

(No Model.)

2 Sheets—Sheet 1.

J. J. COLLINS.
MECHANISM FOR CONVERTING MOTION.

No. 347,230.

Patented Aug. 10, 1886.

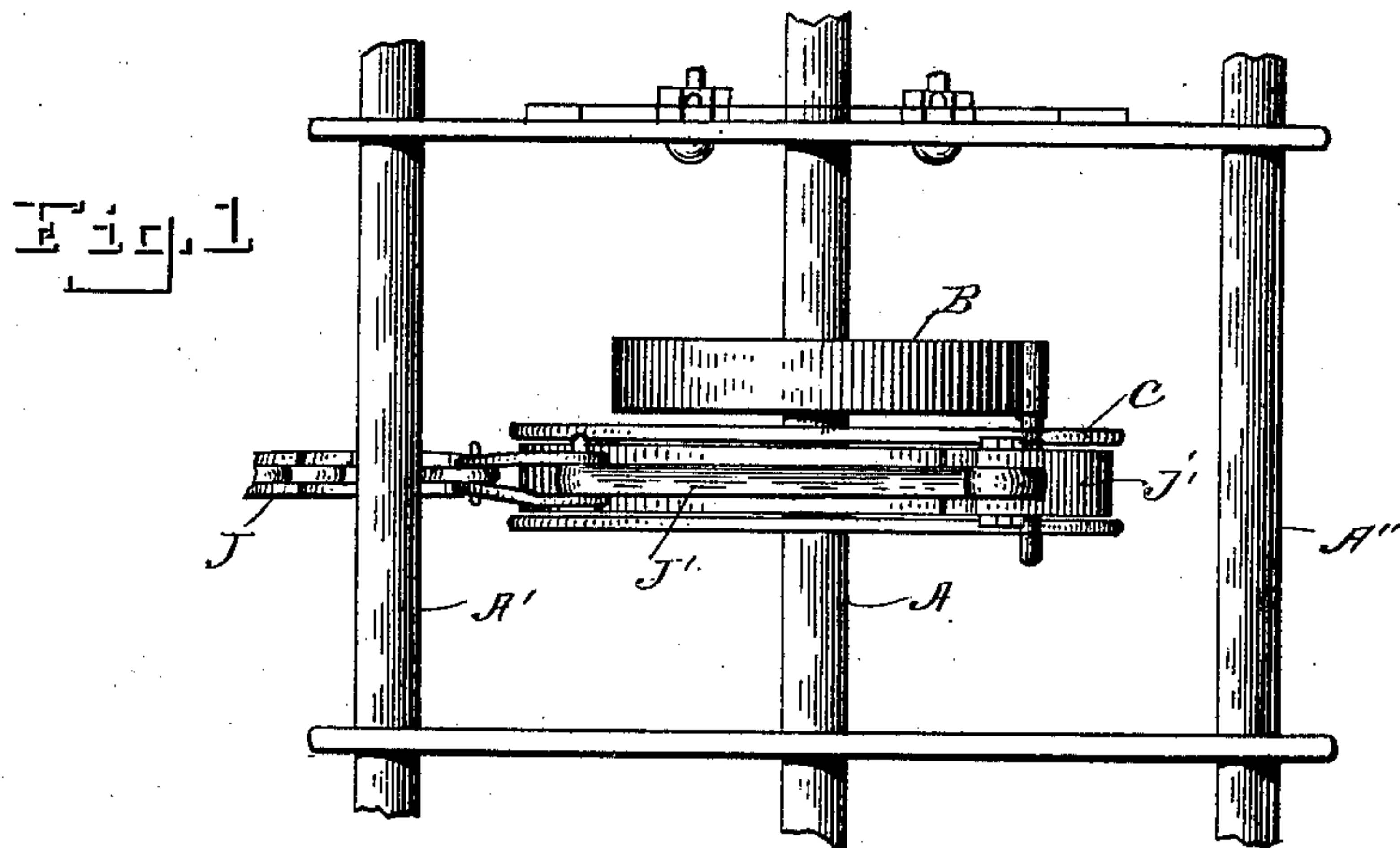


