(No Model.)

W. T. LEECH.

APPARATUS FOR COVERING ROLLERS WITH TOOTHED METAL.

No. 277,297. Patented May 8, 1883.

Fig. 1.

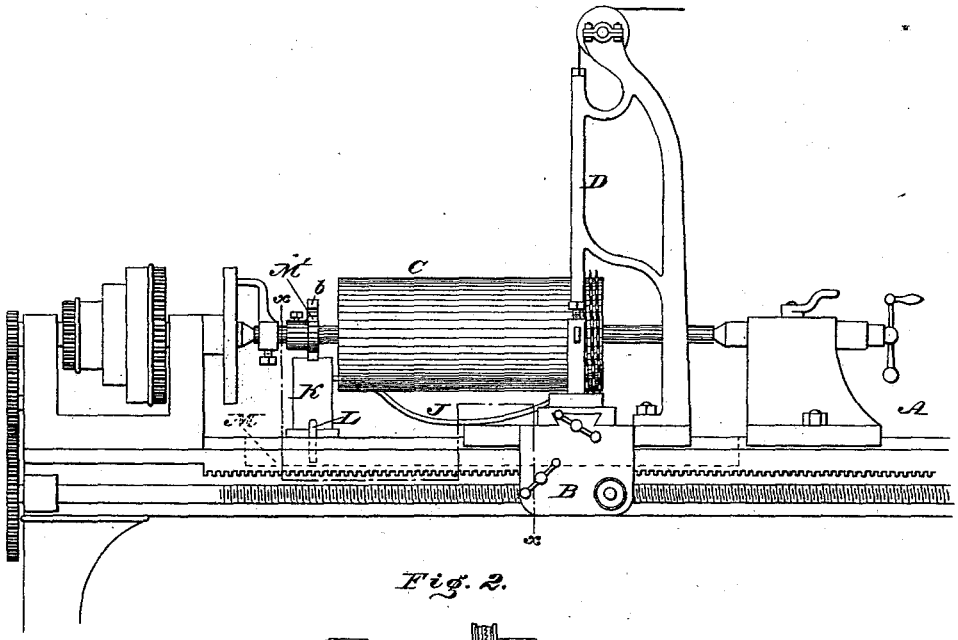


Fig. 2.

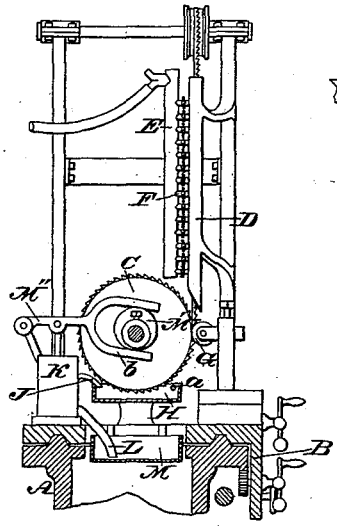
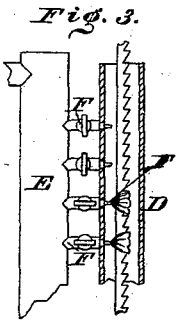


Fig. 3.



WITNESSES:
L. Doaville
W. F. Kircher

INVENTOR:
William T. Leech,
BY John A. Diedersheim
ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM T. LEECH, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR COVERING ROLLERS WITH TOOTHED METAL.

SPECIFICATION forming part of Letters Patent No. 277,297, dated May 8, 1883.

Application filed June 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. LEECH, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Covering Rollers with Toothed Metal, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a front view of apparatus embodying my invention. Fig. 2 is a vertical section thereof in line *x x*, Fig. 1. Fig. 3 is an enlarged view of a portion of Fig. 2, a part thereof being sectional.

Similar letters of reference indicate corresponding parts in the several figures.

Burring, ginning, and other cylinders have been covered or clothed with toothed metal, generally termed "toothed wire;" but it has been found difficult to temper said metal without injuring the cylinder on which it is wound.

My invention consists of means for heating the metal or wire removed from the cylinder, and also of the provision for adjusting the heating medium.

The invention also consists of means, substantially as set forth, for retaining a uniform height of tempering-fluid.

Referring to the drawings, A represents a lathe, and B the traveling saddle thereof, employed for applying toothed wire or metal spirally on a cylinder, (shown at C,) as well known.

D represents a vertical tube, which is secured to a frame rising from the saddle B, and adjacent thereto is a gas-pipe, E, which is also supported on the saddle B, and provided with jets F, which open or project into the tube D, the pipe E being properly supplied with gas. The tube D is so disposed that the length or piece of toothed metal or wire may be passed through it in line with the guide or roller G of the saddle without affecting the usual operation of said roller.

H represents a trough for containing the tempering-fluid, the same being secured to and moving with the saddle B, and so located that the cylinder C to be covered dips into said trough. Leading into the trough is a flexible pipe, J, which communicates with a pump, K, and in the side of the trough is formed an overflow-opening, *a*, which is so arranged that the proper height of the tempering-fluid may be maintained. The pump K is supported on the bed of the lathe, and has a pipe, L, which dips into a longitudinally-extending tank, M, in the bed of the lathe, the rod of the pump being operated by an eccentric, M′, which is fixed to the supporting-shaft of the roller C and engages with a yoke or bifurcation, *b*, whose arm or lever M″ is suitably fulcrumed, and is connected with the pump-rod. It will be seen that the tube D and gas-pipe E and the trough H move with the saddle B, and the pump K and tank M are stationary on the bed of the lathe, the trough H overhanging said tank M. It will also be seen that when the toothed metal or wire is passed through the tube D and guided by the roller G to the cylinder C, and the lathe is set in motion, the metal is wound spirally on said cylinder. The gas-jets, having been lighted, direct their flame or heat against the toothed metal, so as to heat the same, in which heated condition said metal dips into the tempering-fluid, and thus receives its temper, the effect of which, besides fitting the metal for subsequent use, renders it capable of being wound on the cylinder without liability of breaking or fracture as it is bent around the same. The pump K is also in operation, and supplies the trough H with tempering-fluid from the tank M through the pipe J, and as soon as the fluid rises in the trough to a level with the opening *a* the fluid overflows and drops into the tank M, thus maintaining a constant level of fluid in the trough, it being noticed that the fluid in the tank is returned to the trough by means of the pump K.

As the tube D is above the cylinder C, it is evident that the heating medium or flame of the gas-jets is not directed against the cylinder C, whereby the latter is not injured by said medium or flame. The gas-jets are arranged one above the other, so that the combined heat of all the flames of the jets may be directed against the toothed metal as it passes through the tube D, and it is evident that the degree of heat may be adjusted in a most convenient and reliable manner by means of the cocks or plugs of the gas-jets.

It is evident that the improvements are applicable to apparatus adapted for covering rollers or cylinders with plain or untoothed metal

or wire without changing the construction or operation of parts.

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

1. The lathe and its traveling saddle, in combination with a heating device for the metal removed from the cylinder, substantially as and for the purpose set forth.

2. The lathe and its traveling saddle, in combination with the tube D and a heating medium for the metal removed from the cylinder, substantially as and for the purpose set forth.

3. In an apparatus for covering or clothing rollers or cylinders with metal, a tube which incloses or guides the wire, and a gas-pipe with one or more jets discharging into said tube, combined and operating substantially as and for the purpose set forth.

4. The trough H, into which the cylinder C dips, in combination with tank M, pump K, and an eccentric on the cylinder-holding shaft, whereby said pump is operated.

W. T. LEECH.

Witnesses:
JOHN A. WIEDERSHEIM,
A. P. GRANT.