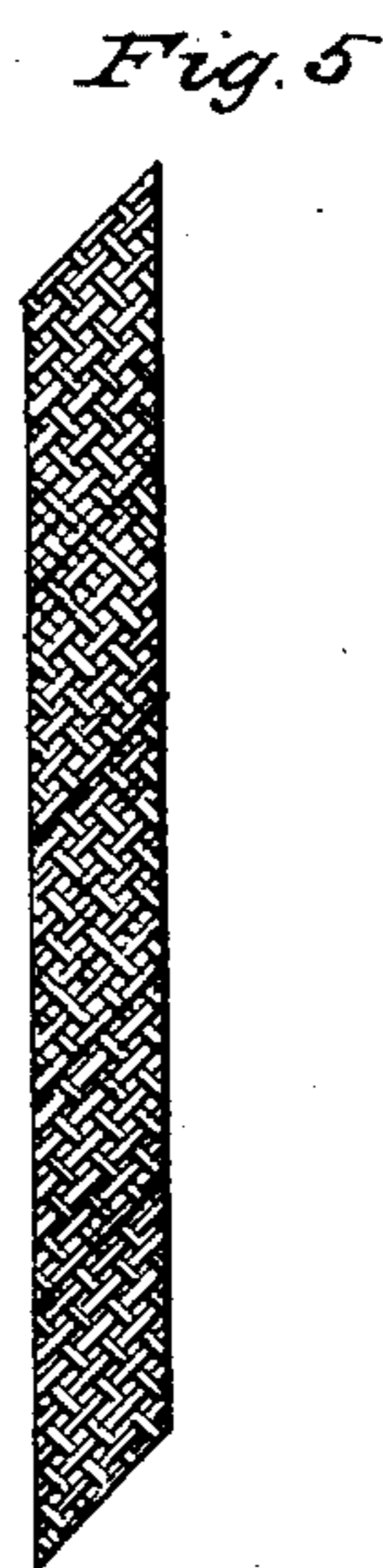
