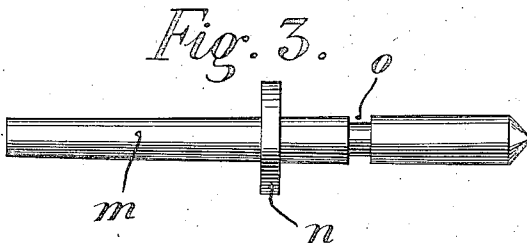
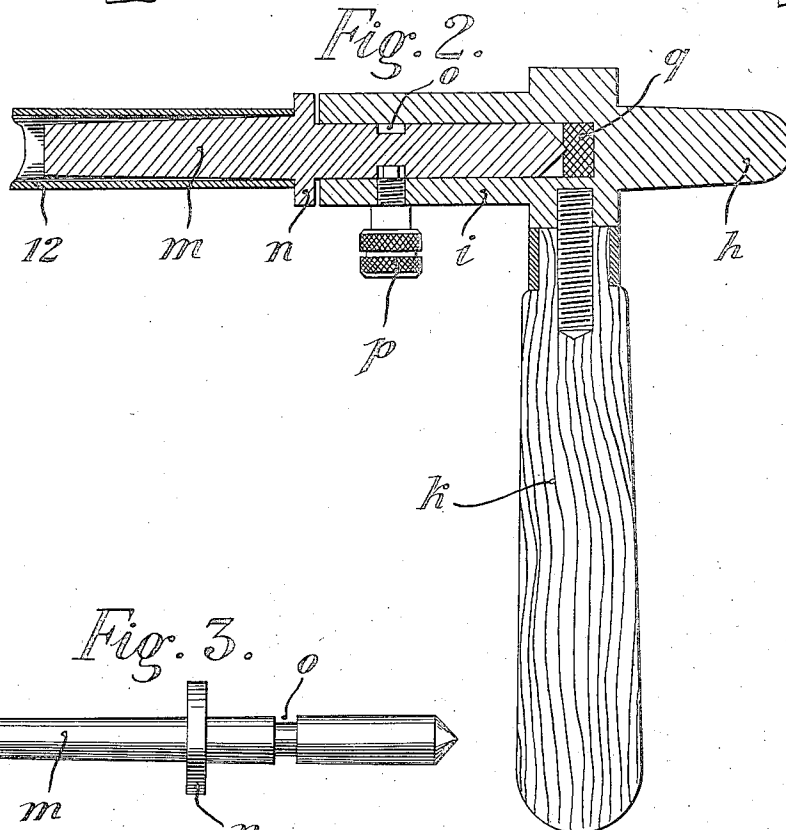
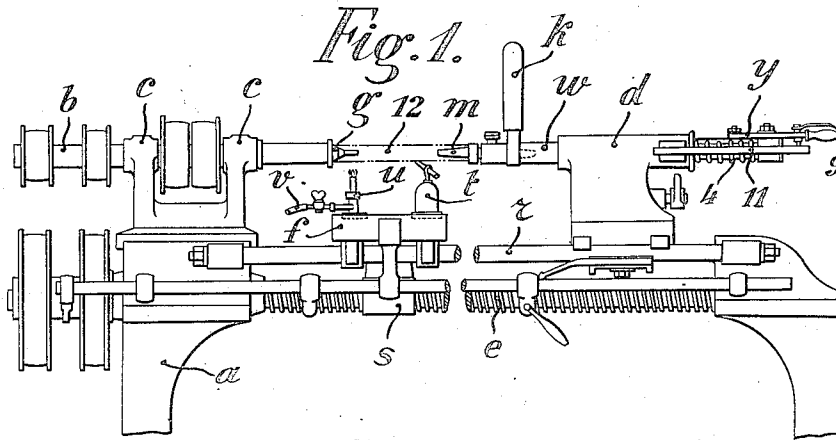


1,070,035.

2 SHEETS—SHEET 1.



Witnesses.

