G. Ross,

Molding & Casting Apparatus,

No. 53,883, Patented Apr. 10, 1866.

Fig: 1.

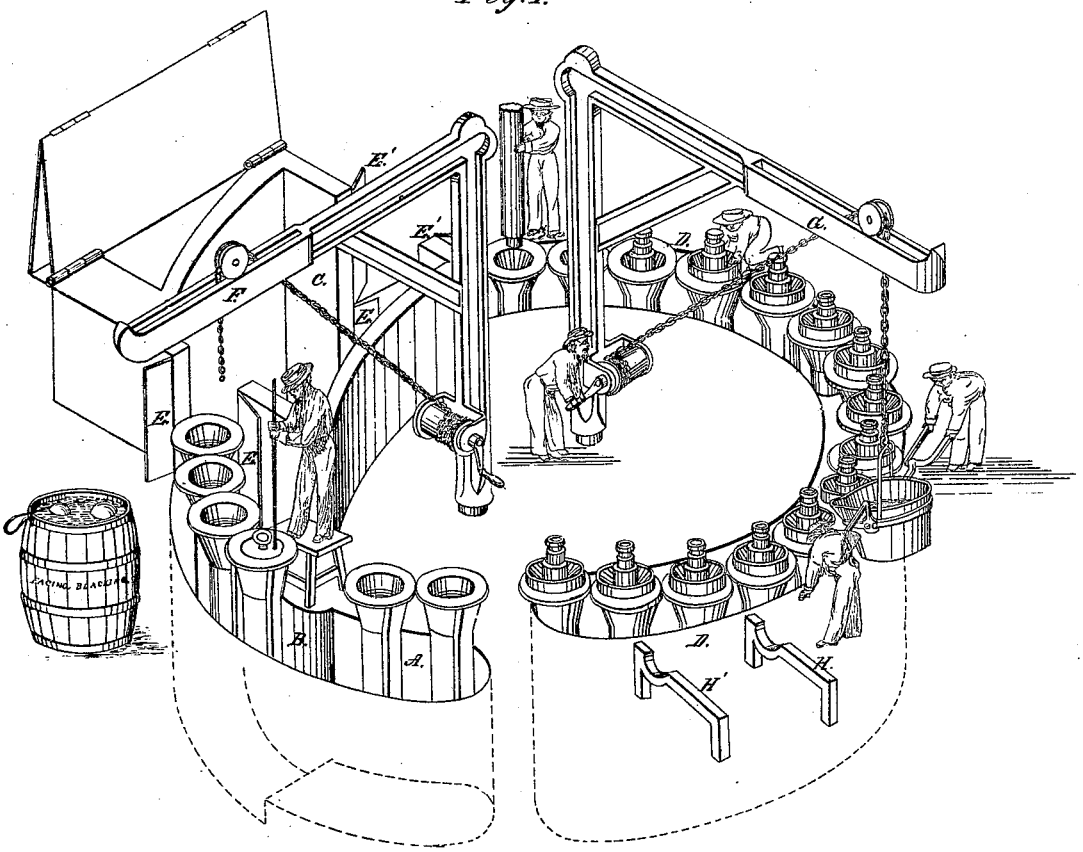
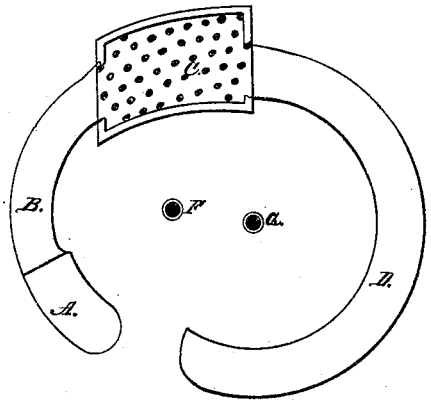


Fig: 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE ROSS, OF NEWPORT, KENTUCKY.

IMPROVED MOLDING AND CASTING APPARATUS.

Specification forming part of Letters Patent No. **53,883**, dated April 10, 1866; antedated October 18, 1865.

To all whom it may concern:

Be it known that I, GEORGE ROSS, of Newport, Campbell county, Kentucky, have invented a new and useful Pipe Molding and Casting Apparatus; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification.

