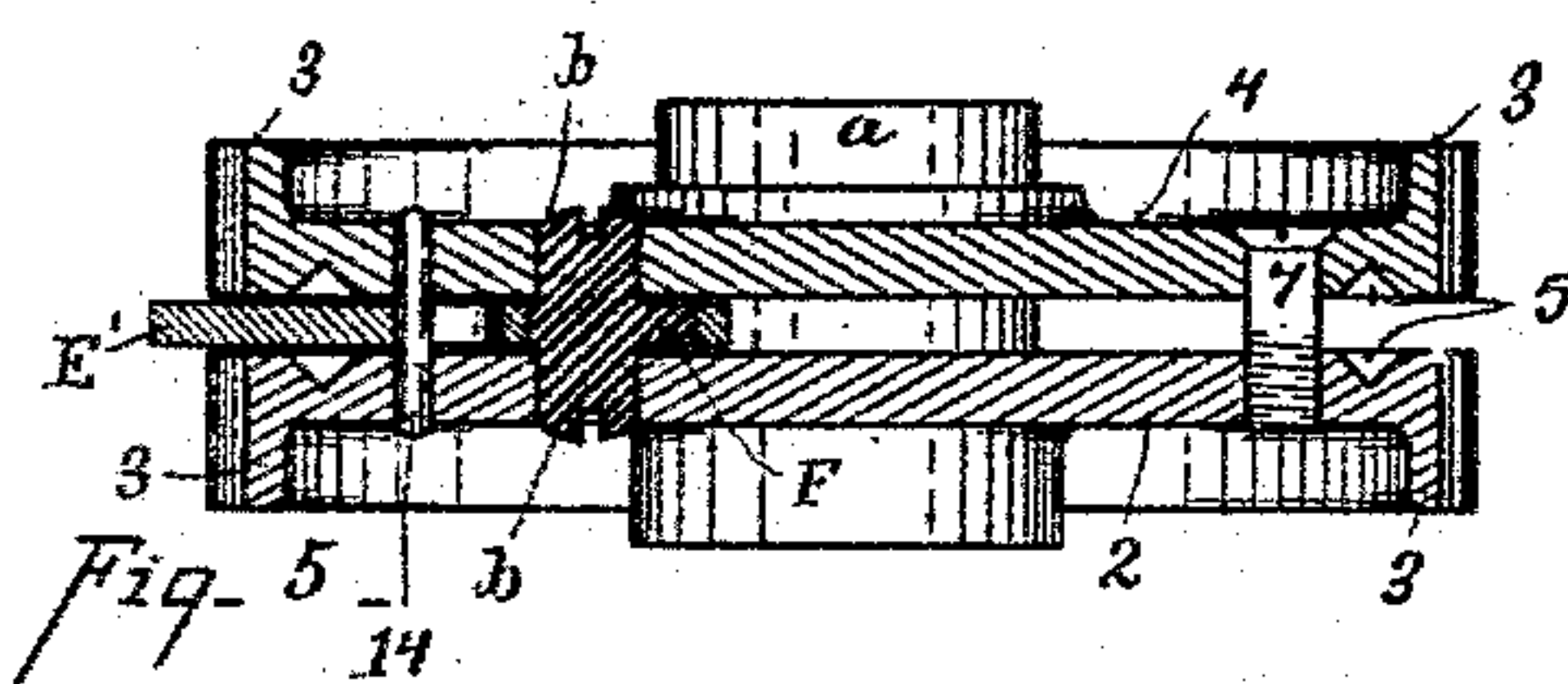


Fig. 5-

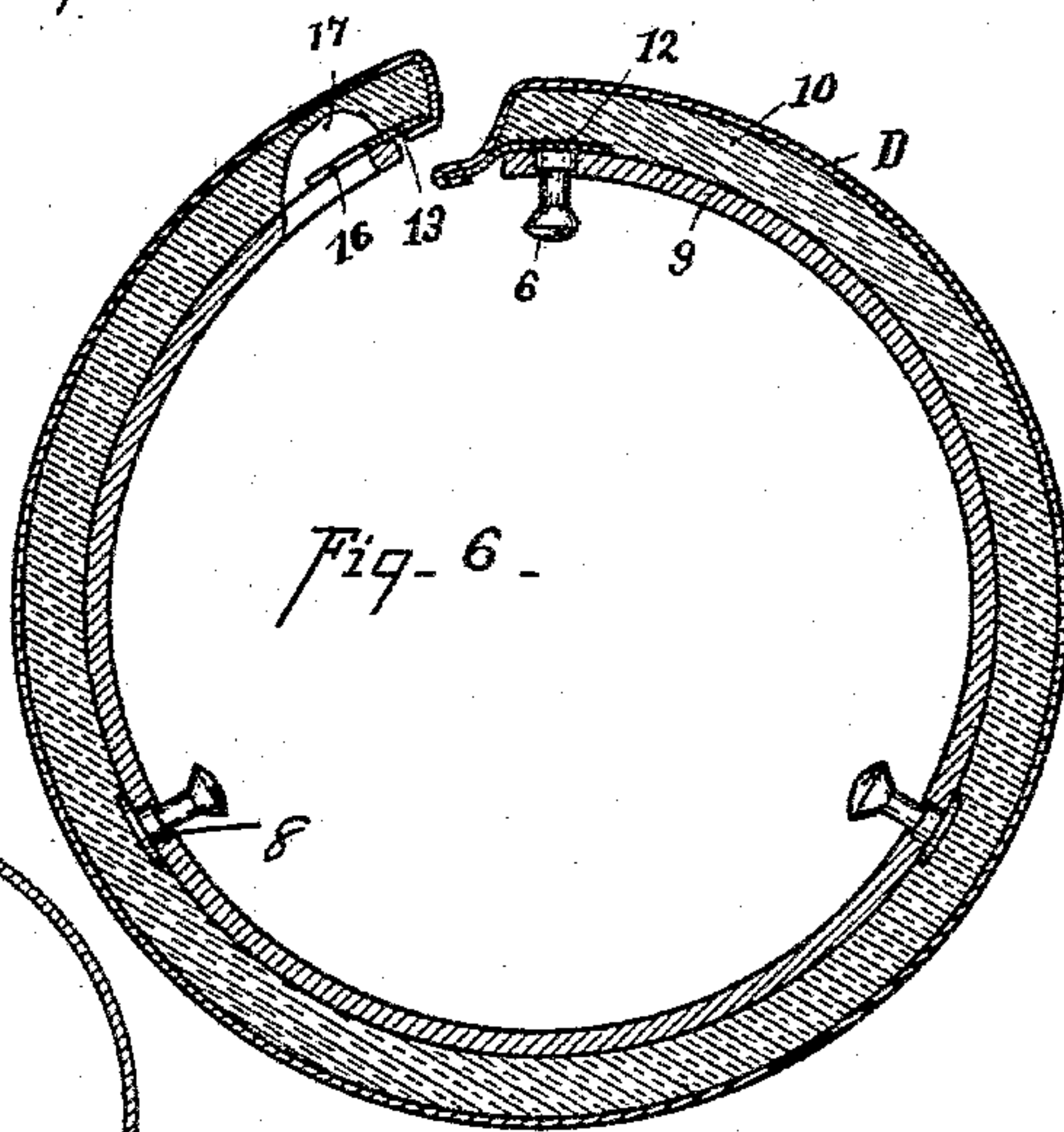


Fig. 6-

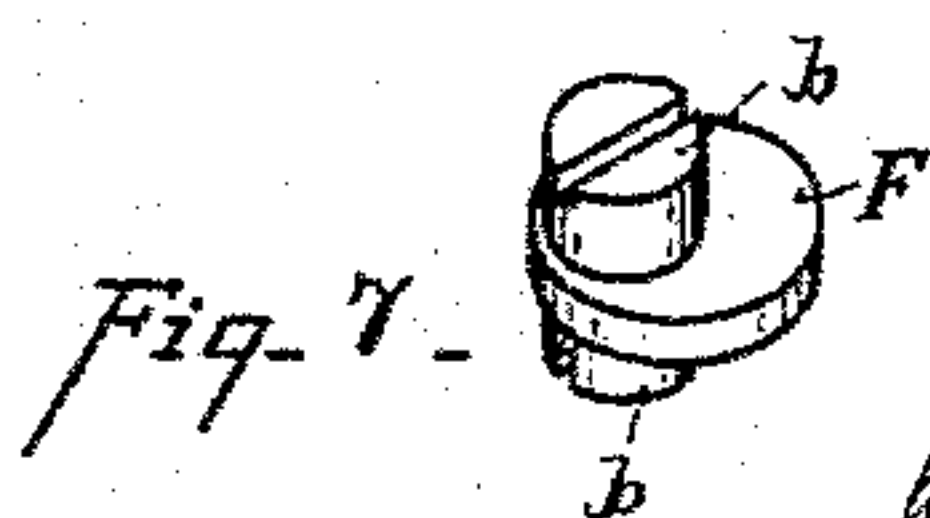


Fig. 7-

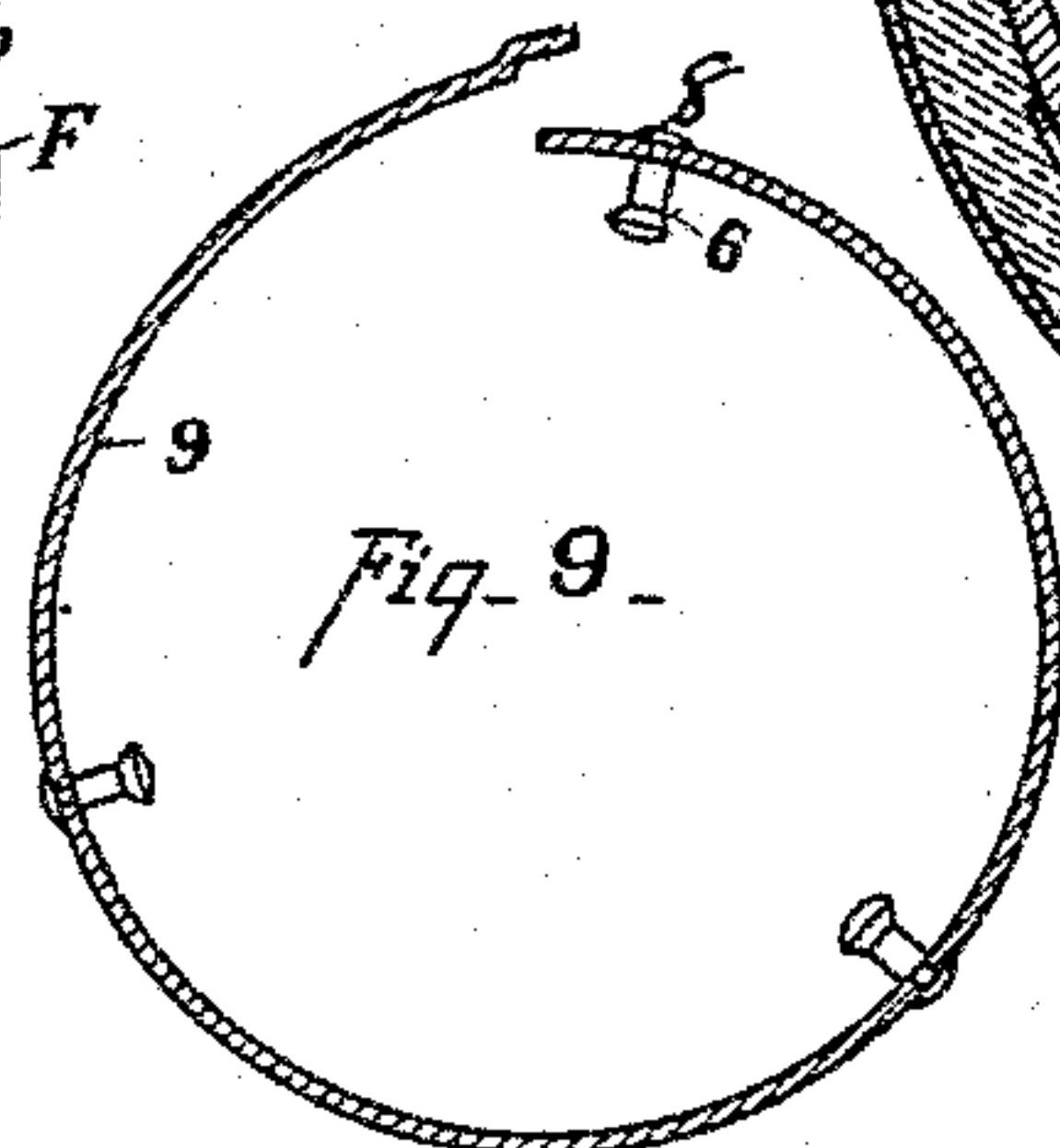


Fig. 9-

Attest—
C. W. Miles
T. Simmons

Inventor—
Simon Ross Jr.
By Wood & Boyd Atty.

UNITED STATES PATENT OFFICE.

SIMON ROSS, JR., OF CINCINNATI, OHIO.

ABRASIVE ROLL OR WHEEL.

SPECIFICATION forming part of Letters Patent No. 494,892, dated April 4, 1893.

Application filed May 14, 1892. Serial No. 433,046. (No model.)

To all whom it may concern:

Be it known that I, SIMON ROSS, Jr., a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Abrasive Rolls or Wheels, of which the following is a specification.

My invention relates to an abrasive roll or wheel which employs a flexible band as a backing for the abrasive material.

