

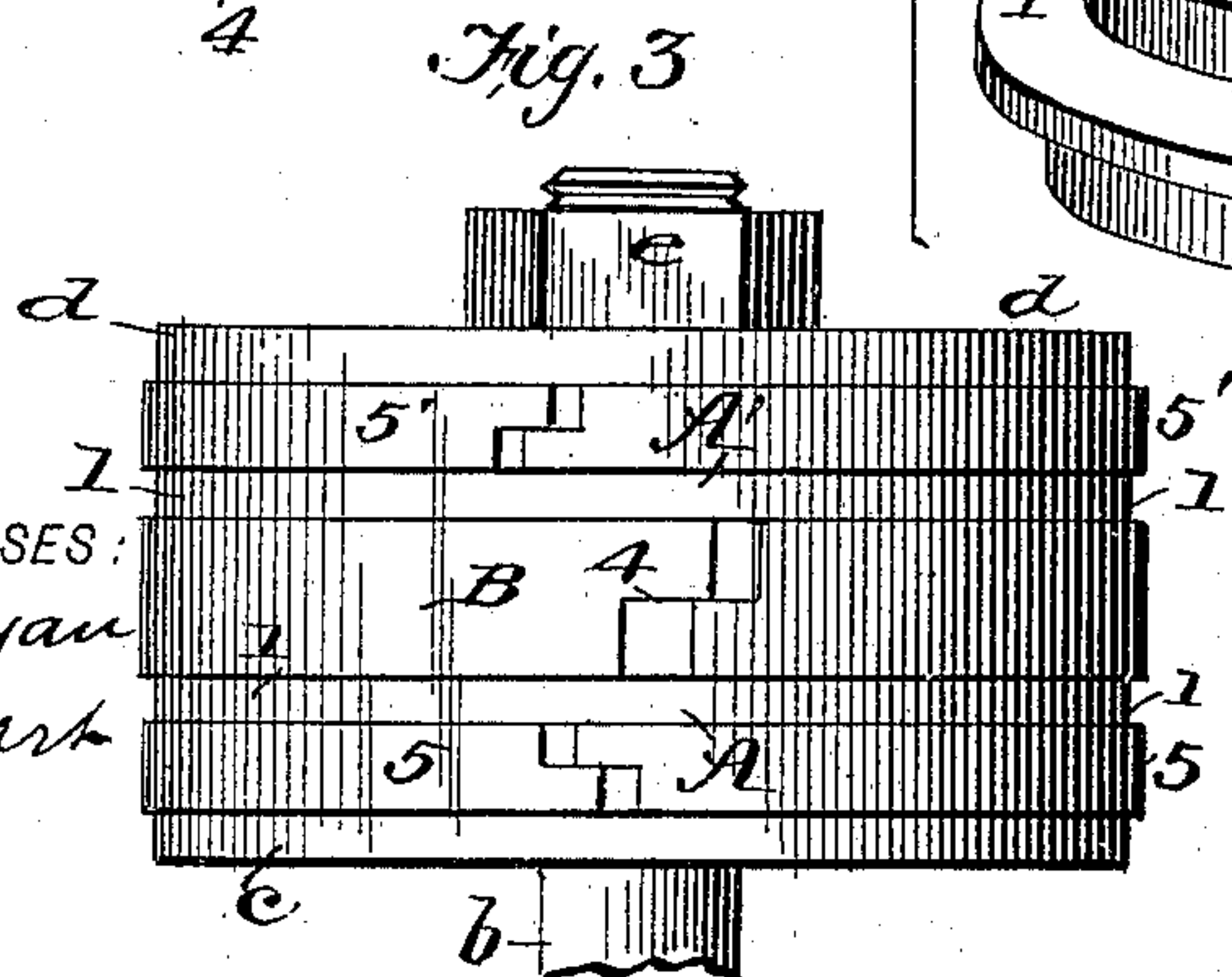
