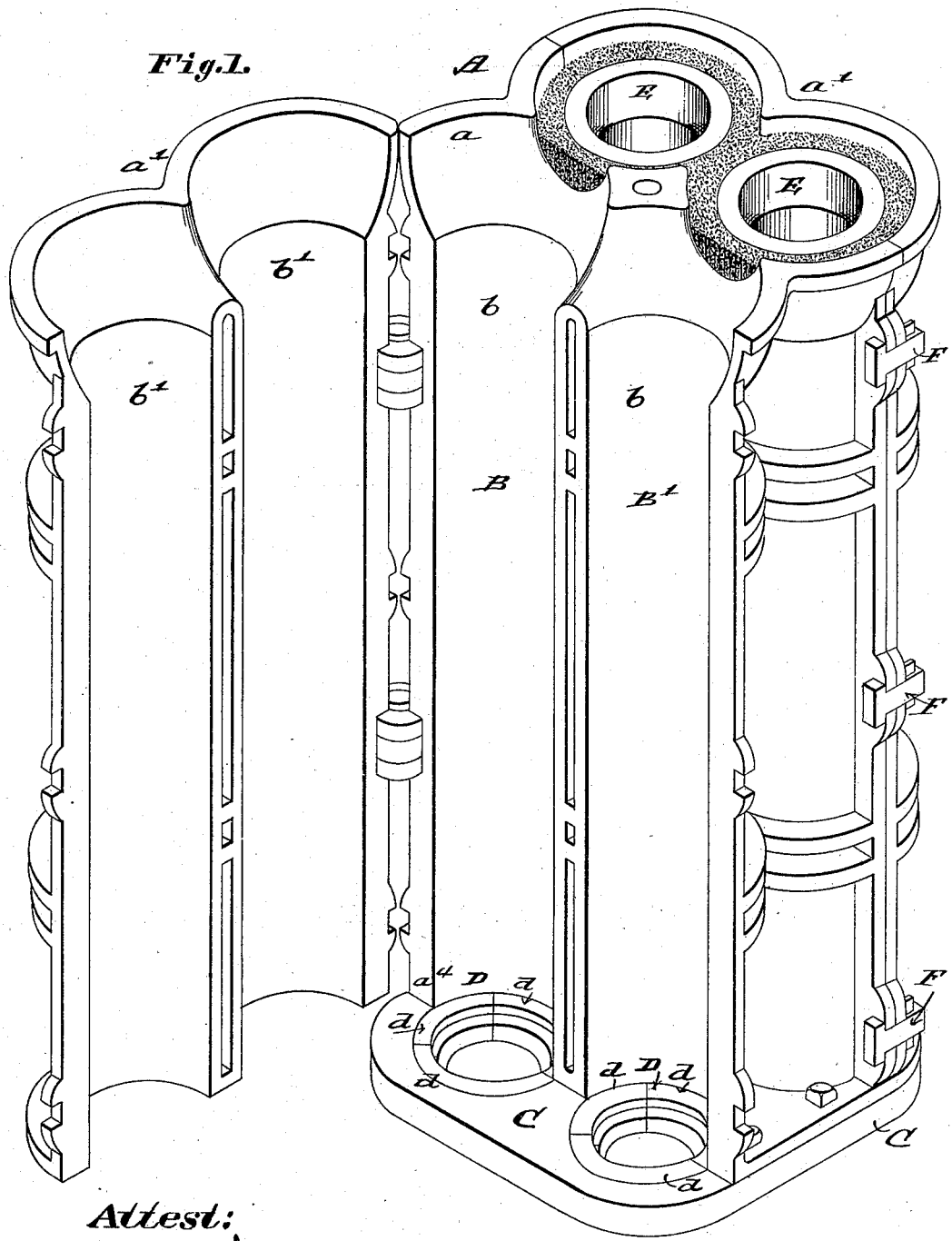
(No Model.) 4 Sheets—Sheet 1.

