(No Model.)

G. B. LAMB.

WIRE DRAWING MACHINE.

No. 588,071. Patented Aug. 10, 1897.

Fig. 1.

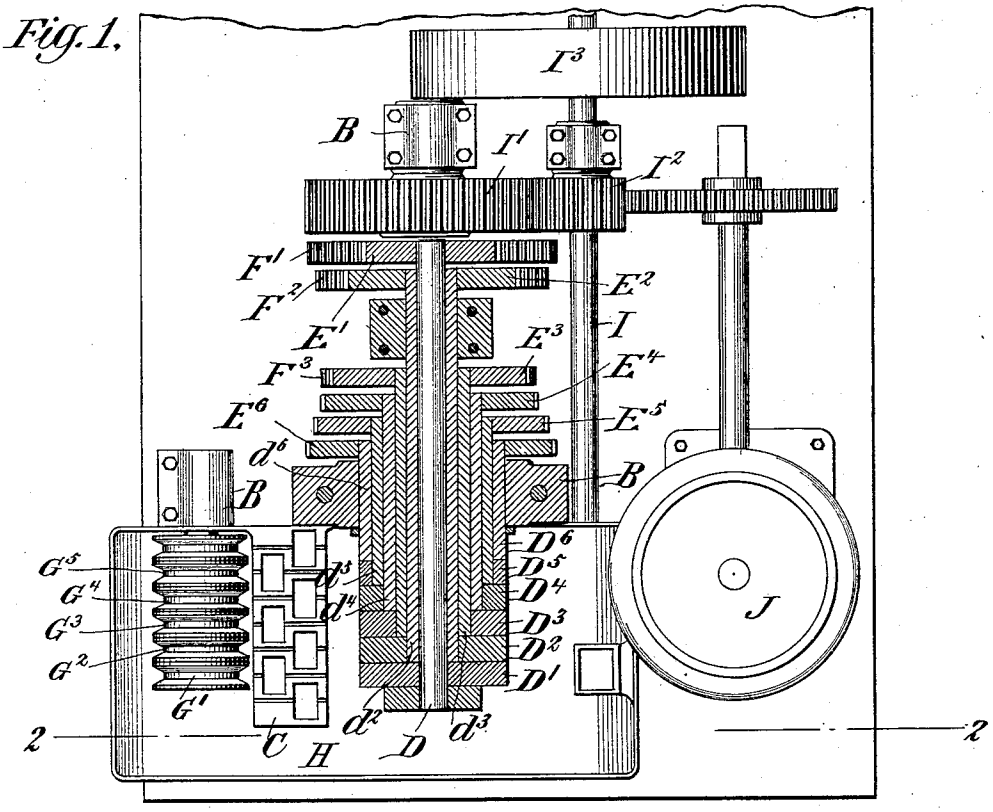
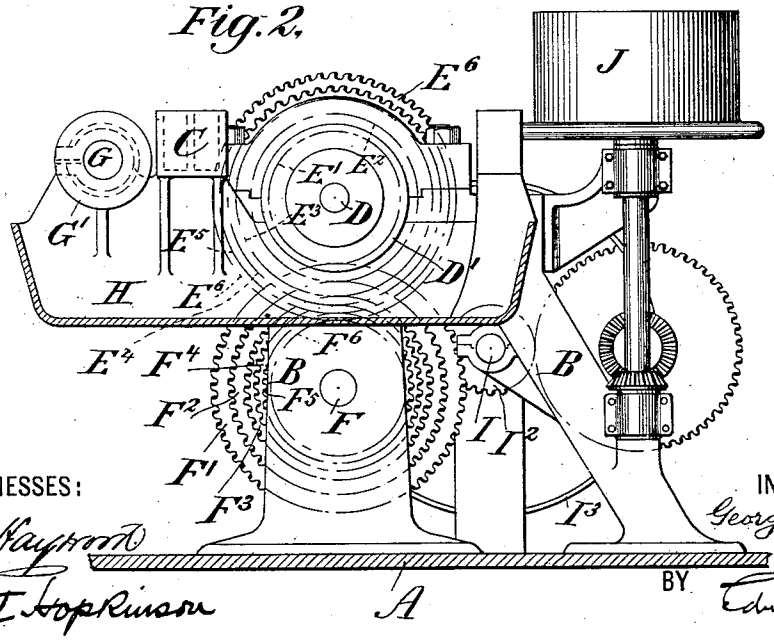


Fig. 2.



WITNESSES:

W. H. Haywood

Ernest Hopkinson

INVENTOR

George B. Lamb

BY Edwin H. Brown

HIS ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE B. LAMB, OF WATERBURY, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE WATERBURY MACHINE COMPANY.

WIRE-DRAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 588,071, dated August 10, 1897.

Application filed April 14, 1896. Serial No. 587,462. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. LAMB, of Waterbury, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Wire-Drawing Machines, of which the following is a specification.