Willy Knuth
Perot Publisher

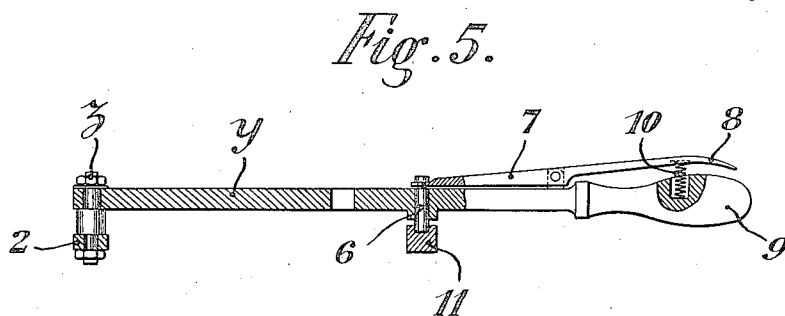
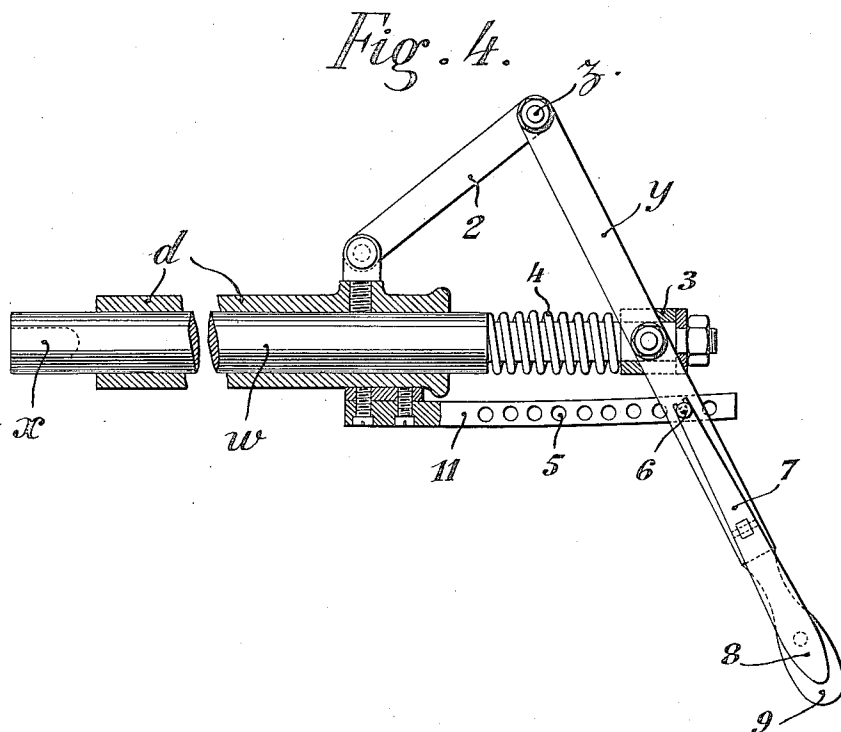
Inventor.

Robert Lewis Horrell
by Freeman M. Smith
Attorney

R. L. HORRELL.
MACHINE FOR HOT LACQUERING METAL TUBES.
APPLICATION FILED JAN. 6, 1913.

1,070,035.

Patented Aug. 12, 1913.
2 SHEETS—SHEET 2.



Witnesses.

Willy Muth
Perot Muth

Inventor.

Robert Leonard Horrell
by F. W. Muth
Attorney

UNITED STATES PATENT OFFICE.

ROBERT LEONARD HORRELL, OF LA GARENNE-COLOMBE, FRANCE.

MACHINE FOR HOT-LACQUERING METAL TUBES.

1,070,035.

Specification of Letters Patent.

Patented Aug. 12, 1913.

Application filed January 6, 1913. Serial No. 740,543.

To all whom it may concern:

Be it known that I, ROBERT LEONARD HORRELL, a subject of the King of Great Britain, residing at La Garenne-Colombe, in the Republic of France, have invented certain new and useful Improvements in Machines for Hot-Lacquering Metal Tubes, of which the following is a specification.

This invention relates to a machine for lacquering metal tubes and similar objects which have to be heated before the coating of lacquer is applied. At present the lacquering of such objects is effected by hand, by means of a brush; this manipulation is difficult to execute as it requires skilled labor and is a slow process. One of the difficulties connected with this kind of work results from the necessity to heat the objects before they are lacquered and further from the fact that said objects, after the lacquer has been applied, must not be touched until the coating of lacquer is cold.

According to this invention the application of the lacquer is effected mechanically and all expert labor suppressed. The tube in being continuously rotated, is heated by means of a Bunsen burner which moves parallel with the axis of the tube, said tube being coated with lacquer by means of a spraying apparatus which also moves parallel with the tube together with said burner. The manipulation of the tube is facilitated by a special handle which enables the tube being picked up, inserted in the machine and instantaneously rotated, and removed from the machine when lacquered, without being otherwise handled.

The invention is shown by way of example in the accompanying drawings.

Figure 1 is a parallel front elevation of the machine. Fig. 2 shows on a larger scale and in section the handle for manipulating the tube. Fig. 3 represents in elevation the spindle which is designed to carry one end of the tube. Figs. 4 and 5 show the sliding puppet on a larger scale, in horizontal and vertical section respectively.

The machine essentially consists of a lathe *a* comprising the driving mechanism *b* for the movable slide, a fixed puppet *c*, a sliding puppet *d*, a screw *e* and a carriage *f*. The fixed puppet *c* has a center *g* with a cylindrical part of small diameter adapted to engage into the tube to be lacquered. The sliding puppet *d* is designed to receive the conical rear part of the back-center *h*. The

back-center *h* which carries a handle is shown in Fig. 2 in section and in natural size. The back-center *h* fixed upon the handle *h* has a horizontal sleeve *i* designed to receive a spindle *m* which is inserted into one end of the tube to be lacquered. This spindle *m* has a ring shaped flange *n* which presses against the end of tube 12 and a circular groove *o* with which engages the point of a set screw *p* screwed into the sleeve *i*. The pointed end of said spindle *m* bears against a steel disk *q* located in said sleeve *i* so that the spindle can freely revolve in said sleeve.