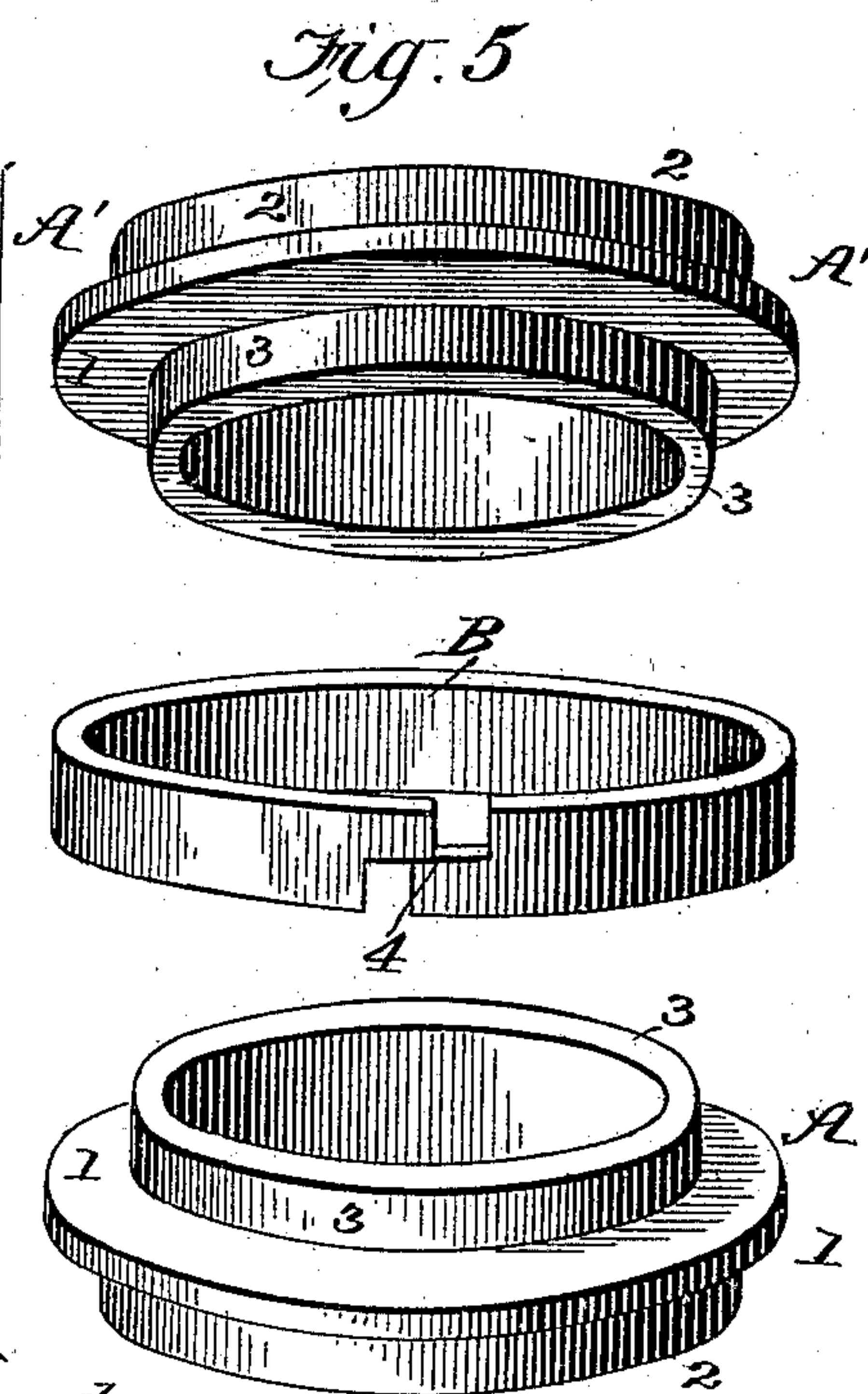
