L. EWALD.

CLEANING BRUSH FOR LINOTYPE MACHINE PLUNGERS.

APPLICATION FILED JUNE 16, 1913.

1,106,795. Patented Aug. 11, 1914.

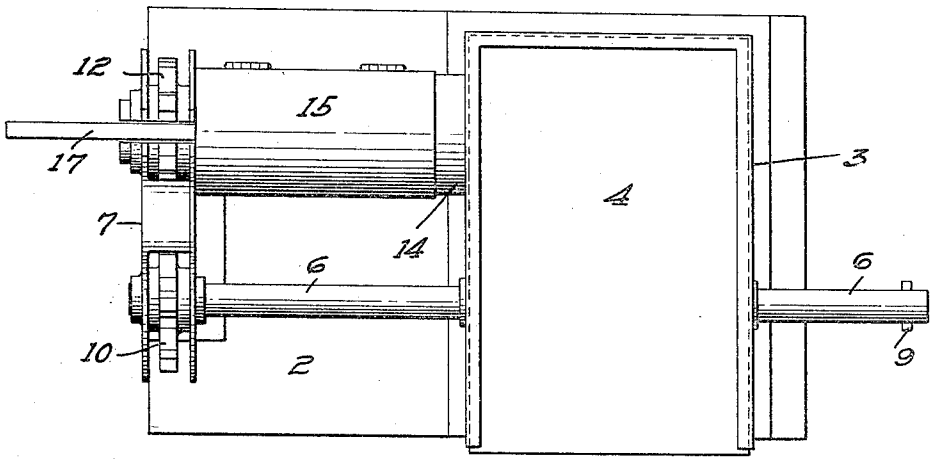


FIG. 1.

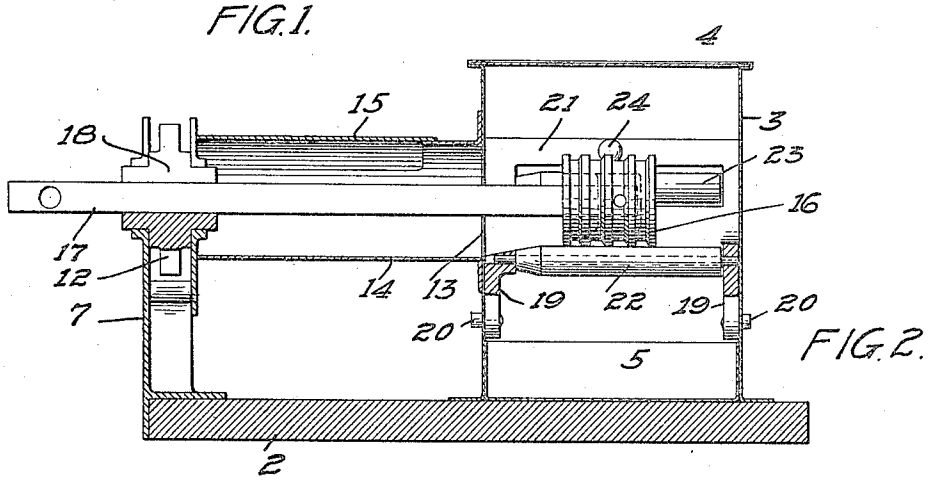


FIG. 2.

