F. H. WOLEVER.

STRIPPING FURNACE.

APPLICATION FILED JULY 9, 1917.

1,316,993.

Patented Sept. 23, 1919.

2 SHEETS—SHEET 1.

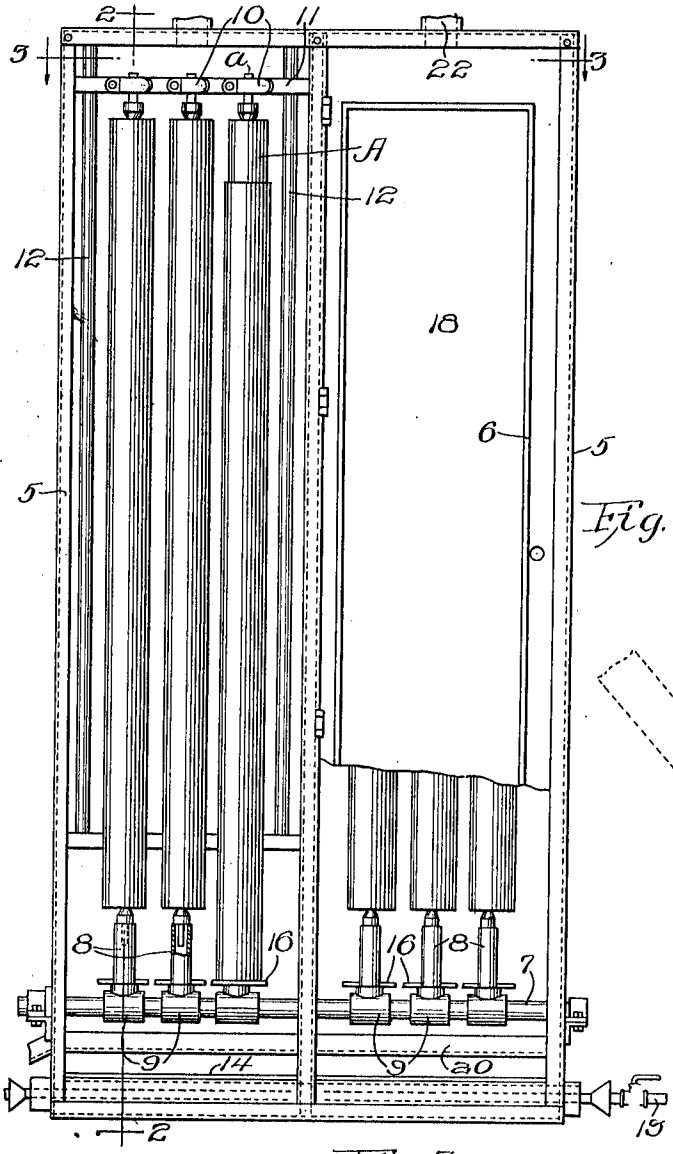


Fig. 1.

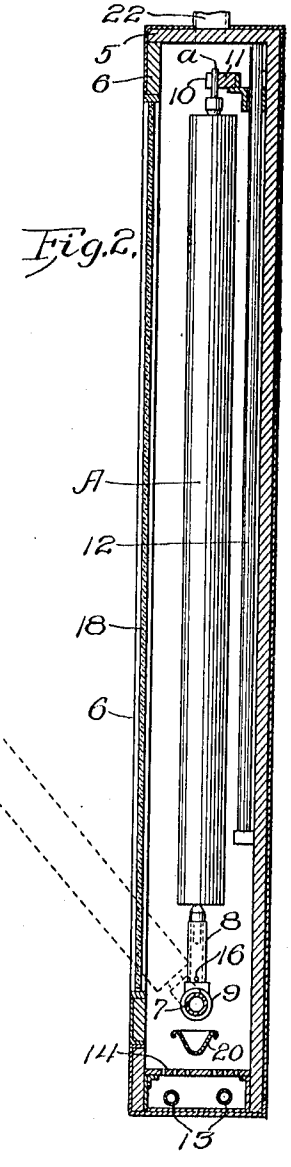


Fig. 2.

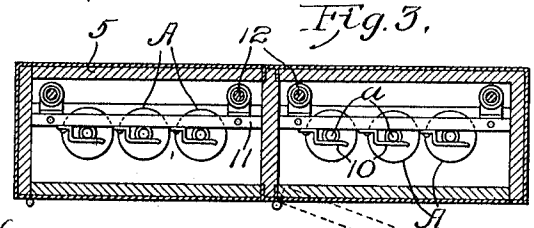


Fig. 3.

