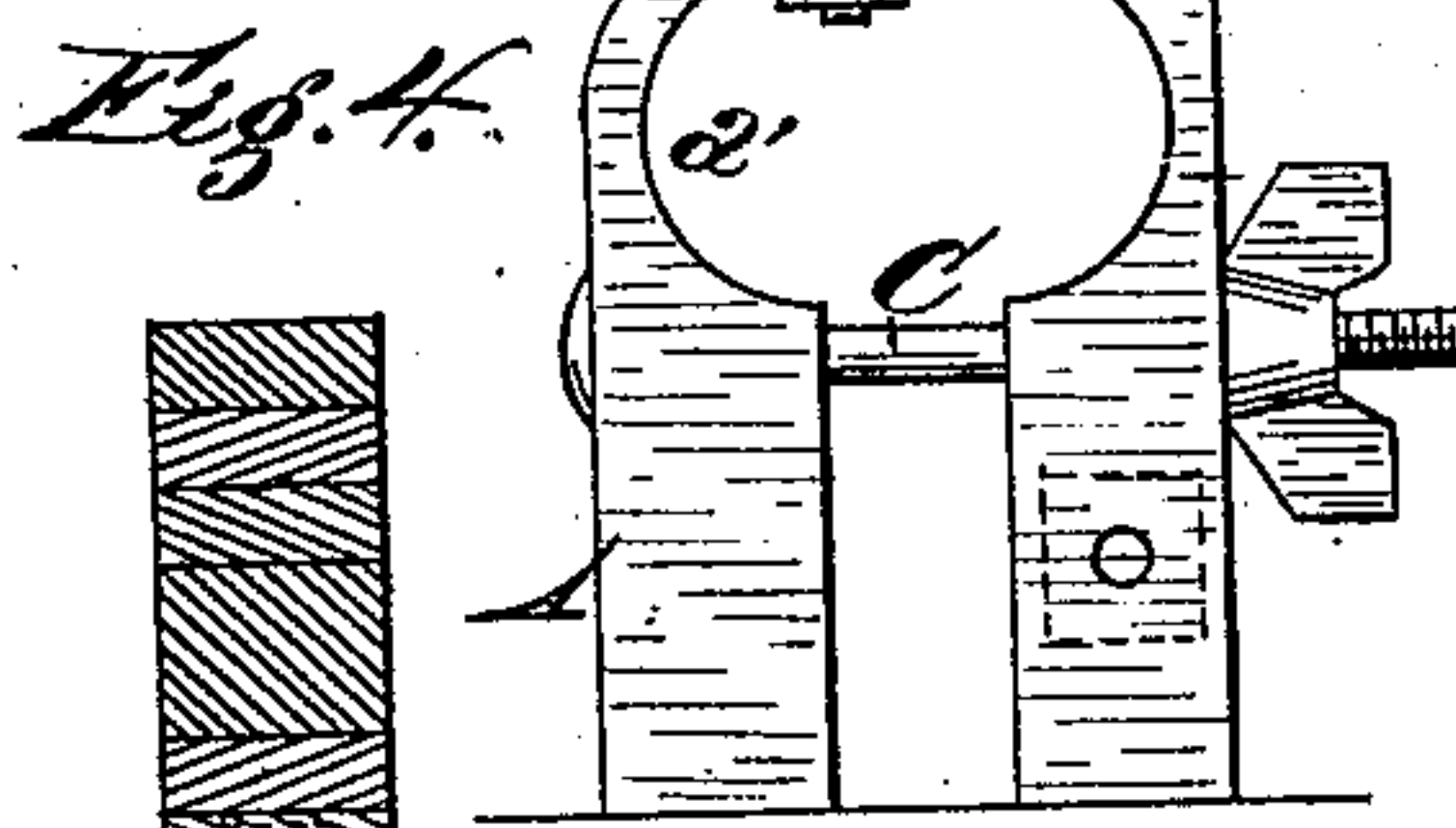
