T. T. PROSSER.

MACHINE FOR INDENTING THE SURFACE OF WIRE.

No. 169,840. Patented Nov. 9, 1875.

Fig. 1.

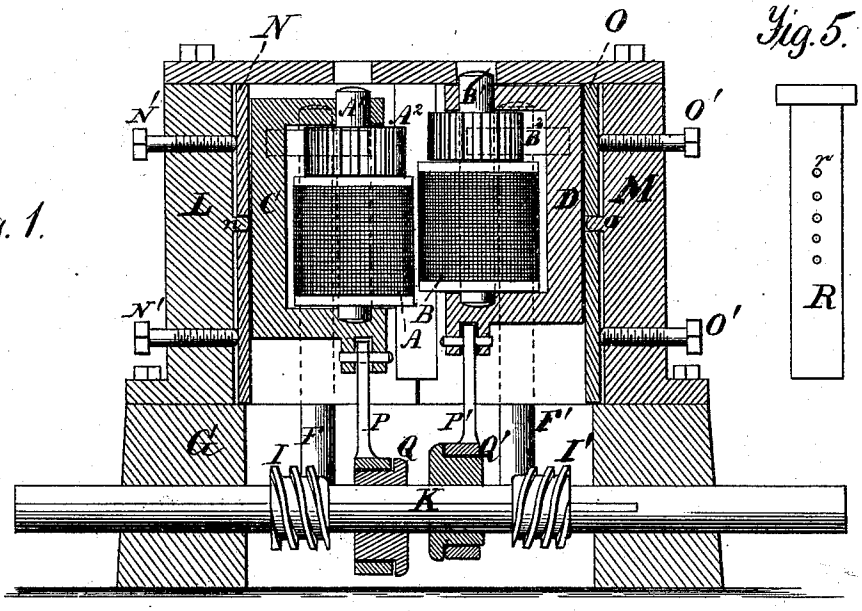


Fig. 5.

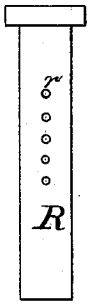


Fig. 2.

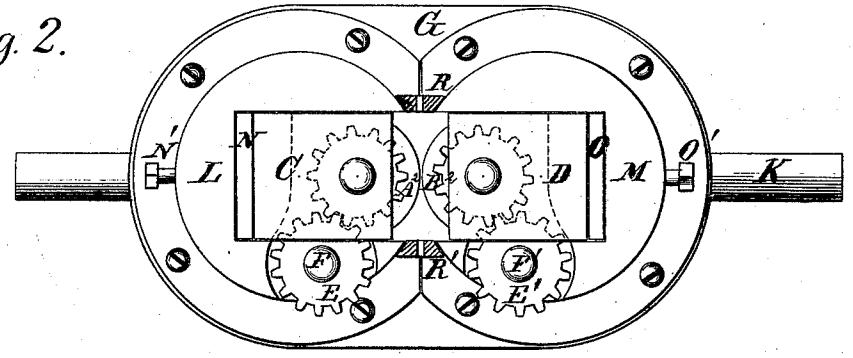
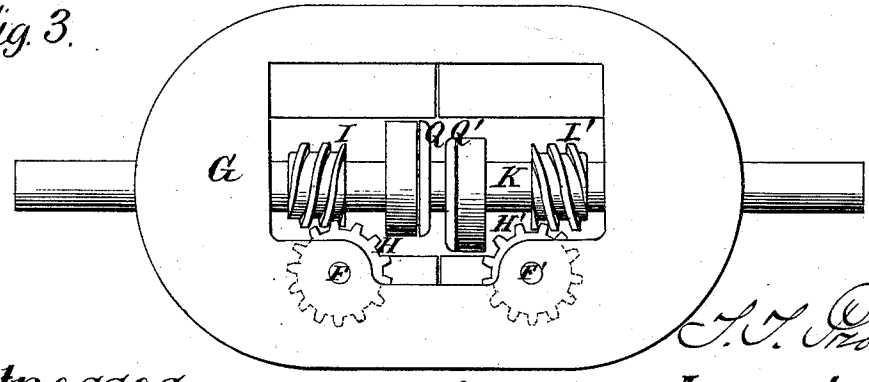


Fig. 3.

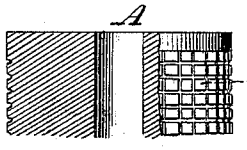


Witnesses.

A. Ruppert.

John Eels

Fig. 4.



Inventor.

T. T. Prosser

by P. Bakewell Eils

Atty

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

TREAT T. PROSSER, OF CHICAGO, ILL., ASSIGNOR TO HIMSELF, O. L. NOBLE, WINSLOW BUSHNELL, AND ALLEN C. CALKINS, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR INDENTING THE SURFACE OF WIRE.

Specification forming part of Letters Patent No. **169,840**, dated November 9, 1875; application filed September 8, 1875.