My invention relates to an improved arrangement of the pit or trench and its appurtenances employed in casting pipes on the vertical method, whereby the several operations of clamping, molding, facing, drying, coring, casting, and stripping are enabled to be performed consecutively and without interference one with any other, the same resulting in a saving of time, space, and labor, and particularly of the more costly labor of the molders.

In pits of this class now and heretofore employed the drying portion or oven has had but one single outlet—namely, that communicating with the molding-pit, the latter connecting at its end most remote from the oven with the casting-pit. A conseqeuence of this arrangement has been that the molding-pit has had to do the double duty of a channel of communication between the casting-pit and the oven and of a molding-pit proper, the effect being either to throw the molders out of work whenever the casting-pit has had to be filled from the oven or to oblige them to assist in the operation of shifting, to which duty the lower paid caster is fully competent. A serious expenditure of time and labor is also incurred by the necessity of twice handling—with both cranes and two gangs of men—of every flask conveyed from the oven to the casting-pit or from the casting-pit to the oven.

A, B, C, and D are different portions of a pit or trench, having horizontally a form nearly identical with the letter **C**, A being the shallowest portion of the pit for receiving the empty flasks, B being the part next in order, as well as in shallowness, for molding, C being the oven for drying, and D being the longest and deepest portion, to receive the successive batches of dried molds for the operation of casting.

My oven C is provided with distinct and separate inlet and exit doors E and E′, communicating with the molding and casting pits respectively.

F is a crane by means of which freshly-clamped flasks are shifted from the receiving-pit A to the molding-pit B, and thence into the drying-oven C.

G is a crane by means of which the dried molds are swung around from the oven into the casting-pit D, and by which, after having received the metal, they are hoisted from the pit onto a pair of trestles or skids, H H′, on which the flasks are opened, stripped, and reclamped. The crane G is also used to return the flasks from the skids H H′ to the receiving-pit A.

A cove or hollow, *h*, in the upper edges of the skids prevents the flasks rolling off while being stripped.

The two cranes F and G and the oven C are so arranged relatively to one another as to be each and either of them capable of communicating with every part of the oven without interference, thus enabling the two gangs of operatives—molders and casters—to act independently and without detention of one another.

Operation: The flask, having been rammed and blocked in the usual manner for vertical casting, is conveyed by the crane G to its appointed place in the oven, to be followed by others in like manner until the oven is full. The oven is then closed, and, a fire being lighted in the furnace, the molds are dried in the customary manner. The exit-door E′ of the oven is then opened and the molds are, by means of the crane G, conveyed, one by one, into the pit D, to be properly gated and cast. In the act of casting the ladle is suspended and passed from flask to flask through the instrumentality of the crane G. The casting having been effected, the crane G is again brought into requisition to hoist the flasks, one at a time, onto the skids H H′, whence, after opening, stripping, and reclamping, the empty flasks are, by means of the same crane G, returned to the receiving-pit A, when the work proceeds as before. Thus the entire series of operations necessary for casting pipes on the vertical method are enabled to be performed in their natural order and in a continuous circuit without interference or detention.

The arrangement selected to illustrate my invention is one that has been satisfactorily tested by me in the foundry, and which I have now in active daily operation; but various

changes may obviously be made while retaining the essential feature of an oven having separate communications with the molding-pit and casting-pit. For example, an inferior modification retaining some of the more important advantages of my plan may have the form of the letter S, the two cranes in such arrangement being, of course, on opposite sides of the trench.

I claim herein as new and of my invention—

1. The vertical pipe-mold drying-oven herein described, arranged with separate and distinct communications with the molding and casting pits, as and for the purpose specified.

2. The described or equivalent consecutive arrangement of receiving-pit A, molding-pit B, oven C, and casting-pit D.

3. The combination of the two cranes F and G with the molding-pit B, oven C, and casting-pit D, arranged substantially as specified.

4. The skids H H′, arranged in the described combination with cranes F and G and continuous pit A B C D.

In testimony of which invention I hereunto set my hand.

GEORGE ROSS.

Witnesses:
GEO. H. KNIGHT,
JAMES H. LAYMAN.