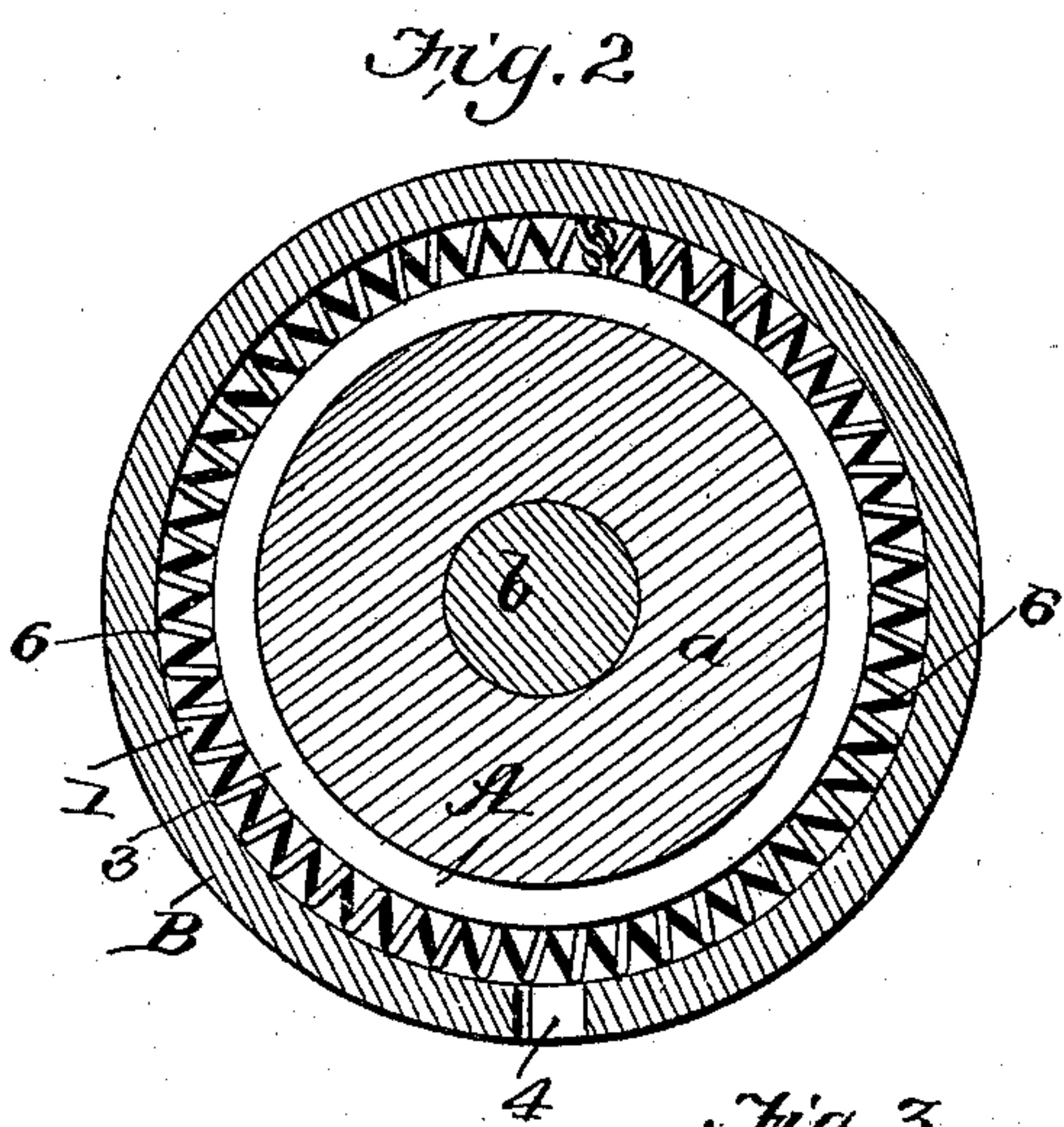
