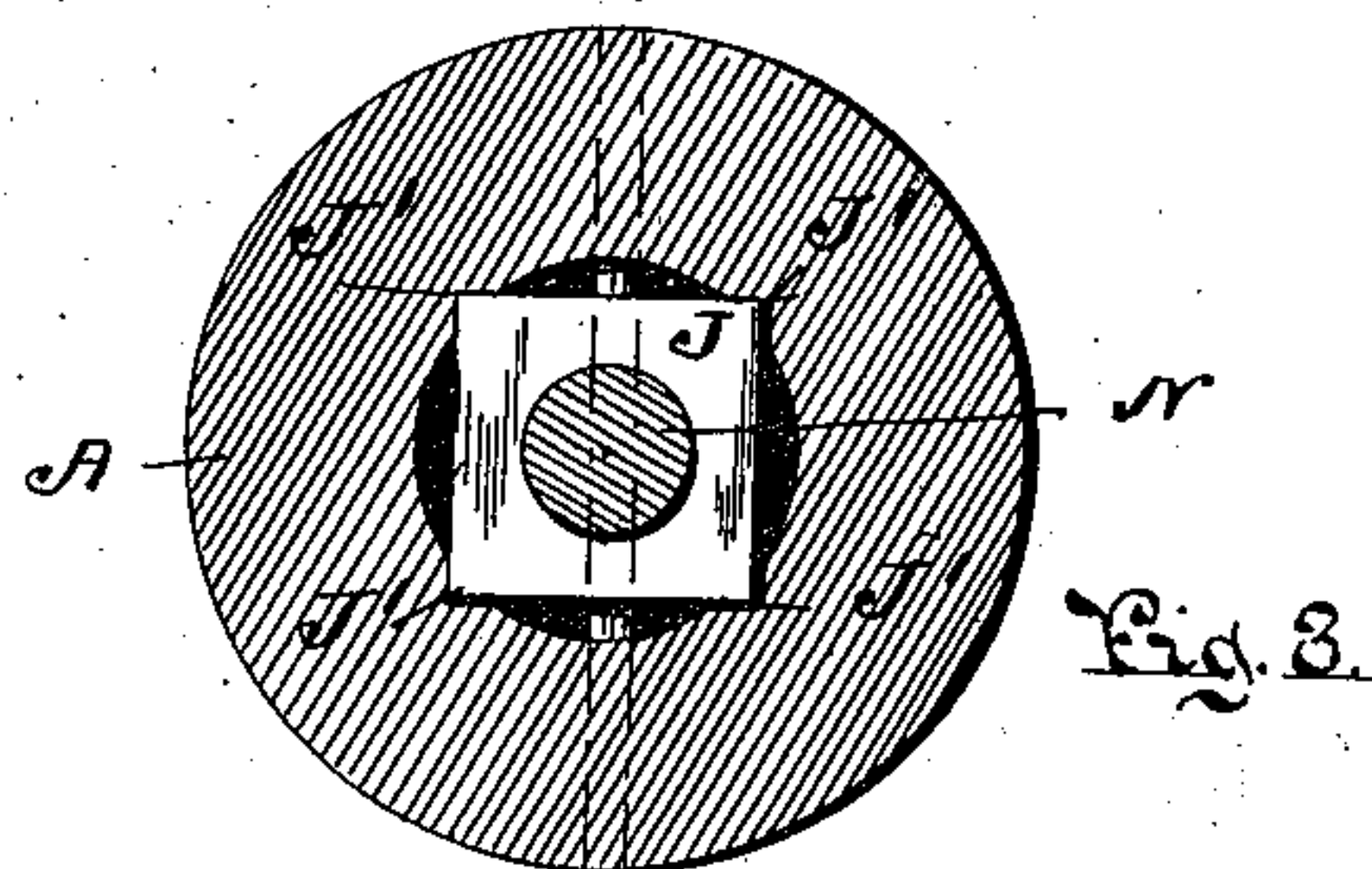
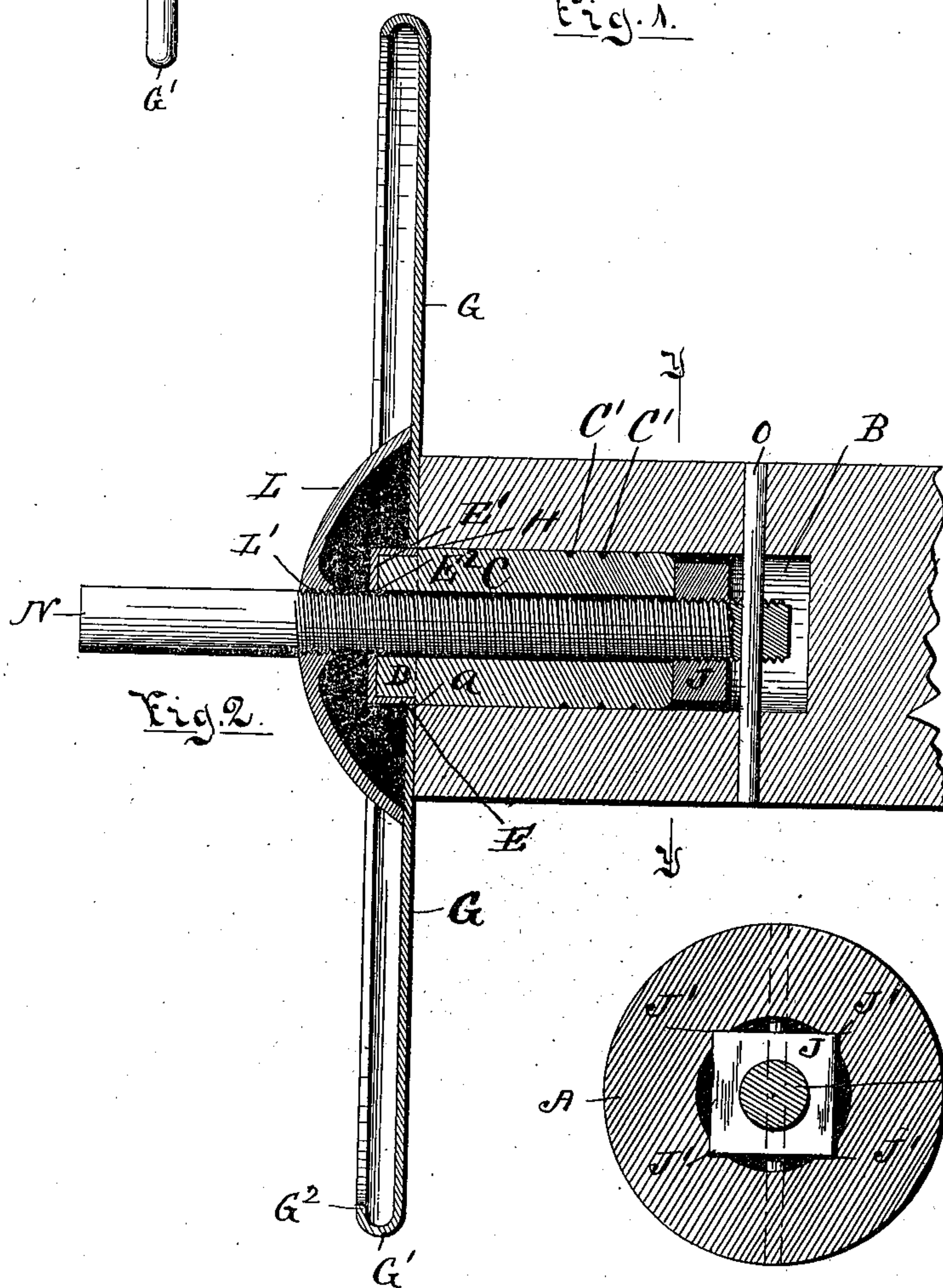