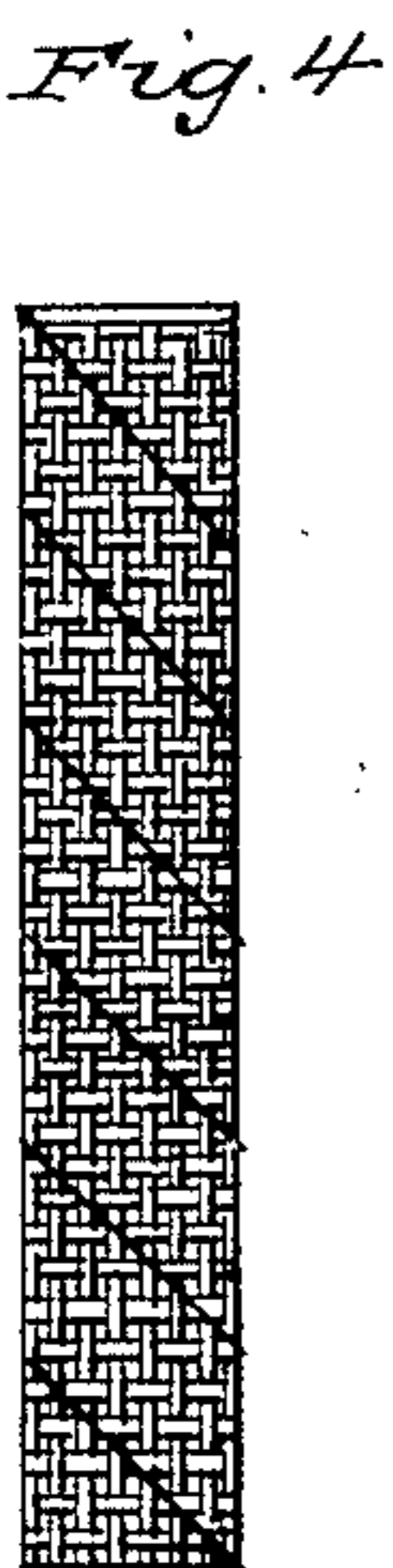
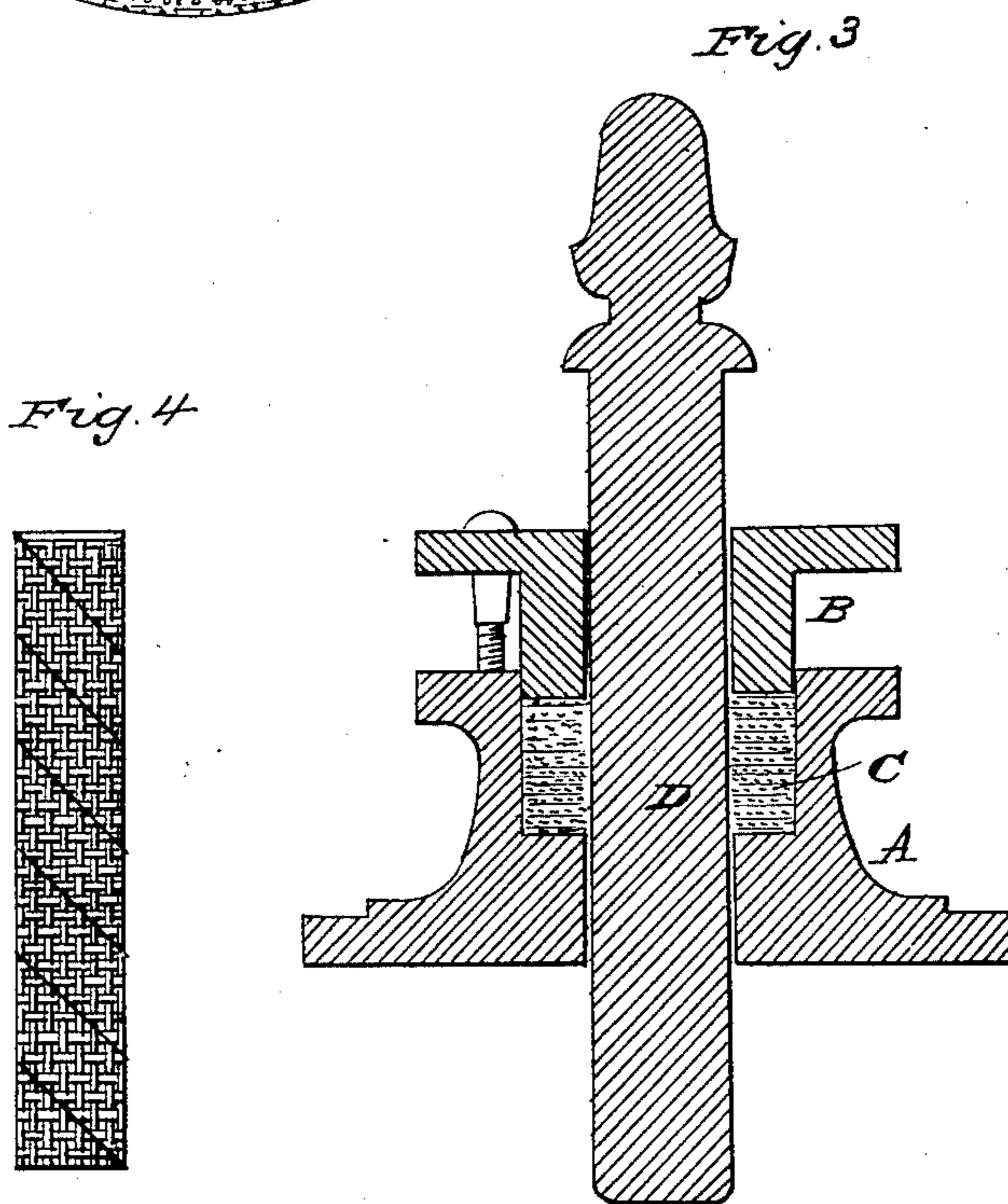