The carriage *f* is adapted to slide in either direction along two rods *r* parallel with the axis of the lathe, it is connected in any convenient manner with a nut *s* adapted to move along the screw *e* when said screw is in rotation. The motion of the screw *e* is controlled by a reversible clutch. Upon the carriage there are fixed in any convenient manner a spraying apparatus *t* containing the lacquer, and a Bunsen burner *u* which is connected by means of a tube *v* with a gas main.

In the sliding puppet *d* a rod *w* is located which has a hollow *x* at one end designed to receive the end of the back-center *h*. The other end of said rod *w* is hinged to the middle of a lever *y*. This lever *y* can pivot around a pin *z* fixed upon one end of a link 2 the other end of which is hinged upon the sliding puppet *d*. The lever *y* is connected with said rod *w* through the intermediary of a sleeve 3 and of a spiral spring 4 surrounding the rear end of said rod. Upon the sliding puppet *d* a segment 11 having a series of holes 5 is fixed, said holes serving to receive a catch pin 6 fixed at the end of a small lever 7 pivotally mounted upon the handle of the lever *y* and having its end 8 situated directly over said handle 9 of the lever *y*. A spring 10 is arranged between said handle 9 and the end 8 of the lever 7 for continuously maintaining the catch pin 6 in engagement with one of the holes 5.

The machine operates in the following manner:—The spindle *m* is inserted into one end of the tube 12 to be lacquered, this tube can then be freely manipulated by holding the handle *h*. The other end of tube 12 is then pushed over the center *g* of the fixed puppet, the rod *w* being pulled back by means of the lever *y* so that the hollow *x* of said rod can engage with the back-cen-

ter *h*. By operating the lever *y* the spring 4 presses the movable rod *w* against the end of the back-center *h* whereby the tube 12 is securely fixed in its position. The pressure exerted by the rod *w* upon the back-center *h* is regulated by varying the position of the lever *y* by means of the catch-pin 6. When the lathe is operated the tube 12 rotates continuously. The burner *u* is then set in motion along the tube 12 so as to heat the same from one end to the other. When the carriage or slide has arrived at the end of the tube the spraying apparatus *t* is operated and the motion of the slide is reversed and the latter brought back to its initial position; the burner continuing to operate all the time. The tube 12 is thus completely coated with lacquer. By pushing against the handle 9 of the lever *y* the back-center is released and the hot and lacquered tube can be removed from the machine by means of the handle *k*. All the manipulations are executed without touching the tube 12 with the hands.

Having thus described my invention what I claim is:—

1. Machine for lacquering metal tubes comprising in combination with a lathe, a fixed puppet serving as abutment for one end of the tube to be lacquered, a sliding carriage, a Bunsen burner and a spraying apparatus containing lacquer mounted upon said sliding carriage, a sliding puppet, a back-center in said sliding puppet carrying the other end of the tube to be lacquered, a handle of said back center, and means for fixing said back-center in position, substantially as described and shown and for the purpose set forth.

2. Machine for lacquering metal tubes comprising in combination with a lathe, a fixed puppet serving as abutment for one end of the tube to be lacquered, a sliding carriage, a Bunsen burner and a spraying apparatus containing lacquer mounted upon said sliding carriage, a sliding puppet, a

back-center for carrying the other end of said tube, a handle of said back-center, a horizontal sleeve projecting from said back-center, a spindle in said sleeve having a circular groove, a screw screwed in said sleeve and projecting into said groove of the spindle, an annular flange of said spindle bearing against the end of the tube to be lacquered, a point at the rear end of said spindle, a steel disk in said sleeve against which bears the point of said spindle, substantially as described and shown and for the purpose set forth.

3. Machine for lacquering metal tubes comprising in combination with a lathe, a fixed puppet serving as abutment for one end of the tube to be lacquered, a sliding carriage, a Bunsen burner and a spraying apparatus containing lacquer mounted upon said sliding carriage, a sliding puppet, a back-center in said sliding puppet, carrying the other end of the tube to be lacquered, a handle of said back-center, a rod movably mounted in said sliding support and having a hollow at the front end for the reception of said back-center, a short sleeve upon the rear end of said rod, a spiral spring surrounding the rear part of said rod and bearing against a shoulder of the rod and against said sleeve, a lever fixed upon said sleeve, a link hingedly mounted with one end upon said sliding puppet, a pivot pin at the other end of said link to which one end of said lever is pivoted, a segment with a series of holes fixed to the sliding puppet and a spring influenced catch fixed to the handle of said lever and adapted to engage with one of said holes, substantially as described and shown and for the purpose set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ROBERT LEONARD HORRELL.

Witnesses:

HANSON C. COXE,
ALFRED FREY.