(No Model.)

J. W. WHITE.

APPARATUS FOR DRAWING WIRE.

No. 424,839. Patented Apr. 1, 1890.

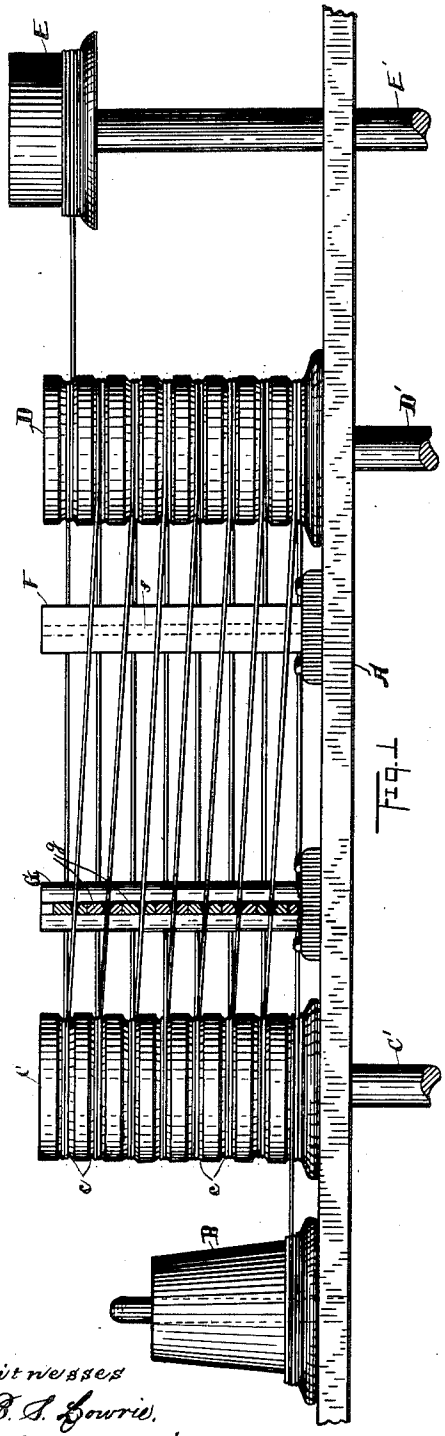


Fig. 1

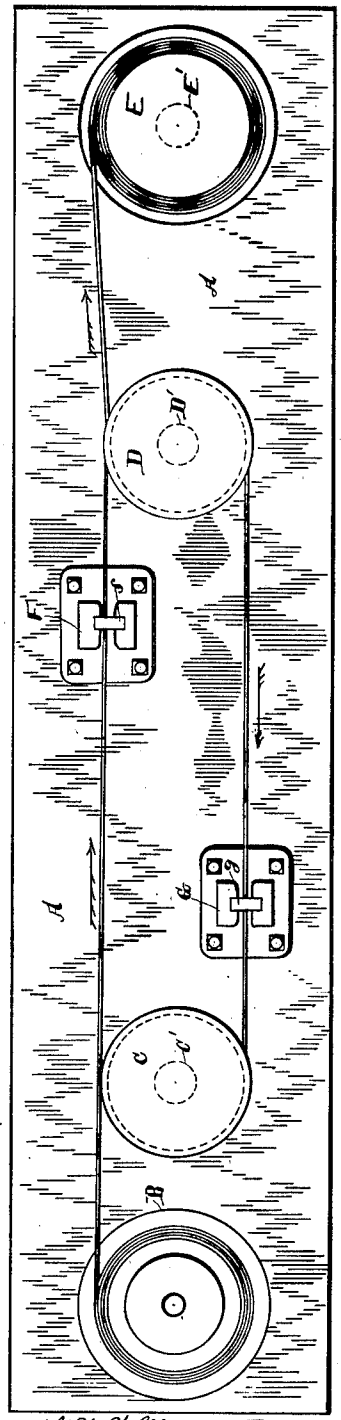


Fig. 2

Witnesses
C. A. Lourie.
Geo. W. King

Joseph W. White Inventor.
By Leggett and Leggett Attorneys.

UNITED STATES PATENT OFFICE.

JOSEPH W. WHITE, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO WASHINGTON S. TYLER, OF SAME PLACE.

APPARATUS FOR DRAWING WIRE.

