

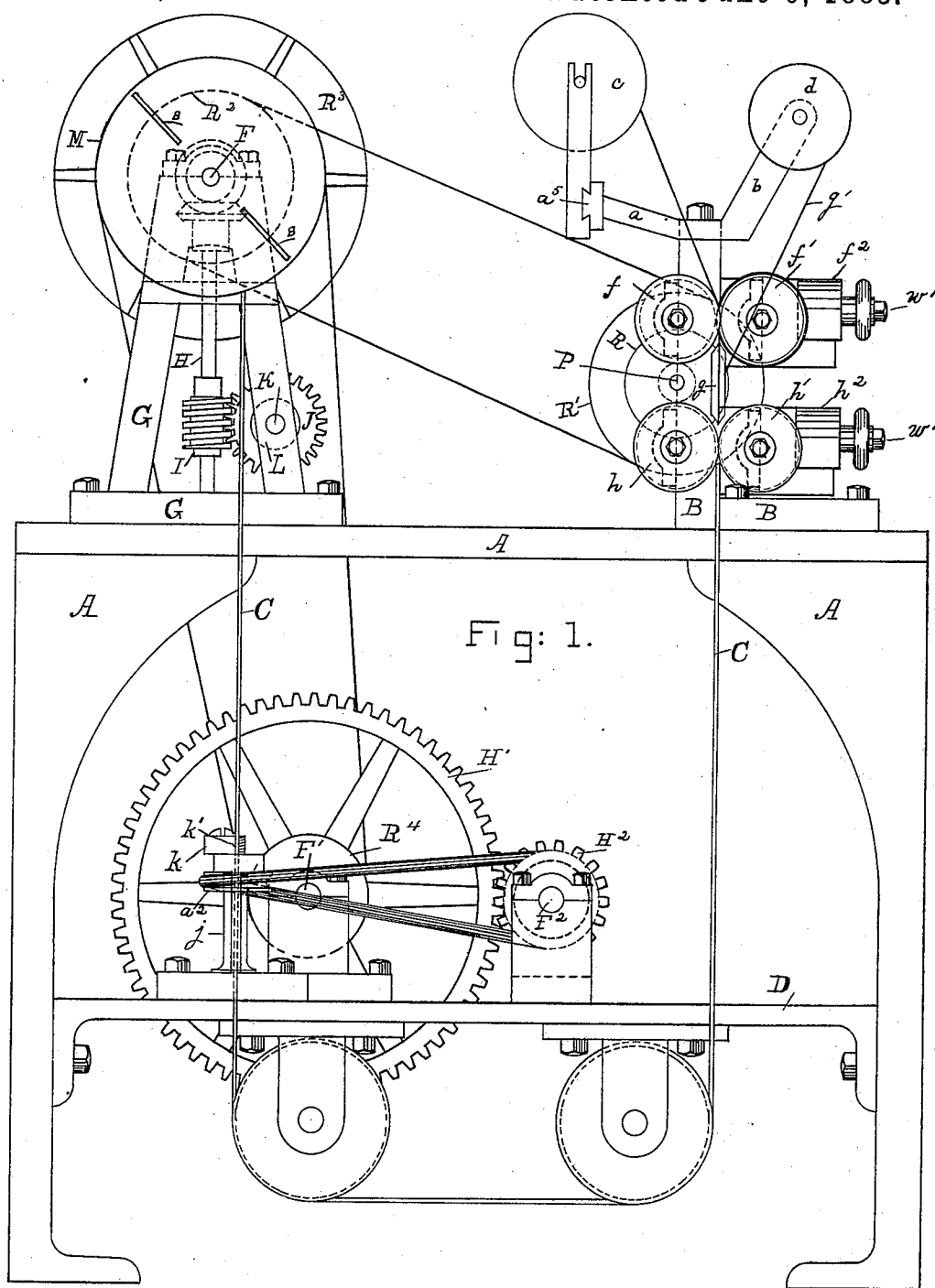
(No Model.)

3 Sheets—Sheet 1.

H. S. BACON.
MACHINE FOR MAKING PEG WIRE.

No. 319,771.

Patented June 9, 1885.



WITNESSES
Robert Wallaer,
Matthew Clark.

