

(No Model.)

C. FRANCO.

BALE TIE TWISTER.

No. 396,651.

Patented Jan. 22, 1889.

Fig. 1.

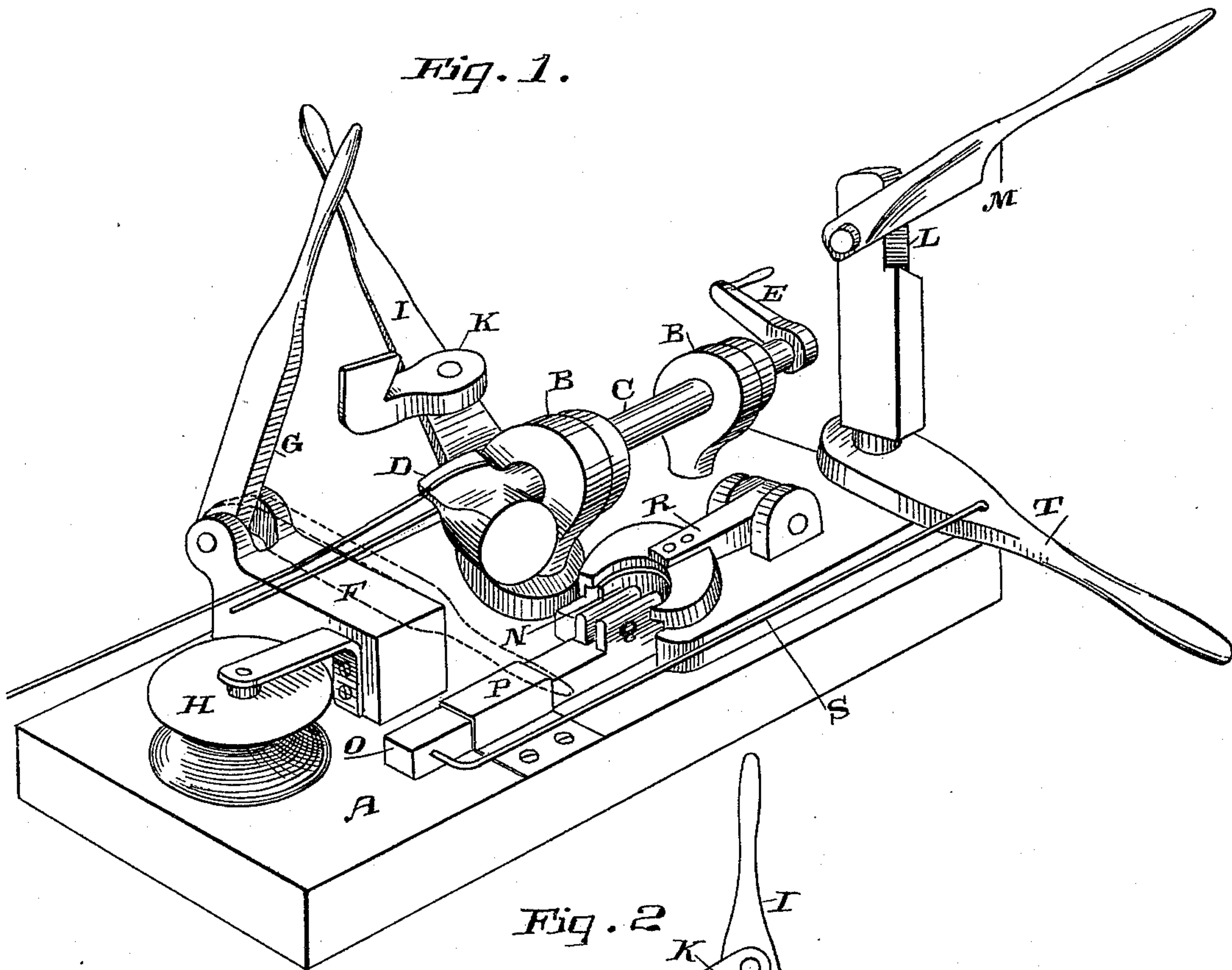


Fig. 2.