F. SHICKLE.

PIPE MOLDING APPARATUS.

No. 261,960. Patented Aug. 1, 1882.

Fig. 1.



Attest:

W. A. Sanford

Fred'k Lear

Inventor:

Frederick Shickle

by C. D. Woody atty

(No Model.) 4 Sheets—Sheet 2.

F. SHICKLE.

PIPE MOLDING APPARATUS.

No. 261,960. Patented Aug. 1, 1882.

Fig. 2.

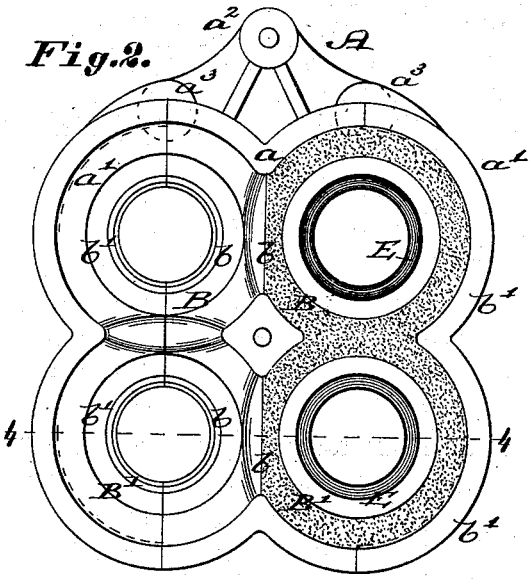


Fig. 3.

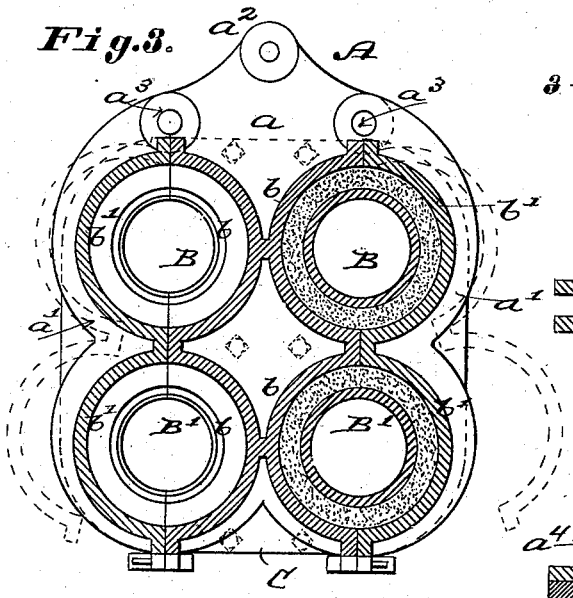
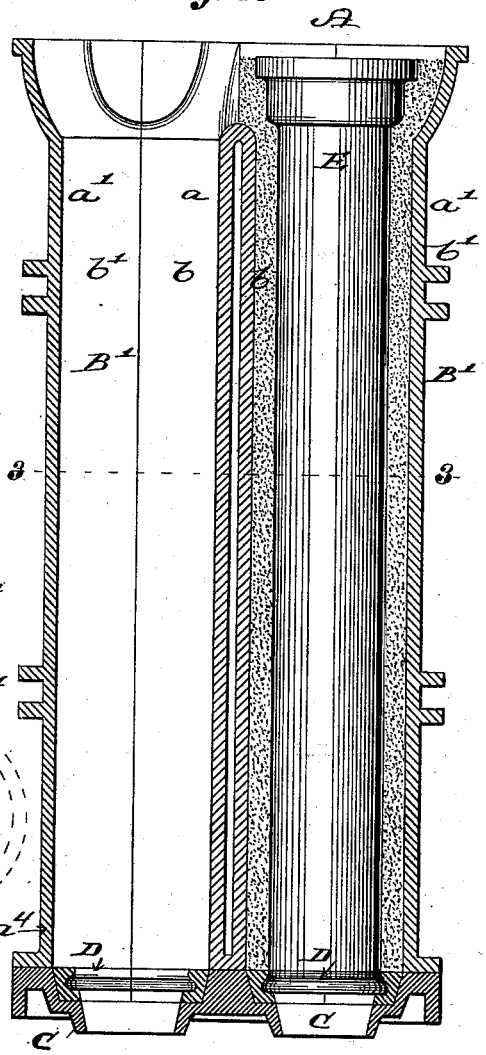


Fig. 4.