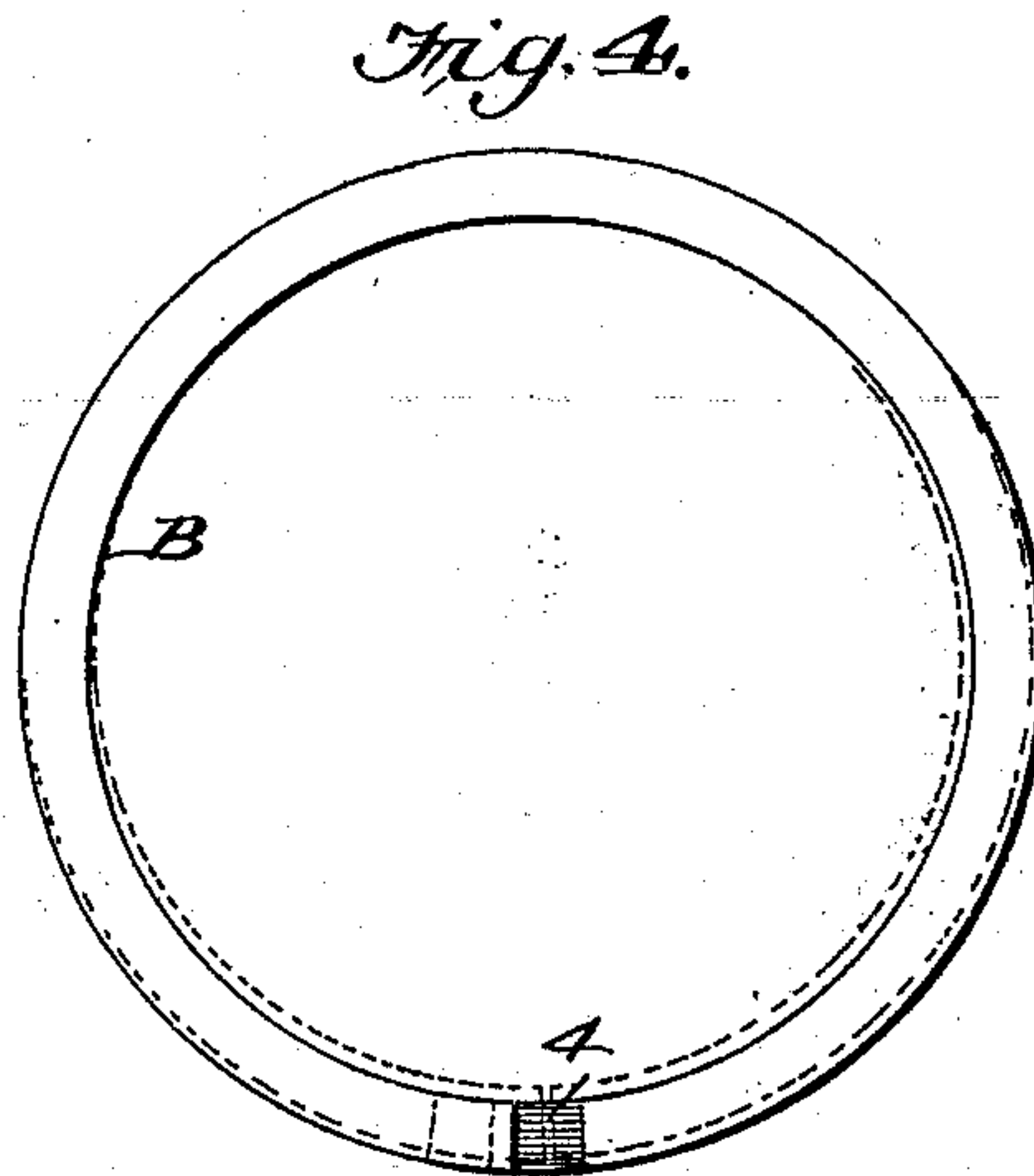