INVENTOR
Henry S. Bacon
By *Wm. H. Macleod*
Atty.

(No Model.)

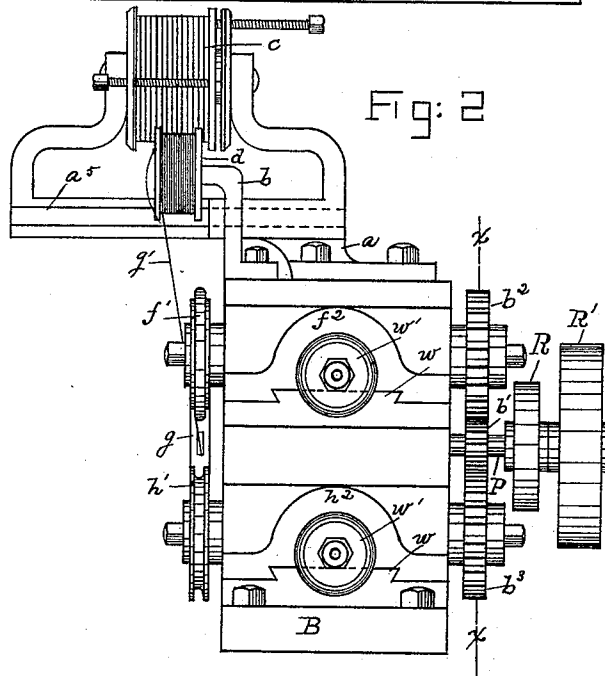
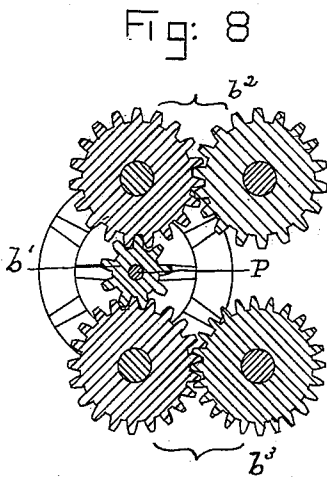
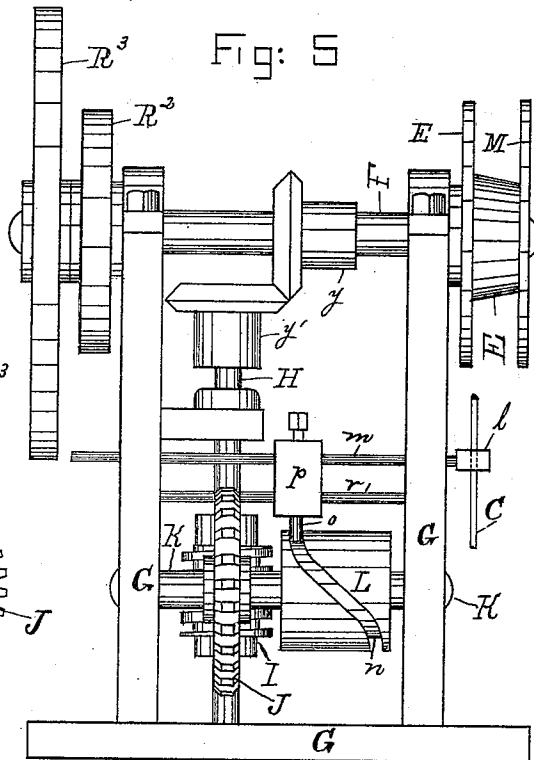
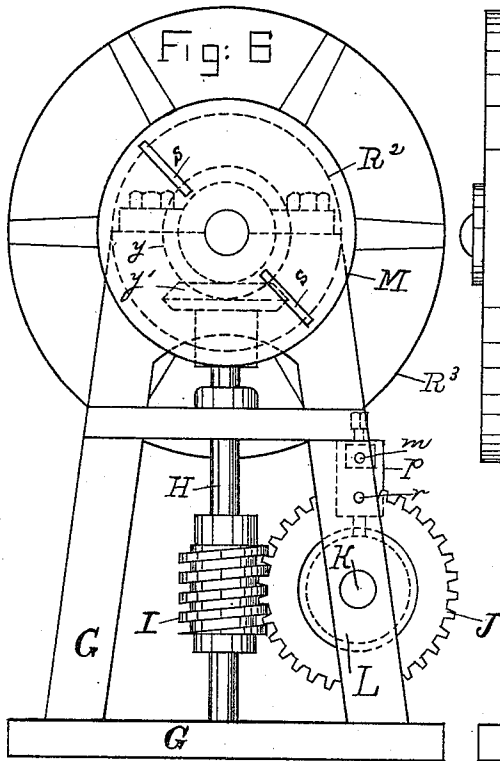
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H. S. BACON.

