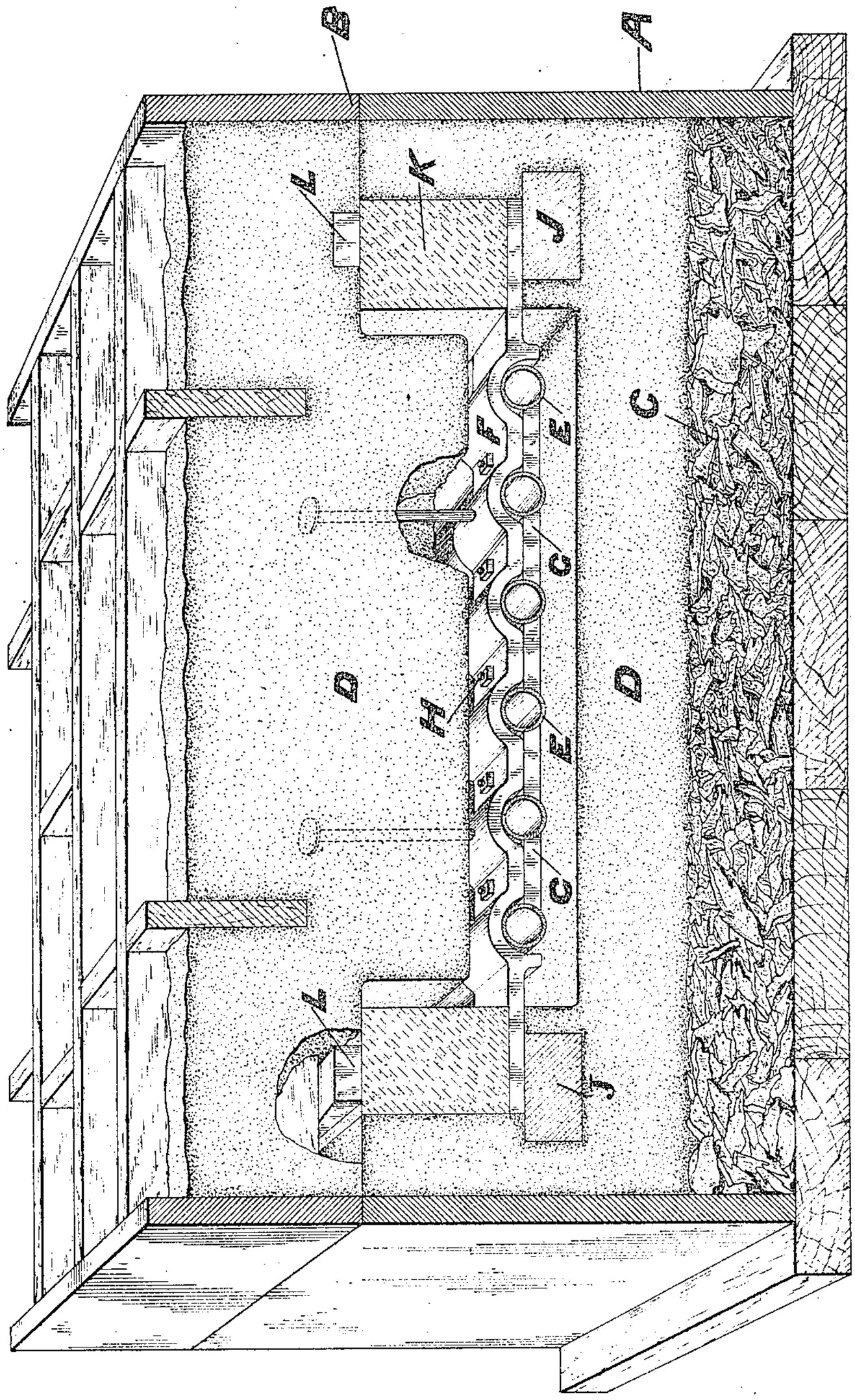
J. LAWSON.

APPARATUS FOR FORMING CASTINGS ABOUT PIPES.

APPLICATION FILED OCT. 25, 1909.

952,821. Patented Mar. 22, 1910.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN LAWSON, OF COPPER CLIFF, ONTARIO, CANADA, ASSIGNOR TO INTERNATIONAL NICKEL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

APPARATUS FOR FORMING CASTINGS ABOUT PIPES.

952,821. Specification of Letters Patent. **Patented Mar. 22, 1910.**

Application filed October 25, 1909. Serial No. 524,441.