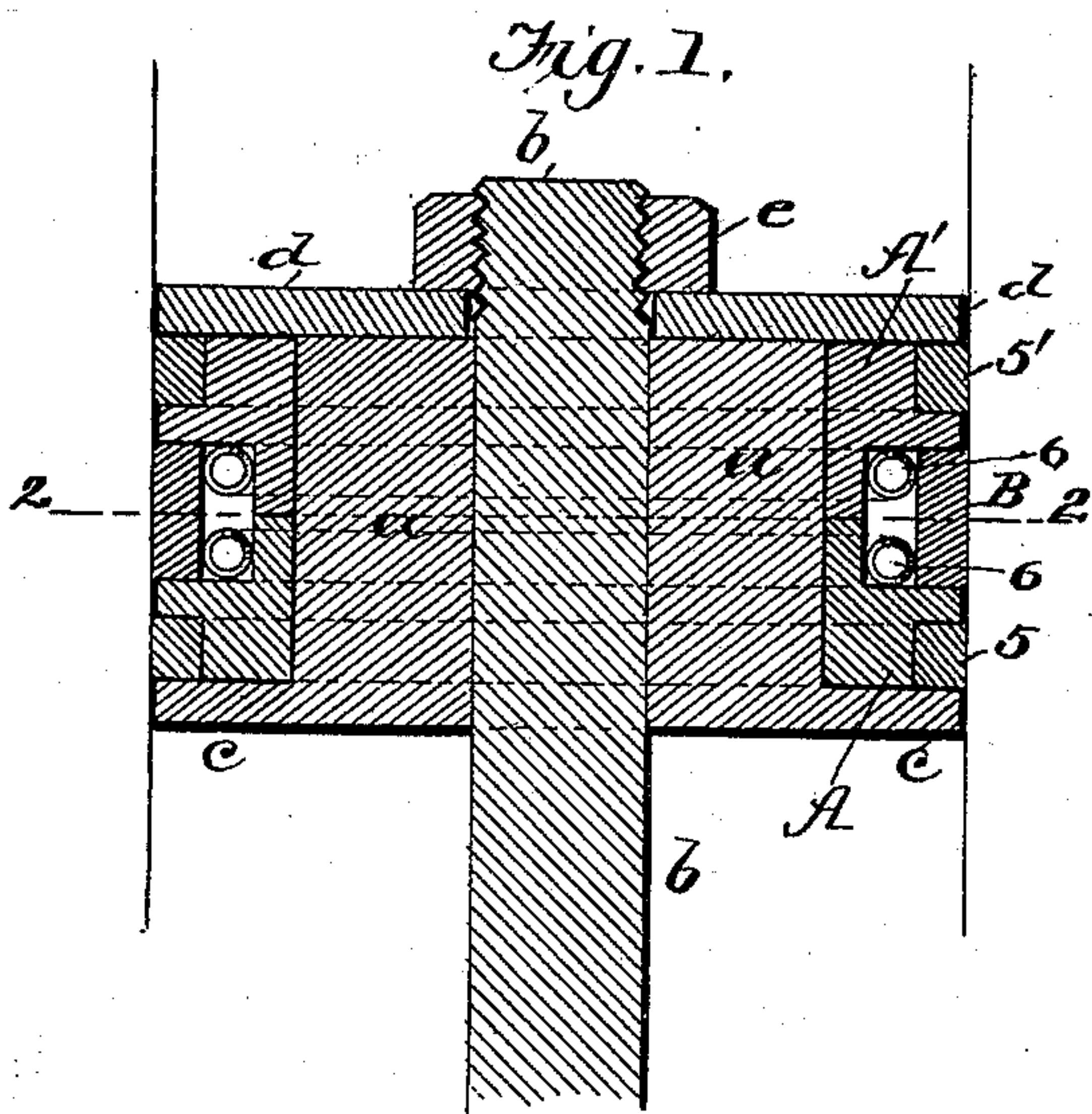
No. 624,365.

