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PATENTED JAN. 29, 1907.

J. MACPHAIL.
FLASK FOR SAND MOLDS.
APPLICATION FILED APR. 2, 1906.

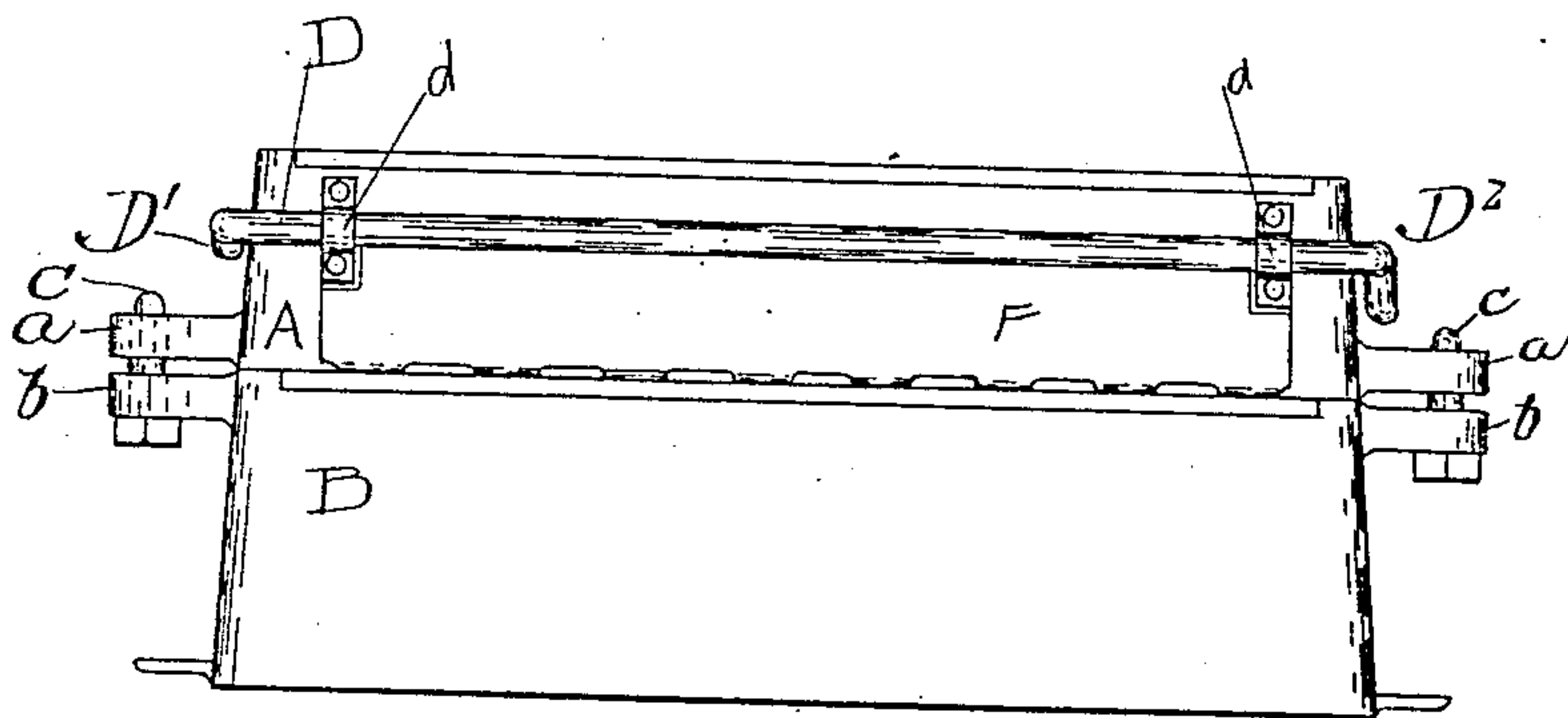


Fig. 1.

