J. GÖBBELS.

Machine for Twisting Wire.

No. 222,486. Patented Dec. 9, 1879.

Fig. 1.

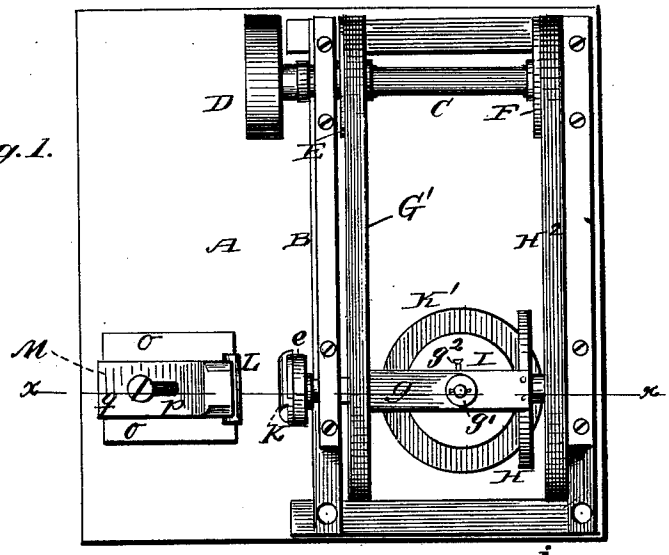


Fig. 2.

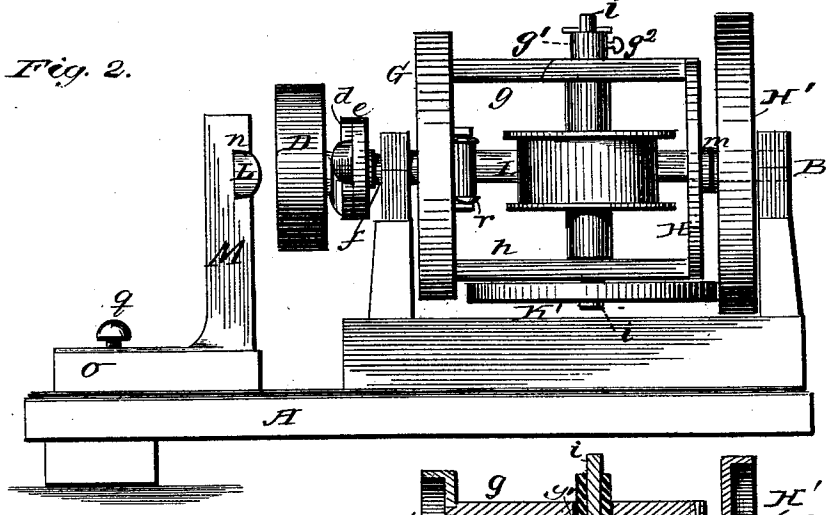
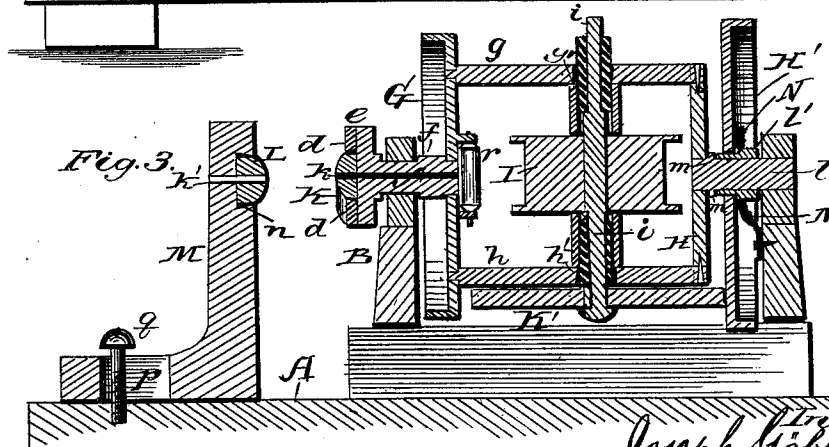


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH GÖBBELS, OF ST. JOHN'S ASYLUM, KENTUCKY.

IMPROVEMENT IN MACHINES FOR TWISTING WIRES.

Specification forming part of Letters Patent No. **222,486**, dated December 9, 1879; application filed February 1, 1879.

To all whom it may concern:

Be it known that I, JOSEPH GÖBBELS, of St. John's Asylum, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Machines for Twisting Wires; 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, which form a part of this specification, and in which—

Figure 1 is a top or plan view. Fig. 2 is a front elevation; and Fig. 3 is a vertical section taken on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to machines for twisting wire; and it consists in the construction and arrangement of parts of a machine adapted to twist triangular, square, or many-cornered (polygonal) wire, so as to form a spiral-edged wire adapted to the manufacture of nails, and more especially that class of nails described in my Letters Patent of the United States No. 178,000, granted to me on the 30th day of May, 1876.

