

No. 812,754.

PATENTED FEB. 13, 1906.

E. M. LANG, JR.  
WIRE FINISHING TOOL.  
APPLICATION FILED MAY 25, 1904.

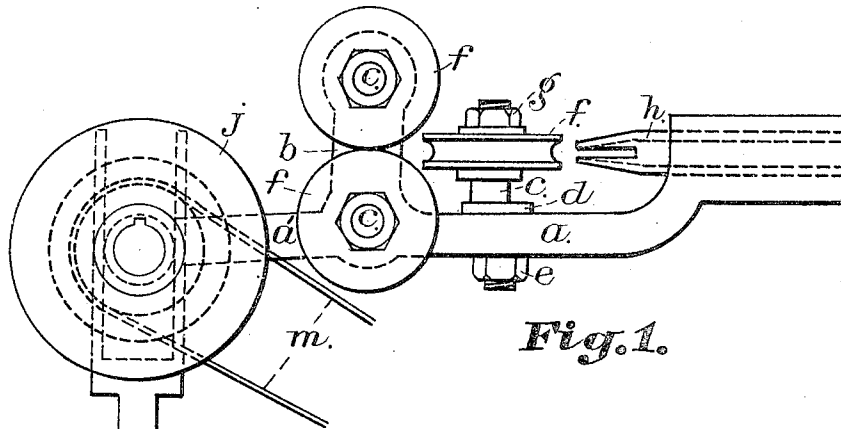


Fig. 1.

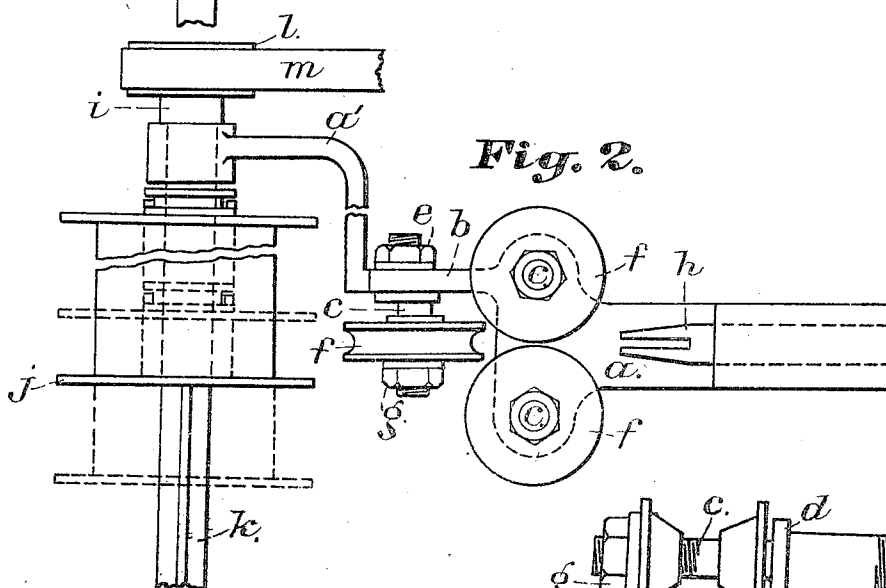


Fig. 2.

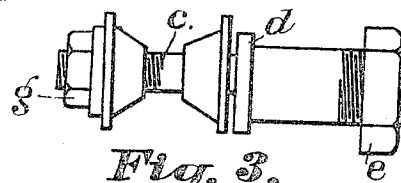


Fig. 3.

Witnesses:

A. L. Perry.  
A. G. McPherson.

Inventor.

Edward M. Lang, Jr.  
by Geo. E. Bird  
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# UNITED STATES PATENT OFFICE.

EDWARD M. LANG, JR., OF PORTLAND, MAINE.

## WIRE-FINISHING TOOL.

No. 812,754.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed May 25, 1904. Serial No. 209,645.

*To all whom it may concern:*

Be it known that I, EDWARD M. LANG, JR., a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented an Improvement in Wire-Finishing Tools; and I 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.

My invention relates to the manufacture, and especially the finishing, of wire of solder and similar material, and particularly to wire which has been cast either upon the surface of revolving wheels or disks or otherwise. Such wire is not always of uniform size throughout, but, on the contrary, may at different points vary in diameter. It is desirable for various uses to reduce it to a uniform size. This may be done by drawing, which is, however, a long and therefore expensive process, or by shaving; but this method is objectionable in that a part of the substance of the wire is removed, leaving much material either to be wasted or recast.