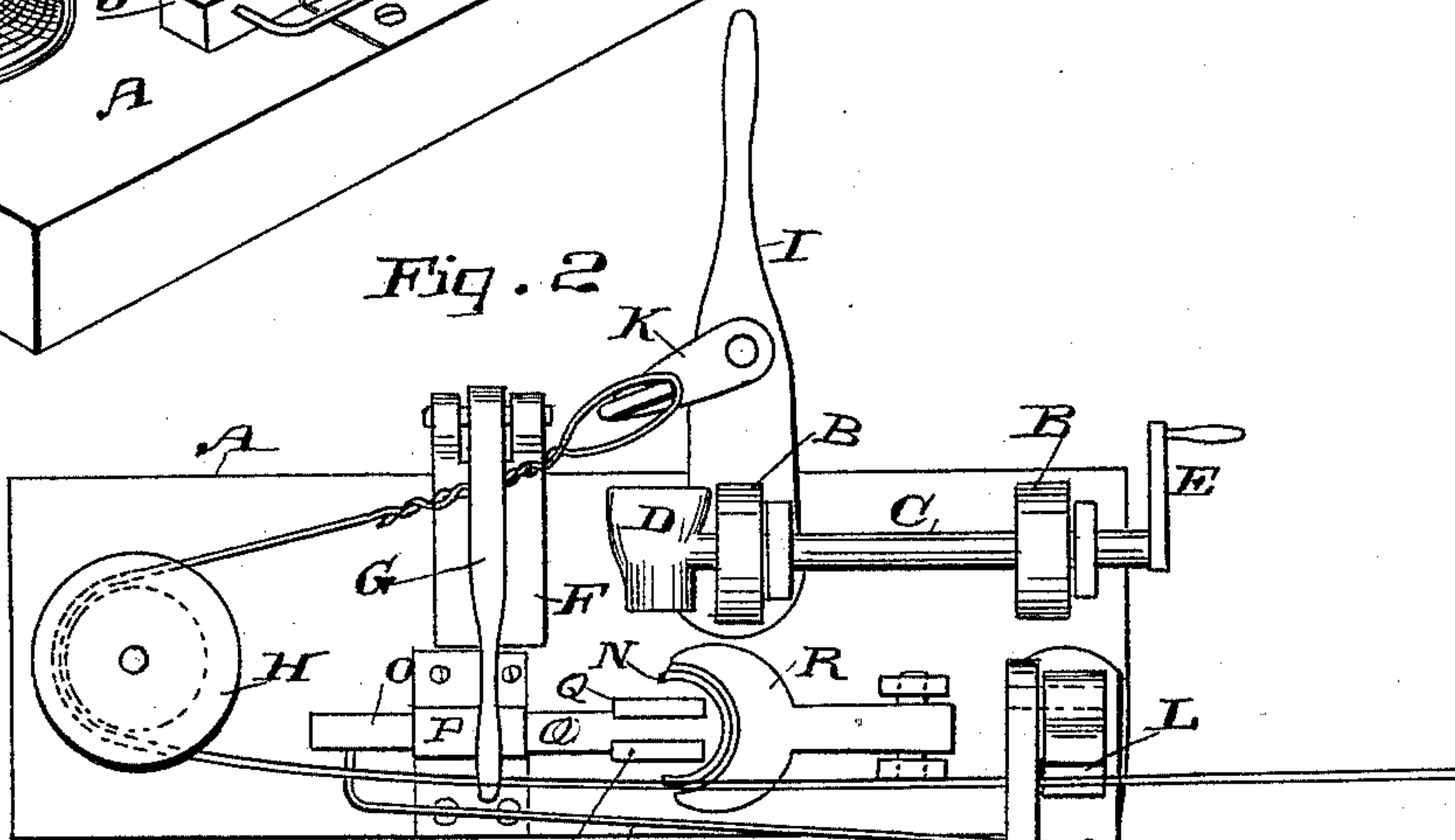
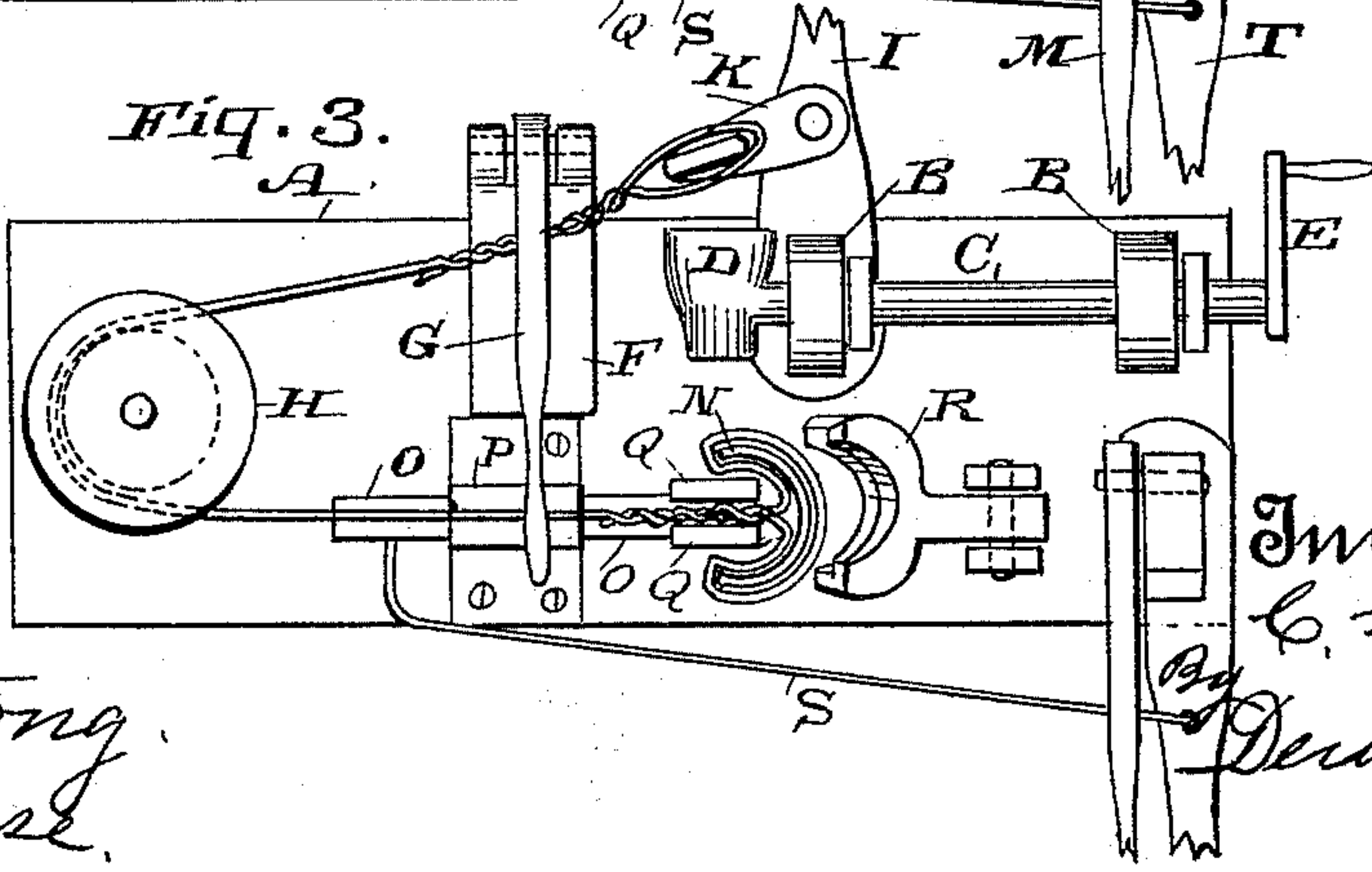