In the drawings, A is the floor or platform of the machine, and B the frame. C is a shaft, journaled in boxes in one end of frame B, and provided with pulleys D, E, and F. In the other end of the frame is suspended the twisting and coiling mechanism, which consists of two circular disks, G H, united parallel to each other by parallel cross-pieces *g h*, provided with adjustable boxes or sleeves *g' h'* for the transverse shaft *i*, which is journaled in the said sleeves, and adjustable in its relation to the frame *g h* by means of a set-screw, g^2, the inner end of which projects into a longitudinal groove in sleeve *g'*, so that the position of this sleeve, with the shaft inserted through it, may be adjusted by means of said set-screw g^2. Upon the middle of the adjustable shaft *i* is placed a flanged drum or cylinder, I, and upon one of its projecting ends, on the outer side of the cross-piece *h*, is keyed a disk, K', which will therefore be at right angles to disks G and H, and is so arranged as to project out over the periphery of the latter, as shown in the drawings.

Disk G has a tubular shaft, *f*, journaled in the adjacent side of the frame B, and provided at its other end with a chuck or flanged disk, *e*, between the dovetailed flanges *d d*, of which is inserted the wedge-shaped twisting-head K, having a spirally-twisted perforation, *k*, corresponding to the shape of the wire. The opposite disk H has a central circular opening, through which is inserted one end of a short shaft, *l*, the other end of which is boxed in the frame of the machine. Shaft *l* is prevented from projecting too far through the disk H by an annular flange, *m*, and is inserted through a stepped sleeve, *l'*, upon which the contact-disk H' is mounted, as shown more clearly in the sectional view represented in Fig. 3.

N is a bifurcated spring-plate, secured upon the inner side of the frame, facing disk H', which is of larger diameter than disk G opposite, and the fork or arms of which said spring-plate straddle sleeve *l'*, so as to impinge upon and press against the face of disk H'.

M is an adjustable standard, having a dovetailed horizontal slot, *n*, in its upper end, into which is inserted the removable drawing guide or head L, which is so arranged relative to the opposite rotating twisting-head K that their correspondingly-shaped perforations *k k'* shall be immediately opposite to and in a line with each other. Standard M moves between parallel guides *o o*, and has a slot, *p*, in its base, through which passes a set-screw, *g*, by means of which the distance between the standard and the frame of the machine may readily be regulated.

Having in the foregoing described the construction of my machine, I shall now proceed to describe its operation.

The wire, which is placed upon a coil near the standard M, is inserted through the perforation in the drawing head or guide L, and then through the rotating twisting-head K and tubular shaft *f* until it reaches the drum I, to which it is attached. To facilitate the passage of the wire, disk G is, on its inner face, provided with rollers *r r*, between which the wire passes. A rotary motion is imparted to the disk G by means of the endless band G', and to disk H' by the band H^2. By the bifurcated spring-plate N disk H' is brought into contact with the periphery of disk K', which is

rotated by the friction, revolving the shaft *i* and reel or winding-drum I, by which the wire is drawn through the twisting-heads L and K, the spiral twist of the perforation in the latter allowing the twisted wire to pass through it readily. As the wire is twisted it is wound upon drum I, which, when full, may be removed from the machine and an empty reel substituted.

The pitch of the twist of the wire may be regulated by regulating the distance between the two heads K and L by means of the adjustable standard M, and changing the rotating head K for one whose spiral perforation *k* corresponds to the greater or lesser pitch of the spiral to be drawn.

It will be observed that by making the disk H′ stationary the same result—viz., the rotating of disk K′, shaft *i*, and the reel I—would be accomplished; but in that case all the force required for this operation would be supplied by the two pulleys E and G and their belt G′.

I have found by experience that it is more satisfactory, and productive of better results, to cause the rotation of disk K′ by the rotation of disk H′ in the manner described, because in that case pulley F supplies, conjointly with E, the force required to operate the machine, inasmuch as disk H′ becomes an active operating element in the machine so far as the rotation of disk K′ with its appurtenances is concerned.

It is also obvious that bevel-gears might be substituted for the friction-disks H′ K′; but the advantage of these over gears consists in the adjustability of disk K′, by making its shaft *i* adjustable in its bushings or boxes *g′ k′*. By lengthening or shortening this shaft, which does not interrupt the contact of disks H′ and K′, the speed of the latter may be regulated, which could not be effected in like manner if gear-wheels were substituted for the friction-disks.

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

1. The combination, substantially as described, of the operating-shaft C, having pulleys E F, endless bands G′ H², rotating disk G, carrying the reel-frame *g h* H, disk K′, and rotating friction-disk H′.

2. The combination, with the rotary reel-frame and rotary reel or drum, provided with an operating friction-disk, K′, of the rotary friction-disk H′ and spring-plate N, substantially as set forth.

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

JOSEPH GÖBBELS.

Witnesses:
W. G. MAYER,
C. A. WATSON.