It is the purpose of the tool which is the subject of my invention to reduce such cast wire to a uniform size. The tool consists of a series of two or more sets or pairs of grooved wheels so located that the opposite sides of every portion of the wire will in succession pass between and be compressed by the grooves of the wheels. As will be perceived, the simplest combination to effect this purpose is two pairs of wheels, the plane of revolution of one pair being at right angles, or practically so, with the plane of revolution of the other. Should three sets be used, the most desirable arrangement and location will be such that the plane of rotation of each pair of wheels will be at an angle of sixty degrees to the plane of revolution of the pairs of wheels on either side. It is believed, however, that two pairs of wheels arranged as above described will be found effectual in all cases, and the succeeding description will be confined to a tool carrying but two pairs of wheels arranged at right angles to each other.

Referring to the drawings in which my device is shown, Figure 1 is a side elevation. Fig. 2 is a top plan, and Fig. 3 is a detail of the shafts carrying the wheels.

In the drawings, *a* represent a bracket which supports the operative parts of the tool and may be substantially of the shape shown in Fig. 2, the central portion being pro-

vided with an arm *b*, extending substantially at right angles with the other portion of the bracket. In front of the arm *b* the bracket is provided with circular apertures to receive the shafts *c c*. These shafts are made of two diameters, the portion with the larger diameter being adapted to be held in the aperture in the bracket. The other portion of the shaft is of smaller diameter and is connected eccentrically with the larger portion. (See Fig. 3.) They are also each provided with a collar *d*, located at such distance from the larger end of the shaft as to permit the latter to pass through the aperture and receive the nut *e*, by which the shaft is rigidly secured in the bracket. The other or smaller end of the shaft carries the grooved wheel *f*, the latter being held upon the shaft by the nut *g*. Another pair of similar shafts and wheels are located in like manner upon the arm *b* of the bracket. The two pairs of shafts—that is to say, those on the main portion of the bracket and those on the arm *b*—must always be so located that the wheels carried by one set will revolve in the plane in which those of the other set revolve and that the plane of the center of the grooves of one pair of wheels will pass midway between the center of the grooves of the other pair of wheels. The space between the wheels of each pair or set may be increased or diminished by loosening the nut *e* and turning the shafts either up or down until the new position is obtained, when the nut is again set up, thus securely holding the shaft between the nut and the collar *d*. Absolute exactness in this instance may be obtained by the use of a gage or by other similar means. In front of the first-described pair of wheels the bracket *a* is provided with a tubular guide *h*, (see Figs. 1 and 2,) which shall be so located that the axis of its longitudinal opening will be substantially in the plane of both pairs of wheels. The rear end of the bracket is provided with an appropriate journal, in which revolves the shaft *i*, which is provided at one end with a pulley *l* and carries at the other end the smaller shaft *k*, which is provided with a spline. On this shaft *k* is placed the spool *j*, having at the side of its circular opening a recess to receive the spline.

In operation the wire as cast is carried through the guide *h*, and the end which has been pointed or somewhat reduced in diameter to permit of its easy introduction is passed through the grooves of each pair of wheels by

hand until sufficient has passed between the wheels to enable the end to be attached to the spool upon the shaft *k*, when power is applied to the pulley *l* by means of the belt *m* or otherwise, and the wire is thereafter continuously drawn between the wheels until the spool is filled, when the wire is cut and the spool removed and another substituted, to which the wire is secured as before and the process repeated. The passage of the wire through the grooves of the first pair of wheels reduces it to a uniform size, but leaves it oval in shape with a slight fin on either side. Its passage through the second pair of wheels obliterates the fin and renders it substantially uniformly round. As the pressure to which the wheels *ff* are subjected is great, friction may, if it is desired, be reduced by using ball-bearings or other devices for the purpose of reducing the friction.

What I claim is—

1. In a wire-finishing machine, the combi-

nation with a support, of a reducing-roll mounted thereon, a rotary adjustable shaft carried by said support, means for locking same in its adjusted position, a pintle eccentrically disposed on the end of said shaft beside said roll, and a second roll mounted on said pintle.

2. In a wire-finishing machine, the combination with a support, of a parallel pair of rotary adjustable shafts carried thereby with means for locking said shafts in a fixed position, eccentrically-disposed pintles on the ends of said shaft, and reducing-rolls on said pintles disposed in the same plane.

In testimony that I claim the foregoing as my invention I have hereunto set my hand this 23d day of May, A. D. 1904.

EDWARD M. LANG, JR.

In presence of—

GEO. E. BIRD,  
A. C. BERRY.