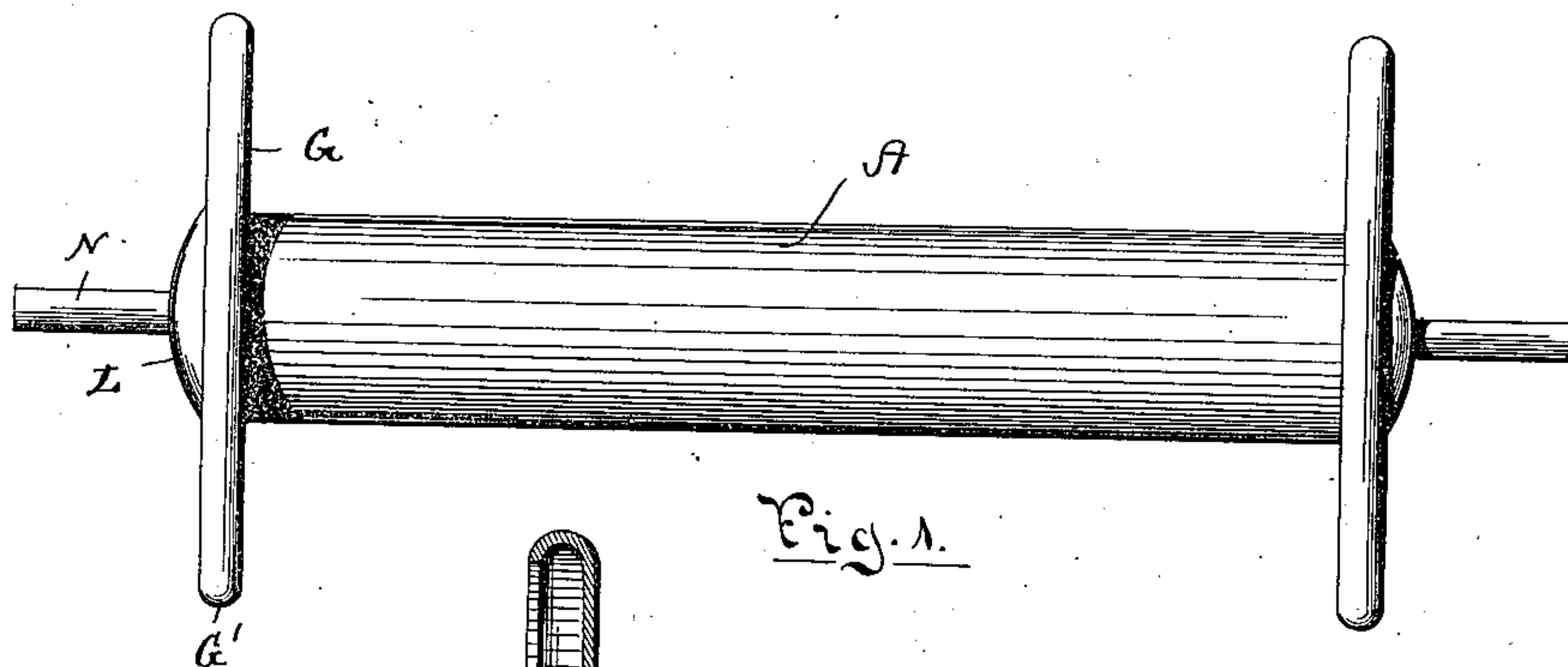


