

W. A. L. KIRK.

Apparatus for Forming Molten Lead into Bars.

No. 157,994.

Patented Dec. 22, 1874.

Fig. 1.

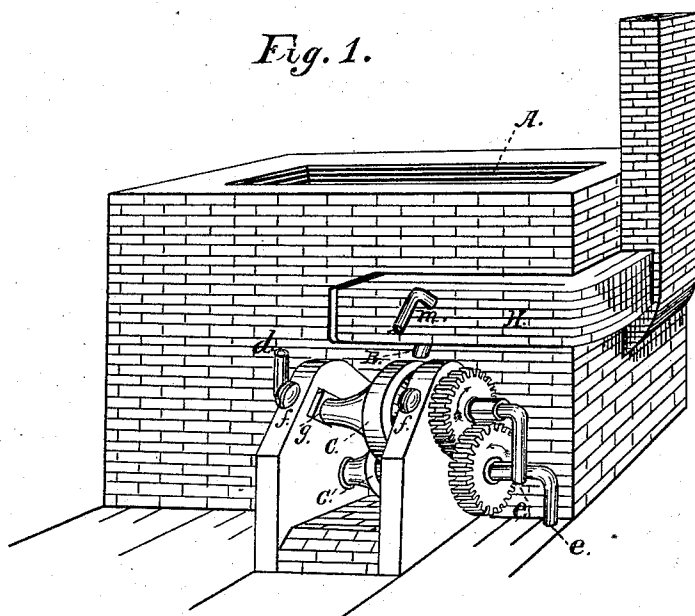
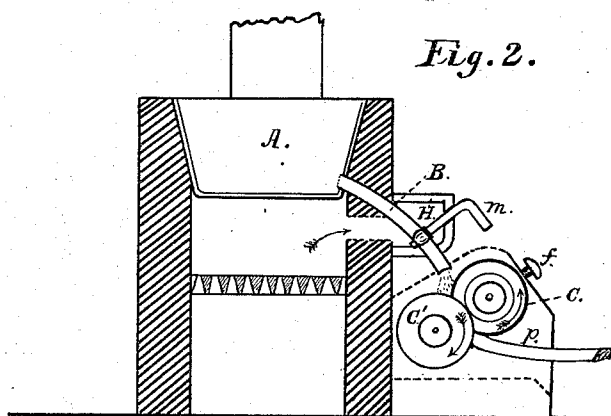


Fig. 2.



Witnesses;

P. Collins
Albert Rem

Inventor;

W. A. L. Kirk
by his Atty.
Peck & Co.

UNITED STATES PATENT OFFICE.

WILLIAM A. L. KIRK, OF HAMILTON, OHIO.

IMPROVEMENT IN APPARATUS FOR FORMING MOLTEN LEAD INTO BARS.

Specification forming part of Letters Patent No. **157,994**, dated December 22, 1874; application filed September 9, 1874.

To all whom it may concern:

Be it known that I, WM. A. L. KIRK, of Hamilton, State of Ohio, have invented a new and useful Improvement in Apparatus for Forming Molten Lead or other Soft Metals into Bars; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 represents a perspective view of my improved furnace and rolls. Fig. 2 is a cross-section of the same, showing the operating devices.

My invention has for its immediate object the manufacture of flat or square bars of lead or other metal, commonly made by casting into molds, and known as bar metal, with a view to subjecting them to other processes in order to make shot; and it consists, substantially, of a furnace provided with a caldron properly set, and having one or more pipes to convey the molten lead from the bottom of the caldron upon rolls of any desirable shape or size, situated in proper adjustable bearings at the side of the furnace.

In the accompanying drawings, A represents the caldron set above the fire-chamber, and having a pipe, B, leading from it, provided with a valve or stop-cock, *m*, to regulate the flow of the metal. It is a matter of great importance that the lead should not cool or congeal in its passage from the caldron to the rolls, and to prevent this I provide a side flue, H, leading to the chimney, and opening into the furnace just at the point where the pipe B is situated, in this manner keeping it incased and surrounded with heat. C C' represent the rolls, to be operated by gearing, and pro-

vided with suitable housings. The roll C is journaled in a sliding box, *g*, and is regulated by the set-screws *ff*. By this means the distance between the rolls can be regulated and varied at will to change the size of the bars. Both rolls are cast hollow, and are provided with suitable connections *d e* at each end, to allow a stream of cold water to pass through them continuously, the object of which is to prevent the metal adhering to the rolls on its passage between them.

An important feature of my invention is the drawing off the metal from the bottom of the caldron by means of the pipe B; for by this means the purest portion of the metal is obtained for the required work, while the impurities rise to the surface, and may be removed or reduced.

In the operation of my improved mechanism the molten metal flows from the mouth of the pipe B upon the roll C', where it hardens, and is carried between the rolls, issuing in the form of a bar, as seen at *p*, Fig. 2.

Having fully described my improved process, with the suitable mechanism, what I claim, and desire to secure by Letters Patent, is—

In apparatus for forming bars of lead or other metal preparatory to making shot, the side flue H, for heating the pipe B, in combination with the hollow rolls C C' and furnace provided with the caldron A, substantially as herein set forth and described.

Witness my hand this 24th day of August, A. D. 1874.

WM. A. L. KIRK.

Witnesses:

H. P. K. PECK,
RICHARD BROWN.