

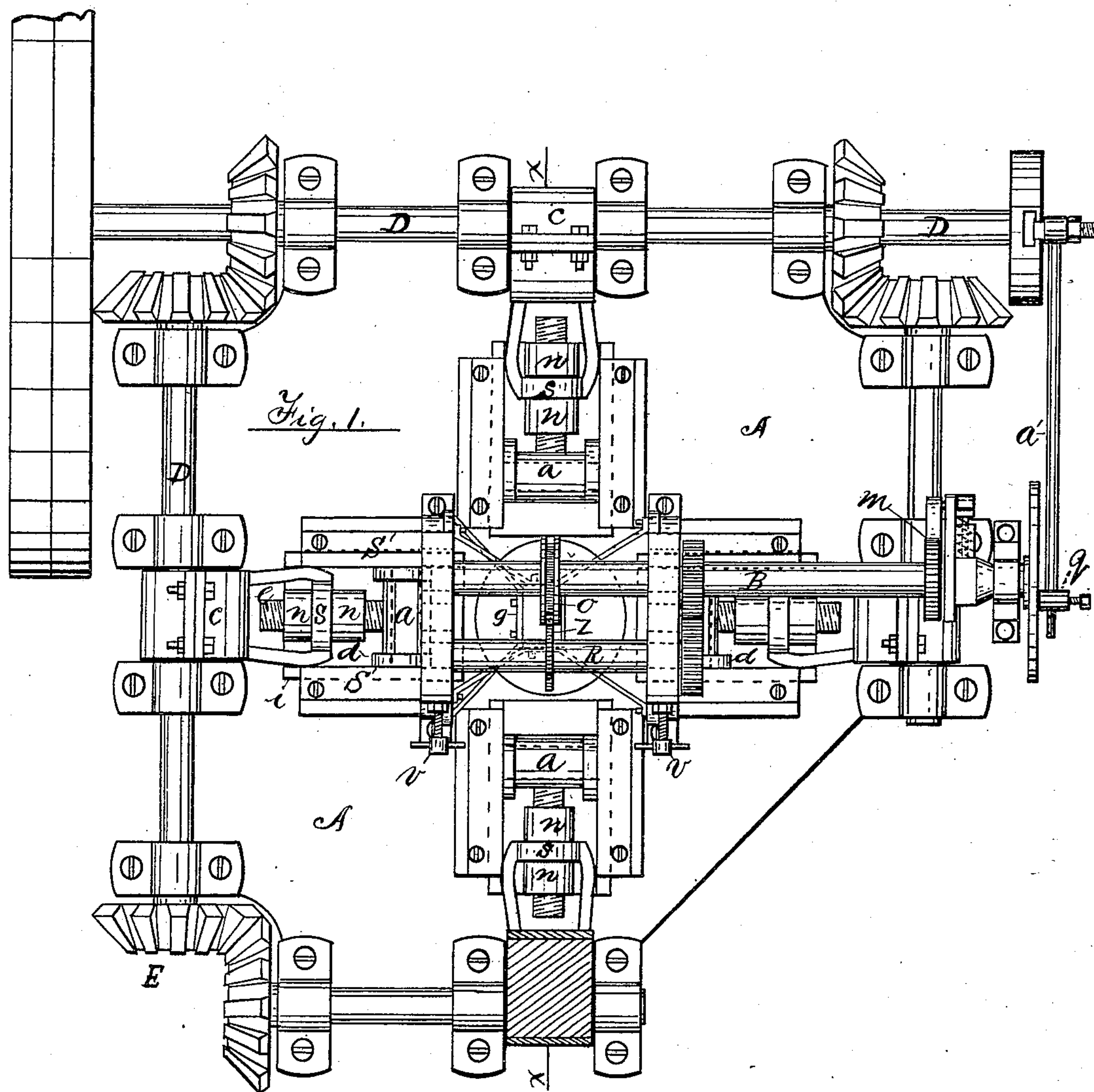
(No Model.)

2 Sheets—Sheet 1.

M. W. WATKINS.  
Barb Making Machine.

No. 241,256.

Patented May 10, 1881.



