

No. 678,976.

Patented July 23, 1901.

J. C. REED.
FLASK FOR MOLDING.

(Application filed Sept. 18, 1899. Renewed Dec. 26, 1900.)

(No Model.)

2 Sheets—Sheet 1.

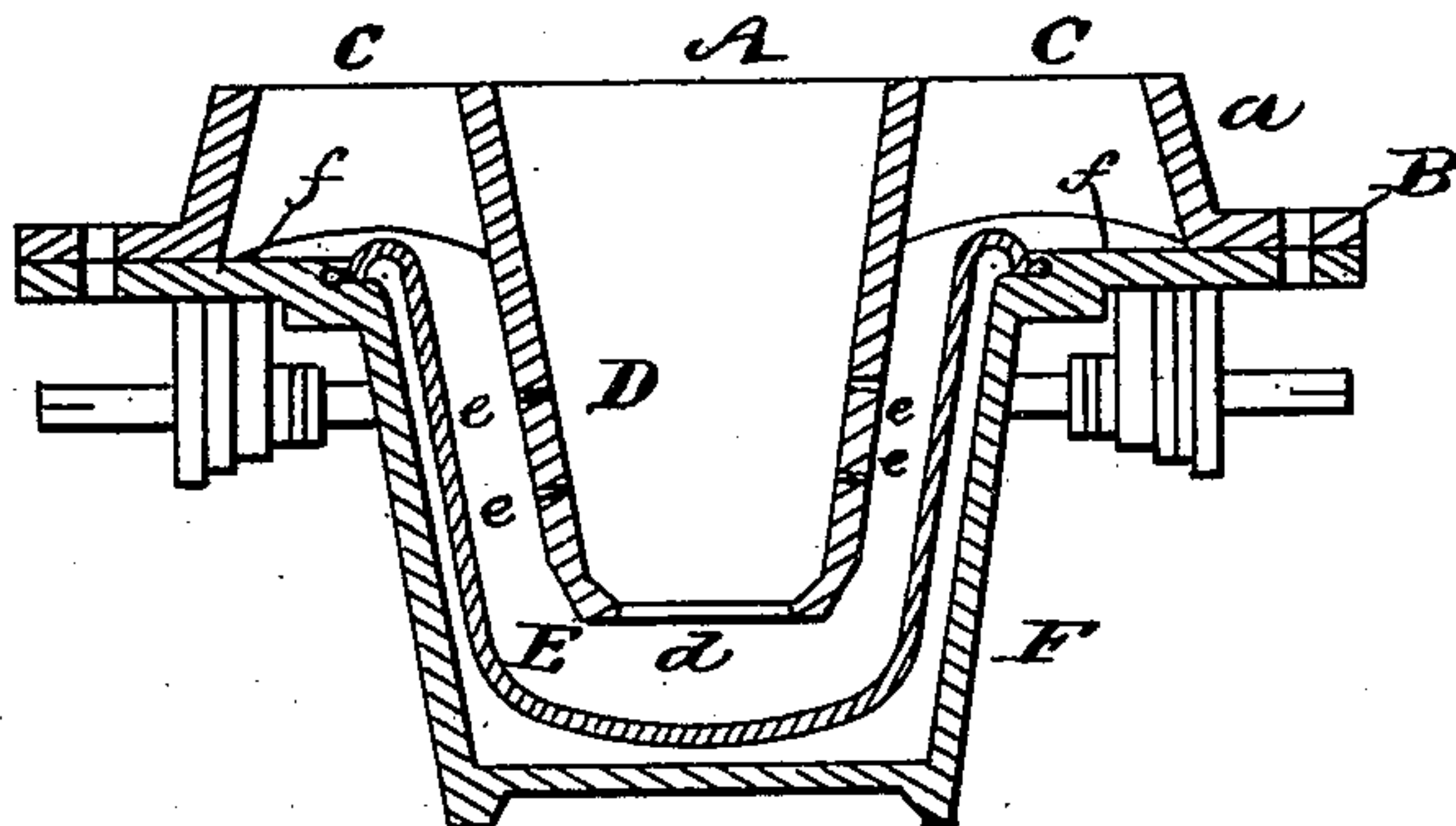


Fig. 1

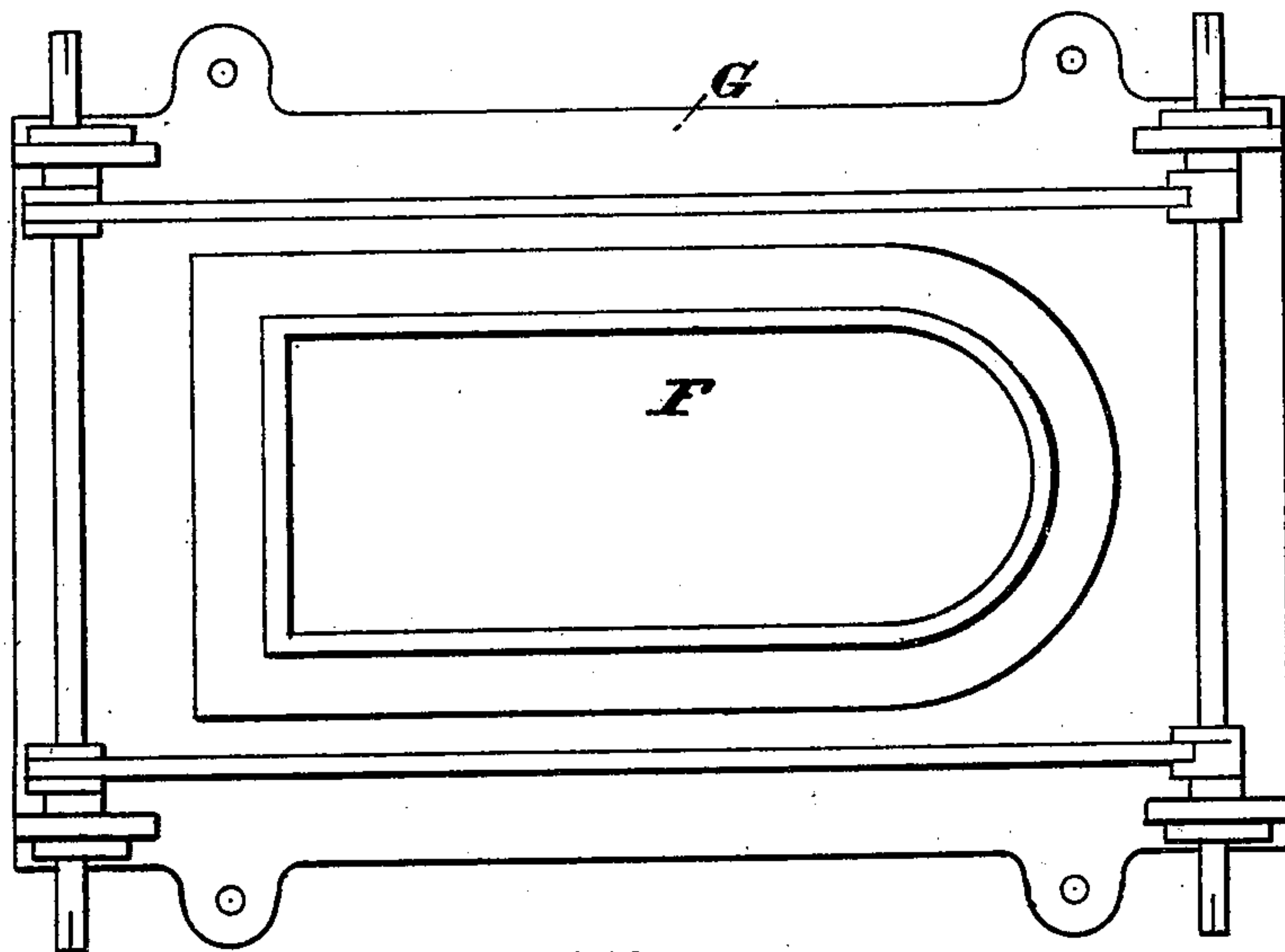


Fig. 2

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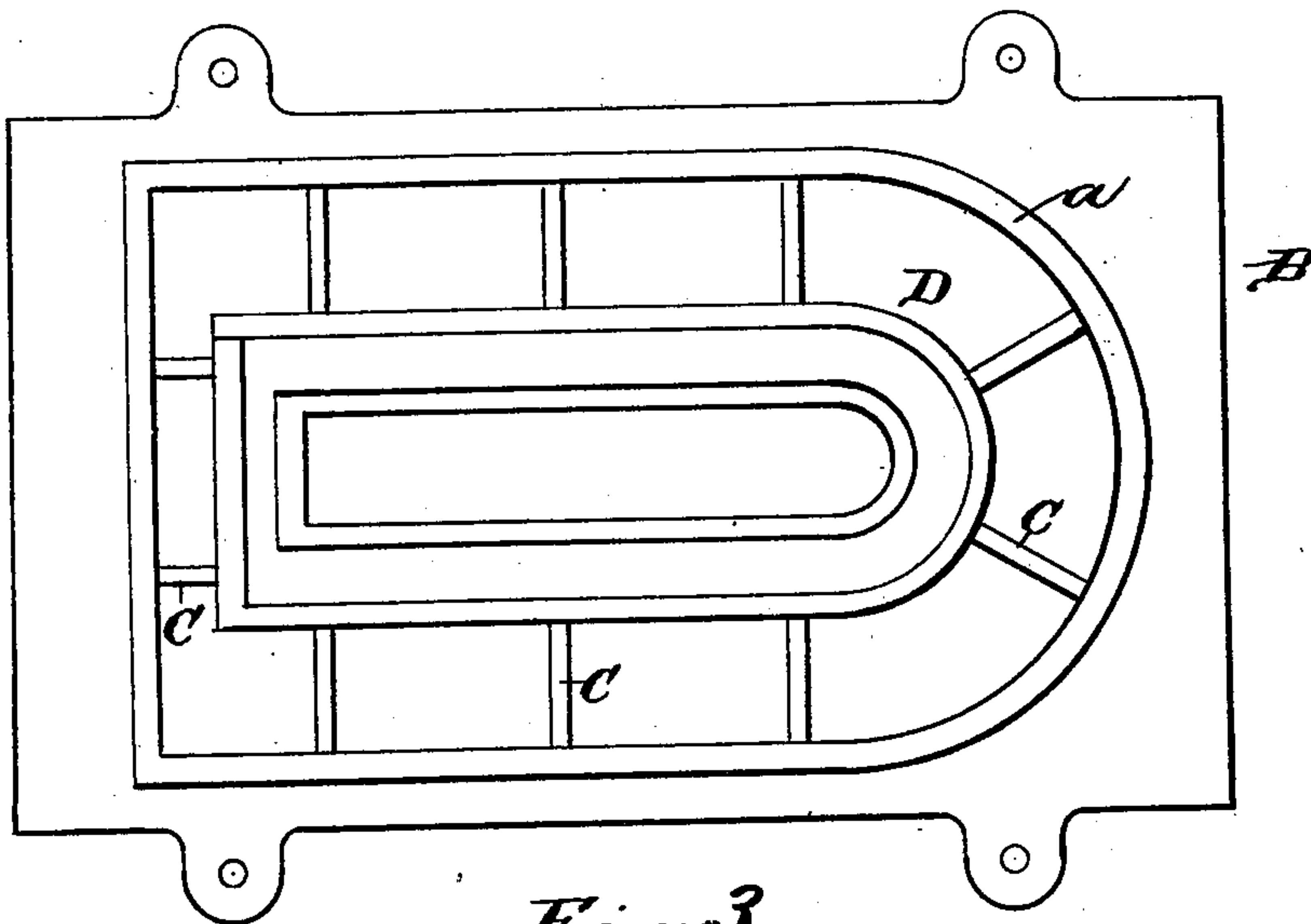


Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN C. REED, OF ALLEGHENY, PENNSYLVANIA.

FLASK FOR MOLDING.

SPECIFICATION forming part of Letters Patent No. 678,976, dated July 23, 1901.

Application filed September 18, 1899. Renewed December 26, 1900. Serial No. 41,092. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. REED, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Flasks for Molding; and I do hereby 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.

My invention has relation to molding apparatus, and particularly to apparatus for molding hollow ware of comparatively large dimensions, such as bath-tubs.

My invention relates more particularly to molding apparatus for forming the nowel or drag part of a complete mold, and has for its object the provision of novel means for forming the nowel part of a mold and for dispensing with the bottom board, which is ordinarily used in connection with molds of the ordinary character.

My invention consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 is a vertical transverse sectional view of the nowel part of a mold embodying my improvements. Fig. 2 is a top view of the same. Fig. 3 is a top view of the nowel or drag part of a flask constructed according to my invention.

In carrying my invention into effect I entirely dispense with the bottom board, which is always used in connection with the molds of the ordinary description, and I employ a casting of suitable configuration which not only serves as a substitute for the bottom board, but also constitutes the nowel or drag of the flask portion of a mold.