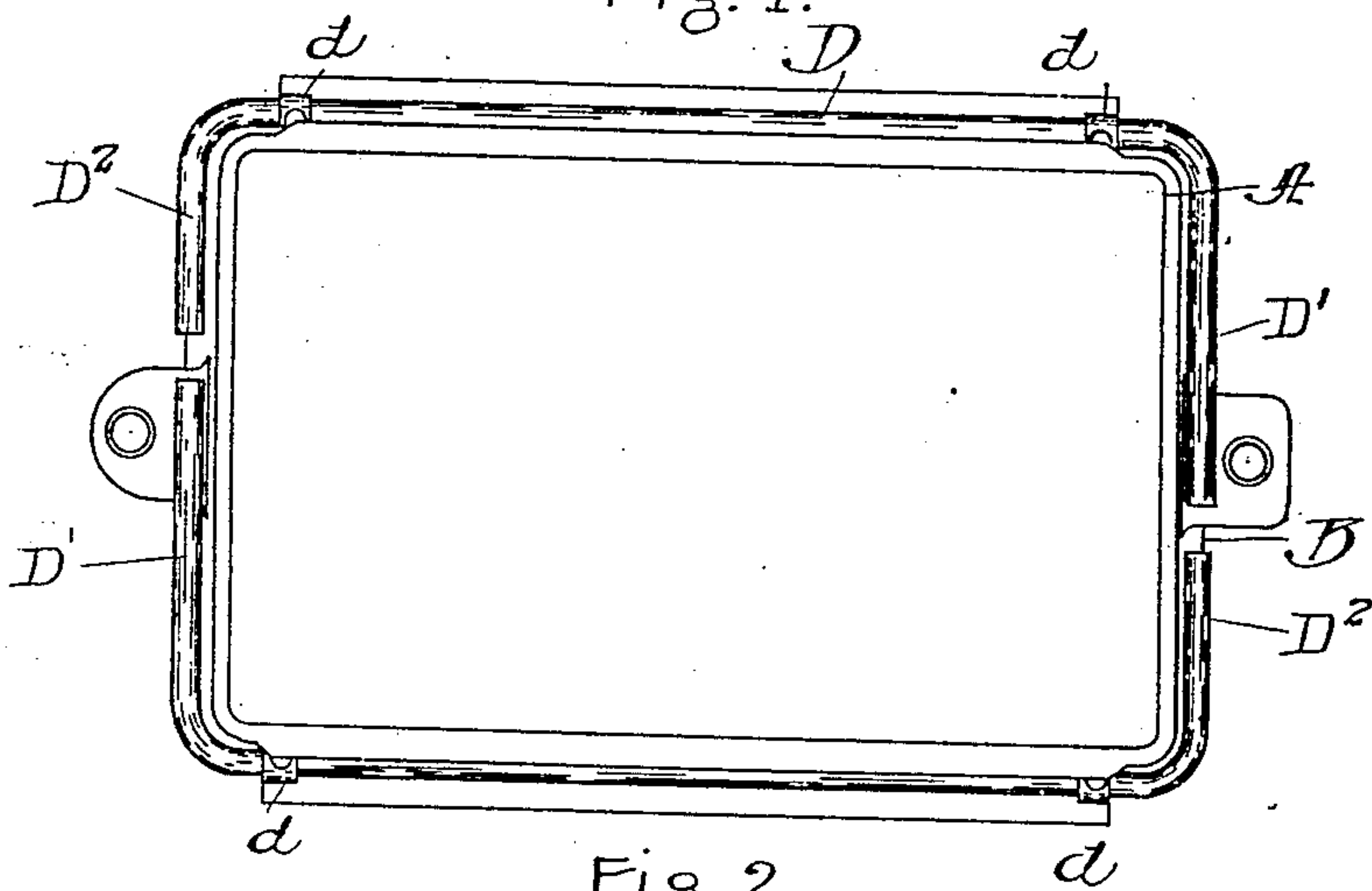


Fig. 2.