(No Model.)

F. M. MARCY.  
SPOOL.

No. 455,224.

Patented June 30, 1891.



Witnesses  
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H. M. Fowler.

Inventor  
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By his Attorney

Rufus B. Fowler.



# UNITED STATES PATENT OFFICE.

FRANK M. MARCY, OF WORCESTER, MASSACHUSETTS.

## SPOOL.

SPECIFICATION forming part of Letters Patent No. 455,224, dated June 30, 1891.

Application filed September 20, 1890. Serial No. 365,595. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK M. MARCY, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Spools, of which the following is a specification, reference being had to the accompanying drawings, representing a spool embodying my invention, and in which—

Figure 1 is a view of the spool. Fig. 2 is a longitudinal central sectional view of one end of the spool; and Fig. 3 is a transverse sectional view on line Y Y, Fig. 2.

Similar letters refer to similar parts in the different figures.

My invention relates particularly to that class of spools which are designed for mill use; and it relates especially to the head of the spool and to its attachment to the barrel.

Referring to the drawings, A denotes the barrel, usually made of wood and bored at each end, forming a concentric chamber B, extending a short distance into the barrel. Within this chamber a wooden plug C is fitted, provided with a series of annular grooves C'. The outer end of this plug extends beyond the end of the barrel B at D, and is made slightly smaller in diameter to receive a metallic ferrule E, the end of the ferrule E abutting against the shoulder *a* in the plug C, and the outer end of the ferrule is closed at E' with a hole E<sup>2</sup>, concentric with the ferrule and of the proper size to receive the spindle N, forming the gudgeon to the spool.

The head G of the spool is made of an elastic metal, like spring-steel, and consists of a circular disk with a concentric hole at H fitting the periphery of the metallic ferrule E and resting against the end of the barrel A. The outer edge of the head G is turned over, forming a flange G', which is curved in substantially semicircular form in its cross-section, as represented in Fig. 2, the edge G<sup>2</sup> of the curved flange being brought into substantially a plane parallel with that of the disk of sheet metal forming the head itself. This gives a round or semicircular edge to the edge of the head, and by turning the edge at G<sup>2</sup> into a plane parallel with the head itself