Fig. 2

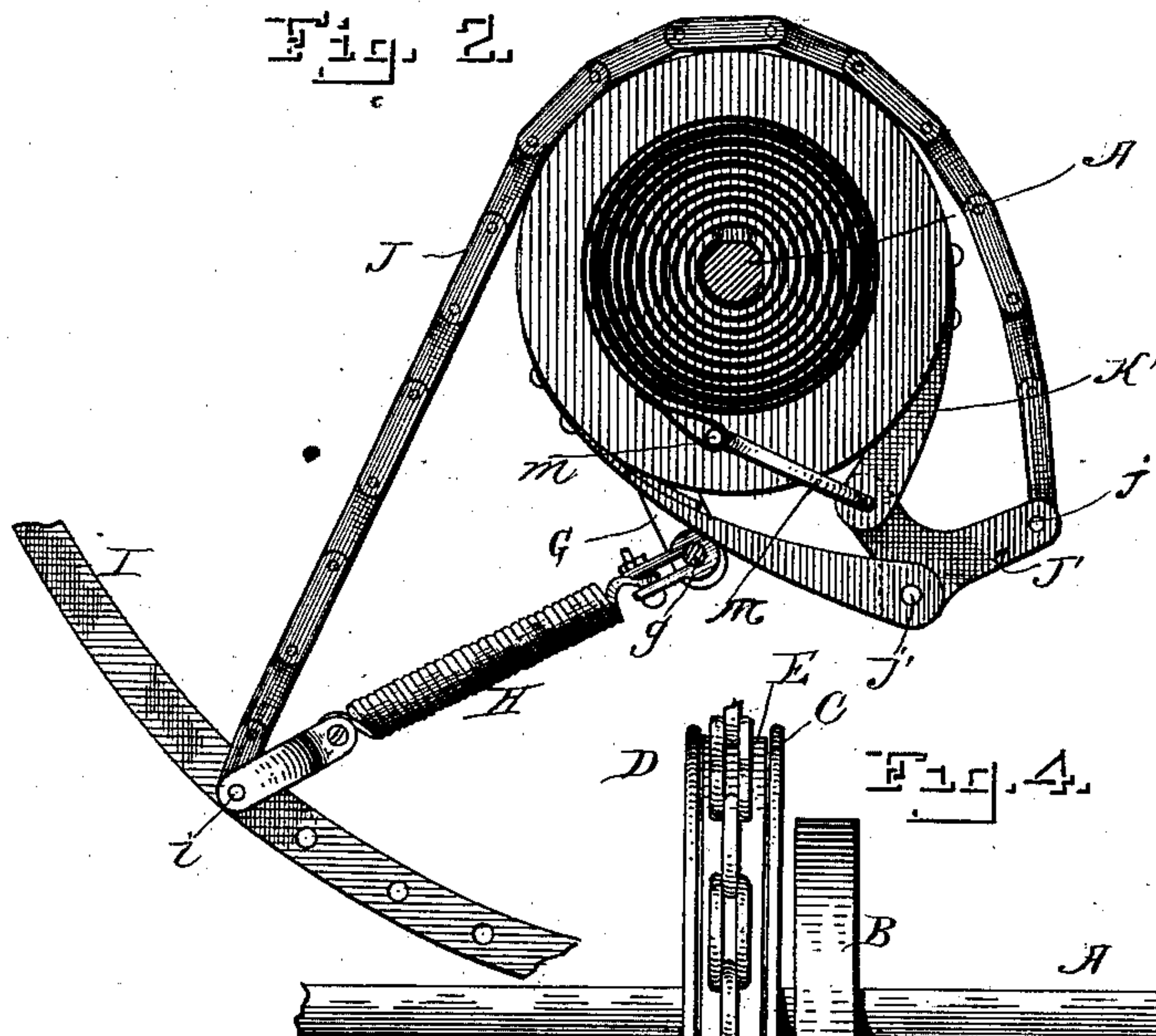


