(No Model.) 2 Sheets—Sheet 1.

W. A. PALMER.

APPARATUS FOR MOLDING PIPES.

No. 414,569. Patented Nov. 5, 1889.

Fig 1

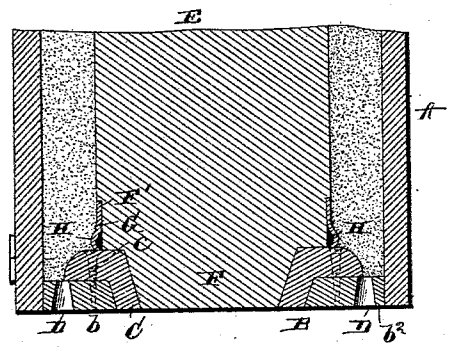


Fig 2

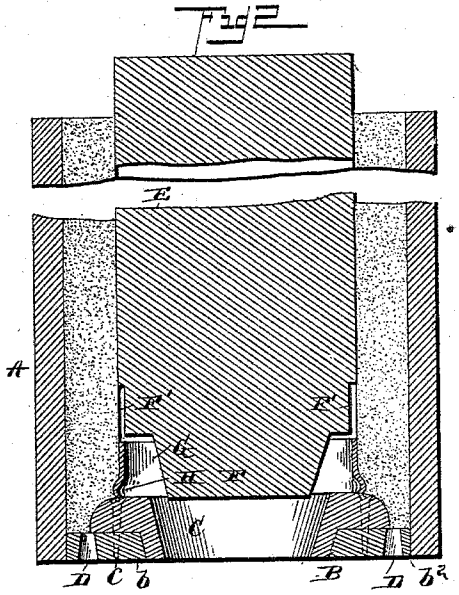


Fig 3

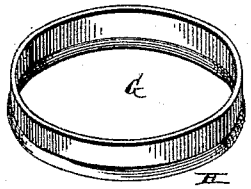


Fig 4

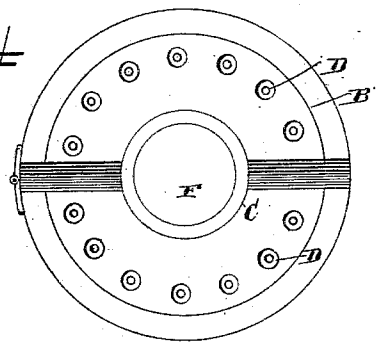


Fig 5

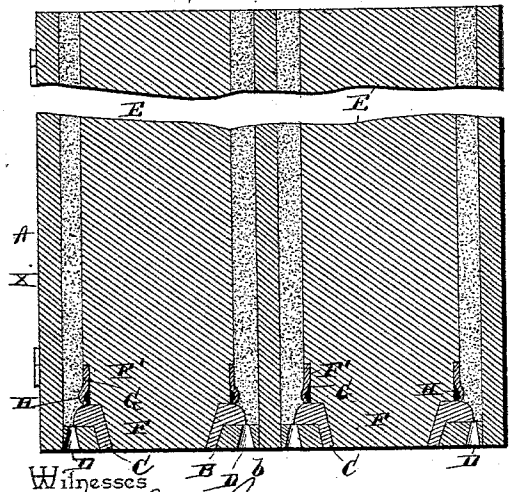
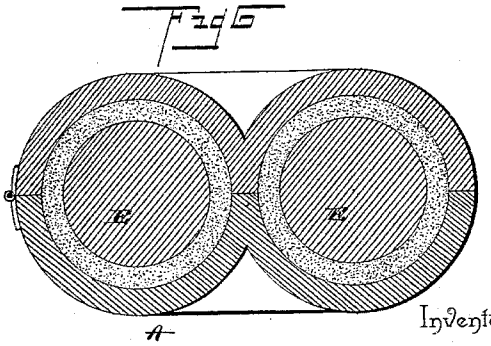


Fig 6



Witnesses

John Imirie.

Wm. Bagger.

Inventor

William A. Palmer

By his Attorneys,

C. A. Snow & Co.

N. PETERS, Photo-Lithographer, Washington, D. C.

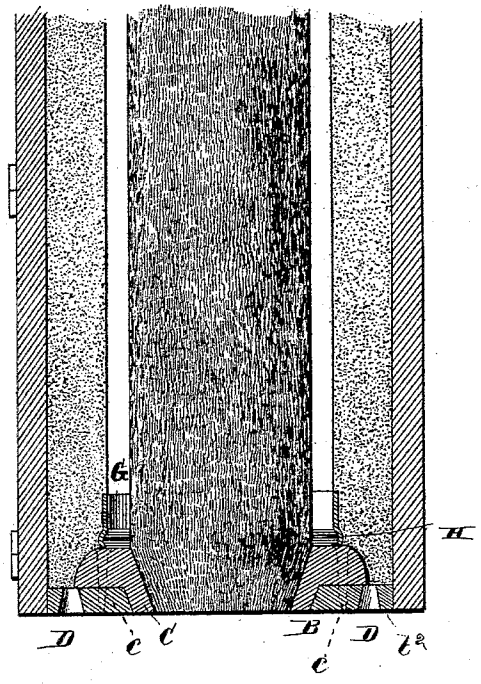
(No Model.) 2 Sheets—Sheet 2.

W. A. PALMER.

APPARATUS FOR MOLDING PIPES.

No. 414,569. Patented Nov. 5, 1889.

Fig. 7.



Witnesses,
John Smirie
Wm. Bagger

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William A. Palmer
By his Attorneys,
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UNITED STATES PATENT OFFICE.