Witnesses

Thos H Hutchins  
Wm J Hutchins

Inventor

Milton W. Watkins

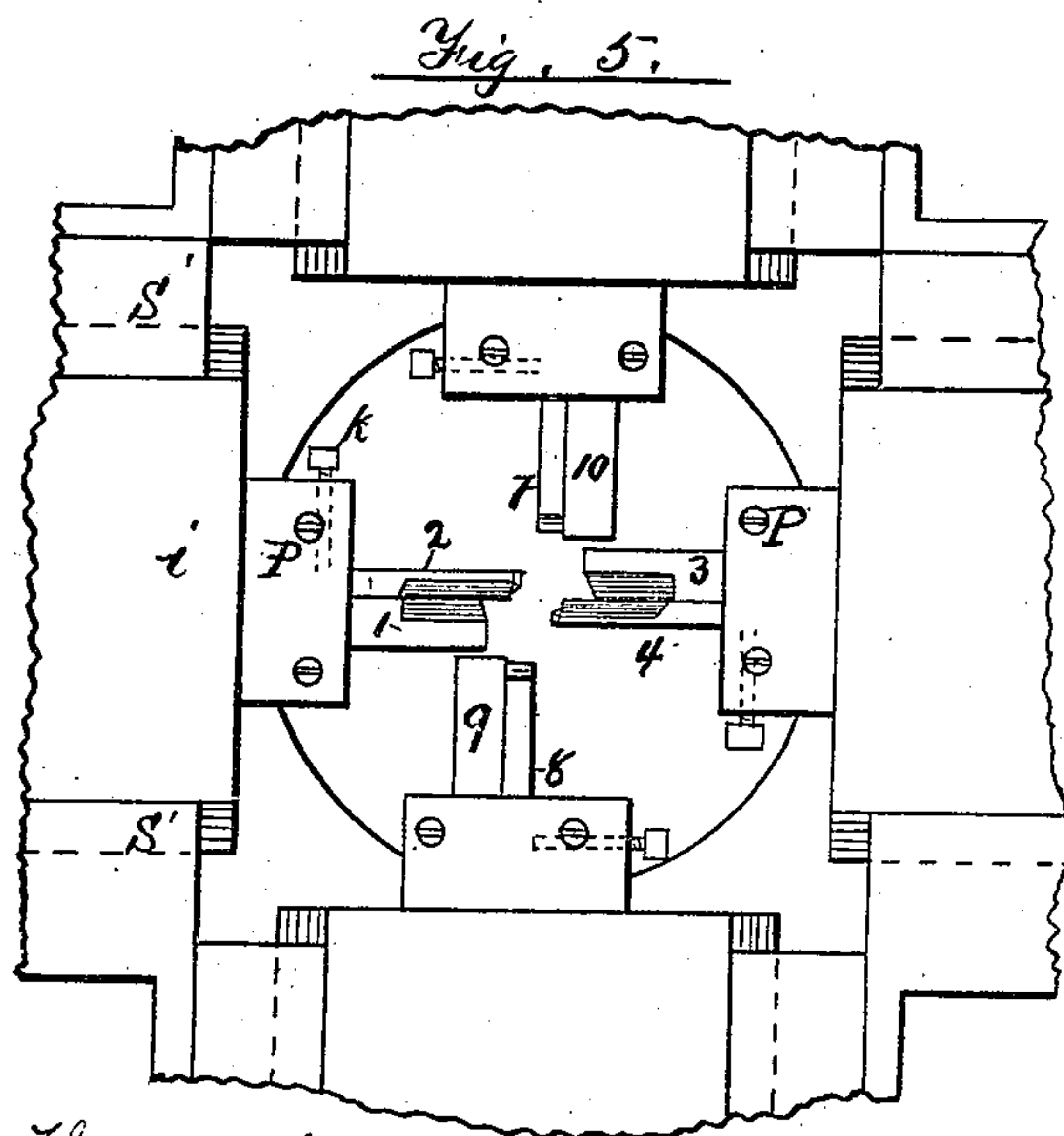