My improvement consists in the combination of a number of drawing-pulleys separately supported and gearing for driving the same at different speeds.

I will describe a machine embodying my improvement and then point out its novel features in the claims.

In the accompanying drawings, Figure 1 is a plan view of a machine embodying my improvement. Fig. 2 is a vertical section of the same.

Similar letters of reference designate corresponding parts in both figures.

The framework of the machine may be of any suitable form. As here shown it consists, essentially, of a base A, with standards B erected thereon, and suitable stretchers uniting the latter.

C designates a die-box in which drawing-dies may be supported in any well-known manner. This is supported at one end by one of the standards B.

D′ D^2 D^3 D^4 D^5 D^6 designate drawing-rollers, here shown as of the same diameter and arranged side by side concentrically with the shaft D. The roller D′ is affixed to the shaft D. The rollers D^2 D^3 D^4 D^5 D^6 are severally mounted upon sleeves d^2 d^3 d^4 d^5 d^6, severally surrounding the shaft D and one another. The shaft D and the sleeves d^2 d^3 d^4 d^5 d^6 are provided with gear-wheels E′ E^2 E^3 E^4 E^5 E^6, that engage with gear-wheels F′ F^2 F^3 F^4 F^5 F^6, affixed to a shaft F. As the gear-wheels E′ E^2 E^3 E^4 E^5 E^6 and F′ F^2 F^3 F^4 F^5 F^6 are of different sizes, graduated to suit the elongation of the wire produced by the drawing-dies, it will be seen that the different drawing-rollers D′ D^2 D^3 D^4 D^5 D^6 will be driven at different surface speeds, although they are all of the same size. The gear-wheels E′ E^2 E^3 E^4 E^5 E^6 and F′ F^2 F^3 F^4 F^5 F^6 may be graduated in size to produce the desired results. It will be seen that the gear-wheel E^6, that is affixed to the sleeve d^6 of the drawing-roller D^6, is the largest of all the gear-wheels E′ E^2 E^3 E^4 E^5 E^6 and driven by the smallest gear-wheel of the series F′ F^2 F^3 F^4 F^5 F^6. Hence the greatest power is produced where the greatest strain is to be overcome. This decreases toward the end of the series of drawing-rollers.

The drawing-rollers may be shaped peripherally in any desired manner. It will be seen that they are arranged upon one side of the die-box C. On the opposite side is a series of rollers G′ G^2 G^3 G^4 G^5, mounted loosely upon a shaft or stud G, so that they may all turn independently of each other. The shaft or stud G is supported in one of the standards B.

It will be seen that a box or tank H is arranged beneath the die-box C, the drawing-rollers D′ D^2 D^3 D^4 D^5 D^6, and the rollers G′ G^2 G^3 G^4 G^5. It is intended that the dies shall be lubricated by a suitable liquid. Water may be used for this purpose, and it may be pumped up into the bottom of the die-box and made to overflow the sides of the latter.

The shaft F may be driven by means of gear-wheels I′ I^2, the latter of which is affixed to the shaft or stud I and the former of which is affixed to the said shaft F, which is mounted in the standards B, and shaft I is driven by means of a belt applied to a pulley I^3.

A block J, of any suitable construction, may be used for the wire and driven by gearing from the gear-wheel I′. As this is no part of my invention, I will not describe it further.

From the above it will be seen that each of the drawing-rollers can be rotated at a speed differing from that of any or all of the others regardless of the diameter of the rolls—that is to say, each drawing-roller can rotate at a different rate or number of rotations per minute. Thus the surface speed of the rollers is dependent upon the rate of rotation and not upon the diameter of the rolls. Further, they can be simultaneously so rotated at different rates of speed.

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

1. In a wire-drawing machine, the combination of a number of drawing-rollers of the same diameter arranged side by side, and surrounding a common shaft, but supported

so as to be capable of simultaneous and independent rotation, and gearing for rotating these drawing-rollers at different speeds, substantially as specified.

2. In a wire-drawing machine, the combination of a number of drawing-rollers arranged side by side and surrounding a common shaft, but supported so as to be capable of independent rotation, and gearing connected to drive said drawing-rollers and consisting of two sets of differently-proportioned gear-wheels, substantially as specified.

3. In a wire-drawing machine, the combination of a number of drawing-rollers arranged side by side, and surrounding a common shaft, but supported so as to be capable of independent rotation, and gearing consisting of two sets of differently-proportioned gear-wheels, the individual gears of one set being connected by a shaft and sleeves with the independent drawing-rollers, substantially as specified.

4. In a wire-drawing machine, the combination of a series of drawing-rollers arranged side by side, and provided with elongated bearing-sleeves supported one within the other, a common shaft for said several sleeves, and gearing for simultaneously rotating said sleeves and their drawing-rollers at different rates of speed, substantially as described.

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

GEORGE B. LAMB.

Witnesses:
T. C. LANE,
W. J. MATON.