Fig. 3.



Witnesses,  
Geo. H. Strong  
J. H. House.

Inventor,  
C. Franco  
By Dewey & Co.  
attys



# UNITED STATES PATENT OFFICE.

CHRIS FRANCO, OF LIVERMORE, CALIFORNIA.

## BALE-TIE TWISTER.

SPECIFICATION forming part of Letters Patent No. 396,651, dated January 22, 1889.

Application filed November 7, 1888. Serial No. 290,253. (No model.)

*To all whom it may concern:*

Be it known that I, CHRIS FRANCO, of Livermore, Alameda county, State of California, have invented an Improvement in Bale-Tie Twisters; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device which I term a "bale-tie twister." Its object is to cut the wire of which the bale-ties are constructed to the proper length to form the loops upon opposite ends of the wires and to shape these loops so that they may be locked together after the wire has been placed around the bale.

It consists of a mechanism which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 shows the machine with the wire in position for forming the first loop. Fig. 2 shows the wire in position to be measured and cut off previous to forming the second loop. Fig. 3 shows the wire in position to form the double hook by which the ends are connected together after being placed around the bale.

A is the base plate or board, which may be attached to any suitable table or support. Upon one end of this table are two standards, B, through which the shaft C passes, and upon the inner end is fixed a sort of a hammer-shaped head, D, the two ends of which are differently shaped. The outer end of the shaft has a crank, E, by which the shaft may be turned. In line with this shaft, and at a short distance from the head D, is an anvil or support, F.

G is a lever hinged at one side of the anvil F, so that its face may be brought down to press upon the surface of the anvil.

H is a grooved roller or pulley fixed at the opposite end of the table A.