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(No Model.) 4 Sheets—Sheet 3.

F. SHICKLE.

PIPE MOLDING APPARATUS.

No. 261,960. Patented Aug. 1, 1882.

Fig. 5.

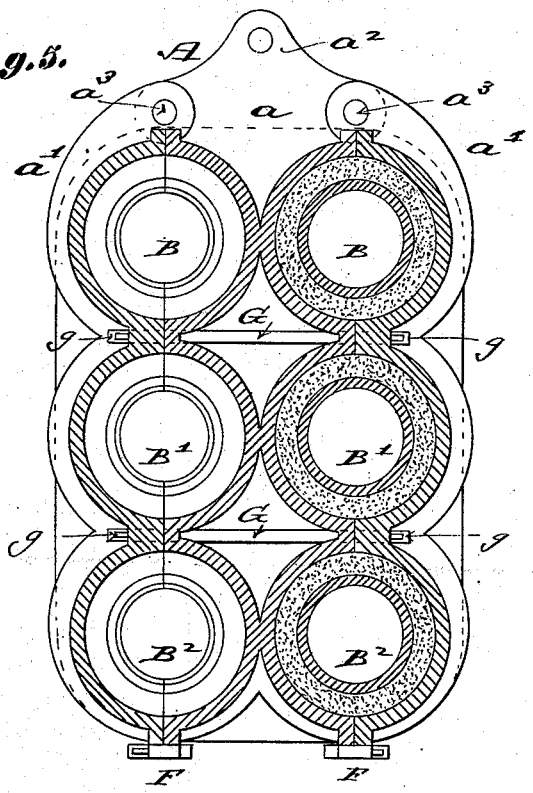
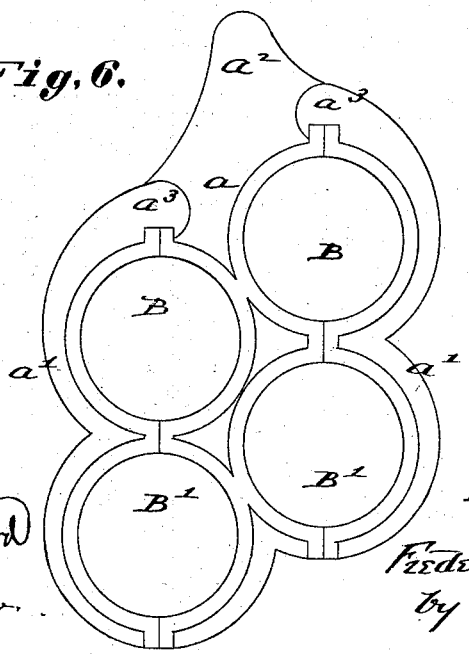


Fig. 6.



Attest:

J. W. Crawford

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No Model.)

4 Sheets—Sheet 4.

F. SHICKLE.

PIPE MOLDING APPARATUS.

No. 261,960. Patented Aug. 1, 1882.

Fig. 7.