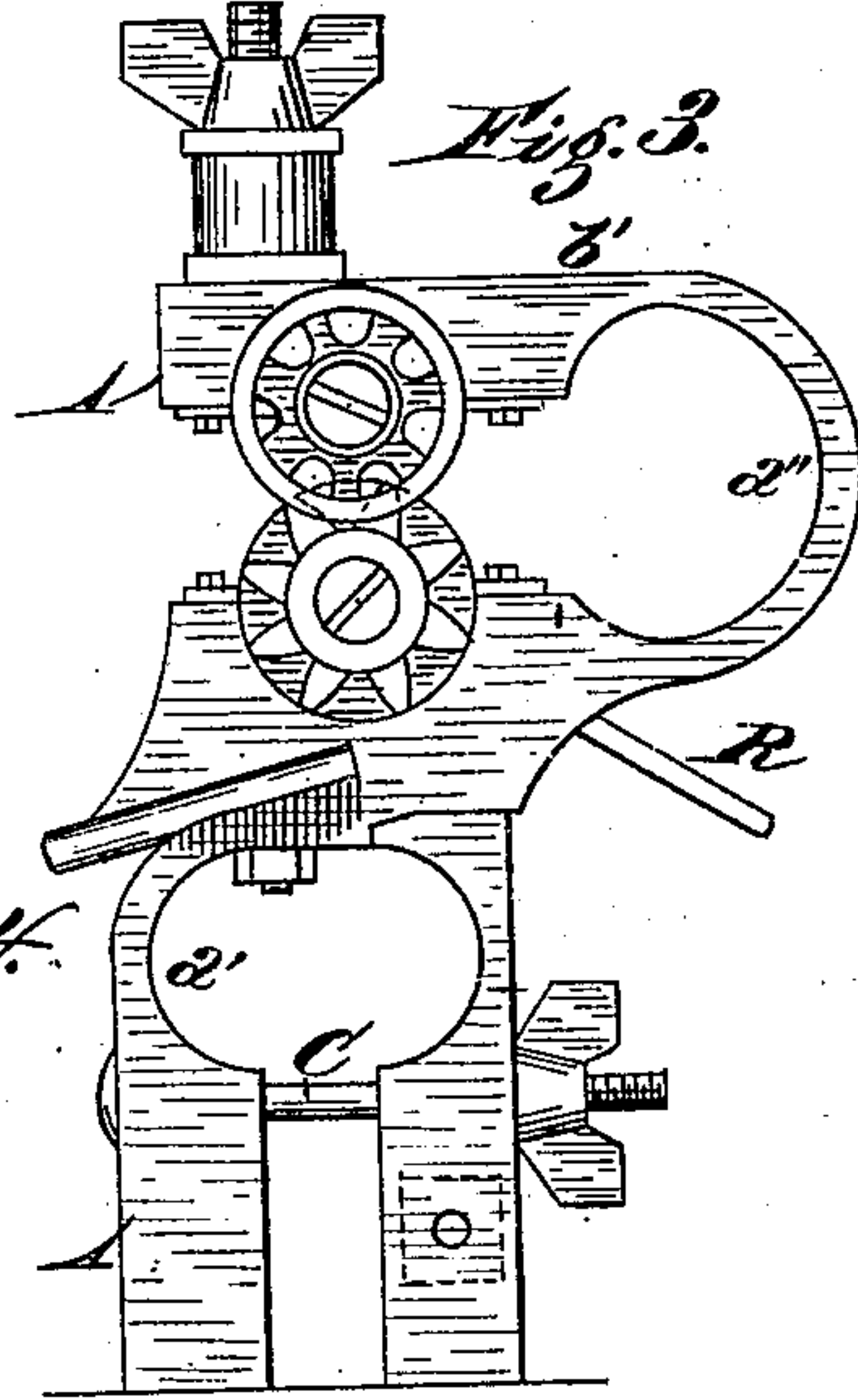
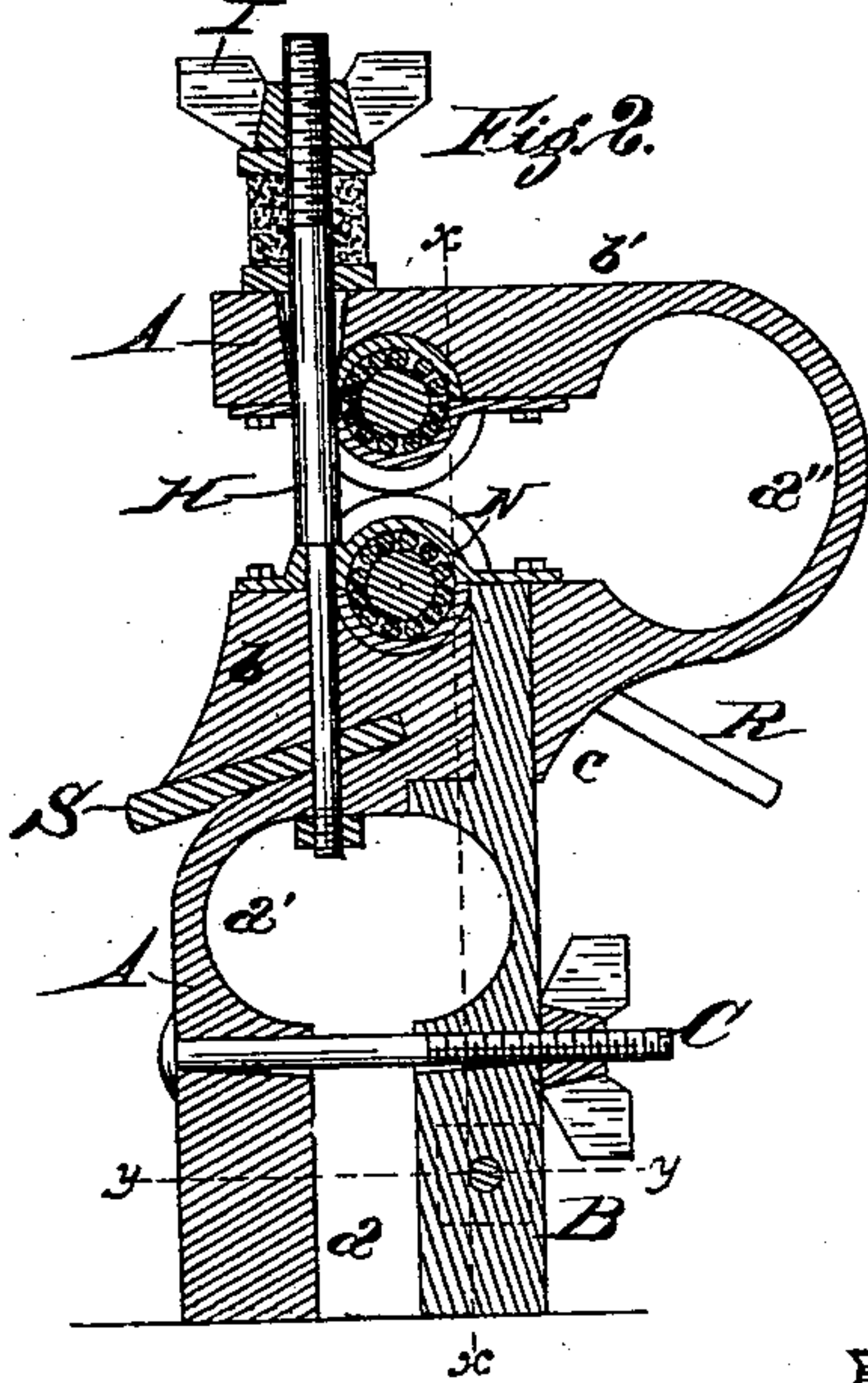