The object of my invention is, first, to provide suitable fastening devices to draw and strain the flexible band so as to hold it and the abrasive material firmly in position.

Another object of my invention is to provide means for securely holding the flexible band in position and yet allow it to be readily removed or changed. In practical use it is very desirable to change the shape of the flexible band, some requiring to be of various shapes, ovals, &c., others flat, and as these changes have to be frequently made it is very desirable to provide means for readily making them, as well as to firmly secure the parts in position for use.

The various features of my invention are fully set forth in the description of the accompanying drawings making a part of this specification, in which—

Figure 1 is a central sectional elevation of my improvement in position for use. Fig. 2 is a section on line *x, x*, Fig. 1. Fig. 3 is a modification of Fig. 1. Fig. 4 is another modification. Fig. 5 is a section on line *y, y*, Fig. 4. Fig. 6 is a sectional plan view of the flexible rim. Fig. 7 is a perspective view of the eccentric lock. Fig. 8 is a plan view of a modification of the flexible belt. Fig. 9 is a side elevation of Fig. 8.

The preferred form of construction is to make an abrasive wheel of the pulley form; it is made of two sections A, B; section A is provided with an elongated hub *a*; section B is of the disk form, with a central bore fitting and sliding on the hub *a*.

1 represents the bore through the hub through which the spindle passes to secure it to the rotating shaft.

2 represents the disk of the section A. 4 represents the disk of section B. The rims 3 of said sectional disks are a sufficient distance apart to form an annular recess all

round the periphery of said disks; the said recess is larger below the rims, and in the preferred form this enlargement is made of the annular groove form 5 near the periphery, so as to receive the heads of studs 6 which rest in said groove, the shank projecting through the recess between the rims. When the sections are not clamped together these studs are free to move around the periphery of the wheel to adjust them in position, and yet they cannot move out radially; the two sections are clamped together preferably by means of screws 7, so as to grasp and hold the heads of the studs. These studs are provided with flat heads 8. The shanks of the studs project through the rim 3 and through the flexible belt 9.