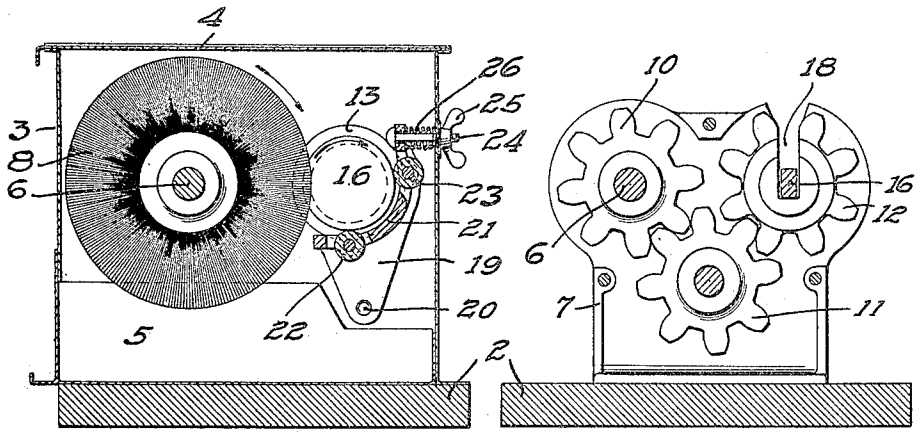


FIG. 3. FIG. 4.

WITNESSES

M. R. McGuire

E. A. Paul

INVENTOR

LEO EWALD

BY Paul & Paul

ATTORNEYS

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

UNITED STATES PATENT OFFICE.

LEO EWALD, OF MINNEAPOLIS, MINNESOTA.

CLEANING-BRUSH FOR LINOTYPE-MACHINE PLUNGERS.

1,106,795. Specification of Letters Patent. Patented Aug. 11, 1914.

Application filed June 16, 1913. Serial No. 774,072.

To all whom it may concern:

Be it known that I, LEO EWALD, a citizen of the United States, resident of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Cleaning-Brushes for Linotype-Machine Plungers, of which the following is a specification.

The plunger used for feeding the molten metal in a linotype machine becomes coated with a fine lead dust and when this dust is brushed off the plunger in the ordinary way the room where the machine is located becomes filled with the floating particles of lead and the health of the linotype machine operators and printers is often seriously affected by being compelled to breathe the air laden with this poisonous dust.

The object, therefore, of my invention is to provide an apparatus by means of which the lead dust can be easily and quickly cleaned from the surface of the plunger without allowing any of the dust to escape and mingle with the air of the room.

A further object is to provide an apparatus into which the plunger to be cleaned can be easily and quickly inserted and as readily removed.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a plan view of an apparatus embodying my invention, Fig. 2 is a vertical sectional view of the same, Fig. 3 is a transverse sectional view through the brush and the chamber where the plunger is arranged, Fig. 4 is a transverse sectional view, showing the arrangement of the gearing for revolving the plunger from the shaft of the brush.

In the drawing, 2 represents a suitable base. On this base a casing 3 is mounted, having a removable cover 4. In the bottom of the casing is a drawer 5 that is adapted to receive the dust during the operation of brushing the plunger. 6 is a shaft, mounted in bearings at one end in the casing and journaled at its other end in a standard 7. On this shaft I mount a brush 8 having wire or other suitable bristles which are adapted to contact with the surface of the plunger and clean the dust therefrom. This shaft 6 has an end 9 that is adapted to receive an operating crank. A gear 10 is mounted on the shaft 6 and meshes with an idle gear 11 which in turn meshes with a gear 12, said gears 11 and 12 being journaled in the standard 7. The wall of the casing 3 opposite the gear 12 has an opening 13 therein and a housing 14 encircles this opening and extends therefrom to the standard 7 and is provided with an opening having a suitable cover 15. The casing is practically dust-proof and by providing the housing with an opening therein for the insertion of the plunger I am able to avoid the necessity of opening the casing and allowing the escape of any of the particles of lead dust which may have accumulated therein. The plunger 16 is inserted into the casing 3 through the opening 13 and has a rod 17, which is preferably flattened in form, as indicated in Fig. 1, for insertion into a radial slot 18 formed in the gear 12. This slot allows the convenient insertion of the plunger and rod into the casing and removal therefrom. The plunger has to be cleaned at intervals and is usually very hot, and the operator has but little time to perform the cleaning operation, hence it is essential that some means, such as the slotted gear, be provided to allow the plunger to be easily and quickly mounted in the casing and operatively connected with a driving means. Other mechanisms might be employed for this purpose, but I prefer the slotted gear device illustrated herein, as the operator can pick up the plunger, insert the head into the casing and drop the rod into the gear without loss of time and without the necessity of handling the hot plunger except for a very brief interval.