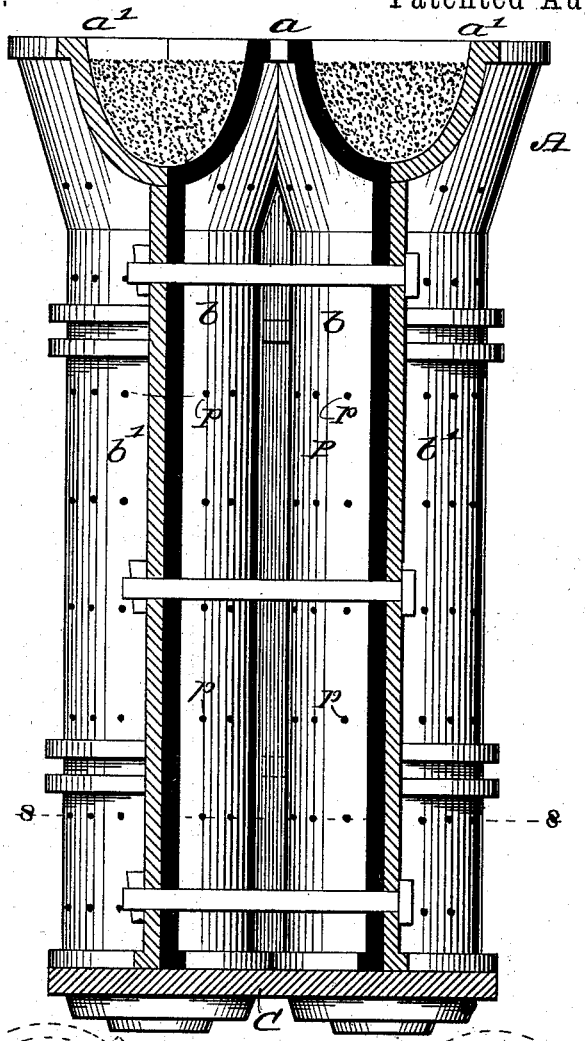
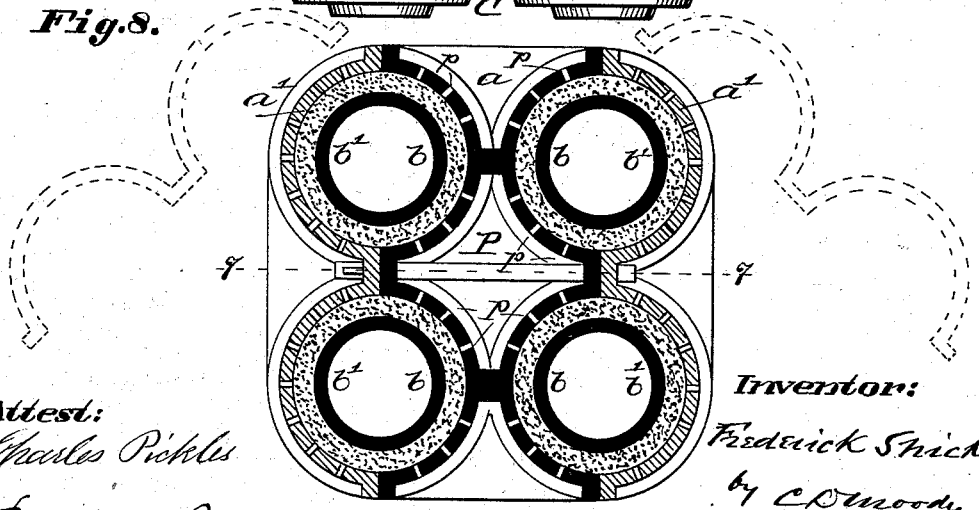


Fig. 8.



Attest:
Charles Pickles
Emil S. Boyd

Inventor:
Frederick Shickle
by C. D. Moody
Atty

UNITED STATES PATENT OFFICE.

FREDERICK SHICKLE, OF ST. LOUIS, MISSOURI.

PIPE-MOLDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 261,960, dated August 1, 1882.

