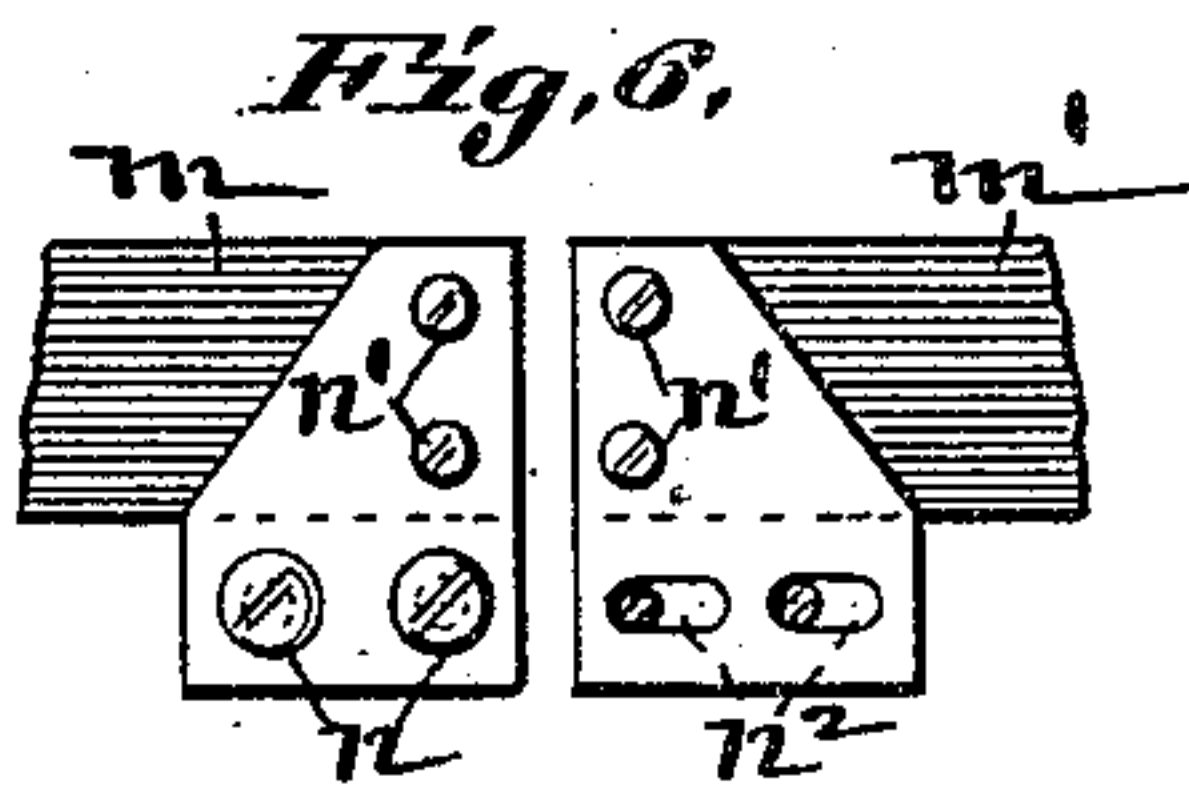
