T. T. PROSSER.

Improvement in Machines for Forming Spiral Grooves on Metallic Rods.

No. 116,218. Patented June 20, 1871.

Fig. 1.

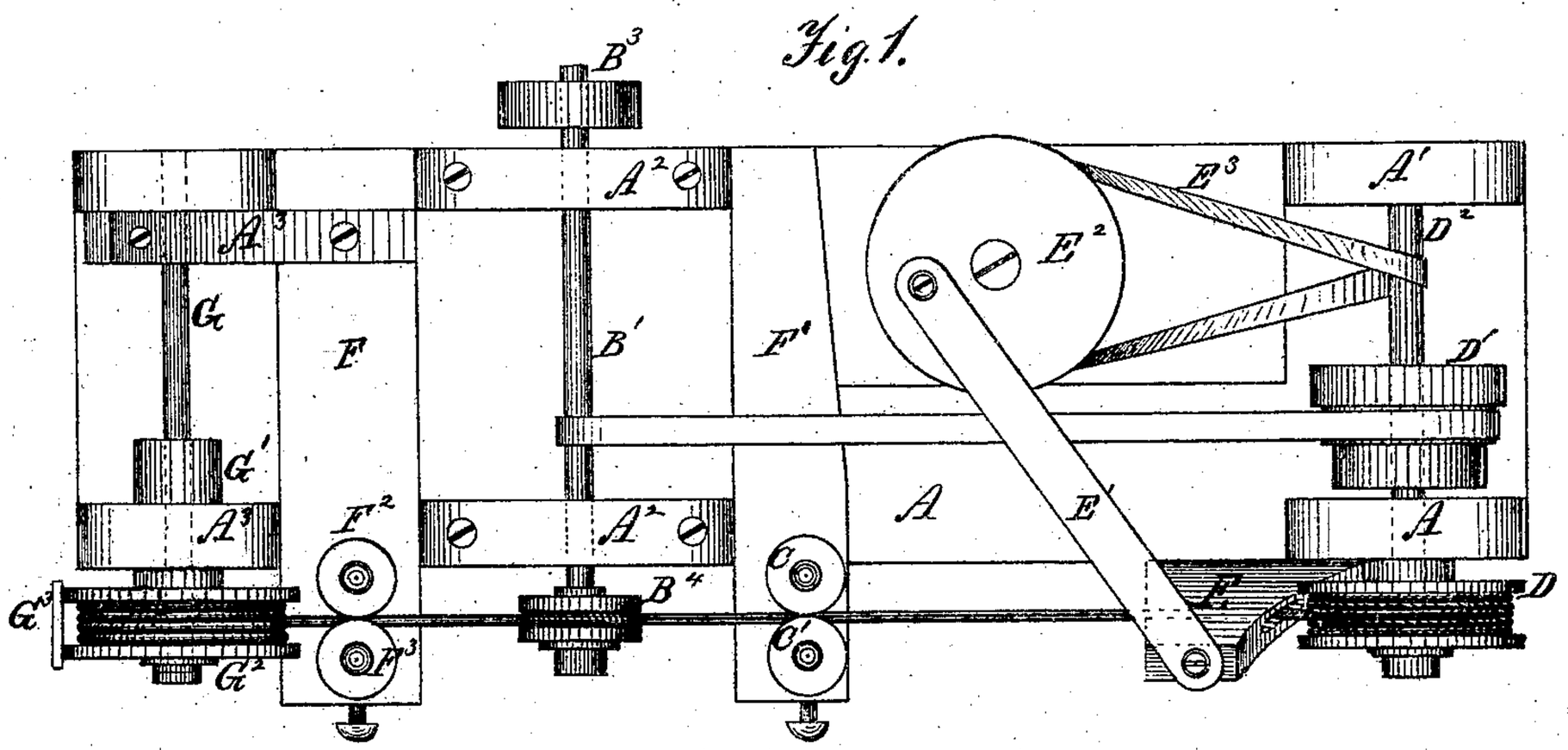


Fig. 2.