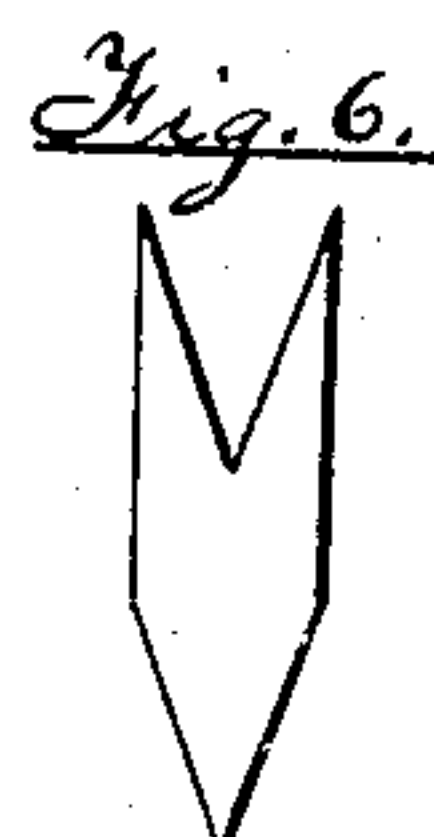
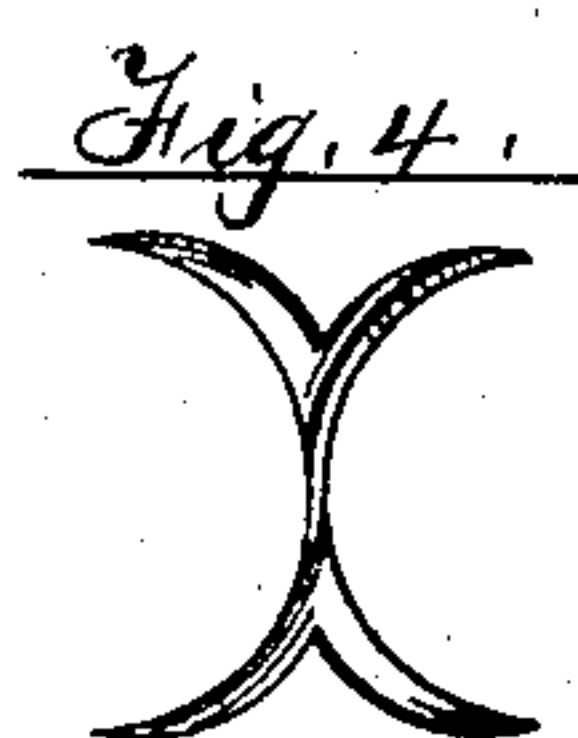
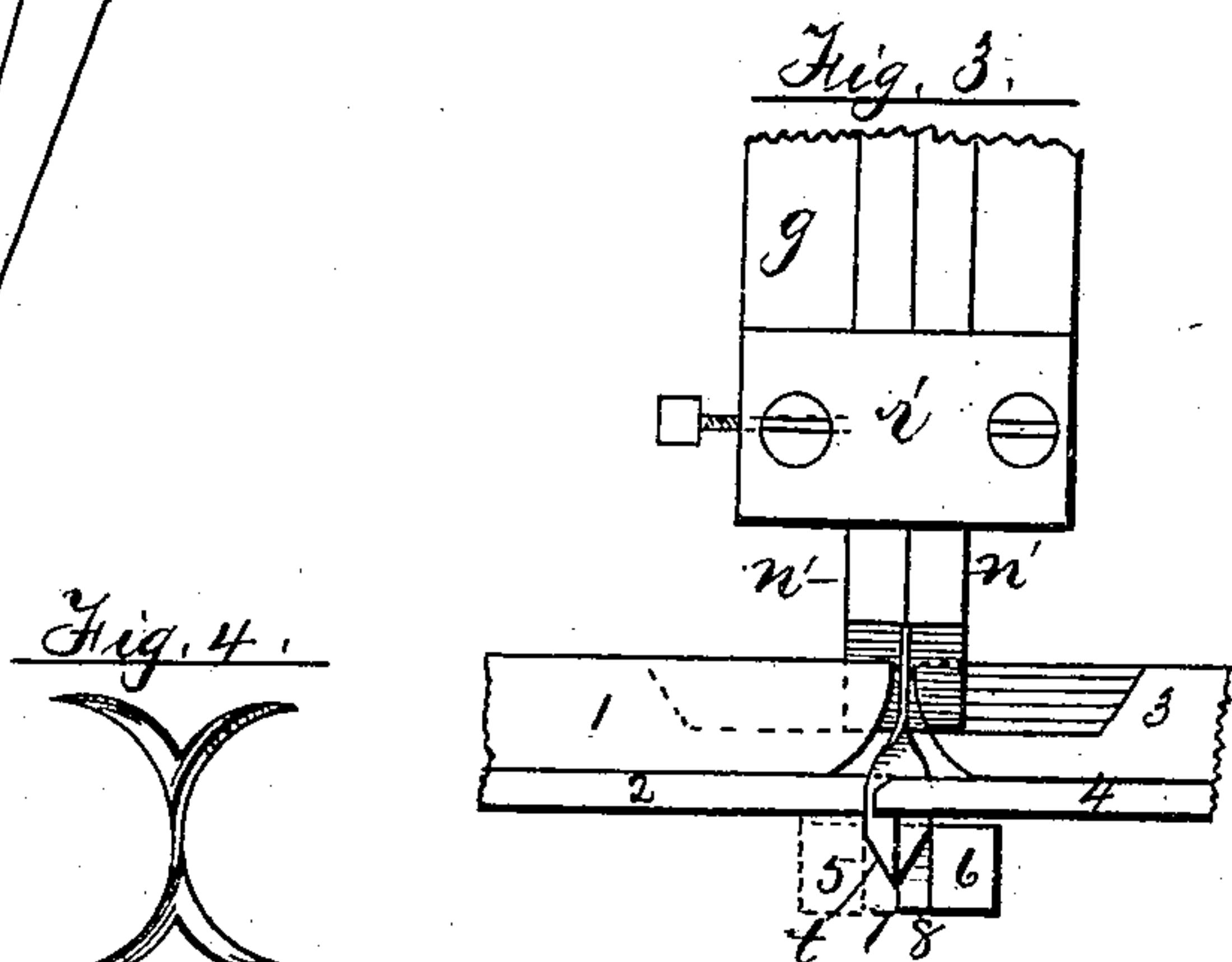