I is a lever fulcrumed to the side of the table near the standards B, and having a hook or projection, K, pivoted to it and projecting upward, so as to serve for the purpose of attaching the wire loops thereto, as will be hereinafter more fully described.

L is a standard having a lever, M, fulcrumed to it, the edge of the lever and the corresponding edge of the standard serving,

when the lever is brought down, as a shears by which the wire may be cut off.

The operation will then be as follows: The wire being taken from the reel, one end is passed round the head D on the rotary shaft C, and the bight thus formed is placed upon the anvil F, and the lever G is brought down, so as to press the two ends firmly upon the anvil. The shaft C is then rotated by means of the crank E, and the wire is twisted, thus forming a loop, the size and shape of which are determined by the end of the head D upon which it is placed. The lever G is then lifted, and the wire loop is removed from the head D and is placed around the loop-holder of the arm K, which is mounted upon the lever I, as above described. The wire is thence carried around the pulley H and to the post L, where, by means of the cutting-lever N, it is severed. The severed end is then placed around the opposite end of the head D, which is made circular and larger than the end upon which the first loop was formed. The bight of the wire at this end being now held upon the anvil F and the lever G brought down upon it, the shaft C is again turned, and the loop at this end of the wire is formed. It is now necessary to form the circular loop last made into a double hook for the purpose of connecting the two ends together. This is done in the following manner:

N is a semi-cylindrical standard, preferably made of stout metal, which is securely fixed upon the table A, the circle being of such size that the loop of the wire last formed will fit around this standard.

O is a sliding bar traveling through the guide P, which is fixed to the table A, the bar traveling to and from the open side of the semi-cylinder N. Upon that end of the bar O which is nearest to the semi-cylinder are two parallel jaws or strips, Q, which are sufficiently spread to admit the twisted portion of the wire after the loop has been placed around the semi-cylinder N, and their ends are rounded, so that they will fit within the concavity of the standard.

R is a holder, which is hinged behind the semi-cylinder N, and after the wire has been placed over the cylinder this holder is turned



down over the semi-cylinder, being cut out so as to just fit it, and thus prevent the loop of wire from being lifted off of the semi-cylinder by the next operation. The slide O is connected by the rod S with a lever, T, which is fulcrumed to the end of the table A. In the present case the bottom of the standard L serves as a fulcrum around which the lever turns. When the lever is turned, so as to draw the bar O toward the open side of the semi-cylinder N, that portion of the loop of wire which is toward the end of the bar is pressed into the interior of the semi-cylinder N by the end of the bar O and the jaws Q, which are curved, so as to correspond with the curve of the interior of the cylinder. This bends the loop upon itself, so that the convex outer portion passes around the outside of the cylinder, while the folding of the wire upon the inside of the cylinder, makes a double hook at this end of the wire. The wire passes from this point between the jaws Q, above the slide O, and around the pulley H. The opposite loop is hooked upon the piece K, and by turning the lever I, which carries this standard, the wire will be stretched and straightened to its fullest extent, so as to be exactly prepared, and the loops sized to be used upon the bale.

It will be manifest that by this operation the wire may be taken from the reel or bale and all cut into equal lengths with the equally-sized and properly-shaped loops formed upon the ends, so that, the size of the bales being determined, the wires for these bales will all be of the same length and have corresponding sized and shaped loops upon their ends. The manner of securing these wires is to simply pass the hook-shaped loop through the oval one while the bale is compressed, and then, the hooks turning transversely to the

oval loop, as soon as the bale is released the elasticity of the material draws the wire tight around it and makes a secure fastening.

By this contrivance any farmer can manufacture his own bale-ties with great rapidity and little expense at the time and place where used and in the quantity needed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The measuring and cutting device consisting of the head K, around which the loop is placed, the roller H, and a cutter, L N, substantially as herein described.

2. The semi-cylinder N, the slide O, with its jaws Q, and the holding-plate R, in combination with the lever T and the connecting-rod S, substantially as herein described.

3. The hook-forming device and gage consisting of the semi-cylinder N, the slide O, and the lever by which the slide is reciprocated to and from the open side of the cylinder, in combination with the pulley H, the loop-holder K, and the lever I, substantially as herein described.

4. A device for measuring, cutting, and forming loops in the ends of the wires for baling purposes, consisting of the rotary shaft with its twisting-head, anvil, and holding-lever, the reciprocating slide, and semi-cylindrical standard, the guide roller or pulley at the end of the table, the stretching hook and lever, and the knives or cutters, substantially as herein described.

In witness whereof I have hereunto set my hand.

CHRIS FRANCO.

Witnesses:

NORMAN MCLEOD,  
R. THOMAS.