Fig. 3

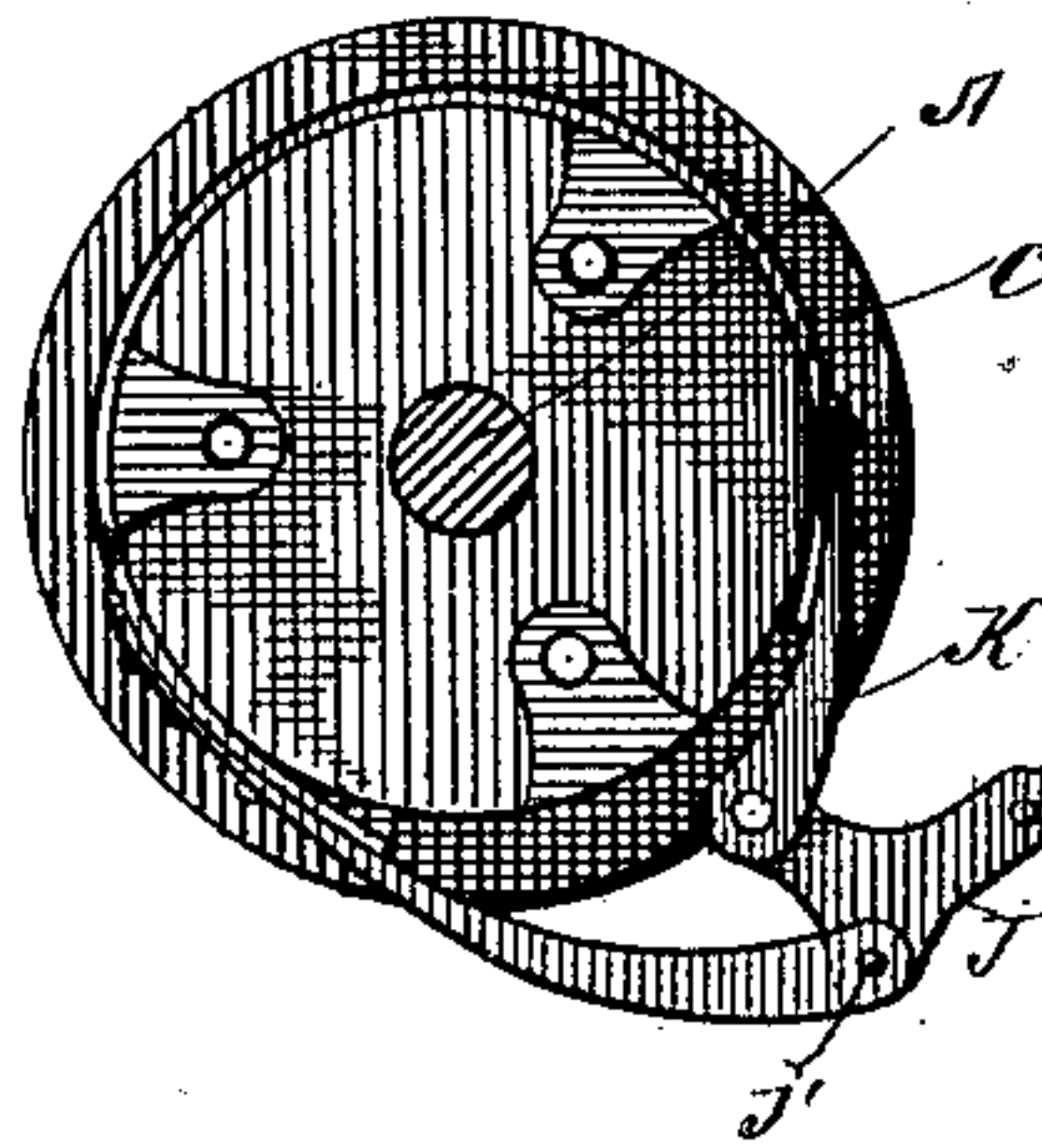


Fig. 4