To all whom it may concern:

Be it known that I, JOHN LAWSON, of Copper Cliff, Ontario, Canada, have invented a new and useful Apparatus for Forming Castings About Pipes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, in which the figure is a sectional perspective view showing one form of molding-flask arranged in accordance with my invention.

In the casting of pipes into metal bodies, such as cast iron, it has been found difficult to maintain the pipes in their proper position during the pouring and solidifying of the overlying metal; and this is especially difficult in the case of water jackets for furnaces where the thickness of metal overlying the pipes is relatively small. In such cases there is a strong tendency of the pipes to warp out of alinement, both vertically and horizontally; and also for the piping to float or rise in the mold cavity. These difficulties are overcome by my invention, which consists in an improved holding system for retaining the pipes in position during the casting operation.

In the drawing, A represents the drag, and B the cope of the molding flask.

C is a coke bed, which I preferably form on the bottom part within the drag, above which sand is filled in the ordinary manner.

The molding cavity may be formed in any usual or desirable way, and within the drag I preferably embed bricks J, beyond the ends of the molding cavity and arranged to form firm supports for the ends of the clamping bar F. Core blocks K are positioned in the drag over the ends of the clamping bar, these being held in place preferably by wedges L, which are driven in between the core blocks and the cross-framing of the cope.

E, E are the pipes to be inclosed in the casting, these being held within recessed or corrugated portions of the clamping bars by means of bolts H, which engage the wedge-shaped cast iron clips G fitting between the pipes on their under side and preferably curved at their ends to fit the pipes. The bars F are spaced apart any desired distance, and are used to any desirable number, depending on the work in hand. Their width and thickness may also be varied in accordance with the particular case.

When the parts are assembled, it will be noted that the pipes are securely clamped at intervals throughout their length, to prevent warping and to hold them rigidly in proper position within the casting. The clamping bars are securely held between the blocks or bricks J, and the core blocks K beyond the mold cavity; and the bars F and clips G are cast into the cooler or casting. When the casting is removed, the ends of the bar F which project beyond the mold cavity may be broken off.

My invention is not limited to any particular form of casting, since it is obviously applicable to widely different forms in which pipes and the like are to be embedded.

Many changes may be made in the form and size of the clamping bars, and the means for holding the pipes thereto, as well as in the means for anchoring the clamping bars in place, without departing from my invention.

I claim:—

1. A molded mold having a mold cavity, a clamping bar extending through the mold cavity, means for anchoring the ends of said bar in the body portion of the molded mold, and means for securing a pipe or the like to said bar, a portion of said bar with the pipe to be permanently embedded in the cast article, substantially as described.

2. In a mold for forming a casting having pipes or the like embedded therein, a clamping bar extending across the mold cavity and anchored at its ends, said bar having seats to receive the pipes, and means for securing the pipes firmly in said seats, a portion at least of the bar and the securing means being arranged to be permanently embedded in the formed casting with the pipes, substantially as described.

3. In a mold for forming a casting having pipes or the like embedded therein, a plurality of clamping bars extending across the mold cavity and spaced from each other, and clips for securing the pipes to the bar, said clips and a portion at least of the bar being arranged to be permanently embedded in the formed casting, substantially as described.

4. In a mold for forming a casting having pipes or the like embedded therein, a

clamping bar extending across the mold cavity with its ends extending into the mold body, said bars having seats for the pipes, means for securing the pipes in said seats, and blocks between which the ends of said bar are secured, substantially as described.

5. In a mold for forming a casting having pipes or the like embedded therein, a clamping bar extending across the mold cavity, means for anchoring the ends of said bar in the mold material at opposite sides of the mold cavity, said bar having a series of pipe-seating recesses therein, and clips secured to the said bar and holding the pipes in said recesses, substantially as described.

6. In a mold for forming a casting having pipes or the like embedded therein, a clamping bar extending across the mold cavity and having a plurality of pipe-seating recesses therein, and means for securing the pipes to be embedded in the casting in said recesses, the end portion of the bar extending into the mold-forming material at each side of the mold cavity, blocks upon which the end portions of the bar are supported, core blocks forming a part of the walls of the mold cavity, and means for clamping said blocks against the end portions of the bar, substantially as described.

In testimony whereof, I have hereunto set my hand.

JOHN LAWSON.

Witnesses:
G. E. SILVESTER,
F. C. KIMMERLY.