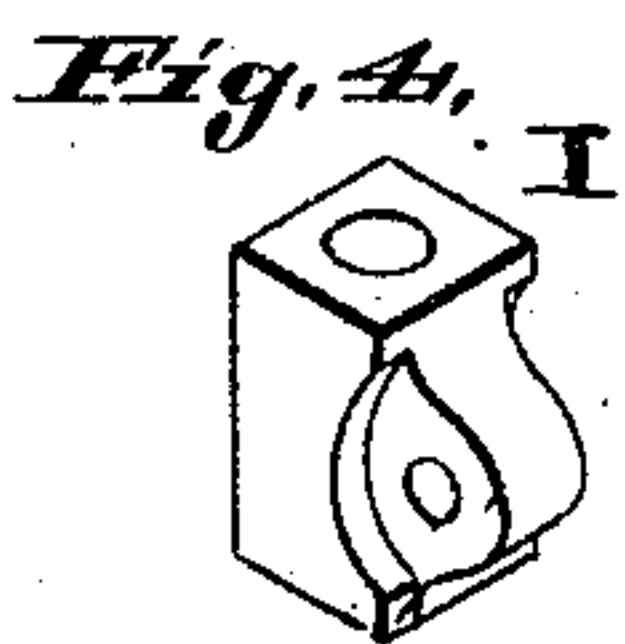