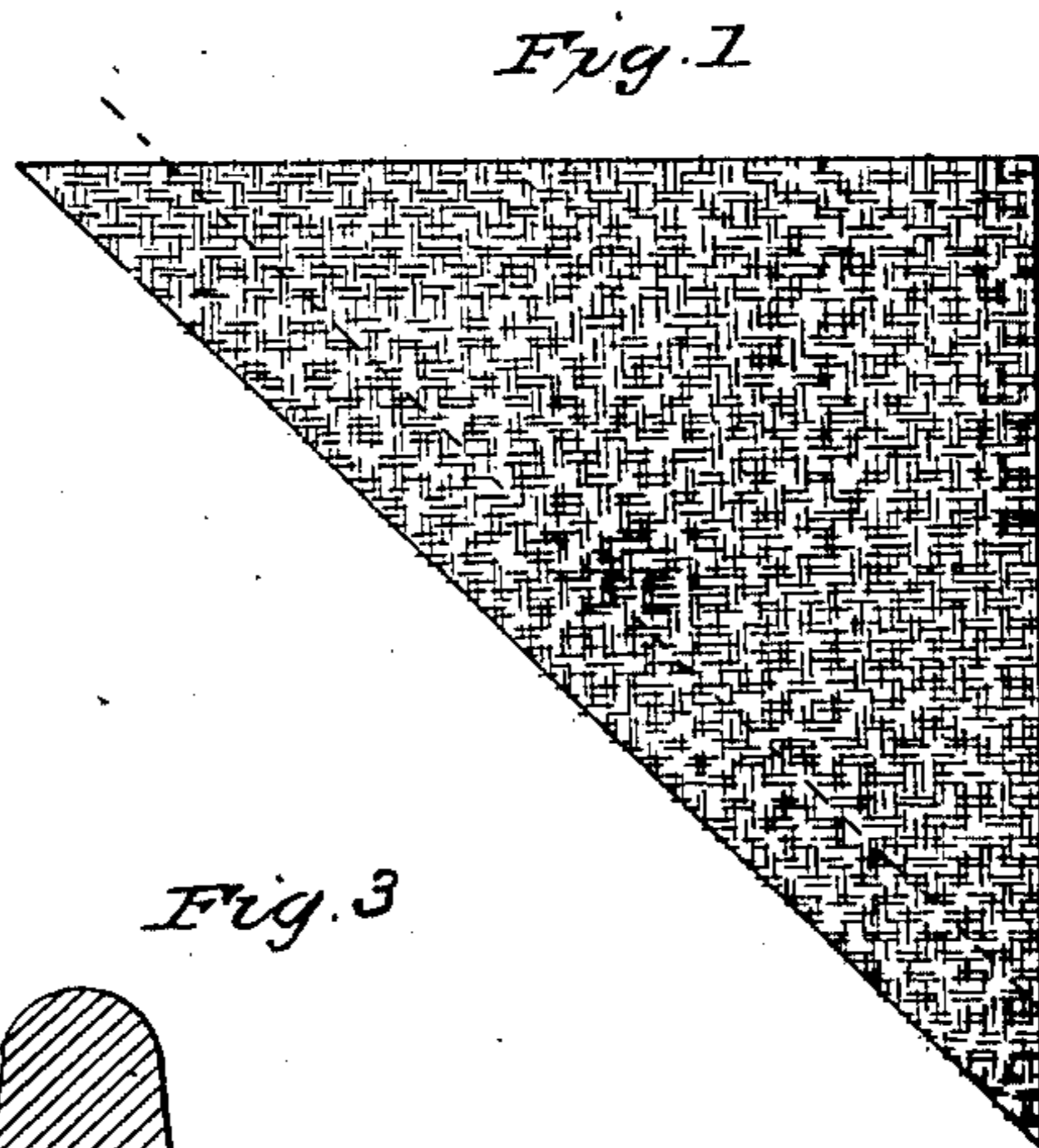