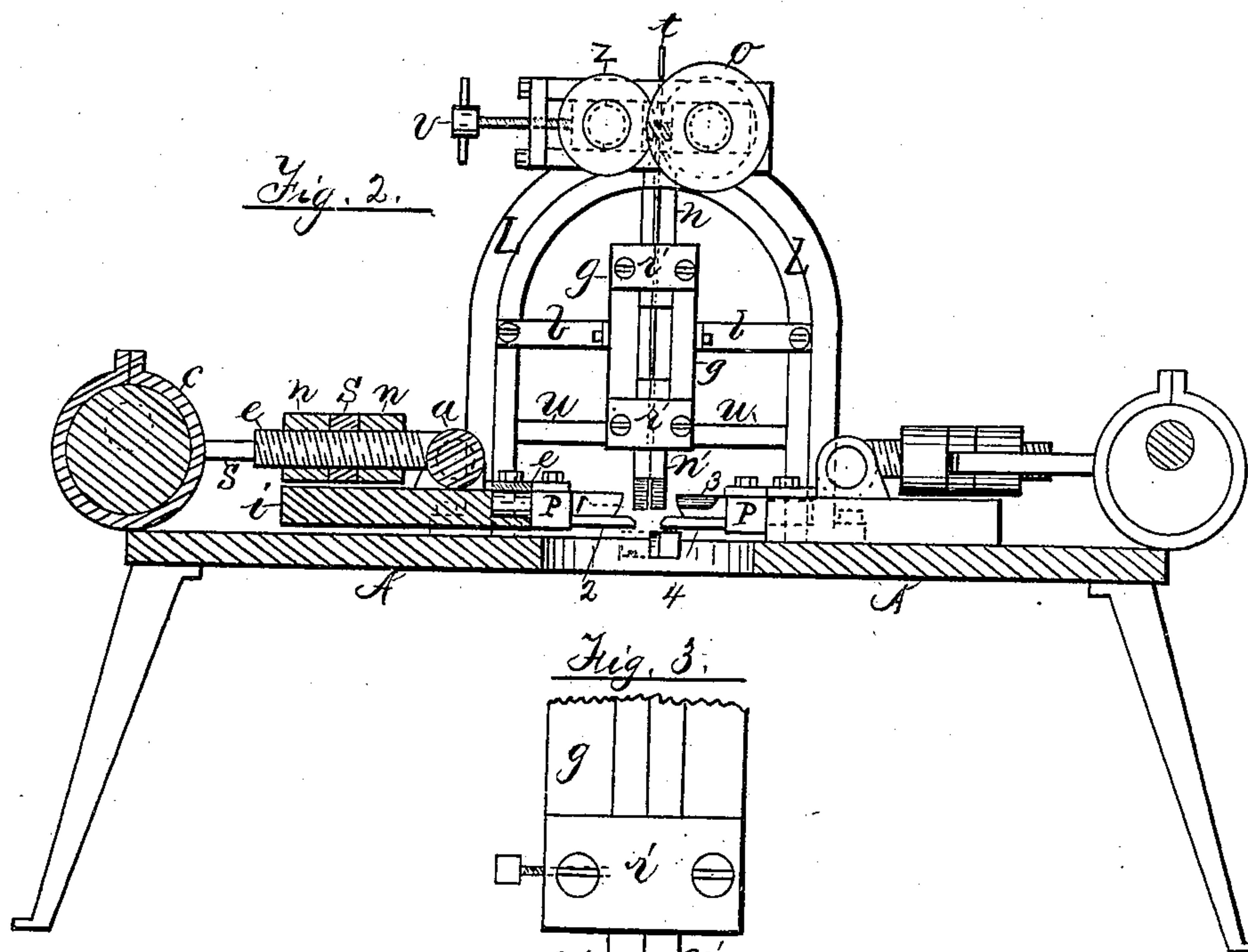
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# UNITED STATES PATENT OFFICE.