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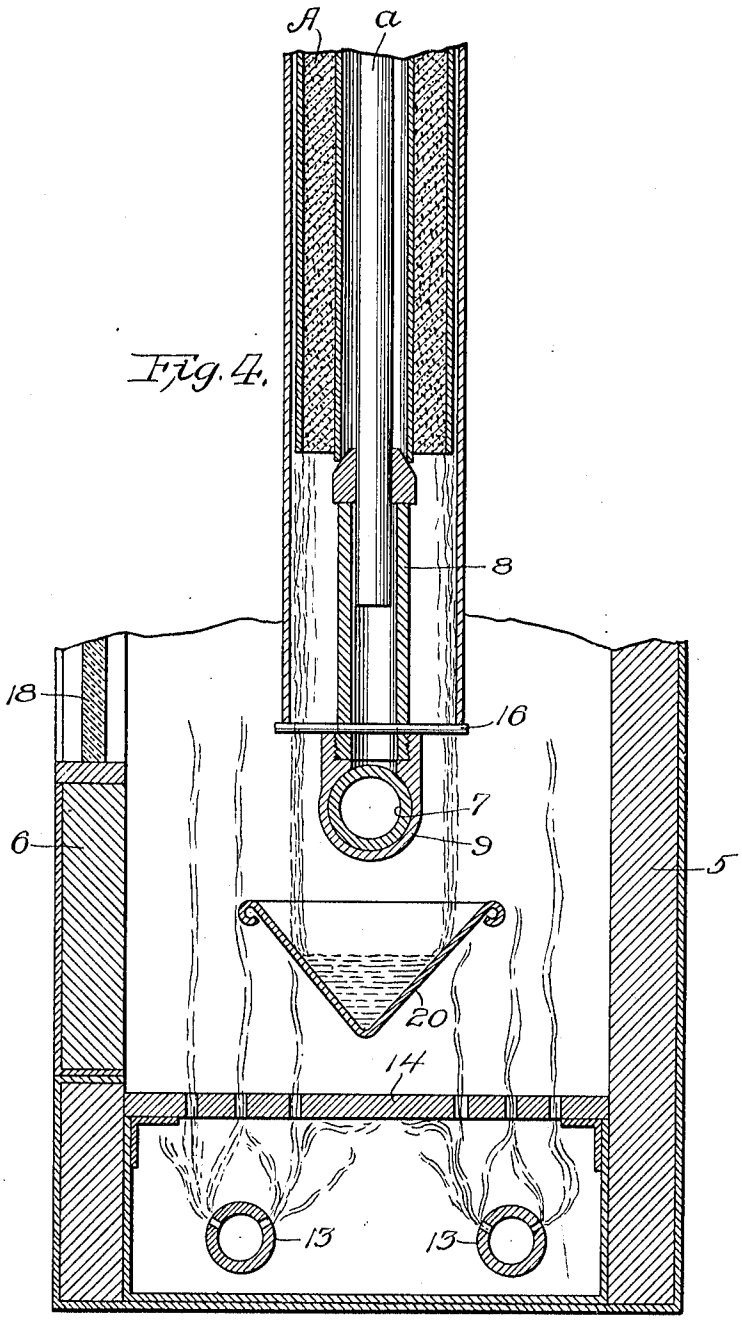
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2 SHEETS—SHEET 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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STRIPPING-FURNACE.

1,316,993. Specification of Letters Patent. Patented Sept. 23, 1919.

Original application filed April 21, 1917, Serial No. 163,579. Divided and this application filed July 9, 1917. Serial No. 179,422.

To all whom it may concern:

Be it known that I, FRANKLIN H. WOLEVER, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Stripping-Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to a novel stripping furnace for use in the manufacture of printers' rollers, or other like compound rollers, such, for instance, as is shown and described in my pending application for U. S. Letters Patent, Serial No. 163,579, filed April 21st, 1917, of which this application is a division.

In producing a roller in accordance with the method described in said prior application, the mold is first lined with a fusible lining deposited therein by centrifugal action, and within said liner is formed, by centrifugal action, the shell layer of the roller, and thereafter the roller is completed by pouring into the shell, with the mold arranged vertically in a casting machine, the core material. After the roller is completed it becomes necessary to fuse the liner so as to enable the mold to be stripped from the roller, or conversely, the roller to be stripped from the mold.

The purpose of the present invention is to provide a furnace which is so constructed and arranged as to sustain the molds and the rollers therein in upright position while being subjected to heat so that when the proper amount of heat has been applied to the mold to fuse the liner, the mold may drop away from the roller by gravity, whereby the roller may be lifted or stripped from the mold or the mold stripped from the roller as desired.