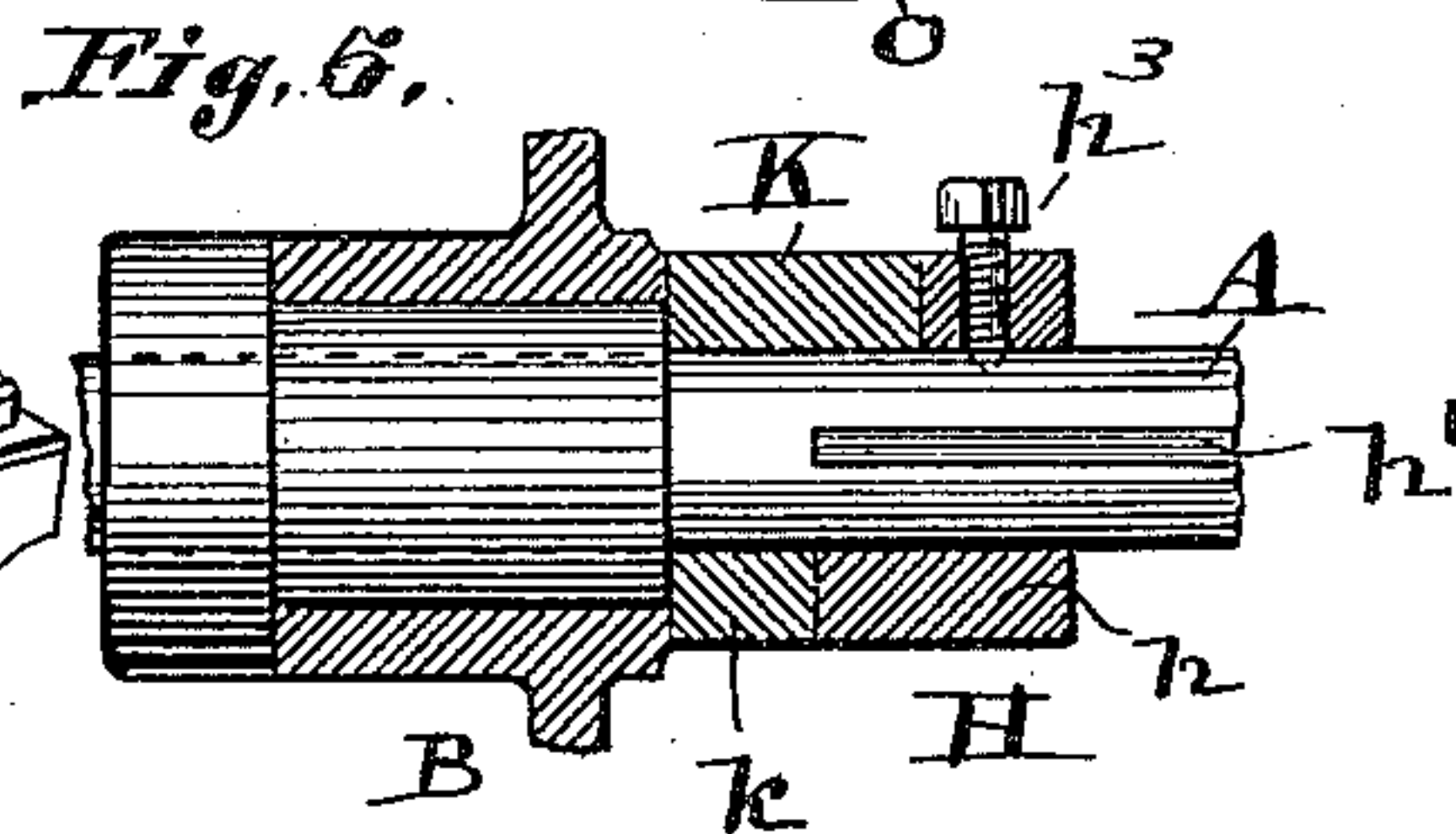
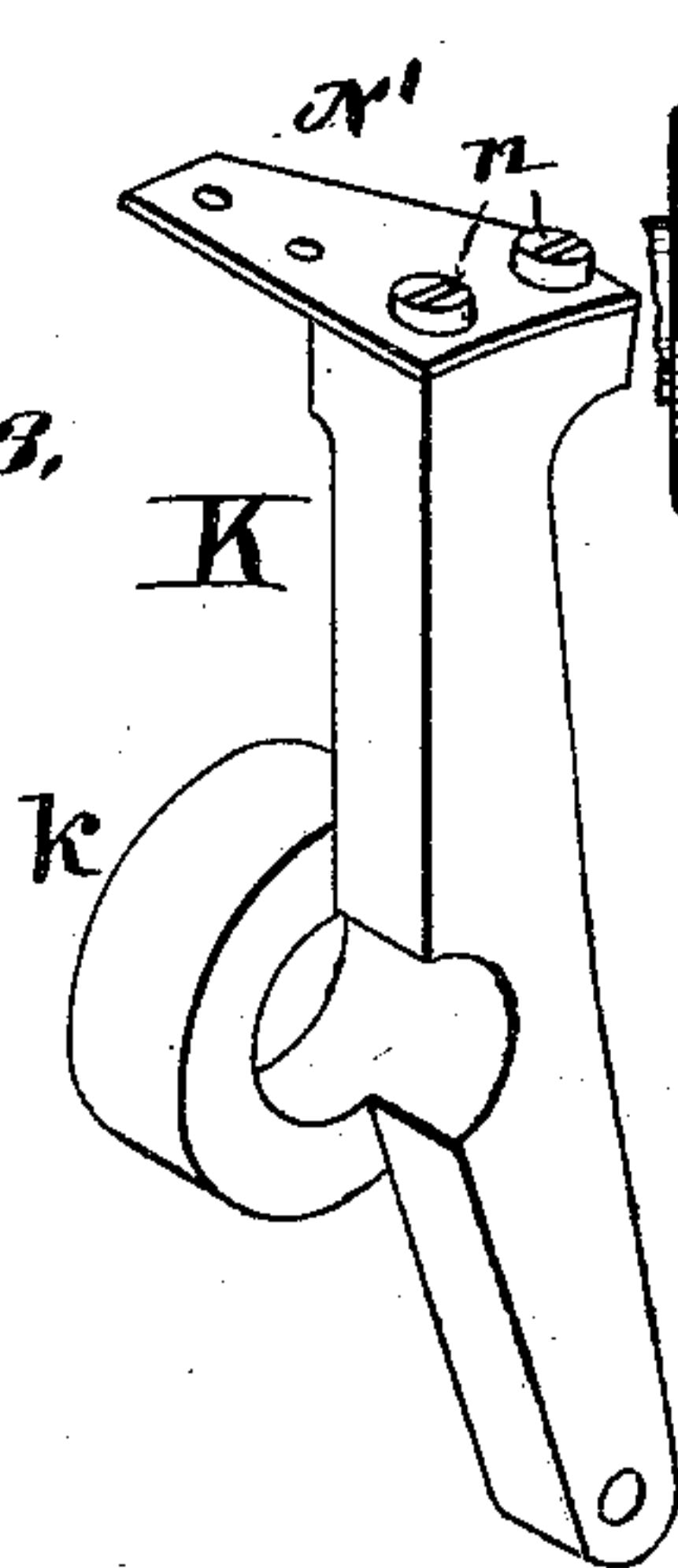
