

G. BROOKE.
MOLD FOR CASTING INGOTS.

No. 568,511.

Patented Sept. 29, 1896.

Fig. 1.

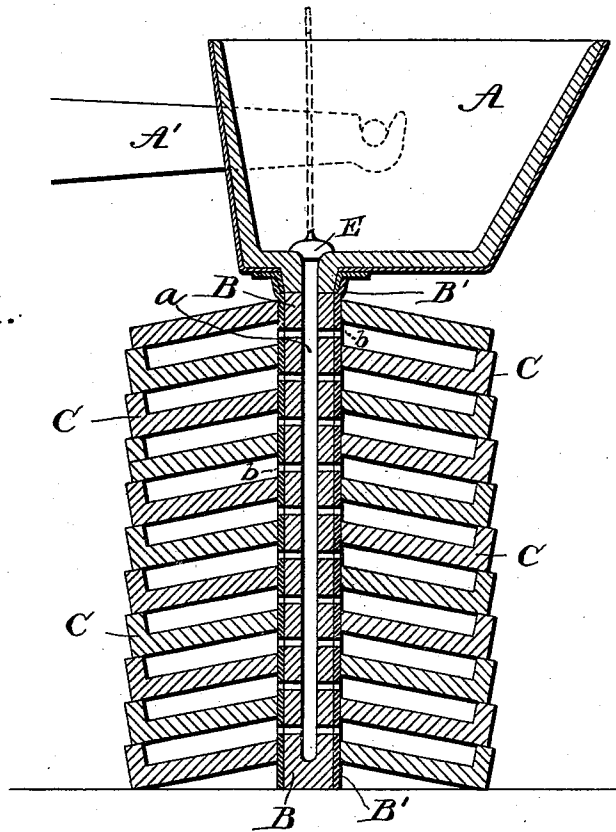
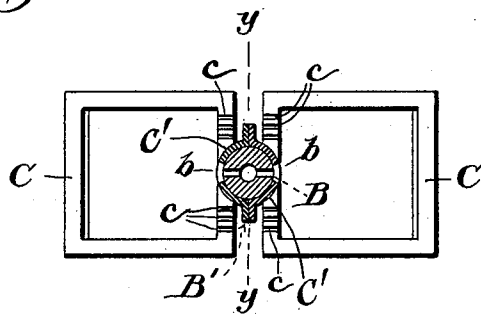


Fig. 2.



Witnesses.

E. F. Able
Wm. J. Lambert

Inventor.

George Brooke
By Thomas S. Mowley
his Attorney.

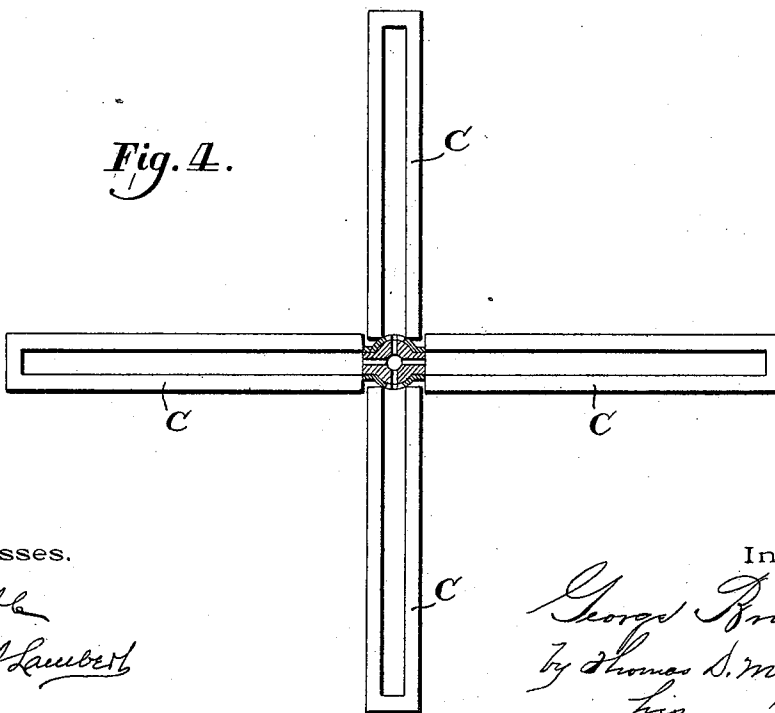
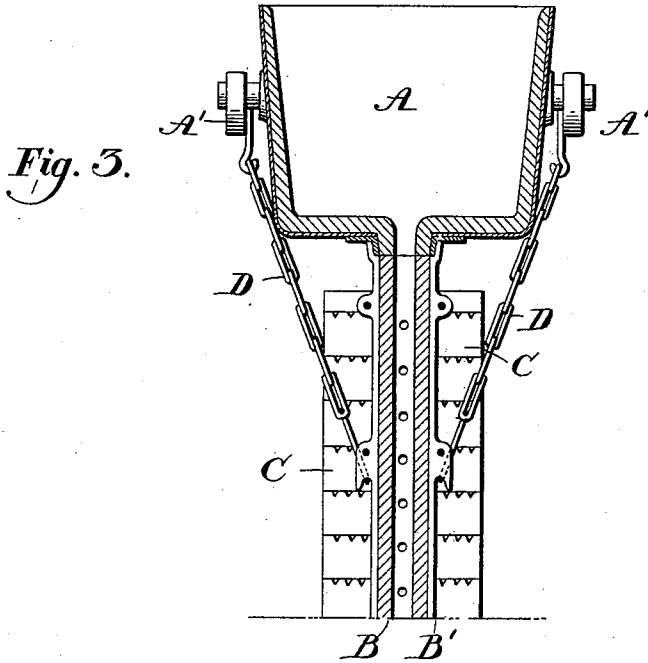
(No Model.)