Patented May 2, 1899.

G. M. MULLEN.
PISTON PACKING.

(Application filed Dec. 16, 1898.)

(No Model.)



WITNESSES:
Jos. A. Ryan
Amos Hart

INVENTOR
Gregory M. Mullen.
BY Munn & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE,

GREGORY M. MULLEN, OF BALTIMORE, MARYLAND.

PISTON-PACKING.

SPECIFICATION forming part of Letters Patent No. 624,365, dated May 2, 1899.

Application filed December 16, 1898. Serial No. 699,482. (No model.)

To all whom it may concern:

Be it known that I, GREGORY M. MULLEN, of Baltimore city, in the State of Maryland, have invented a new and useful Improvement in Piston-Packing, of which the following is a specification.

My invention is an improvement in the class of pistons for steam-engines in which a so-called "bull-ring" is employed to hold the spring-packing, the same being constructed in two annular sections adapted to be placed on the piston-head and having radial flanges between, and on the outer sides of which are arranged the packing-rings proper.

The details of construction, arrangement, and operation of my invention are hereinafter described, reference being had to the accompanying drawings, in which—

Figure 1 is a central longitudinal section of a piston of which my improved packing forms a part. Fig. 2 is a horizontal section on line 2 2 of Fig. 1. Fig. 3 is a side view of the piston. Fig. 4 is a plan view of the chief or central packing-ring. Fig. 5 includes perspective views of bull-ring sections and packing-ring separated from each other.

The solid circular head or body of the piston *a* is secured on the rod *b* and provided with a radial base-flange *c*, as usual heretofore. Between such flange *c* and the circular "disk" or "follower" *d*, secured by a nut *e*, are arranged and secured the movable annular parts constituting my improved metallic packing. The chief novel feature of the same consists in making the bull-ring in two like parts or sections instead of integrally or in one piece, as usual heretofore. One of such parts or sections is indicated by *A* and the other by *A'*, as shown best in Fig. 5. Each section has a radial circumferential flange 1 and a thickened base 2 and a thinner inner portion 3. The bases 2 seat, respectively, on the head-flange *c* and follower *d* of the piston, while the inner portions 3 abut and fit closely on each other, as shown in Fig. 1. In the annular space surrounding such portions 3 and intermediate the projecting flanges 1 1 of the two sections is arranged the broad packing-ring *B*, which is divided transversely and its ends 4 lapped in the usual way.

A narrow, divided, and lapped packing-ring 5 is applied to the lower bull-ring section *A* below its flange 1 and surrounding the base 2. A similar packing-ring 5' is applied in like manner to the upper section *A'*. The lower ring 5 is obviously the first, and the upper ring 5' the last member of the packing put in position in assembling the parts forming the complete piston.

As a means for centering the central packing-ring *B* and steadying it in practical work I apply spiral springs 6 in the annular space between the inner ends of the bull-ring sections *A A'* and the surrounding packing-ring 4. These springs are held in place on parts 3 by their own contractility and are in contact with the ring *B*, but practically exert no pressure thereon.

My improved packing-rings are made of suitable metal and cast larger than the diameter of the cylinder wherein they are intended to work. Then they are turned off in a lathe and cut transversely to form a lap-joint, as shown. The finishing operation consists in turning them off to the exact diameter of the cylinder, forming a perfect circle accurately fitting the cylinder, so that a perfectly steam-tight joint may be formed. When placed in the cylinder, the rings are slightly compressed to a circle, as shown by dotted lines in Fig. 4.

What I claim is—

The improved piston composed of the flanged head, the follower secured thereon, the bull-ring formed of two annular sections each having a radial flange, and a reduced portion on both sides thereof, three spring packing-rings arranged in the grooves formed between and exterior to said flanges, the central groove or annular space between the flanges being deeper than the exterior grooves, and the spiral springs arranged in such central groove, behind the central packing-ring, as shown and described.

GREGORY M. MULLEN.

Witnesses:

JAS. W. CLAYTON,
WM. A. LEPPER.