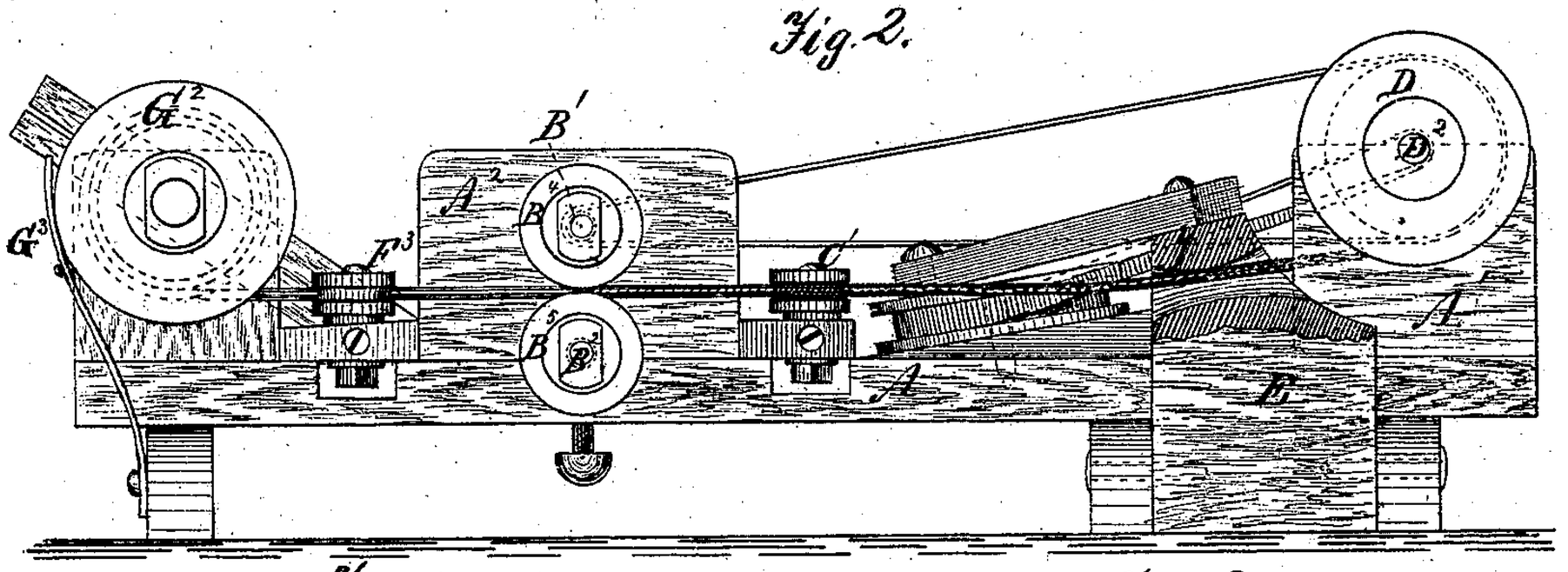
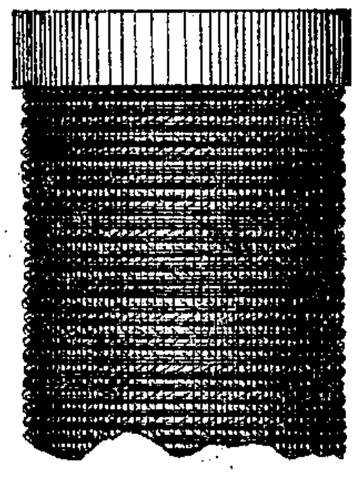


Fig. 4

Fig. 3.



Witnesses.
A. Ruppert.

T. T. Prosser
Inventor.
Dr. Holloway & Co
Attys

116,218

UNITED STATES PATENT OFFICE.

TREAT T. PROSSER, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF, CHARLES E. RAMUS, OF LAWRENCE, KANSAS, AND HENRY WALLER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN MACHINES FOR FORMING SPIRAL GROOVES ON METALLIC RODS.

Specification forming part of Letters Patent No. 116,218, dated June 20, 1871.

To all whom it may concern:

Be it known that I, TREAT T. PROSSER, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Machines for Cutting Screw-Threads or Spiral Grooves on Wire or small Rods of Iron; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making part of this specification, in which—

Figure I is a plan view of my improved machine, showing the frame-work, the driving-pulley, the dies or rollers for forming the threads or spiral grooves, the reel for the wire, and the guide-rollers for directing the wire to the reel. Fig. II is an elevation of the same, showing also the wire in the act of being threaded or grooved while it is passing from one reel to the other. Fig. III shows a portion of wire which has been threaded or grooved and wound upon a reel or drum; and Fig. IV shows two sections of wire upon a somewhat enlarged scale.

Corresponding letters refer to corresponding parts in the several figures.

This invention relates to a machine which is intended for cutting a screw-thread or spiral groove upon wire or small rods of iron, which iron or wire is afterward to be cut by another machine into pegs for boots and shoes, or into brads to be used in putting together articles made of wood, leather, and other elastic substances; and it consists in the construction, combination, and arrangement of some of the parts of which it is composed, as will be more fully explained hereinafter.