MILTON W. WATKINS, OF JOLIET, ILLINOIS.

## BARB-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 241,256, dated May 10, 1881.

Application filed February 21, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, MILTON W. WATKINS, of the city of Joliet, in Will county, and State of Illinois, have invented a Machine for Forming and Cutting Flat Metal Barbs for Wire Fences at One Single Operation, the construction and operation of which I will proceed to explain, reference being had to the annexed drawings and the letters and figures thereon, making a part of this specification, in which—

Figure 1 is a plan view on the top; Fig. 2, a central vertical sectional view on the line *x*; Fig. 3, a side elevation of the cutting and twisting dies and guide above to conduct the barb metal to the cutting-dies; Fig. 4, a perspective view of a barb cut and twisted ready to use; Fig. 5 a plan view on the top of the central portion of the machine, showing the cutting-dies and the die-blocks into which they fasten; and Fig. 6 a plan view on the top of a blank barb before it is twisted.

The nature and object of this invention are to twist and split the barb made of flat metal at one single operation, so they will be in the form shown in Fig. 4, ready to be placed between the two strands of wire and twisted between them, for the purpose of forming a barbed wire for fences.

Heretofore the barb herein shown has been punched or cut out of a flattened strip of metal and then placed into a former to give it the spiral twist, thus requiring two separate operations and two separate machines to do that which I now attain by the use of this machine.

In the drawings, A shows the bed-plate of the machine having legs and a circular opening in or near the center, and bearing on its upper surface the operating parts of the machine, the essential feature of which is a system of shafting reaching around the edge of the bed-plate driven by a bevel-gear at the corners, and driving, by means of eccentrics on the shafts, a set of four cutting-dies approaching each other simultaneously from each of the four sides over the opening in the bed-plate to cut and bend the barb between them as they come in contact with each other, and letting the barb drop below finished as the cutting-dies separate from each other.

Where the parts are similar in the drawings only one of said parts is lettered, and reference by letter will include every similar part.

The shafts D are the shafts that carry the eccentrics *e*.

To the boxing of the eccentric *e* is attached a stirrup, S, which slides on the shaft *e*, and is held at any place thereon by means of the set-nuts *n n*, which turn on the threads cut on the shaft *e*. The inner end of the shaft *e* is pivoted at *a* by a cross-head into suitable boxing into lugs *d* on the top of the sliding heads *i*, which are beveled on their sides and travel in ways under the plates S', which hold them in place.

To the front end of the sliding heads *i*, in suitable recesses and by set-screws *k*, are fixed the cutting and forming dies, as shown more particularly in Fig. 5.

It will be seen by reference to Fig. 1 that when the machine is in motion the eccentrics *e* on the shafts D cause all the dies to move simultaneously to and from a common central point of contact at the center of the machine, to jointly perform their work and recede, letting the finished barb drop below, the set-nuts *n n* being used to adjust the dies in or out after they are set, so their contact may be regulated to a great nicety and certainty, so as to cut and form the barb exactly as desired, and thereby avoiding the necessity of driving wedges at the sides or ends of the cutting-dies to get them in proper position.