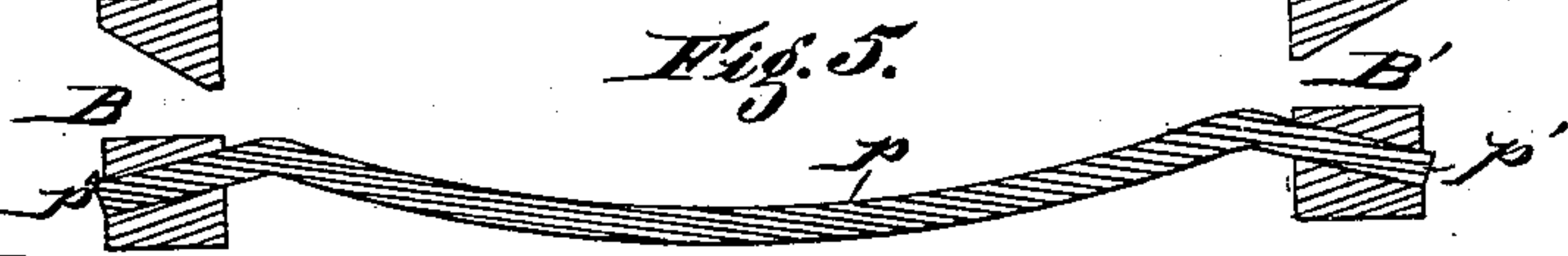