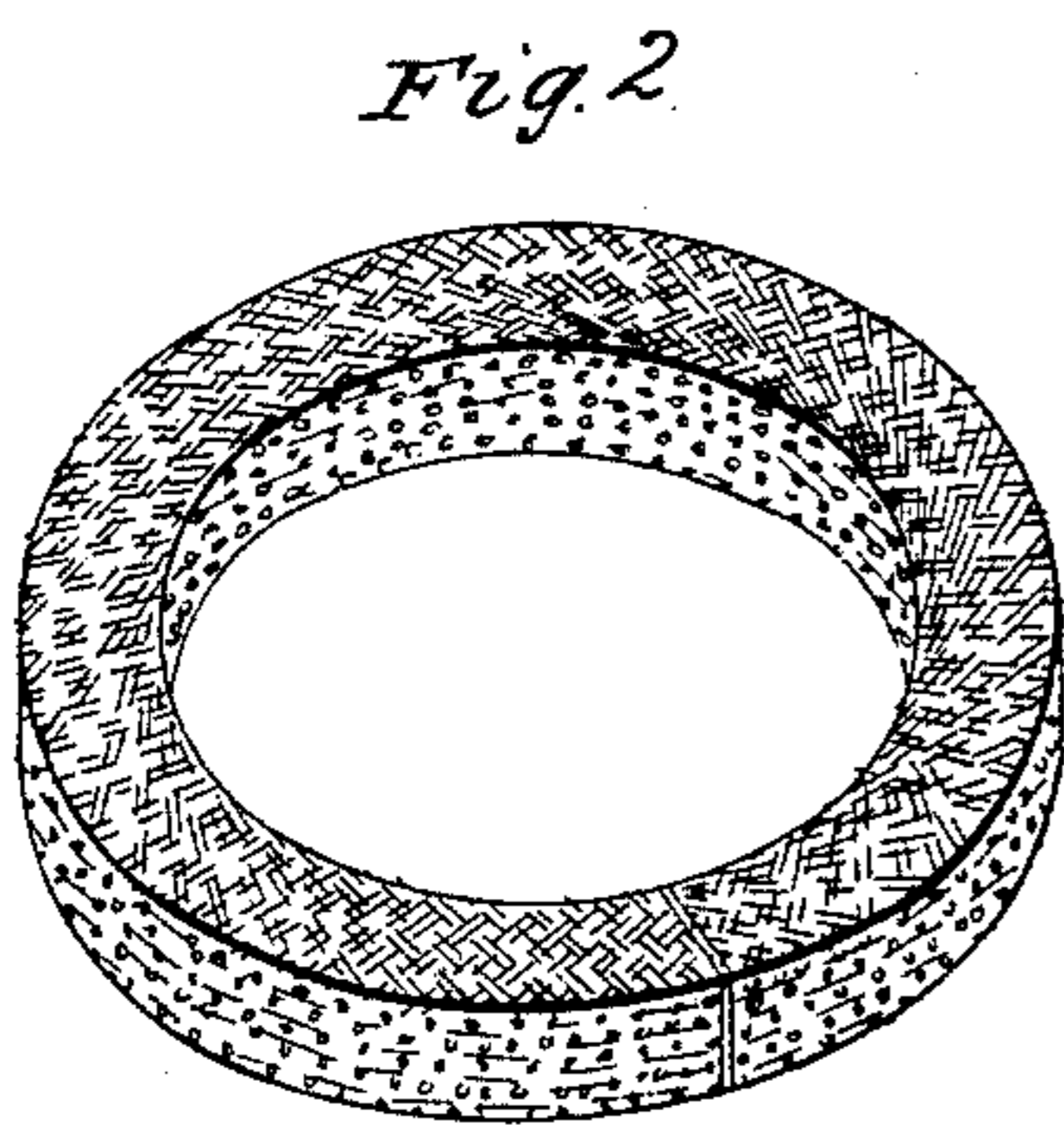