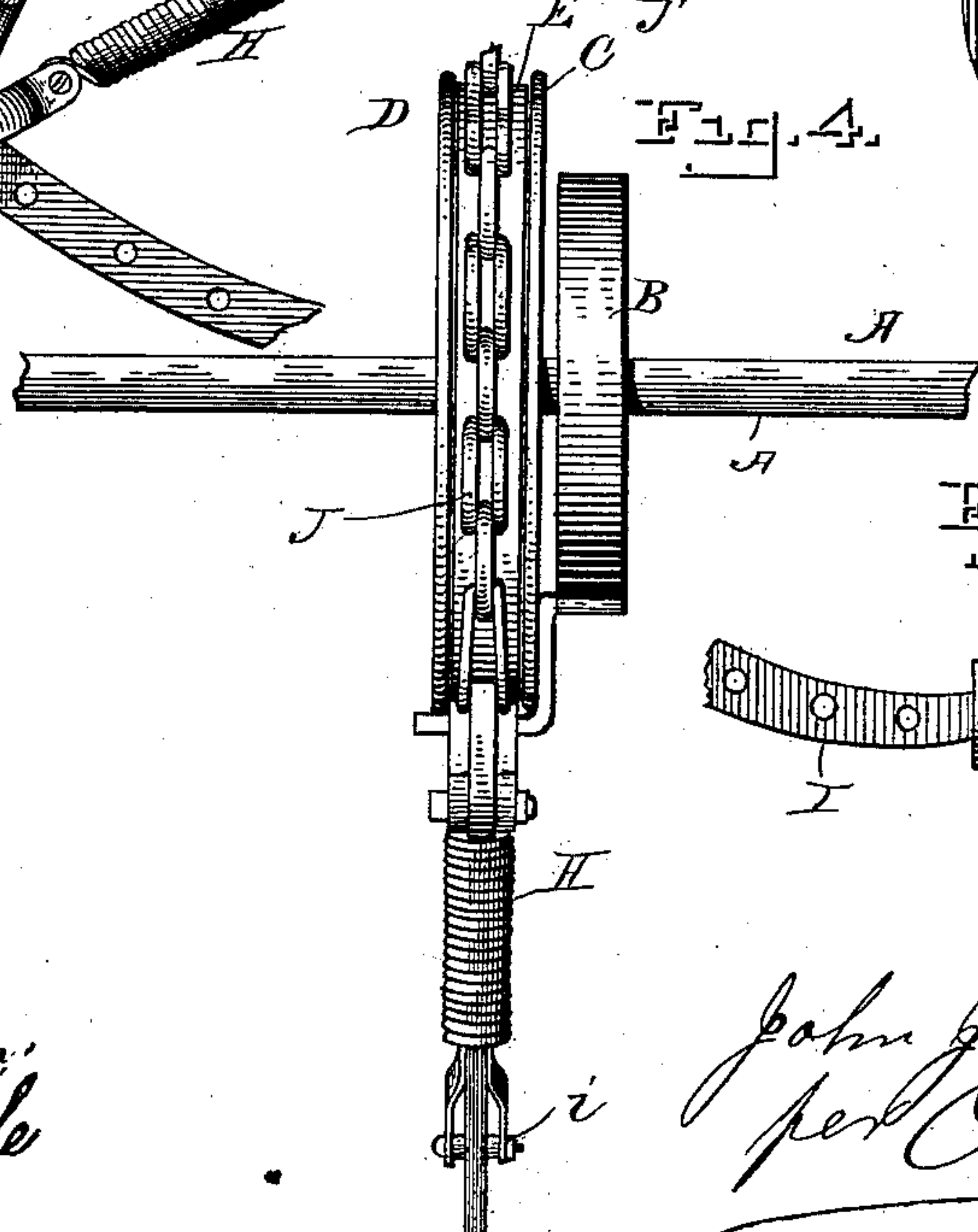
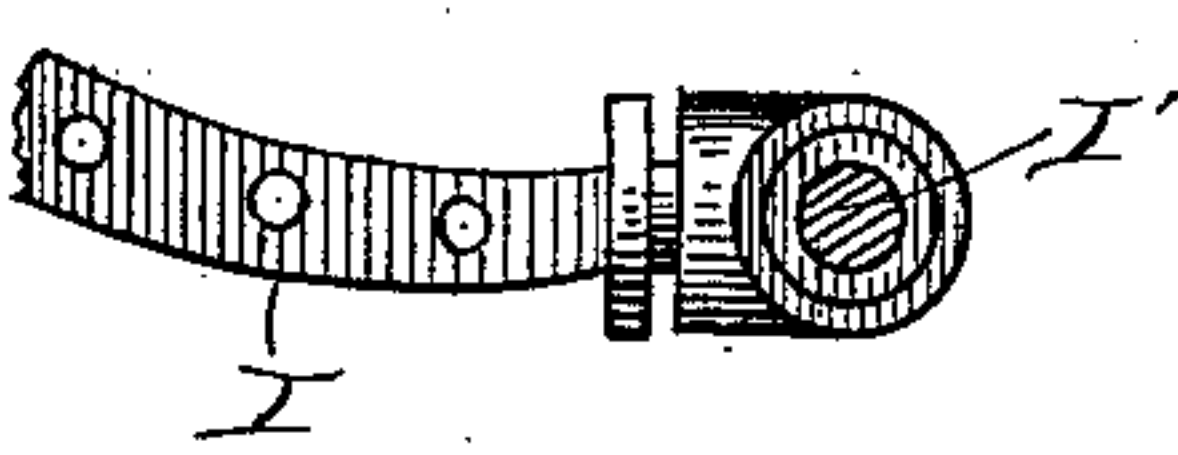