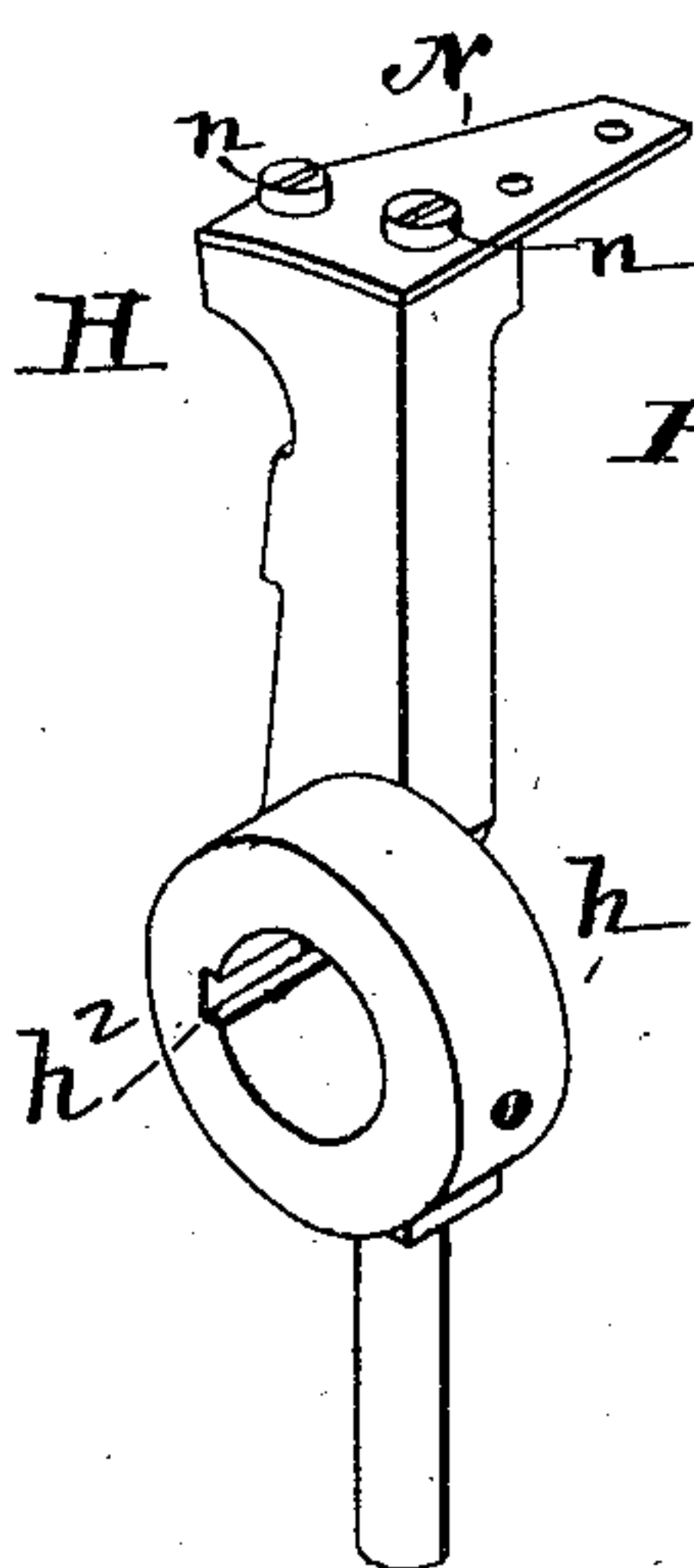