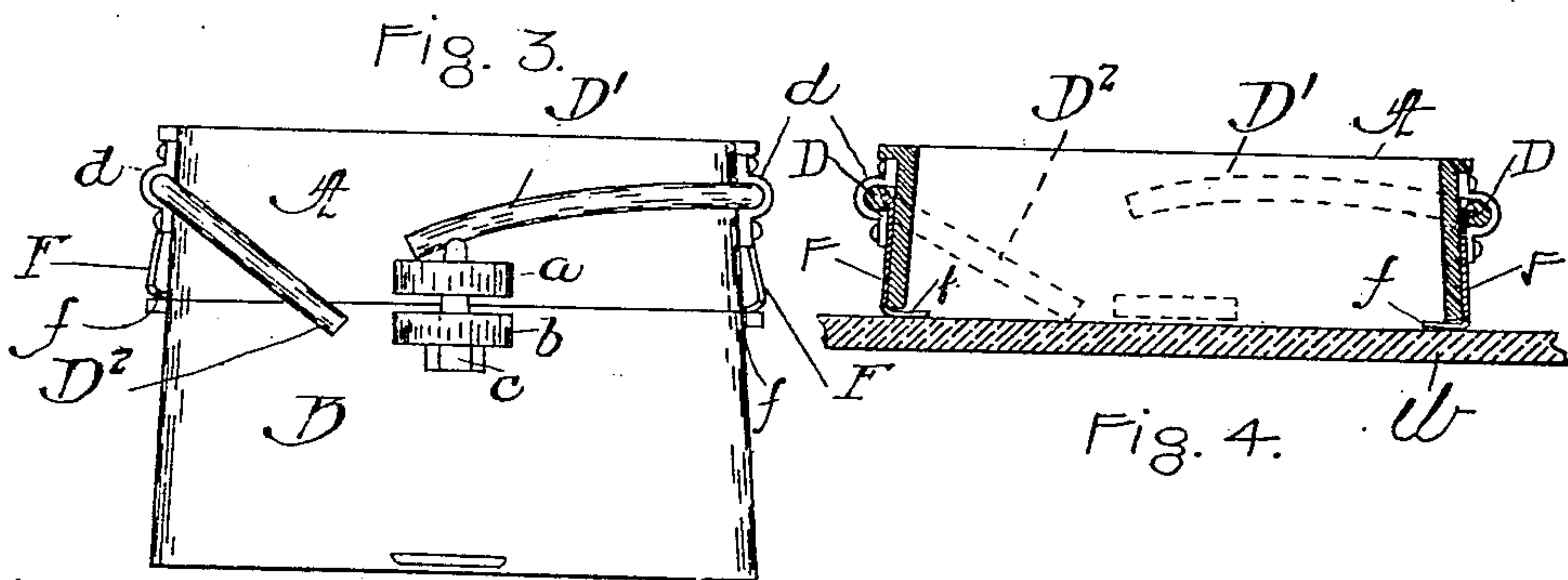


Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES MACPHAIL, OF DAVENPORT, IOWA.

FLASK FOR SAND MOLDS.

No. 842,322.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed April 2, 1906. Serial No. 309,262.

To all whom it may concern:

Be it known that I, JAMES MACPHAIL, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Flasks for Sand Molds, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The present invention has relation to the improvement of flasks designed for making sand molds for castings, the object of the invention being to provide improved means whereby the accidental dropping of the molds from the flask while the latter is being handled may be avoided. This object of the invention is accomplished by the construction hereinafter described, illustrated in the accompanying drawings, and particularly defined in the claims at the end of this specification.

Figure 1 is a view in side elevation of a two-part flask embodying my invention. Fig. 2 is a plan view. Fig. 3 is an end view. Fig. 4 is a view in vertical cross-section through the cope of the flask.

The two-part flask shown in the accompanying drawings is a taper flask comprising a cope A and drag B, adapted to be aligned and connected by means of the horizontally-projecting lugs *a* and *b* and pins or bolts *c*.