10 represents a flexible band made of felt or other similar material which is securely fastened to the belt 9 and serves as a cushion backing for the abrasive material. The enlarged heads 8 prevent the studs from being drawn through the belt, and draw the flexible band which is composed of felt 10, and the belt 9 firmly to the periphery of the wheel as the disks 2 and 4 are drawn together. One end of the flexible band is preferably free so as to allow the end of the sand paper D to be inserted between band and pulley. In order to prevent the sand paper from wearing the ends of the flexible band are provided with metallic lining plates 12, 13, inserted between the felt and leather, when the same is of leather as shown in Figs. 1, 2 and 6; but this flexible band may be made of metal as shown in Figs. 8 and 9; it is provided with a series of holes *c*, as shown in Fig. 8, so that the fibrous backing 10 may be stitched thereto. The ends of this flexible band clasp and grip the abrasive material between them.

In order to secure the ends of the flexible band together I have provided the following instrumentalities: E represents a hook provided with an eccentric opening. F represents an eccentric journaling in the disks 2, 4. *b* represents stud shafts which project through the disks 2 and 4 of sections A, B, so that a screw driver may be applied thereto to turn the eccentric shaft. The outer end of the hook E engages in a slot in the flexible belt 9. When said eccentric F is turned in one direction it drives said catch down clasp-

ing the ends of the sand-paper between the ends of the band; when the eccentric is turned in the reverse position the hook E is thrown out of engagement and the end of the flexible belt may be opened as shown in Fig. 6, to remove the sand-paper.

In Figs. 3 and 4 I have shown a modification of the eccentric hook; the hook E' in this case is held in position by the eccentric and the shank of the hook is slotted to slide over the pin or keeper 14, while in the form shown in Fig. 1, the pin 14^a serves as a journal for the hook and the lateral motion is provided by setting the eccentric to one side thereof. These two forms are practically the equivalent one of the other.

15 represents a lock pin to prevent the catch from being thrown back too far.

16 represents a slot formed in the leather belt 9, and 17 a cavity formed in the felt portion of the band, so that the head of the hook may pass through and readily engage with the fastening plate 13. It will be observed that the hook as it is thrown forward moves toward the opposite end of the flexible band so that it draws the ends of said split band together, as well as drawing them inward thereby making a very firm locking or fastening for holding the ends of the sand paper in position on the flexible band. The flexible bands are made and put together in the form shown in Fig. 6 with the stud secured in position so that by unscrewing and taking off disk B the band can be taken off and the new band inserted, resting the stud in the groove 5, and then putting on the disk B and clamping the same together.

Having described my invention, what I claim is—

1. An abrasive wheel composed of rimmed sections A, B, having an annular opening between the rims, and a recess below said rims, in combination with the studs 6, seated in said recess, projecting between the rims of the sec-

tions, and secured to a flexible belt, and the means for clamping said disks together, substantially as specified.

2. In combination with a wheel formed of sections A and B, provided with grooves 5, the flexible belt having fastening studs 6 secured between the disks of the split wheel, substantially as specified.

3. An abrasive wheel composed substantially of the section A provided with an elongated hub *a*, the section B nesting and sliding thereon, each section being provided with an annular groove 5 adapted to secure and clamp the fastening devices of the flexible belt resting in said groove, substantially as specified.

4. In combination with the duplex wheel A, B, provided with annular grooves 5, the flexible belt 9, the elastic fibrous material 10 secured to said belt, the studs 6 secured therein provided with the head clamped between the faces of the disks 3, 4, substantially as specified.

5. In combination with the abrasive wheel, composed of the sections A, B, the eccentric F, and catch E placed between the faces of the said split sections, the said catch projecting through a slit in the flexible belt 9, and means for moving said catch to engage and lock said belt upon the periphery of the wheel, substantially as specified.

6. In combination with the abrasive and split wheel, the flexible band secured around the periphery by means of an eccentric and catch located between the faces of the split wheel, the free end of said catch projecting up through the slot 16 and engaging with the flexible belt 9, substantially as specified.

In testimony whereof I have hereunto set my hand.

S. ROSS, JR.

Witnesses:

T. SIMMONS,
C. W. MILES.