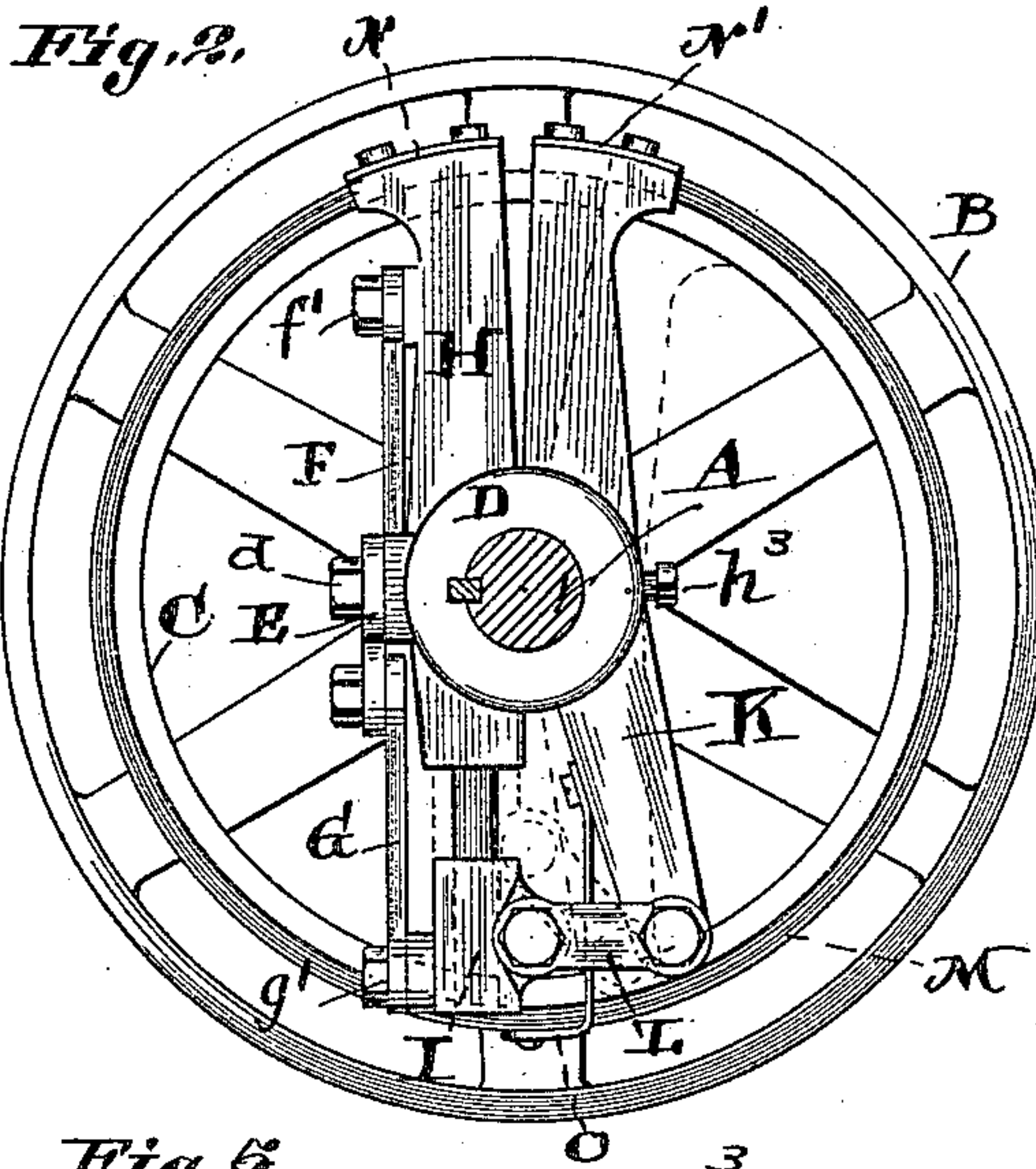