MACHINE FOR MAKING PEG WIRE.

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WITNESSES.
Robert Wallace,
Matthew Clark.

INVENTOR.
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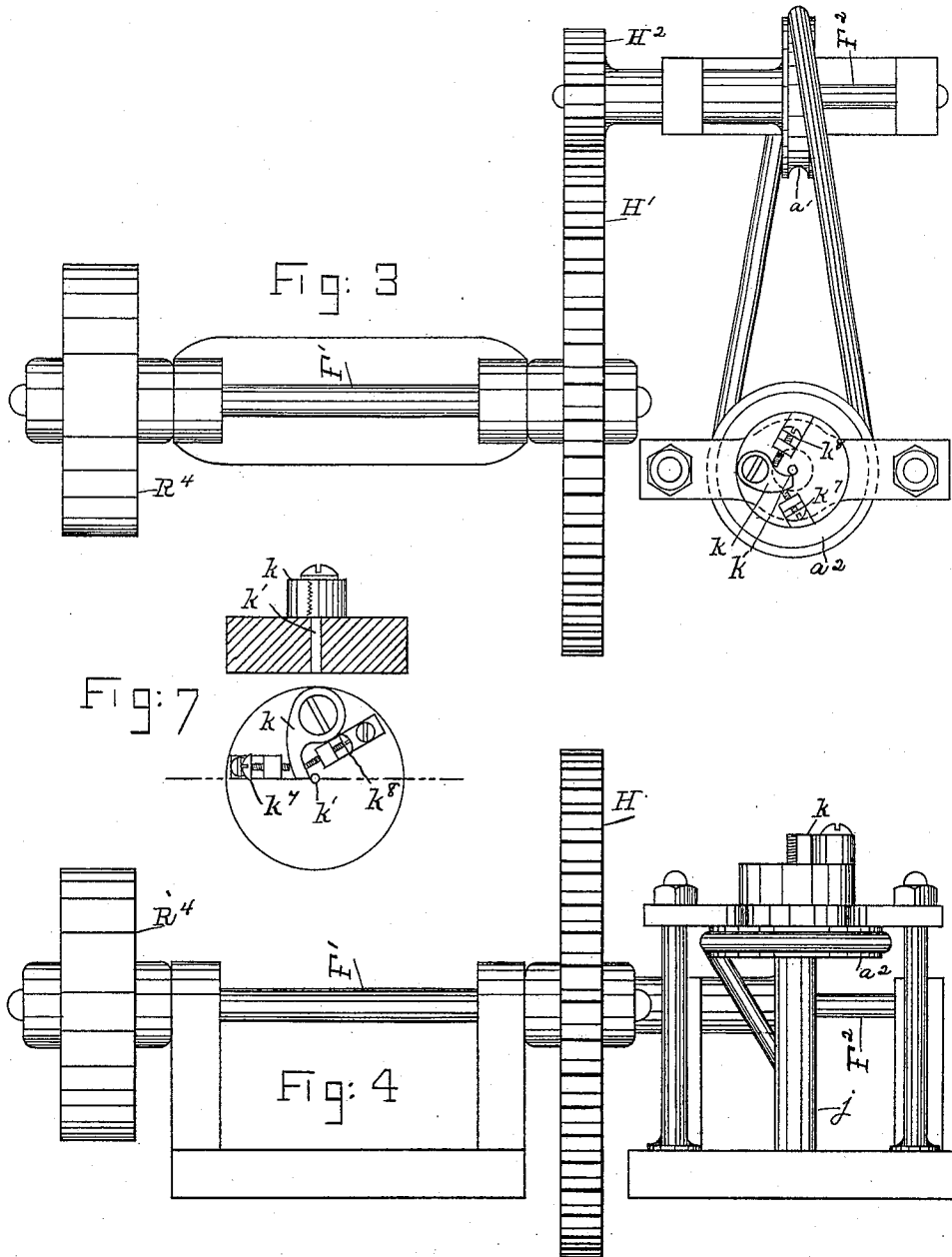
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MACHINE FOR MAKING PEG WIRE.