To all whom it may concern:

Be it known that I, TREAT T. PROSSER, of Chicago, in the county of Cook and State of Illinois, have invented a certain Improvement in Machines for Preparing Wire for Shoe Pegs or Nails, of which the following is a specification:

The object of my invention is to furnish rolls adapted to operate on wire for shoe pegs or nails in such a manner as to provide the entire peripheral surface of such wire with indentations, in the act of drawing it through between them. To this end my invention consists of certain model combinations, the leading element of which is a pair of rolls having, beside their rotary motions, axially reciprocating motions, so alternating that the wire, in being drawn through between them, will also be rolled on its axis, and thus have its entire peripheral surface exposed to the action of the rolls, which, being grooved both transversely and longitudinally in this instance, have reticulated surfaces, the protuberances of which will indent the wire and produce a cellulated or honey-combed surface thereon.

The novel details of my invention will be specifically pointed out by separate claims.

In the annexed drawings, Figure 1 is a sectional elevation of my improved machine. Fig. 2 is a plan view of the same. Fig. 3 is a bottom view thereof. Fig. 4 illustrates, on a somewhat magnified scale, the construction or formation of the surface of the rolls. Fig. 5 is an elevation of one of the wire guides.

The same letters of reference are used in all the figures, in the designation of identical parts.

In the particular machine which I have shown, and which embodies the principle of my invention, the rolls A and B are respectively arranged in vertical positions in sliding boxes C and D on shafts A^1 and B^1, supported in suitable bearings in the boxes. The surface of the rolls will be the counterpart of the surface to be formed on the wire, and in this instance the rolls are grooved both transversely and longitudinally, producing a reticulated surface, with rectangular protuberances, as best seen in Fig. 4. Of course, the surface construction of the rolls will depend upon what sort of indentations are to be formed on the wire. Each roll carries a spur-wheel, marked respectively A^2 and B^2, which mesh with spur-wheels E and E′, on shafts F and F′, which extend down into the base G of the machine, and carry, near their lower bearings, spur-wheels H and H′, gearing into worm-wheels I and I′ on the driving-shaft K. The threads of the worm-wheels run in reverse directions, and thus impart to the rolls slow rotary motions in opposite directions. The boxes C and D are fitted in chambered columns L and M, standing on the base G, to which they are firmly bolted, and forming guides in which the boxes can slide. The columns afford suitable bearings for the shafts F and F′, located on one side of the boxes C and D, the backs of which are properly cut out opposite to the spur-wheels A^2 and B^2, as shown by dotted lines in Fig. 2. The backs of these boxes impinge against plates N and O, supported on projections *n* and *o* on the interior surface of the chambers in the columns L and M. These plates may be adjusted laterally by set-screws N′ and O′ to move the boxes for the purpose of increasing or lessening the distance between the rolls A and B, to adapt them for operating on different sizes of wire. The boxes are supported respectively on eccentric rods P and P′, the straps of which encircle eccentrics Q and Q′ on the driving-shaft K. These eccentrics, in imparting reciprocating motions to the boxes, will also give longitudinally-reciprocating motions to the rolls, and they are so arranged on the driving-shaft that they will move one roll up while the other is moving down. R and R′ are guides fixed on opposite sides of the rolls directly in line with the bite thereof. They are provided with apertures *r*, through which the wire passes, and in which it is supported while being operated upon by the rolls.

In operation, one or more wires are passed through the apertures in the front guide, thence through between the rolls, and through the apertures in the rear guide. As the driving-shaft K rotates, the rolls, by reason of their rotary motion, draw the wire or wires gradually through between them, forming indentations on the surface thereof, corresponding to

the protuberances on the rolls. The longitudinally-reciprocating motion of the rolls will, at the same time, cause the wire or wires to be rolled on their axes in such a manner that the entire peripheral surface of the wire will be subjected to the indenting action of the rolls, the throw of the eccentrics being such as will give the necessary amount of rolling motion to the wire or wires.

It will be understood that the wire is indented by the rolls, both by rolling it and drawing it through between them.

The reciprocating motion of the rolls will be but slight; sufficient, however, to so roll the wire as to indent it at those points of its periphery which would remain untouched if it were merely drawn through between them. The cogs of the wheels A^2 and B^2 are sufficiently elongated to permit the longitudinal motions of the rolls without becoming disengaged from the cogs of the wheels E and E'.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the both rotating and reciprocating rolls, of guides for confining the wire so as to compel it to pass in a straight line through between the rolls, substantially as specified.

2. The combination, with the rotating rolls, of the boxes supporting them, and eccentrics and rods for reciprocating the boxes and rolls in the manner and for the purpose substantially as specified.

3. The combination, with the driving-shaft, the rolls, and their supporting-boxes, of the worm-wheels for imparting, through intermediate gearing, a rotary motion to the rolls, and the eccentrics and rods for reciprocating the boxes and rolls at the same time, all substantially as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

T. T. PROSSER.

Witnesses:
HENRY PROSSER,
JOHN EILS.