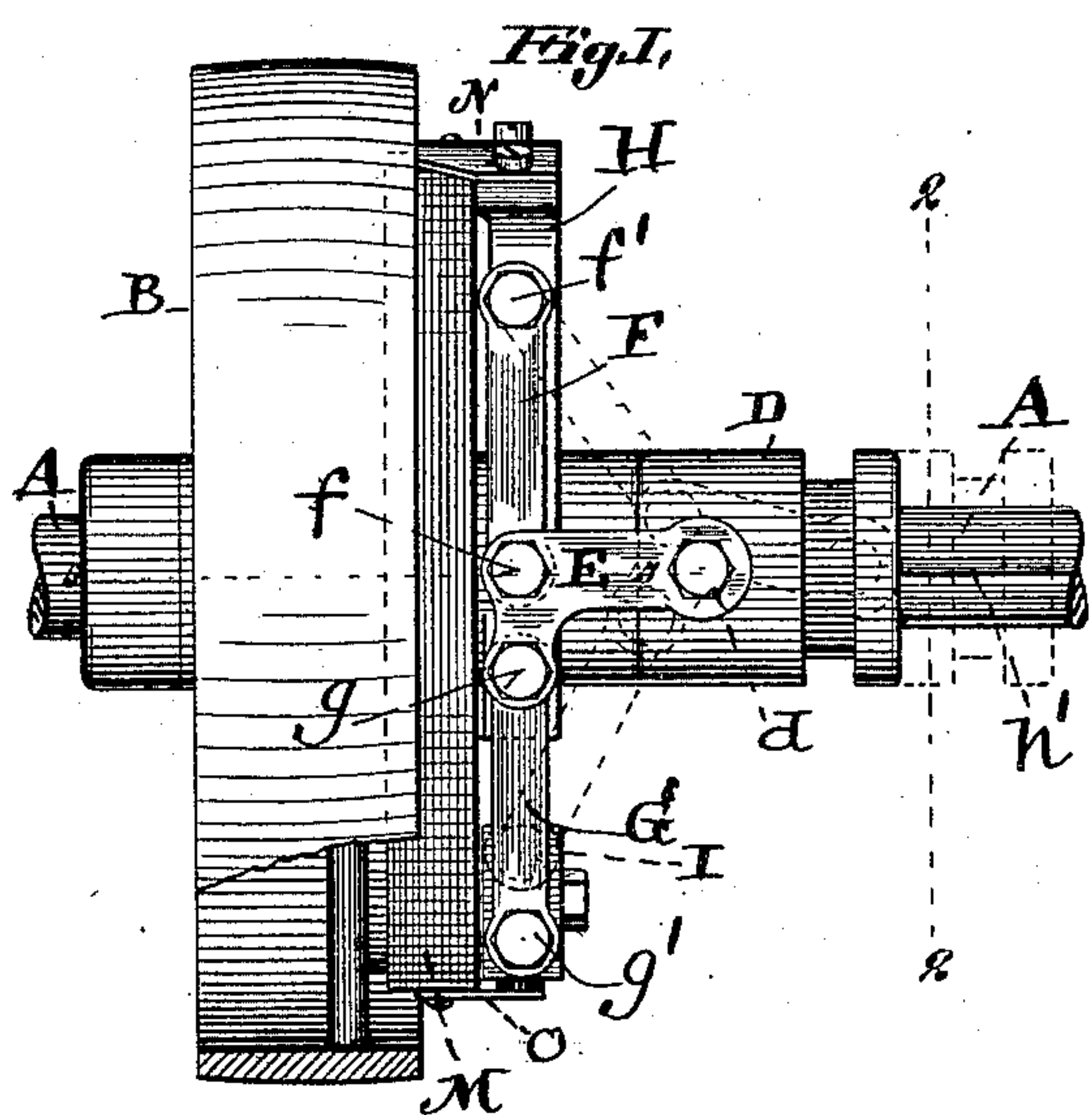