Within the casing is a frame 19 pivoted at 20 in the casing walls and having a curved seat 21 provided with anti-friction rollers 22 and 23. These rollers are adapted to contact with the plunger 16 and form an anti-friction bearing therefor in the seat 21. A bolt 24 is mounted in the frame 19 and is provided with a thumb nut 25 and a spring 26, said bolt projecting through the wall of the casing and the spring is located between the frame 19 and the casing wall so that by the movement of the nut 25 the frame 19 can be moved away from the plunger to allow it to drop down out of contact with the brush, or the plunger may be held toward the brush with a yielding pressure through the engagement of the spring 26 with the casing wall and with the frame. I am thus able to

regulate to a nicety the pressure of the brush on the plunger.

The operation of the device is as follows:—The plunger being inserted into the casing and the cover 15 closed, the brush will be revolved by means of a suitable crank placed on the shaft 6 and thereupon the brush and plunger will be revolved in the same direction, but their contacting surfaces will be moved in opposite directions, thus insuring a thorough brushing of the plunger and complete separation of the dust from the plunger and its deposit in the bottom of the chamber.

I claim as my invention:—

1. A means for cleaning a linotype machine plunger comprising a casing, a brush mounted therein, means adapted to support a plunger inserted into said casing adjacent to said brush, a gear having a radial slot adapted to receive a plunger rod, and means for revolving said brush and gear.

2. A means for cleaning a linotype machine plunger comprising a casing having an opening in its wall adapted to receive a plunger inserted therein, a housing encircling said opening and adapted to inclose the plunger rod, said housing having an opening therein and a cover, a gear mounted opposite said housing and having a radial slot to receive the plunger rod, a brush mounted in said casing, and means for revolving said brush and gear.

3. A plunger cleaning device comprising a shaft, a brush thereon, a casing for said brush, a seat provided within said casing adapted to support a plunger head, one end of said shaft having a driving connection, and mechanism connecting said shaft with the rod of said plunger.

4. A plunger cleaning device comprising a casing, a brush having a driving shaft journaled therein, a seat provided within said casing adapted to support a plunger head, the rod of said plunger head and said shaft being in substantially parallel relation with one another, and a gear mechanism operatively connecting said shaft with said plunger rod.

5. A plunger cleaning device comprising a shaft, a brush driven thereby, a seat provided within said casing adapted to support a plunger head, means for moving said seat toward or from said brush to increase or decrease the pressure thereof on said plunger head, and a gear mechanism operatively connecting said shaft with the plunger rod.

6. A means for cleaning a linotype machine plunger comprising a casing into which the plunger to be cleaned is inserted, a gear having a radial slot adapted to receive the plunger rod, means for operating said gear to revolve said plunger, and means mounted within said casing for brushing the surface of said plunger.

7. A means for cleaning a linotype machine plunger comprising a casing into which the plunger to be cleaned is inserted, a gear having a radial slot to receive the plunger rod, a brush mounted to revolve within said casing and contact with the surface of said plunger, and a driving connection between said brush and said gear.

8. A means for cleaning a linotype machine plunger comprising a casing having an opening in its wall through which the plunger head is inserted, the rod of the plunger projecting outside said casing, means for cleaning the surface of the plunger within said casing, means for closing the opening in the wall of said casing around said plunger rod, and a driving mechanism having means to engage said rod and revolve the same and said plunger-head.

9. A plunger cleaning device comprising a casing, a brush having a shaft journaled therein, one end of said shaft being adapted to receive an operating crank, a seat provided within said casing adapted to support a plunger head, and a gear mechanism operatively connecting the other end of said shaft with the plunger rod.

In witness whereof, I have hereunto set my hand this 4th day of June, 1913.

LEO EWALD.

Witnesses:

GENEVIEVE E. SORENSEN,

EDWARD A. PAUL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."