To the top of the bed-plate A, over the central opening, stands a frame, L, which supports that portion of the machine denominated the "feed." This feed consists of the two parallel shafts B and R, Fig. 1, carrying on their inner ends, respectively, the rollers *o* and *z*, between which the barb metal is carried and forced downward between the cutting-dies through the grooved guides *n'* by an intermittent motion derived from the shaft *a'*, attached to the outer end of the shaft B to a crank, *q*, the hub of which crank is sleeved on the outer end of said shaft B, so the crank will swing backward and forward without rotating entirely around and operating the ratchet and pawl *m* to give the said shafts B and R an intermittent motion to feed the barb metal into the dies to any extent required. The feed-roller *o* is grooved around its periphery, and the feed-roller *z* rolls between the flanges of said groove with the barb metal between them, as is shown in Figs. 1 and 2.



Immediately below the feed-rollers *o* and *z* is a frame, *g*, held in its place by braces *b* and *u*, which frame holds the barb-metal guides *n'*, secured firmly by means of the plates *r'*.  
 5 These guides have a central groove between them, each half having half the groove, down through which groove the barb metal *t* is forced by the feed-rollers *z* and *o*. This groove is made  
 10 to suit the size of the metal used for barbs, and may be replaced by others of any size or form for round or flat or square metal, as desired. The set-screw *v*, Fig. 2, is used to tighten the two feed-rollers, so they will firmly grasp the  
 15 barb metal to carry it downward, as described. Fig. 3 shows the essential features of the invention and the real object of the device and what I regard as the principal thing I have invented, and that is twisting, bending, and cutting the barb at one single operation to leave  
 20 it in the shape shown in Fig. 4. In Fig. 3 the barb metal *t* is represented as having been forced down from the feed as far as desired to make a single barb. The bending-dies 2 and 4 have first come in contact with  
 25 the metal and twisted it one-fourth the way around or one-half way around, according to the manner the bending-dies are set. They are set so as to pass each other by the barb-metal, when the shear-dies 1 and 3 shear the metal off  
 30 on either side of the V-shaped guides *n'*, leaving the upper end of the barb cut off V-shaped on its upper end, and each point carried forward by the shear-dies 1 and 3 until they point each way, as shown in Fig. 4. At the same instant  
 35 the lower pointed end of the barb is split by means of the shear-dies 7 and 8, the guides 9 and 10 serving to hold that end of the barb between them at the right place until it is so split, the shears 7 and 8 passing each other far enough  
 40 to bend the points apart in a similar manner as the upper ones are bent. After the barb is thus twisted and cut and the points bent apart so as to form such a barb as is shown in Fig. 4 the dies separate and the completed barb  
 45 falls below in a box ready for use.

It will be seen the lower end of the guides *n'* are V-shaped, so as to correspond with the V-shaped opening between the dies 1, 2, 3, and 4, so the barb metal is always cut of V shape, leaving the lower end of the upper barb pointed, to be split, as shown in Fig. 3, thus wasting no metal. 50

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent is as follows, to wit: 55

1. In a machine for forming and cutting flat-metal barbs for barb-fence, the shear-dies 1 3 7 8, bending-dies 2 4, and guides 9 10, arranged, substantially as described, in suitable sliding heads, to act conjointly with each other to twist 60 and cut and form the barb in the manner and for the purpose set forth at a single operation.

2. The combination and arrangement of the bed-plate A, feed-frame L, feed-rollers *z* and *o*, guide-frame *g*, braces *b u*, grooved guides *n'*, shafts B and R, ratchet and pawl *m*, crank *q*, and shaft *a'*, to feed the barb metal intermittently to the twisting and cutting dies, in the manner set forth. 65

3. The combination and arrangement of the shear-dies 1 3 8 7, bending and twisting dies 2 4, and V-shaped grooved guides *n'*, for the purpose of twisting and forming the barb at a single operation, as set forth. 70

4. The combination of the bed-plate A, shafts D, bevel-gears E, eccentrics *e*, stirrups *s*, screw-shafts *e*, set-nuts *n*, cross-shafts *a*, lugs *d*, sliding heads *i*, die-blocks P, and plates *s*, arranged to operate in the manner as and for the purpose set forth. 75 80

5. In a machine for cutting and forming barbs, the twisting-dies 2 and 4, to twist the barb *t* immediately before it is sheared off by the shear-dies 1, 3, 7, and 8, in the manner substantially as set forth.

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Witnesses:

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L. LEACH.