In the drawings, A designates a nowel of a contour corresponding to the article which is to be made and which in the present instance is a bath-tub. The exterior contour of the nowel A does not necessarily correspond exactly to the contour of the article to be cast, and in the drawings where the mold which is to be formed is adapted to produce a bath-tub having rounded ends the nowel A is in the form of a parallelogram. I have shown the nowel A in the position in which it is placed when the sand is being packed into

the pattern, and I wish it to be understood that when the pattern is removed from the sand the nowel A will be in a reversed position. The nowel A is composed of the outer wall *a*, which converges toward the center, the horizontal flange B, the vertical webs C C, and the hollow part D. The part D corresponds in configuration to the shape of the article to be cast and converges toward its lower end *d* and is liberally perforated, as shown at *ee*, for the escape of steam and gases from the sand.

E designates the pattern for the nowel or drag part of the mold, and this pattern is of such size and shape that the exterior surface of the sand mold formed within it will correspond to the interior surface of the article which is to be cast in the mold.

F designates the follow-board within which the pattern E is secured, said follow-board conforming in its general shape to the shape of the pattern E and having a horizontal flange G, corresponding to and adapted to support the flange B of the nowel A.

The pattern E, which is adapted for the formation of a sand mold that will in turn produce a casting of a bath-tub having a rounded rim, is so placed in the follow-board that the rounded rim of the pattern will project slightly above the flat surface *f* of the follow-board, and there is a space between the wall *a* of the nowel A and the rim part of the pattern E, which in the completed mold constitutes the parting.

Operation: The parts being constructed as described and placed in the position shown in Fig. 1 of the drawings, a quantity of sand being first thrown into the pattern E and the nowel A being lowered into position, so that the tapering part D will sink into the sand in the pattern and the flange B will rest upon the flange G, sand is now thrown into the pattern, between the pattern and the part D, and packed down and rammed in the usual manner, the sand within the portion D being packed down to about a level of the lower end *d* of the part D and the sand between the wall *a* of the nowel and the part D being packed quite up to the level of the top of the same and around the webs C C. The mold is now reversed in position, so that the follow-board F is uppermost. The follow-board

is then removed and the mold completed in the usual manner.

The advantages of my novel nowel are that the elimination of a bottom board for the mold, which in the case of castings of size and magnitude, such as bath-tubs, are extremely heavy, subject to damage in use requiring frequent replacement and very expensive.

The peculiar construction of the nowel below the parting-line forms a wedge of the sand when properly rammed into it, which resists the flow and pressure of the metal when the mold is filled. The open bottom of the part D of the nowel affords an opportunity to the operator to ram or compact the sand to a sufficient density to form a perfect mold and at the same time by reason of the shape of the nowel at that point forms an arch of sand of sufficient strength to resist the flow and pressure of the metal which it is required to support.

The nowel when filled with sand is self-contained without the use of a bottom board; hence is safely and readily transposed to any desired point without damage to the mold.

The venting heretofore necessary in molds having such large compacted masses of sand is entirely dispensed with by the employment of my improved nowel, as the quantity of sand necessary is so small that the venting is accomplished without the use of vent-wires by escape of vent through the perforations in the nowel, and a much safer mold is made than can be made by the ordinary process of hand-venting with wires.

Having described my invention, I claim—

1. A nowel or drag, comprising a horizontal flange, a wall extending above said flange and a hollow central portion extending above the flange and having a continuous wall, forming,

with the outer wall, a space for the retention of sand and extending below said flange so as to project into a hollow pattern, said outer and inner walls being relatively oblique and forming a relatively wedge-shaped cavity for the sand above the flange, substantially as described.

2. A nowel or drag consisting of a horizontal flange, an inwardly-tapering wall extending above said flange, and a hollow central portion having a continuous wall, extending above the flange and projecting below the same, and webs connecting said wall and hollow portion substantially as described.

3. A nowel or drag, consisting of a horizontal flange, an inwardly-inclined wall and an outwardly-inclined hollow central portion, adapted to project into a hollow pattern and forming, with said wall, a wedge-shaped cavity for the retention of sand, substantially as described.

4. A molding apparatus comprising a casing, a hollow pattern inserted in said casing, a nowel or drag having an inwardly-inclined wall with a flange upon which the casing rests, a hollow outwardly-inclined part which projects beyond the horizontal parting-line between the casing and drag and into the pattern and a series of webs connecting the wall of the drag with the core part and separated by spaces between and through which the sand may be packed into the pattern and around the hollow core part of the drag, substantially as described.

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

JOHN C. REED.

Witnesses:

JOS. B. CONNOLLY,
HUMPHREY LYNCH.