(No Model.)

H. R. HORTON.
FRICTION CLUTCH PULLEY.

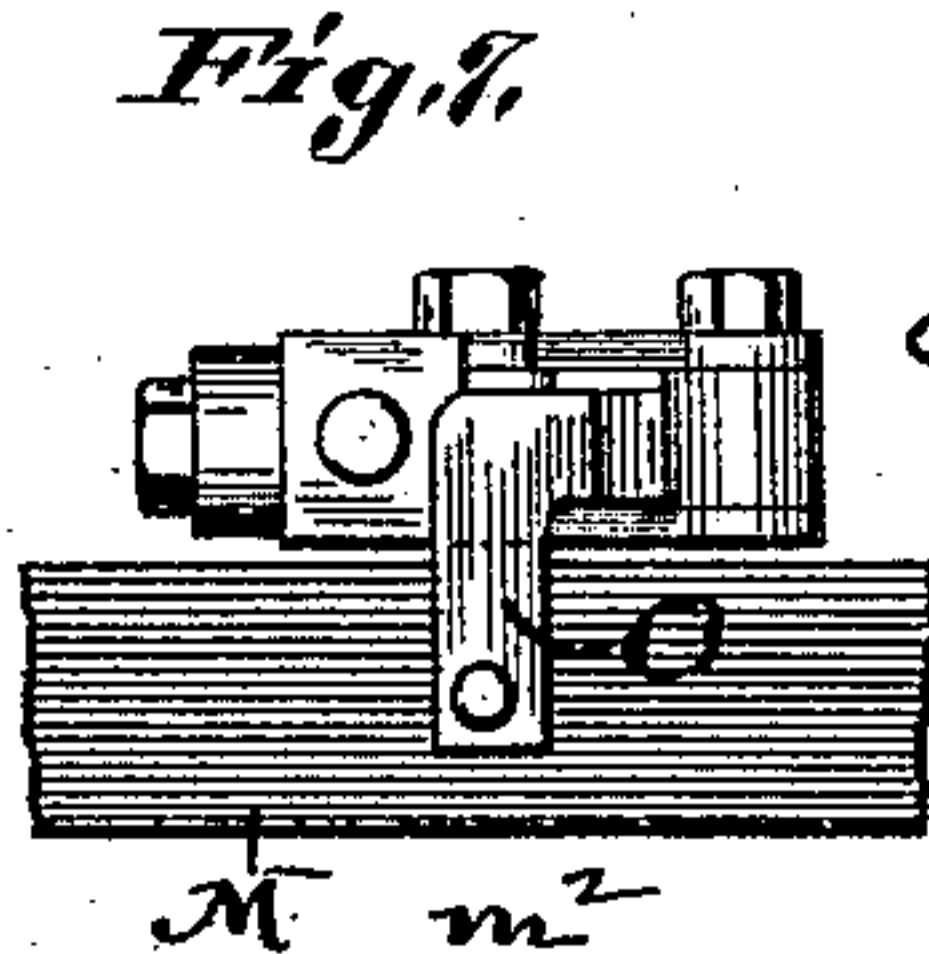
No. 428,048.

Patented May 13, 1890.



Attest:

Ltr. J. & Hilleg
 R. H. H. H.



Inventor,

Hilom R. Horton
by L P Moody
Mistake

UNITED STATES PATENT OFFICE.

HILON R. HORTON, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO MILTON F. WILLIAMS, OF SAME PLACE.

FRICTION-CLUTCH PULLEY.

SPECIFICATION forming part of Letters Patent No. 428,048, dated May 13, 1890.

Application filed December 16, 1889. Serial No. 333,977. (No model.)

To all whom it may concern:

Be it known that I, HILON R. HORTON, of St. Louis, Missouri, have made a new and useful Improvement in Friction-Clutch Pulleys, of which the following is a full, clear, and exact description.

The improvement relates to that class of friction-clutch pulleys in which the pulley is provided with a side flange upon which the clutch mechanism exerts a grip in effecting an engagement with the pulley; and it consists in the special means whereby the engagement is effected, substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is an elevation of the improved construction, a portion of the pulley-rim being broken away; Fig. 2, a section on the line 2-2 of Fig. 1; Fig. 3, a view in perspective, showing, separated from each other and respectively in different positions, the two arms which are attached to the pulley-shaft and used to tighten and loosen the band upon the pulley side flange; Fig. 4, a view in perspective of the block which is applied to one of the described arms and is movable longitudinally thereon; Fig. 5, a sectional view on the line 5-5 of Fig. 1, showing the pulley-shaft and the parts immediately therewith connected; Fig. 6, a plan showing the ends of the band and the plates used to connect them, respectively, with the arms shown in Fig. 3; and Fig. 7, a bottom view of the middle portion of the band and the part immediately therewith connected.

The same letters of reference denote the same parts.

The shaft A, to which the improved mechanism is applied, the pulley B, and the pulley side flange C are of the customary form.

D represents a sleeve applied to and adapted to be slipped, with the aid of a suitable lever, (not shown,) upon the shaft A, as indicated by its two positions shown, respectively, in the full and the broken lines, Fig. 1.