2 Sheets—Sheet 2.

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Witnesses.

E. F. Allen
Max J. Lambert

Inventor.

George Brooke
by Thomas S. Nowlady
his

Attorney.

UNITED STATES PATENT OFFICE.

GEORGE BROOKE, OF BIRDSBOROUGH, PENNSYLVANIA.

MOLD FOR CASTING INGOTS.

SPECIFICATION forming part of Letters Patent No. 568,511, dated September 29, 1896.

Application filed November 22, 1895. Serial No. 569,812. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BROOKE, a citizen of the United States, residing at Birdsborough, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Molds for Casting Ingots; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to molds for casting small ingots of steel; and the improvement consists in the particular construction of each mold and the manner of arranging a series of molds and connecting them with the runner, through which the melted metal is poured; also, in the provision of means whereby the sprue or connection between the ingot and the runner may be easily broken off before the casting has been allowed to harden.

In the accompanying drawings, Figure 1 represents a vertical section of a series of molds in position under the ladle containing the liquid steel. Fig. 2 is a ground plan view of the molds. Fig. 3 is a vertical sectional view of the molds on line Y Y of Fig. 2, one of the sections being removed. Fig. 4 is a plan view of a modified form of molds.

A represents the ladle containing the metal. A' is the crane supporting the ladle. These parts of the device are of the ordinary construction.

B is the runner, into which the metal is poured from the ladle. This runner is made of any refractory material and has therein a channel *a*, extending from below the entrance to the bottom mold up to the top of the runner.

B' is an iron jacket surrounding the runner and holding the parts in position. This jacket is made in two semicircular sections secured together, as shown in Fig. 2.

C C are the molds, which are placed one above the other around the runner, preferably at an angle, as shown.

C' is a recess in one end of each mold, into which sets the runner when the said molds are in position for receiving the metal. These

molds may be of any convenient shape, and are preferably made open at the top, so that the bottom of one will serve as a cover for the mold underneath, a suitable air-vent being provided at the top of each mold.

b b are the channels, through which the metal flows from the runner B into the molds C C.

D D are two chains attached to the iron jacket B, surrounding the runner on opposite sides thereof. The upper ends of these chains are secured to the sides of the ladle-crane.

E is a removable stopper that closes the opening in the bottom of the ladle and is of the well-known construction used for this purpose.

c c are air-vents or V-shaped openings made in the highest point of the molds on each side of the recess C'.

The molds being arranged in the manner described, the operation of casting the ingots is as follows: The ladle, filled with melted steel is handled by the crane in the usual way and placed in such a position that the nozzle in the bottom of said ladle will fit into the cup-shaped top of the runner B. The stopper in the ladle is then withdrawn, when the steel will flow down the runner, filling the bottom mold first and after that in regular succession each succeeding mold. When all the molds are filled, the runner B is raised by a movement of the crane A, operating through the chains D D. This upward movement of the runner will completely sever all of the connections between the several ingots and the said runner before the metal has had a chance to harden. After the metal has cooled sufficiently the molds are removed from the runner, the ingots taken out, and the operation repeated.

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

1. In a device for casting ingots the combination of the crane or support A' and ladle A attached thereto, with a movable runner B having a channel *a* therein, a series of molds each connected directly with said runner by a channel *b*, and means for connecting said runner with said crane, as and for the purpose set forth.

2. In a device for casting ingots the combination of the crane or support A', a ladle and a stopper therefor, with a movable runner B, channel *a* therein, a series of molds each connected directly with said runner by a channel *b*, and chains connecting said runner with said crane, as and for the purpose set forth.

3. In a device for casting ingots the combination of the runner B, the channel *a* therein and the jacket B' surrounding said runner, with molds arranged around said runner one above the other, recesses C' in said molds fitting against said runner, and channels *b*, *b*, one of the channels *b*, *b*, connecting each mold directly with the vertical channel *a* in the runner, as set forth.

4. In a device for casting ingots the combination of the crane or support A', a suitable

ladle carried by said crane, with a movable runner B having a channel *a* therein, a series of molds C, C, recesses C' in said molds fitting against said runner, a channel *b* connecting each mold directly with the channel *a* in the runner, and means for connecting the crane and the movable runner, all constructed and arranged substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE BROOKE.

Witnesses:

THOMAS D. MOWLDS,
SAML. H. KIRKPATRICK.