WILLIAM A. PALMER, OF ANNISTON, ALABAMA.

APPARATUS FOR MOLDING PIPES.

SPECIFICATION forming part of Letters Patent No. 414,569, dated November 5, 1889.

Application filed May 25, 1889. Serial No. 312,040. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. PALMER, a citizen of the United States, residing at Anniston, in the county of Calhoun and State of Alabama, have invented a new and useful Apparatus for Molding Pipes, of which the following is a specification.

This invention relates to apparatus for molding pipes, and is an improvement on the device for which Letters Patent of the United States No. 396,506 were granted to myself on the 22d day of January, 1889. The said patent relates to an improvement in molding that class of cast-iron pipes which are provided at their small ends with an annular bead adapted to enter the bell-shaped mouth of the next adjoining pipe-section; and it consists in the combination, with the pattern, of a resilient metallic ring adapted to form the annular bead in the mold and to be withdrawn with the pattern when the latter is withdrawn from the mold.

My present improvement consists, primarily, in substituting for the said resilient ring an annularly-beaded ring adapted to be left in and to form a part of the mold when the pattern is withdrawn from the latter, thus absolutely preventing the possibility of any injury to the mold in the act of withdrawing the pattern from the same, which might sometimes be caused in case the resilient ring should fail to contract closely upon the pattern.

My present invention further consists in certain improvements in the chill-plate, which I propose to construct in two sections connected by a hinge in the same manner as the flask, and one of the sections of which is provided with a detachable core-print seat, which, when worn out, may be easily renewed at a trifling expense, thereby saving the expense of an entire new shell-plate, all as will be hereinafter more fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical sectional view of a pipe-molding apparatus embodying my improvements, taken on line *z z* in Fig. 4. Fig. 2 is a vertical sectional view showing the pattern partially removed from the mold, taken on line Z Z in Fig. 4. Fig. 3 is a perspective view of the annularly-beaded ring used in connection with my invention. Fig. 4 is a bottom view of the device. Fig. 5 is a vertical sectional view showing my invention applied to a double mold. Fig. 6 is a horizontal sectional view taken on the line *x x* of Fig. 5. Fig. 7 is a vertical sectional view showing the mold ready for pouring.

The same letters refer to the same parts in all the figures.

A designates the mold or flask, the bottom of which B is annular or ring-shaped and divided vertically into two sections b b^2, which are secured permanently in the lower ends of the corresponding sections of the flask, which are hinged together in the usual manner.

C designates the annular chill-plate, which also forms the core-seat, and which is secured detachably to one of the bottom sections b^2 by means of screws or bolts *c*, and which, when the flask is closed, fits neatly between and upon the sections of the bottom. The latter is provided with a series of conical openings D D, which, when the device is placed in the furnace for the purpose of drying the mold, will admit of the heat circulating more freely through the sand of which the mold is composed, thereby causing the same to be dried more rapidly than would otherwise be the case.

E designates the pattern core-print, the lower end of which is provided with the centering-plug F, adapted to enter the annular seat-ring C, thereby centering the core-print of the pattern in the flask. The lower end of the pattern is provided with an annular rabbet F′, of suitable depth to form a seat for an annular beaded ring G, constructed of sheet metal or other suitable material, and the outer side of which, when it is placed in position upon the pattern, is flush with the outer side of the latter. The bead H upon the ring G may be formed in any suitable manner by stamping or rolling, and the said ring may be constructed of ordinary sheet-tin in an exceedingly simple and inexpensive manner.

The operation of my invention is as follows: The beaded ring having been adjusted upon the lower rabbeted end of the pattern, the latter is placed in position in the flask, and the earth or sand is then tamped in the usual manner in the latter. When this has been done, the pattern is withdrawn from the flask and the ring G will be retained in the mold by rea-

son of the bead H engaging the superincumbent sand or earth. The casting is now proceeded with in the usual manner, the beaded ring G forming a part of the mold. When the casting is completed, the beaded ring may, as a general thing, be easily peeled off the casting; but if this cannot be successfully done it may remain upon the casting without injury to the latter.

Owing to the construction of the bottom plate in two hinged sections, as herein described, the casting may be removed from the mold in a much more convenient manner than has heretofore been the case when it has been necessary to remove the bottom plate bodily from the mold before the casting could be removed. Those skilled in the art to which my invention appertains will also appreciate the advantages derived from the construction of the separable bottom plate with the detachable chill-plate or core-seat, inasmuch as the latter, when worn out, may be renewed very easily and at a trifling expense compared to that of an entire new chill-plate.

Having thus described my invention, I claim—

1. In an apparatus for molding pipes, the combination, with the hinged flask having a vertically-divided bottom, of an annular chill-plate and core-seat secured detachably to one of the sections of the bottom, substantially as set forth.

2. In an apparatus for molding pipes, the hinged flask having a vertically-divided annular bottom, the parts or sections of which are provided with conical perforations, in combination with the annular chill-plate and core-seat secured detachably to one of the sections of the bottom, substantially as set forth.

3. In an apparatus for molding pipes, the combination of the hinged flask having the annular vertically-divided bottom, the sections of which are secured permanently to the sections of the flask, the annular chill-plate and core-seat secured detachably to one of the sections of the bottom, and a solid annularly-beaded ring adapted to be mounted detachably upon the rabbeted end of the core-pattern and to be left in and form part of the mold when the pattern is withdrawn from the latter, substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM A. PALMER.

Witnesses:
ADOLPH GOETTER,
CHARLES D. CLARKE.