Fig. 5



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John J. Collins
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ATTORNEY

(No Model.)

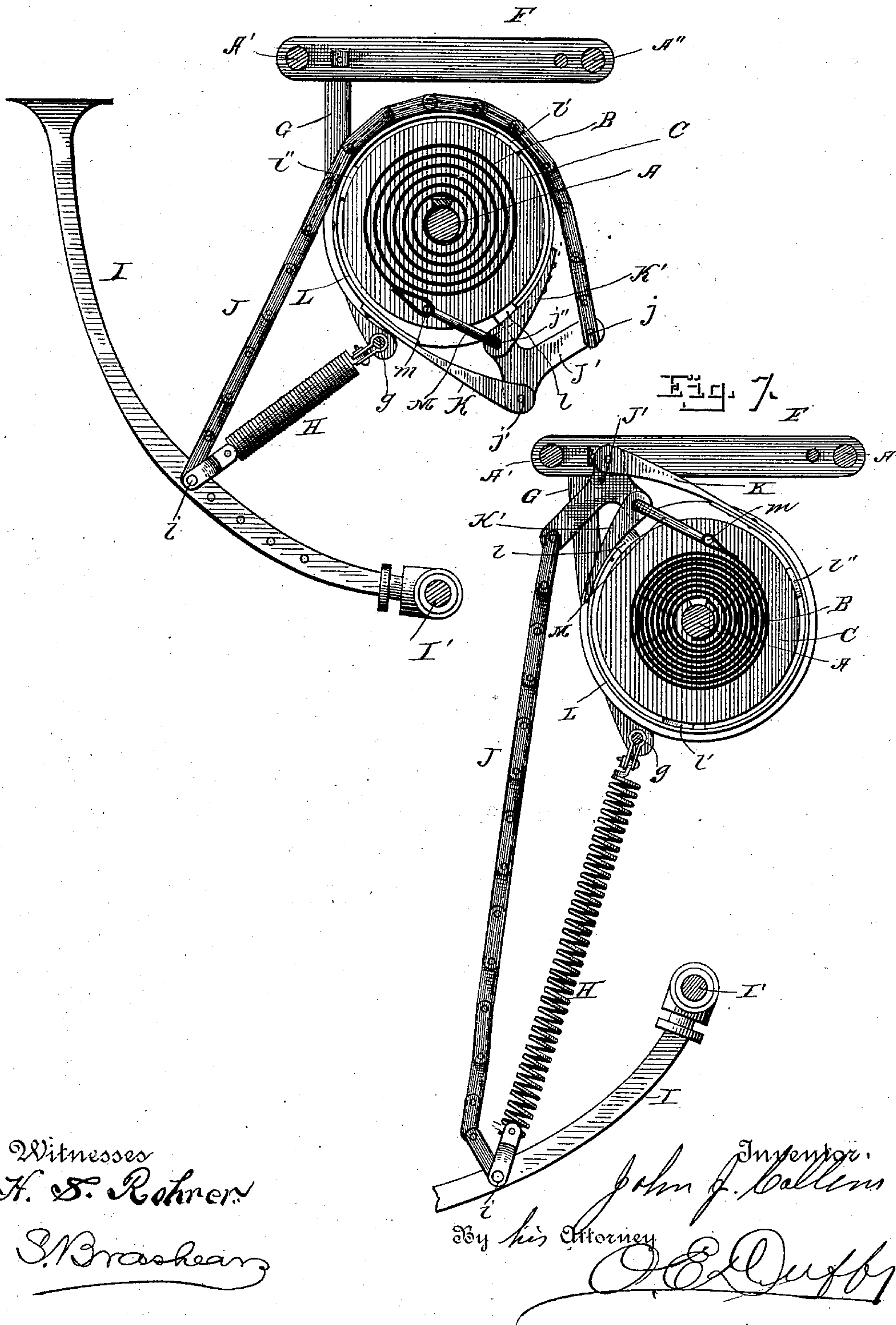
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Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN J. COLLINS, OF WASHINGTON, DISTRICT OF COLUMBIA.

MECHANISM FOR CONVERTING MOTION.

SPECIFICATION forming part of Letters Patent No. 347,230, dated August 10, 1886.

Application filed April 7, 1886. Serial No. 198,150. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. COLLINS, of Washington city, in the District of Columbia, have invented certain new and useful Improvements in Mechanism for Converting Reciprocating into Rotary Motion; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to mechanism for converting reciprocating into rotary motion by means of hand-levers or treadles and suitable connecting mechanism, and has for its object to furnish devices whereby such conversion of motion may be effected, which devices may be used in any place where it may be desired to turn a shaft—as, for instance, in lathes, saws, pumps, grindstones, velocipedes, &c.

With this object in view my invention consists in the improved construction, arrangement, and combination of parts, which I shall now proceed to fully describe, the specific points of novelty in which will be particularly set forth in the claims hereto appended.

In the drawings, Figure 1 is a plan view of a portion of my improved mechanism, the manner of supporting the main shaft being shown. Fig. 2 is a view, partly in section and partly in side elevation, showing the main shaft, its gripping mechanism, and the spring for loosening the grip on the return-stroke. Fig. 3 is a view of the main shaft, its drum, and the gripping-band. Fig. 4 is a view in front elevation of the parts shown in Fig. 2. Fig. 5 is a fragmentary detail showing the lower end of the operating-lever, showing the manner of pivoting it. Fig. 6 is a view, partly in section and partly in elevation, showing all the operative parts at the beginning or in the early part of the stroke; and Fig. 7 is a similar view of the same parts in the position to which they are brought at the latter part of the stroke.