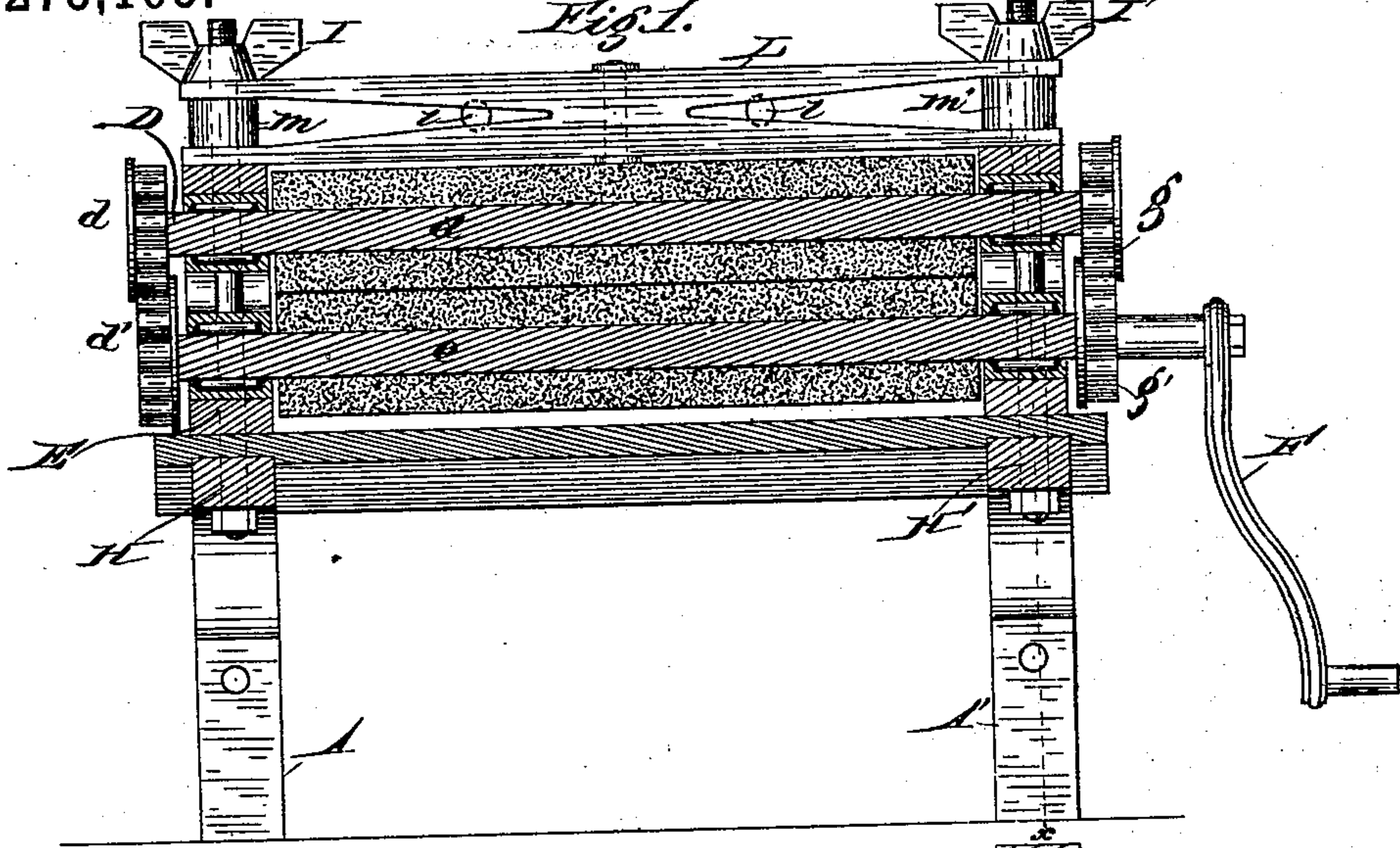