E represents an L-shaped bar jointed at *d* to the sleeve D and at *f* and *g* respectively jointed to the links F G. These links in turn at *f'* and *g'*, respectively, are jointed to the

arm H and the block I, which is movable upon said arm H. The combination of the parts E F G forms in effect a toggle capable of a movement indicated by the two positions of the parts shown, respectively, in the full and the broken lines, Fig. 1.

The arms H and K are both, and by means of the hubs *h* and *k*, respectively, fitted to the shaft A. The arm H, by means of the key *h'* (which may extend beyond the sleeve D, as shown) and groove *h''*, is prevented from rotating upon the shaft A, and the set-screw *h'''* is used to prevent the arm H from slipping longitudinally upon the shaft. A link L, at one end jointed to the block I and at the other end to the arm K, unites those parts, and the two parts I L thus serve as a brace by which the arms H K at the lower end thereof (as viewed in Fig. 2) can be braced apart, as shown in the full lines in Fig. 2, or drawn toward each other, as indicated by the broken lines, same figure. The parts I L also, in conjunction with the link G, form a device analogous to that of a toggle. The arms H K do not cross each other upon the shaft A, and when their lower ends are moved apart, as described, their upper ends are closed toward each other, as shown in the full lines in Fig. 2. The arm H does not, as stated, turn upon the shaft; but, owing to the key and groove described, it turns with the shaft, and to provide for the described relative adjustment of the arms H K the arm K can be turned on the shaft A. If desired, the arm K can be fixed on the shaft and the arm H be adapted to turn thereon.

M represents a band encircling the pulley side flange C. The ends *m m'* are respectively attached to the upper ends of the arms H K in such a manner that when those upper ends are moved toward each other the band ends are drawn toward each other, and the bands thereby tightened upon the flange C, and when they are opened apart from each other the band is loosened upon the flange C. The preferable means for thus connecting the bands and the arms H K is the plates N N'. These plates are attached to the arms H K, respectively, and preferably by means of the screws *n n*, and to the band ends, and prefer-

ably by means of the screws $n' n'$. The plates project laterally from the arms H K to come into line with the band upon the flange C, so as to draw the band in the plane of the flange.

The plates N may be adjustable upon the arms H K, as indicated, by the slots n^2 , to enable the plates to be set toward each other as the band stretches in use. Any other method of adjustment may be used. The middle m^2 of the band may be steadied in its position upon the flange C by means of an arm O, one end of which is connected with the band and the other end with an arm K, substantially as shown. The flange C may be attached to or connected with the pulley by any suitable means so long as the pulley and flange rotate together. In a cut-off coupling the flange may be attached directly to the shaft without the intervention or use of the pulley. The flange C is preferably a continuous one.

I claim—

1. The combination, in a friction-clutch, of the arms, the band, and connecting mechanism, one of said arms being tight and the other loose upon the shaft, and the ends of said band being attached to said arms, respectively, substantially as described.

2. The combination, in a friction-clutch, of the shaft, the arms respectively fast and loose upon said shaft, the band, and the pulley provided with the flange C, said band encircling

said flange and its ends being attached to said arms, respectively, substantially as described.

3. In a friction-clutch, the combination of the shaft, the sleeve upon said shaft, the bar E, jointed to said sleeve, the links F G, the arm H upon said shaft, and the block I, said links being jointed to said bar and arm, and said block being adjustable upon said arm, substantially as described.

4. In a friction-clutch, the combination of the shaft, the arms H K, the block I, and the link L, said arms being fitted to said shaft, said block being adjustable upon said arm H, and said link being jointed to said block and said arm K, substantially as described.

5. In a friction-clutch, the combination of the shaft, the sleeve upon said shaft, the bar E, jointed to said sleeve, the links F G L, the arms H K, and the block I, said links F G being jointed to said bar E and arm H, said link L being jointed to said block and arm K, said arms being fitted to said shaft, and said block being adjustable upon said arm H, as described.

Witness my hand this 11th day of December, 1889.

HILTON R. HORTON.

Witnesses:

C. D. MOODY,
MILTON F. WILLIAMS.