Like letters of reference mark the same parts wherever they occur in the various figures.

Referring to the drawings by letter, A is the main shaft, upon which is mounted a coiled spring, B, a pair of disks, C D, and a drum,

E, all of which are rigidly secured to and turn with said shaft.

A' A'' are two bars or rods mounted rigidly and carrying two connecting flat bars, F F', from near one end of each of which depends a flat bar, G G', which are connected at their lower ends by a pin-bar, g, upon which one end of a spring, H, is mounted, which spring is connected to a lever, I, pivoted to a bar, I', mounted below the shaft A.

To the lever I, which may be either a hand or foot lever, is attached by a pin, i, (in this instance the same one that secures the spring to it,) a chain, J, which at its upper end is attached at j to a T-shaped piece of metal, J', having a hole in each of its three arms. To two of the arms of this T-shaped piece is secured, at j' and j'', two pieces of metal K K', which are in turn secured by rivets or other suitable fastenings to a belt, L, of sheet-steel, which encircles the drum E. The T-shaped piece, at j'', by which the piece K' is attached, is a double-crank rod, M, which at its other end, m, enters a loop in the outer end of the coiled spring B.

On the interior surface of the belt or band L, at proper intervals, are secured metal shoes l' l'', which form the points of bearing on the drum.

The shaft A may be the main driving-shaft of any kind of a machine in which it is desired to have a continuous rotary motion in one direction.

The operation of my invention may be described as follows: The parts being in the position shown in Figs. 2 and 6, and being at rest, in order to set the shaft in motion it is only necessary to press downward on the lever I, which will carry the end of the chain downward, by means of which the chain is drawn around the drum, pulling on the fulcrum pressure-bar or T-piece at the point j. When this action begins, the end of the double-crank bar M at j'' becomes a fulcrum, and the weight is at the point j', the tendency being to throw the point j'' in one direction and the point j' in the opposite, thus firmly clasping the belt around the drum. This action having been continued until the belt is tightly clasped around the drum, the further movement carries the drum around with the belt, and as a consequence rotates the shaft. As soon as press-

ure on the lever is released, the spring H will draw it back, and thus release the pressure of the belt around the drum, so that the momentum acquired will continue to rotate the drum
5 until a new stroke can be made. At the same time the release of the lever leaves the coiled spring B free to act, when it draws the chain around the drum until the enlarged end of the piece K strikes the rod *g*, when the motion of
10 the chain backward ceases. The shoes *l l'* take the wear off the belt and make it much more durable.

The action of this motor is reliable, strong, and sure, and much superior to any with which
15 I am acquainted.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In combination, a drum mounted rigidly
20 on a shaft, a metallic belt encircling said drum, a T-shaped piece of metal attached at two of its arms to the two ends of the belt, and a chain attached to the third arm of the T-piece at one end and to a lever at the other, as set forth.

25 2. In combination, a drum mounted on a shaft, a metallic belt encircling said drum, a

T-shaped piece of metal having two arms connected to the ends of said belt, a hand or foot lever, a chain connecting the third arm of the T-piece with said lever, and a coil-spring rigidly mounted on the shaft and connected at
30 its outer end to one arm of the T-piece, as set forth.

3. In combination, the shaft, the drum, and spring mounted thereon, the T-piece, the
35 chain, the lever, and the belt having shoes on its interior surface, as set forth.

4. In combination, the bars *A' A''*, the connecting-plates *F F'*, the depending plates, the pin *g*, connecting them at the bottom, the drum,
40 its belt, and its moving and clamping mechanism, the pin *g* serving as a means of attachment for the retracting-spring H, and a stop for the backward movement of the belt around the drum, as set forth.

In testimony that I claim the foregoing as my own I hereto affix my signature in presence
45 of two witnesses.

JOHN J. COLLINS.

Witnesses:

S. BRASHEARS,
LEO DUFFY.