SPECIFICATION forming part of Letters Patent No. 424,839, dated April 1, 1890.

Application filed August 26, 1889. Serial No. 321,960. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. WHITE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Apparatus for Wire-Drawing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in apparatus for wire-drawing; and it consists in certain features of construction and in combination of parts, hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a plan.

A represents a bench for supporting the apparatus, and B a reel on which is placed a coil of wire that is to be drawn.

C, D, and E are drums mounted, respectively on shafts C′, D′, and E′, power being applied to each shaft, and the drums are usually rotated at the same speed, although this is not material.

F and G are standards or housings for supporting each a series of dies, respectively *f* and *g*, the dies of each series being placed one above the other in the respective housings. Drums C and D are draft-drums, being used solely for pulling the wire through the different dies. These drums have each a series of circumferential grooves, respectively *c* and *d*, these grooves being usually something less than semicircular in cross-section. These grooves may be quite shallow, being intended only to keep the wire in place on the respective drums opposite the respective dies. The finished wire is wound on drum E, this drum having no grooves and the end of the wire being fastened thereto, this drum serving also as a draft-drum in pulling the wire through the last die, and more especially in giving tension to the wire, by means of which tension the different coils of wire are successively tightened on drums C and D. The coil of wire having been placed on the reel, the free end of the wire is pointed, so that the end thereof may be passed through the different dies. The end of the wire is first passed, for instance, through the lower die *f* and drawn by hand until there is enough drawn wire to wrap once or twice around drum D, after which wrapping the wire is passed by hand through the lower die *g*, and from thence around drum C, and back through the second die *f* from the bottom, and again wrapped around drum D, and so on throughout the required number of dies, the wire leading from the upper die *f* directly onto drum E. Drum E, having, as aforesaid, the end of the wire fastened thereto, pulls the wire through the upper die *f*, and in so doing tightens the upper coil of wire on drum C, causing the latter to draw the wire through the upper die *g*, and this in turn tightens the upper coil on drum D, such retrograde action of tightening coils extending throughout the dies and coils on drums C and D, and causing each drum to draw the wires through the different opposing dies. In placing the wire upon drums C and D, as aforesaid, it is only necessary to draw the wire by hand through the respective successive dies. The drums, being in motion, draw the wires through the dies in which the wire had previously been inserted and wound from thence around the drums. For instance, the wire having been drawn by hand through the first lower die *f* and passed from thence around drum D, by afterward tightening this coil by drawing on the wire by hand this drum draws the wire through the first die until there is enough slack wire to pass through the lower die *g* and to wrap around the drum C, after which by again drawing on the end of the wire the two drums C and D draw the wire through the first two dies, and so on. It will be understood that the drums C and D have little or no effect on the wire so long as the coils are loose on these drums, and that the drums only pull the wire as the coils are tightened by drawing on the advance end of the wire, and hence, although the wire is elongated in passing through the respective dies, the slipping of the drum in the different coils of wire, except as these coils are tightened by the draft of the coil next in advance, causes the entire system to operate automatically.

Heretofore, as shown in United States Pat-

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ent No. 397,272, dated February 5, 1889, the wire has been drawn by a single cylinder, the wire passing from thence around a guide-bar and returning to the cylinder, each return-wire passing through a die. Such guide-bars caused much useless friction and wear of parts, by reason of which the wire was more likely to break, and the excessive friction rendered it necessary to run the cylinder in a lubricating-trough.

With my improved construction, by means of the two drums C and D, each drum drawing the wire directly through the opposing dies, the friction, wear, and tear are reduced to a minimum, as is also the initial power required, and by reason of such reduction in the friction such lubricating-trough may be dispensed with.

What I claim is—

1. In a wire-drawing apparatus, the combination, with a reel, a winding-drum E, and draft-drums located in planes between the reel and drum E, of a series of dies for each draft-drum, each series of dies being parallel to and located in advance of its respective draft-drum, substantially as set forth.

2. In a wire-drawing apparatus, the combination, with a reel B, and a winding-drum E, on which the wire is to be wound, of two draft-drums located in planes between reel B and drum E, each draft-drum having a series of grooves on the face thereof and a series of dies for each draft-drum, the dies of each series located in advance of their respective drum, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 15th day of June, 1889.

JOSEPH W. WHITE.

Witnesses:

CHAS. H. DORER,

ALBERT E. LYNCH.