Application filed March 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK SHICKLE, of St. Louis, Missouri, have made a new and useful Improvement in Apparatus for Molding Pipes and other Long Heavy Castings, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a view in perspective of the improvement, the flask being opened, and in two of the compartments the sand and pipes being shown; Fig. 2, a plan, two of the compartments being filled; Fig. 3, a horizontal section taken on the line 3 3 of Fig. 4. Fig. 4, a vertical section taken on the line 4 4 of Fig. 2; Fig. 5, a section similar to that of Fig. 3, but showing additional compartments; Fig. 6, another horizontal section, illustrating a modification in the relative arrangement of the compartments of the flask; Fig. 7, a vertical section taken on the line 7 7 of Fig. 8; and Fig. 8, a horizontal section taken on the line 8 8 of Fig. 7.

The same letters denote the same parts.

The present invention is an improved flask for casting two, four, six, or more pipes or other long heavy castings at a single casting operation.

The improved flask consists mainly of three parts—a central one, that is attached to the pit-wall and shaped to form one, two, or more pairs of drags, the drags of each pair being placed back to back, and the other parts of the flask being hinged to the central one at each side thereof, respectively, and forming the copes to the drags of the central part.

A, Figs. 1, 2, 3, 4, represent an approved form of the flask in question, having the central part, *a*, and the two side parts, *a' a'*, the part *a* being furnished with suitable brackets—such as a^2—for attaching the flask to the pit-wall, and the parts *a' a'* being hinged at a^3 a^3 to the central part, *a*. As shown in the figures named, the flask is made to form two pairs, B B and B' B', of molding-compartments, the central part, *a*, forming the drags *b b b b*, and the outer parts, *a' a'*, the copes *b' b' b' b'*, of the various molds.

The pit-wall is not shown, as its construction is well understood, and being similar to that shown in patents previously granted me—for instance, No. 209,139. The flasks are also, so far as the details thereof are concerned, mainly as shown in the patent named.

The flask-bottom C can be connected with the flask-body in any desirable manner, the bottom either being entirely removable from the remainder of the construction, hinged to the flask-body so as to drop downward therefrom, made in sections or in a single piece, or it may be as shown in the drawings—that is, the bottom C is permanently connected with the central part, *a*, and when the parts *a' a'* are opened away from the part *a*, as shown in Fig. 1 and indicated by the broken lines in Fig. 3, the bottom projects laterally from the central part, as shown in Fig. 1.

The chill or bead ring D is made in sections *d d*, two or more, and the shell a^4 of the flask does not preferably project or come directly over the chill-ring, enabling the pipe E, with the inner section of the ring, to be drawn directly upward in the flask.

It is evident that a flask constructed upon the present plan can have one, two, three, or more pairs of molding-compartments. In Fig. 5 a flask having three pairs, B B B' B' B^2 B^2, is shown. In such cases, or even when only two pairs are used, it is desirable, in addition to the outside fastenings, F F, to have tie-bolts G G passed laterally through the flask and fastened by suitable keys, *f f*.

The molding-compartments B B' B B' need not be in all cases exactly opposite each other, but may be arranged as shown, for instance, in Fig. 6. Nor is it necessary for the drags of the various pairs to come close together at their backs. On the other hand, the drags on one side of the part *a* must not come solidly and continuously against the drags on the opposite side of the part *a*; but a space, P, or spaces must be left, as shown, to provide for venting the gases from the sand of the drags, for the present flask involves the use of sand, and the gases therefrom in casting could not pass off unless a space or spaces in the interior of the part *a* were provided to receive the gases. The latter issue through the many small perforations *p p p* in the shell of the flask, passing into the space described in the interior of the part *a*, and thence to the outer air.

I claim—

1. The combination, in a flask where sand or clay is used for molding pipes and other castings, of the central part, *a*, and the side parts, *a' a'*, said central part, *a*, having between the drags a space or spaces, for the purpose described.

2. The combination, in a flask where sand or clay is used, of the part *a*, the parts *a' a'*, and the bottom C *a*, having between the drags therein a space or spaces for venting the gases from the drags, substantially as described.

FREDERICK SHICKLE.

Witnesses:

C. D. MOODY,

CHARLES PICKLES.