Other objects of the invention are to improve and simplify furnaces for this and like purposes, and the invention consists in the combination and arrangement of the elements shown in the drawings and described in the specification, and is pointed out in the appended claims.

In said drawings:—

Figure 1 is a side elevation, with parts broken away, of a stripping furnace embodying my invention.

Figs. 2 and 3 are sections on the line 2—2 and 3—3, respectively, of Fig. 1.

Fig. 4 is an enlarged sectional detail of said furnace, with one of the molds therein.

After the molds and contained rollers have been removed from the vertical casting machine, they are placed in a furnace 5 wherein the liners are fused to strip the molds from the rollers. Said furnace may be made of any preferred construction. As shown it comprises one or more closed compartments having a door or doors 6 by which access may be had thereto. A convenient means, among others, for supporting the molds and contained rollers in the furnace consists in providing at the bottom of the furnace a horizontal shaft 7, shown as made tubular, equipped with a plurality of upwardly opening socket members 8 that are rotatively mounted, as by means of fittings 9, on the shaft 7 to swing in a plane transverse to the plane of said shaft. The lower ends of the stocks *a* of the roller A are seated in said upwardly opening sockets and are supported thereby, and said molds may be held in upright position in the furnace by means of clips 10 at the top of the furnace which are carried by a transverse bar 11 which may be supported by the upper ends of upright rods 12. The said clip bars are vertically adjustable on the rods to accommodate roller stocks of different lengths.

The furnace is heated from any suitable source of heat, as gas, steam coils or electric energy. The heating device herein shown consists of one or more burner pipes 13 at the bottom thereof and located beneath a perforated hearth 14. Said socket members 8 are provided near their fittings 9 with transverse pins 16 which are located a distance below the lower ends of the molds when the latter are first assembled in the furnace. The heat from the burner, acting on the exterior of the mold, causes the mold liners to fuse so as to free the molds from the rollers; the products of combustion passing away from the furnace through exhaust

pipes or flues 22. By reason of the upright position of the molds when so supported, said molds drop by gravity downwardly against and are supported by the transverse pins 16 when the liners are fused sufficiently to release the molds from the rollers.

The door of the furnace is preferably provided with a transparent window 18 through which the molds may be observed when supported in the furnace under heat. When the molds are observed to drop, the door is opened and the stocks of the molds are released from the sustaining clip 10, and the molds may be swung outwardly in the manner indicated in dotted lines in Fig. 2, so that they may be stripped off of the rollers. However, the mold may be otherwise stripped from the roller, or the roller from the mold. The melted liner material falls into an inclined trough 20 arranged below the series of molds and is thereby drained from the furnace to a suitable exterior receptacle (not shown).

After the molds have been stripped from the rollers, the rollers may be again adjusted in upright position in the furnace and sustained therein by the clips 10 and subjected to a further heat treatment from the burner. The furnace heat may be maintained at a suitable temperature and over a necessary period to melt and volatilize any of the liner material which may cling to the outer faces of the roller shells, and which heat treatment also serves to toughen the surfaces of the shells.

The furnace may be otherwise constructed and the mold otherwise inserted into and removed from the furnace. For instance, the molds may be removed from the rollers directly in the line of the axes thereof, and the rollers may be inserted into and removed from the furnace in groups in the manner of a continuous heat furnace.

I claim as my invention:—

1. In a roller making machine, a furnace constructed with means to apply heat to the exterior of a mold to heat the mold liner to remove the mold from the roller and provided with means to support the mold and heat it in upright position, whereby, when the liner is melted, the mold is released from the roller.

2. In a roller making machine, a furnace to heat the liner to remove the mold from the roller, a vertically swingable socket to receive the lower end of the roller stock, means to releasably hold the roller in upright position and a source of heat in the furnace.

3. In a roller making machine, a furnace to heat the liner to remove the mold from the roller, a horizontal shaft at the bottom of the furnace, an upwardly opening socket hinged thereto to receive the lower end of the roller stock, a stock holding clip at the top of the furnace, and heating means for the furnace.

4. In a roller making machine, a furnace to heat the liner to remove the mold from the roller, a horizontal shaft at the bottom of the furnace, an upwardly opening socket hinged thereto to receive the lower end of the roller stock, a stock holding clip at the top of the furnace, means to heat the furnace, and means to vertically adjust the clip to adapt the furnace to rollers of different lengths.

In witness whereof I claim the foregoing as my invention, I hereunto append my signature, in the presence of two witnesses, at Chicago, Illinois, this 7th day of June, 1917.

FRANKLIN H. WOLEVER.

Witnesses:
W. L. HALL,
A. E. WALBRIDGE.

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