No. 319,771.

Patented June 9, 1885.



WITNESSES.

Robert Wallace,
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INVENTOR.

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UNITED STATES PATENT OFFICE.

HENRY S. BACON, OF MILFORD, ASSIGNOR TO THE AMERICAN METALLIC FASTENING ASSOCIATION, OF BOSTON, MASSACHUSETTS.

MACHINE FOR MAKING PEG-WIRE.

SPECIFICATION forming part of Letters Patent No. 319,771, dated June 9, 1885.

Application filed January 24, 1885. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. BACON, of Milford, in the county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Machinery for Manufacturing Peg-Wire for Boot and Shoe Nailing Machines, of which the following is a full, clear, concise, and exact description, reference being had to the drawings accompanying and forming a part hereof, in which—

Figure 1 is a side elevation of my machine. Fig. 2 is an end view of the grooving and finishing rolls and their operating mechanism, showing also the reels which hold the metallic strip and the waxed thread, all as shown in side elevation at the upper right hand of Fig. 1. Fig. 3 is a plan view of the mechanism for corrugating or grooving the wire, shown in side elevation at the lower part of Fig. 1. Fig. 4 is an end view of the same. Fig. 5 is an end view of the mechanism for laying the finished peg-wire on the receiving-reel, shown at the upper left hand of Fig. 1. Fig. 6 is a side elevation of the same. Fig. 7 is a detail of the corrugating device. Fig. 8 is a section on line *x x*, Fig. 2, of the gears which operate the grooving and finishing rolls.

The object of my invention is the construction of a wire for use in nailing boots and shoes which is composed of a central core of waxed thread or fine cord incased in a metallic covering, cylindrical in cross-section, which is bent around and made to cover the thread completely.

My invention consists in the mechanism, hereinafter more fully described, which is adapted to take the thread and the metallic strip which form the wire from the supply-reels, groove or bend the flat strip into a trough shape, lay the thread in the trough or groove, complete the bending of the wire over the thread so as to incase it, corrugate or roughen the surface of the wire thus formed, and lay the completed wire upon the receiving spool or reel, where it may be tied in bundles and taken off as desired.

With the aid of the accompanying drawings the machine may be readily understood.

Fig. 1 shows the machine complete, with the parts for performing the various operations

conveniently disposed with reference to each other upon a frame or stand. It will be obvious that this arrangement of the parts for performing the various operations is not essential; but I prefer it as one of the most convenient which I have tried. On top of the bench A, I secure the frame B, provided with two uprights which support the arms *a* and *b*, which carry the supply-reels *c* and *d*, respectively. The reel *c* holds the metallic strip, which passes from it between the grooving-rolls *f* and *f'*, provided, respectively, with concave and convex peripheries, which act upon the flat strip as it passes between them and groove or form it into a trough shape, whence it passes through the guide *g*, formed to receive it, and into which the waxed thread *g'* also passes from the reel *d*. (See Fig. 1.) As the thread *g'* passes into the guide *g*, it is laid into the groove or trough in the metallic strip, and the strip and the thread in this relation pass between the concave peripheries of the finishing-rolls *h h'*, which finish the bending of the strip and press it into a tube or cylinder around the thread. The peg-wire is then complete, but has not been corrugated. The wire A then passes, as shown in Fig. 1, over sheaves so arranged as to bring it into position to be passed through the corrugating-spindle *j*. This spindle is arranged to revolve, and is provided on top with a hard-metal corrugating-tool, *k*, provided with a toothed cutting-edge, and so set (see Figs. 3 and 7) with relation to the wire, which passes up through the hole *k'* in the center of the spindle, as to bear upon the wire while the spindle revolves, and thus cut a spiral groove or series of grooves in its surface, leaving it roughened or corrugated. The set-screws *k' k''*, Fig. 3, suitably secured to the top of the spindle, serve to keep the finger *k* in a given position and permit of its adjustment relatively to the wire.