(No Model.)

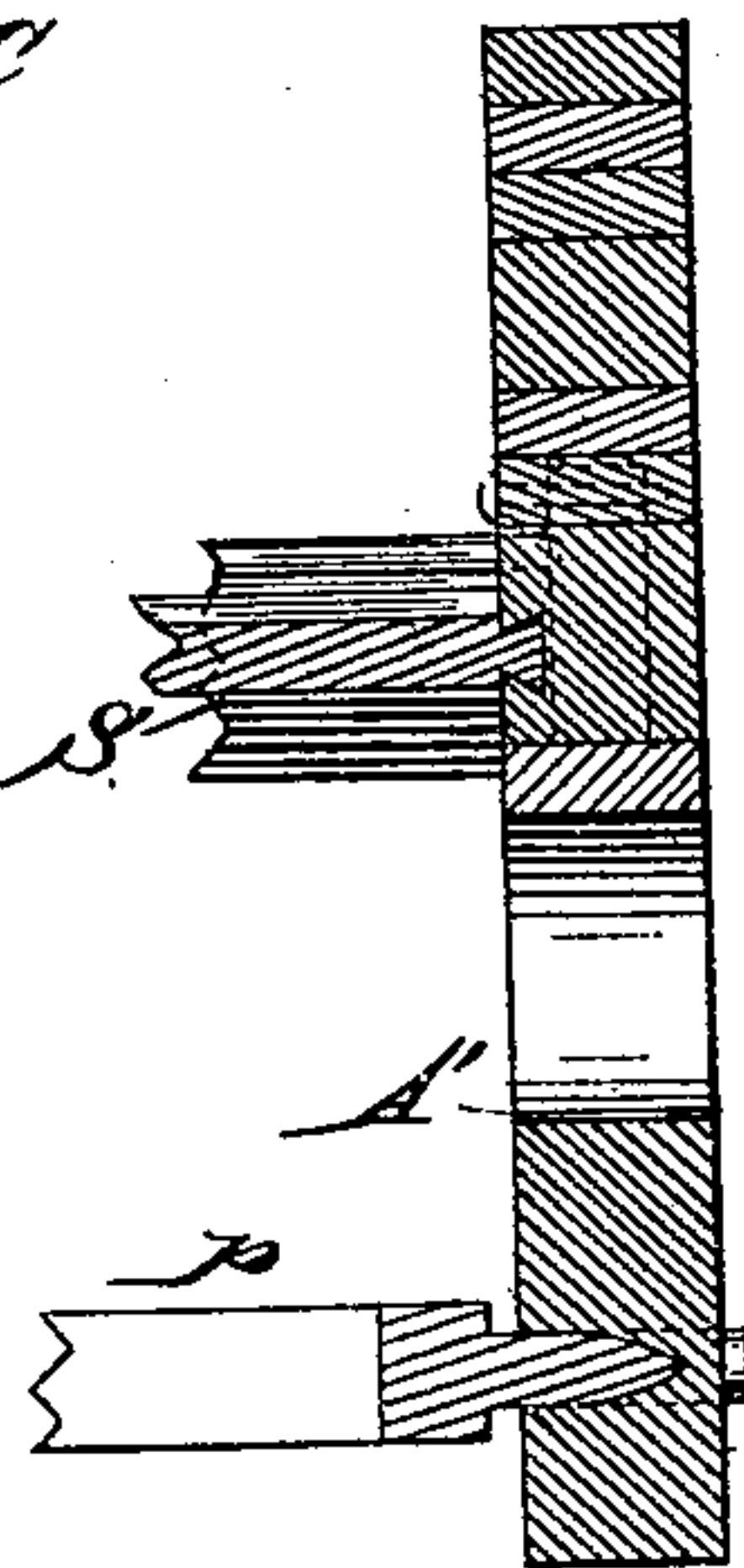
J. E. DONOVAN.  
CLOTHES WRINGER.