The cope A has mounted upon its outer walls suitable sand-supports that are provided with inwardly-extending portions adapted to be projected beyond the inner face of the wall of the cope in order to retain the sand mold therein until it is desired to strip the flask from the mold. In the preferred form of the invention the sand-supports F consist of plates having their lower edges turned inwardly and, by preference, formed as fingers *f*, these fingers being adapted to enter slots formed in the side walls of the cope A. As shown, each of the sand-supports F is fixed to a bar D, that is mounted in bearings or supports *d*, so that a pivotal movement is given to the sand-supports as they are shifted into and out of operative position.

One important feature of my present invention is that of connecting the sand-supports to the handle whereby the cope is lifted, so that the handle shall serve not merely as a means for lifting the cope, but shall serve also to hold the sand-supports in operative position while the cope is raised. As shown,

the handles D' are formed as extensions of the bars D, that carry the sand-supports F, and hence it will be seen that when the handles D' are grasped by the molder in the act of lifting the cope A the handles D', through the medium of the bars D, will serve to hold the sand-supports in operative position—i. e., with their fingers *f* extending beyond the inner face of the flask-wall. So, also, it will be seen that when the cope A has been placed in position upon the drag B the weight of the handles D' will cause the bars D to turn, and thus automatically withdraw the sand-supports F from operative position, thereby permitting the flask to be freely stripped from the mold.

It is desirable to retain the sand-supports in operative position during the time that the cope is being filled and rammed with sand, and one feature of my invention is the provision of means for automatically holding the sand-supports in operative position at such time. One simple means for effecting this automatic holding of the sand-supports in operative position consists in forming angular extensions D² on the ends of the pivoted bars D; these extensions D² being arranged at such an angle with respect to the sand-supports that when the cope is set upon a flat surface *w*—as, for example, upon the bed-plate of a molding-machine—the ends of the extensions D² will contact with the flat surface and will be raised thereby, thus shifting the sand-supports to operative position, as shown in Fig. 4, and holding them in such position until the cope is lifted from the flat surface.

From the foregoing description it will be seen that when the cope A is set upon the bed of the molding-machine or other flat surface to receive its charge of sand the extensions D², by their engagement with such surface, will cause the fingers *f* of the sand-supports to project beyond the inner face of the cope-wall, and the sand-supports will thus be held in operative position and against danger of displacement while the sand is being rammed into the cope. When the molder desires to lift the cope, he will grasp the handles D' and by so doing will retain the sand-supports in operative position, so as to prevent the accidental dropping of the molds from the cope. When the cope has been set in position upon the drag B, the weight of the handles D' will cause the sand-supports to be automatically shifted out of operative position, so that they

will not interfere with the lifting of the flask from the mold, which will be effected by the molder grasping the lugs *b* of the drag in the usual manner.

5 It is manifest that the precise details of construction above set out may be varied within wide limits without departing from the spirit of the invention and that features of the invention may be employed without its
10 adaptation as an entirety.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a flask for sand molds, movable sand-
15 supports, and vertically-movable handles for lifting said flask and for simultaneously shifting said sand-supports.

2. In a flask for sand molds, oppositely-
20 disposed sand-supports, and vertically-movable handles at the opposite ends of the flask for lifting said flask and for simultaneously projecting the sand-supports beyond the inner face of the flask-wall.

3. A flask for sand molds having movable
25 sand-supports and vertically-movable handles for lifting said flask and for shifting said sand-supports, said handles having unsupported ends arranged to drop and automatically shift the sand-supports out of operative
30 position.

4. A flask for sand molds having a sand-support, a vertically-movable handle connected to said sand-support whereby when the handle is lifted the sand-support will be moved into operative position, and having a
35 part connected to said sand-support and adapted to extend below the bottom of the flask-wall whereby when the flask is supported on a flat surface to be rammed the sand-support will be moved into operative
40 position.

5. A flask for sand molds having one or more movable sand-supports, means for automatically projecting said sand support or supports beyond the inner face of the flask-
45 wall and means for withdrawing the sand support or supports from operative position when the flask is to be lifted from the mold.

6. A flask for sand molds having one or more movable sand-supports adapted, when
50 in operative position, to project beyond the inner face of the flask-wall, and means for automatically withdrawing the sand-supports from operative position to permit the flask to be lifted from the mold.

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Witnesses:

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