the edge of the head is stiffened to resist any blows upon the edge of the head caused by dropping the spools upon the floor or otherwise. The head of the spool is held in place upon the end of the barrel by means of a nut J, which is driven into the chamber B before the insertion of the wooden plug C, the corners of the nut entering the wall of the chamber, as represented at J' J' in Fig. 3, to prevent the nut from turning in the chamber B. The plug C has a concentric hole coincident with the screw-threaded hole in the nut J, and also with the hole E<sup>2</sup> in the ferrule E, and a concave washer L is placed upon the head G, with its edge resting against the head. The concave washer L has a screw-threaded hole L' in the center, and through the screw-threaded hole I place a screw-threaded spindle N, the end of the spindle passing through the nut J. The outer end of the spindle N is left plain, and the washer L is screwed against the plain section of the spindle, so that the washer L cannot be loosened by unscrewing it upon the spindle N. The spindle N is screwed into the nut J, bringing the nut J firmly against the inner end of the plug C and drawing the edge of the concave washer firmly upon the head G. The spindle N is then held from turning by means of a pin O driven through a hole in the barrel and the end of the spindle N, as represented in Fig. 2. The plug C is covered with a coating of glue or adhesive material previous to its being driven into the chamber B, and the grooves C' serve to retain the glue that would be scraped from the surface of the plug by the operation of driving the plug into the chamber. The shoulder *a* should be flush with the end of the barrel or brought slightly within the barrel, in order to secure a bearing of the inner edge of the head G upon the metallic ferrule E, so that the edge of the head will not abrade the wood of the plug C, and the hole E in the ferrule is made to closely fit the spindle N and hold the spindle from contact with the interior of the plug, as it is similarly held at its inner end by the nut J. An advantage is also gained in employing a spindle N which is screw-threaded throughout nearly its entire length and employing



with the screw-threaded spindle a screw-threaded washer L, as the nut J and washer L act as check-nuts one for the other.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. The combination, with the barrel of a spool having a concentric chamber at its end, of a nut held in said chamber, a head resting against the end of the barrel, a screw-threaded concave washer bearing against the outer surface of the head, and a screw-threaded spindle passing through said washer and entering said nut, substantially as described.

2. The combination, with the barrel of a spool having a concentric chamber at its end, of a nut held in said chamber, a hollow plug placed in said chamber by which said nut is retained in position, the end of said plug projecting beyond the end of said barrel, a metallic ring or ferrule inclosing the projecting end of said plug, a head held concentrically on the projecting end of said plug, a screw-threaded washer bearing against the outer surface of the head, and a screw-threaded spindle passing through said washer and entering said nut, substantially as described.

3. The combination, with a spool having a concentric chamber at its end, of a nut held in said chamber, a hollow block placed in said chamber, whereby the nut is retained in its position, said plug having its end projecting beyond the barrel of the spool, a metallic ring or washer inclosing said projecting end of the plug, a metallic head placed concentrically upon the projecting end of said plug and having a flanged edge turned over so as to bring the edge of the flange parallel with the plane of the head, a washer resting upon the outer surface of said head, and a bolt passing through said washer and said hollow plug and entering the nut held in the concentric chamber of the barrel, substantially as described.

4. The combination, with the barrel of a spool having a concentric chamber, of a nut held in said chamber, a hollow plug placed in said chamber, whereby said nut is held in position, said plug having its end projecting beyond the end of the barrel, a metallic head placed concentrically upon the projecting end

of said plug and having a flanged edge, a metallic ring or ferrule interposed between the edge of said head and the projecting end of said plug, a washer resting against the outer surface of said head, a screw-threaded spindle passing through said washer and said hollow plug and entering the nut held in the concentric chamber of the barrel, and a retaining-pin passing through said barrel and said screw-threaded spindle, whereby it is held from rotation, substantially as described.

5. The combination, with the barrel of a spool having a concentric chamber at its end, of a nut held in said chamber, with its corners engaging the walls of said chamber, whereby said nut is held from rotating, a hollow plug placed in said chamber, by which said nut is held in position, said plug having its end projecting beyond the end of said barrel, a metallic head held concentrically upon the projecting end of said plug, a washer resting against the outside of said head, and a screw-threaded spindle passing through said washer and said hollow plug and entering the nut held in said concentric chamber, whereby said washer is drawn against said head, substantially as described.

6. The combination, with the barrel of a spool having a concentric chamber at its end and a nut held in said chamber, of a hollow plug held in said chamber and projecting beyond the end of said barrel, a head resting against the end of said barrel and held concentrically upon the projecting end of said plug, a concave washer extending over and covering the projecting end of said plug, with its edge resting upon the outer side of said head, and a screw-threaded spindle passing through said hollow plug and entering the nut held in said concentric chamber and engaging said concave washer, whereby it is drawn firmly against the head, substantially as described.

Signed this 18th day of September, 1890.

FRANK M. MARCY.

Witnesses:

M. D. MARCY,  
RUFUS B. FOWLER.