This machine differs from all that have preceded it, in that it is adapted to the cutting a continuous thread or a continuous series of spiral grooves on wire or rods of iron, of any desired length, so that such wires or rods may be put into the market and sold as an article of manufacture, to be cut by the user into such lengths as he may desire; and it not only differs in this respect, but it differs in its construction, and in its method of forming the thread or spiral groove, from all other machines that have come within my knowledge.

In constructing these machines I provide a bed or platform, A, of wood, iron, or other suitable material, to which are bolted or otherwise secured suitable pedestals and journal-boxes A′, A″, and A‴, to secure and hold the shafts of the machine. Near the center of the bed A, longitudinally, are located the journal-boxes A′, which form bearing places for the shafts B′ and B″. These shafts are so arranged that their centers are in line with each other vertically, and they are at such a distance from each other as to enable them to receive upon one of their outer ends the roller or dies B^4 and B^5, which form the threads or grooves in or upon the wire. These rollers or dies are cylindrical in form and have a semicircular or nearly semicircular groove formed in the periphery, which groove is provided with spiral projections and recesses or sections of screw-threads, so that, as the wire is, by the rotating motion or in any other manner, drawn between them, a thread or series of spiral grooves is formed upon it, they being held in such proximity to each other as to produce that result. After the rod or wire has been passed between the rollers or dies above described, it is passed between two other rollers or dies, C and C′, the axes of which are in a vertical position or at a right angle to those upon the shafts B′ and B″. These rollers or dies are of the same construction as those above described, and are arranged to be adjusted transversely, in order that, in cases where it is intended that the thread formed upon the rod or wire should be continuous, it can be made so by causing these dies to press upon those portions of such wire or rod which may not have been threaded or grooved by the first pair of dies. A reel, D, is provided for the reception of the threaded wire, which is located upon a shaft, D′, which has its bearings in pedestals A′, this shaft being driven by a belt which passes around the shaft B′ and over a cone of pulleys, D′, upon shaft D″, that it may be made to receive the wire as it passes through the dies and wind it upon the reel D. Between the dies and the reel-shaft there is placed a guide, E, for the purpose of bringing the wire evenly upon the reel. This guide consists of a vibrating lever, which is pivoted to the bed of the machine, or

to ribs secured thereto, for the purpose, and it is provided with a slot or aperture through which the wire is passed in order that the vibrations thereof may cause the wire to be distributed evenly upon all parts of the reel. Motion is imparted to the lever E by a connecting-rod, E′, which receives its movement from a pulley, E″, which is driven by a belt, E‴, which passes around the shaft D″. The position and construction of these last-recited parts are clearly shown in Figs. I and II of the drawing. Across the bed A of the machine are placed two timbers or ribs, F′ and F, the latter of which carries the threading or grooving dies or rollers C C′, the latter carrying the guide-roller F′ and F‴. These rollers are for the purpose of guiding the wire to the threading-dies or rollers, the outer one being made adjustable in order that the requisite amount of pressure may be put upon the wire as it passes. Upon the end of the machine which is opposite to the one upon which the reel D is located there is placed a shaft, G, upon which there is located another reel, G^2, upon which the wire is wound previous to being threaded or grooved. This shaft also carries a pulley, G^2, on which a belt may be passed for the purpose of winding the wire upon the reel G′; and, in order to prevent the too rapid movement of this reel, a spring, G‴, is made to bear upon the periphery and thus act as a brake.

In Fig. III there is shown one method of putting up the wire when it is to be sold in long pieces, it being wound upon a spool or drum for convenience in transportation. In Fig. IV there are represented two pieces of wire on an enlarged scale, one being designed to show it as threaded or grooved upon two sides only, while the other has the thread extended entirely around it. The first result may be accomplished by using only the first pair of dies or rollers, in which case the form of the wire will be slightly changed, as shown at *a*, Fig. IV, while the second result—that of extending the thread or groove entirely around the wire—is accomplished by the use of both pairs of dies or rollers, leaving the wire peg or brad in the form shown at *b* in the same figure.

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

As an improvement in machines for forming screw-threads or spiral grooves upon long sections of wire or metallic rods, the combination, with the mechanism shown and described for feeding the wire or rod to the machine, of two pairs of grooved rolls, the axis of one pair being arranged perpendicular, or nearly perpendicular to those of the other pair, the cavities in the peripheries of such rolls being provided with spiral grooves by which to produce the spiral projections upon the wire, substantially as and for the purpose set forth.

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

T. T. PROSSER.

Witnesses:
B. EDW. J. EILS,
A. RUPPERT.