No. 275,165.

Patented Apr. 3, 1883.



Attest,  
Jno. C. Wiles,  
Jno. E. Jones



Inventor,  
Jno. E. Donovan,  
by Wood & Boyd  
his Attorneys etc.



# UNITED STATES PATENT OFFICE.

JOHN E. DONOVAN, OF CINCINNATI, OHIO.

## CLOTHES-WRINGER.

SPECIFICATION forming part of Letters Patent No. 275,165, dated April 3, 1883.

Application filed October 17, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. DONOVAN, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Clothes-Wringers, of which the following is a specification.

My invention relates to a clothes-wringer; and it consists of certain new improvements in the manner of constructing the frame; also, in an improved manner of applying pressure to the upper roller, all of which will be fully set forth in the description of the accompanying drawings.

Figure 1 is a central vertical longitudinal view of my invention. Fig. 2 is a section on line *x x*, Fig. 1. Fig. 3 is an end elevation. Fig. 4 is a section on line *x x*, Fig. 2. Fig. 5 is a plan view of the brace.

A A' represent the end piece of the frame, made of a single piece of bent wood, *a* representing the leg or lower part, *b* the central portion, on which is supported the lower roll and journal, *a'*, and *b'* the upper overhanging arm supporting the upper roller and journal.

*a'* represents a bow made in the leg to allow it to yield laterally to fit over a tub. *a''* represents the spring-bow supporting the arm *b'*, so as to allow the elastic action of the upper roller.

B represents a leg connected to the frame-piece A by means of clamp-bolt C, and attached thereto by a dowel, *c*, which projects into the part *b*.

D represents the upper roller, secured to shaft *d*, which journals in the spring-arm *b*.

E represents the lower roller, connected to shaft *e*, which journals in boxes attached to the shoulder *b* of the frame-piece A.

H represents clamp-rods which pass through the shoulder *b*, arms *b'*, and spring-bar L.

I I represent clamp-nuts for regulating the pressure on the upper roller, D.

*d d* represent spur-gears upon the rollers' shafts at one end, and *g g* similar gears upon the opposite end.

Bar L is made forked at either end, and rubber or coiled springs *m m* are inserted in the forks, so as to allow of a yielding motion to the upper roll in operation.

*l l* represent rollers inserted in the base of the forks in bar L, to regulate the tension of

the spring formed by the forks and to prevent their becoming set.

N N represent journal-boxes; *o o*, a series of friction-rollers which just fill an annulus formed between the periphery of the journal-boxes and the shaft-bearings. The anti-friction rollers relieve the rubber rolls D and E of friction, and avoid nearly all of the liability of loosening shaft *e* from the rubber roll E, which is a very serious difficulty occurring in most wringers.

P represents a spring-clamp uniting the legs B, which go outside of the tub. It is important to know how these legs clamp against the tub. This is accomplished by means of the bent clamp P. The tenons P' are formed divergent at angles the reverse of the curve of the bow of the clamp P. This angle of the tenons prevents any tendency of the spreading of the legs B from the strain of the clamp, and avoids the use of fastening devices to hold them in position, and is an important feature.

S represents a combined clamp and drain-board, which is at the same time cheap and efficient. It fits in gains cut in the frame-piece A, and is held in position by means of clamp-bolt H, which passes through the ends of the board.

R represents a detachable drain-board upon the opposite side of the frame.

By my method of making the wringer-frame and uniting the parts I obtain several important advantages: First, I obtain a cheap and more durable frame; second, by means of the fork spring-bar L and springs *m m*, I obtain an easy adjustment of the spring, with an increased yielding capacity and durability. I also provide an improved support for the wringer-frame, which also acts as an efficient clamp to hold the frame on tubs of varying sizes in a very efficient manner.

I claim—

1. The combination, in a wringer-frame, of the legs B with the bow-shaped spring-clamp *p*, having its ends bent at an angle reversely to the curvature of the bar, and fitted into mortise formed through the said legs, substantially as described.

2. In a wringer-frame, the combination, with the clamp-rods H, of the forked bar L, and springs M, and rollers *l*, placed intermediate the prongs of the fork, substantially as herein set forth.

3. In combination with spring-legs B, the spring-clamp P, having the annular brace-tenons P' for jointing the said clamp to the legs, substantially as herein set forth.

5 4. In a wringer-frame, the leg *a*, shoulder *b*, spring-bow *a''*, and overhanging arm *b'*, all formed in one piece, in combination with the leg B, fitted at its upper end in the shoulder *b*, bolt C, bolt H, and forked spring L, said  
10 frame being adapted to be fastened to a tub

by means of the spring-clamp P, secured in the legs by the angular tenons P', substantially as described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing 15 witnesses.

JOHN E. DONOVAN.

Witnesses:

JNO. E. JONES,

JNO. E. WILES.