C. McBURNEY.  
Rubber Fabrics.

No. 24,569.

Patented June 28, 1859.



*Witnesses*  
*Thos. K. Rouch*  
*Sam. Cooper*

*Inventor*  
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# UNITED STATES PATENT OFFICE.

CHARLES MCBURNEY, OF ROXBURY, MASSACHUSETTS.

## PACKING FOR STUFFING-BOXES OF PISTONS.

Specification of Letters Patent No. 24,569, dated June 28, 1859.

*To all whom it may concern:*

Be it known that I, CHARLES MCBURNEY, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented a new and useful Packing for the Stuffing-Boxes of Piston and Valve Rods, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of the packing in the sheet; Fig. 2, a strip as it is bent into a circle when it is in use; Fig. 3, a section through a stuffing box with the packing inserted.

The hempen packing heretofore employed in stuffing boxes is not easily adjusted so as to produce a uniform pressure upon all sides of the rod, and an elastic, durable substitute for it has long been a desideratum. In experimenting for this purpose I have laid together a suitable number of plies of canvas or cotton cloth with india rubber between them forming a cake of packing which was afterward cut into strips. This was found to be objectionable for three reasons—First, the longitudinal threads of the canvas rendered the strips of packing very difficult to bend so as to insert it into the stuffing box; second, the short transverse threads prevented the packing from yielding with sufficient ease when the follower was brought down upon it; third, the longitudinal threads of the strip were drawn out of place by the motion of the rod, leaving the packing with an uneven surface. The same packing was then cut into rings, the inner circle of which was of the diameter of the rod and the other circle of a diameter just sufficient to fill the stuffing box, but it is obvious that this method of cutting the packing is very wasteful of material, as each stuffing box requires a ring of a particular size both upon its inner and outer circle and as the ends of the threads are exposed to wear at four points around the circle while at the four intermediate points the sides of the threads are exposed, these rings wear very irregularly and when worn they become useless.

To remove all these objections is the object of my present invention the nature of which I will now proceed to describe.

I take 25 lbs. of india rubber, 2 lbs. sulfur, 4 to 8 lbs. of silica, or plumbago with this

compound after it is suitably ground and mixed, canvas or other suitable fabric of cotton linen or hemp is coated upon each side, and a sufficient number of plies of such fabric are united by a heavy pressure or by rolling. The packing is then vulcanized and to prepare it for use it is cut diagonally into strips (as seen in Fig. 1.) These strips are then cut of the right length and are bent into rings (Fig. 2.) which are inserted into the stuffing box as seen in Fig. 3 in which A is the box; B, the follower; C, the packing; D, the valve or piston rod.

In lieu of cutting the packing into short strips, and bending it into rings as above described, a longer strip may be wound spirally around the rod, the pressure of the follower bringing it to a uniform bearing upon the rod. It will be observed that when cut diagonally as above described the ends only of all the threads are exposed to wear by which it is caused to wear slowly and uniformly while there are no longitudinal threads to resist the action of bending the strips and they are consequently easily coiled within the stuffing box. Also as there are no threads running transversely of the packing it is easily caused to expand against the rod by pressure and thus as the packing wears it may be again and again tightened up by bringing down the follower.

In lieu of making the packing of continuous strips of canvas, the latter may be cut into lozenge shaped pieces Fig. 4 which when matched together (Fig. 5) may be cut longitudinally as upon the line  $y, y$ , and produce the same effect.

The compound which I have given above is that which I prefer for the manufacture of the packing but both the ingredients and the proportions in which they are used may be variously modified without altering the spirit of my invention. Even the vulcanizing process may be dispensed with and I do not therefore restrict myself thereto; but

When I claim as my invention and desire to secure by Letters Patent is—

A packing for stuffing boxes composed of canvas and india rubber as set forth and cut diagonally as described.

CHAS. MCBURNEY.

Witnesses:

THOS. R. ROACH,  
SAM. COOPER.