After passing the corrugator the wire passes through a hole, *l*, in the guide-rod *m*, (see Fig. 5,) and is laid on the receiving-reel E. The purpose of the guide-rod *m* is to lay the wire evenly on the reel, and to do this it is necessary that it should reciprocate horizontally, carrying the wire with it, and causing it to cross and recross the drum of the reel.

To obtain this movement of the guide, I provide the following mechanism, (more fully shown in Figs. 5 and 6:) On the shaft F, which is mounted in a suitable supporting-frame, G, I secure a beveled gear, *y*, arranged to mesh with another beveled gear, *y'*, fast to the upright shaft H, which is mounted in supports from the frame. On this shaft is set the worm I, which meshes with the gear J, fast on shaft K, on which shaft is also secured the pulley L, provided with a cam-path, *n*, cut in its periphery. A traveler, *p*, is secured to two rods, *r* and *m*, which slide in the frame-pieces G, and is provided with a pin, *o*, which bears in the cam-path *n*, thus causing the traveler *p*, the rod *r*, and the guide-rod *m* to reciprocate as the cam revolves. As the guide *m* reciprocates, it lays the strand of peg-wire evenly in the coil on the reel E. The reel has a conical drum, so that the coil of wire may be easily slipped off, and has a removable head, M, which may be removed when it is necessary to empty the reel. The slits *s* (see Fig. 6) in the heads of the reel enable the operator to tie the coil of wire before removing it.

The driving-shaft P (see Figs. 1 and 2) is provided with a driving-pulley, R, and power is conveyed from this shaft, through pulley R', to pulley R², which is fast with pulley R³, which in turn is belted to pulley R⁴, which drives shaft F'. Shaft F' is provided with a gear, H', which meshes with pinion H² on small shaft F². This shaft is provided with a grooved pulley, *a'*, which is belted to the grooved pulley *a*² on the spindle *j*, and thus motion is communicated to the corrugating mechanism. (See Figs. 1 and 3.)

The main driving-shaft P is provided with a small gear, *b'*, which actuates the pairs of gears *b*² and *b*³, which drive, respectively, the grooving and finishing rolls. (See Figs. 8 and 2.) As the grooving and finishing rolls wear, they may require adjustment relatively to each other, and for other reasons it is desirable to be able to adjust them. In order that I may do this, I mount one of each of said rolls *f'* and *h'* in the blocks *f*² and *h*², respectively.

These blocks are dovetailed to projecting parts of the supporting-frame, as shown at *w*, Fig. 2, and are provided with adjusting-screws *w'*, tapped through and into the frame, and by means of which rolls *f'* and *h'* may be set toward or from their companion rolls, *f* and *h*. (See Fig. 1.)

The supply-reel *c* may also be adjusted horizontally by means of the dovetail shown at *a*³, Fig. 1, in its supporting-frame. This adjustment of the reel is necessary as the reel is used up, the reel being shifted by the operator so as to bring the next coil in line, it being necessary for the even paying off of the metal strip that the coil be substantially in line with the rolls, as will be obvious.

What I claim is—

1. The combination, with the grooving-rolls *f f'*, of the arm *a* and its adjustable reel-frame, whereby the reel may be adjusted relatively to the rolls, for the purposes and substantially as described.

2. The fixed grooving and finishing rolls *f* and *h*, in combination with the movable rolls *f'* and *h'*, mounted in the blocks *f*² and *h*², each arranged to slide independently on their supports, and the hollow guide *g*, having an opening in its wall for the passage of the thread or cord, substantially as described.

3. The combination, with the fixed roll *f*, of the roll *f'* and its block *f*², dovetailed to the supporting-frame, whereby the rolls may be adjusted relatively to each other, for the purposes and substantially as specified.

4. The combination, with the supply-reels *c d*, of the adjustable grooving-rolls *f f'*, the hollow guide *g*, whereby the thread is laid in the hollow metal strip, the adjustable finishing-rolls *h h'*, the corrugating-finger *k*, mounted on a revolving support, guide *m*, traveler *p*, secured thereto, and its actuating-cam, for the purposes and substantially as described.

HENRY S. BACON.

Witnesses:

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M. A. THOMPSON.