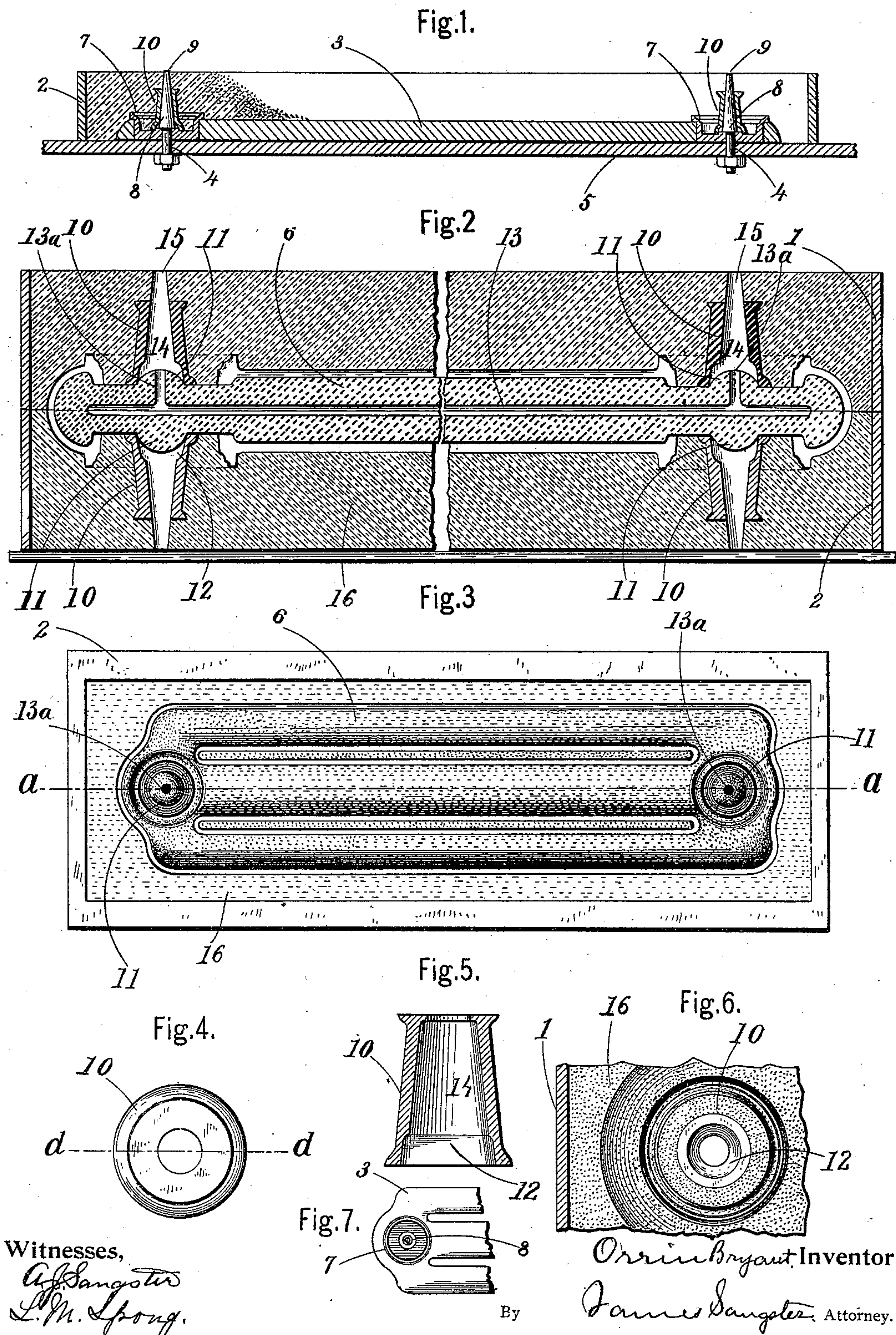


(No Model.)

O. BRYANT.
MOLD FOR MOLDING RADIATOR SECTIONS.

No. 581,017.

Patented Apr. 20, 1897.



UNITED STATES PATENT OFFICE.

ORRIN BRYANT, OF BUFFALO, NEW YORK.

MOLD FOR MOLDING RADIATOR-SECTIONS.

SPECIFICATION forming part of Letters Patent No. 581,017, dated April 20, 1897.

Application filed December 9, 1896. Serial No. 615,022. (No model.)

To all whom it may concern:

Be it known that I, ORRIN BRYANT, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Molds for Molding Radiator-Sections, of which the following is a specification.

My invention relates to an improved means for molding radiator-sections or analogous articles, whereby the core may be set in its exact position in the mold and securely held in that position, also the parts of the mold upon which the core rests are greatly strengthened and the core is ventilating, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical longitudinal central section through a pattern and one part of a two-part flask on or about line *a a*, Fig. 3, showing the first operation of preparing a mold for casting a radiator-section. Fig. 2 represents a vertical longitudinal central section through a complete mold, also on or about line *a a*, Fig. 3, showing the core in position and the means for securing and ventilating it. Fig. 3 is a top plan view showing the core in position in the lower half of the mold and the ventilating-openings therein. Fig. 4 represents a detached top view of the core centering, holding, and ventilating device. Fig. 5 is a vertical central section through the same on or about line *d d*, Fig. 4. Fig. 6 represents a top view of a portion of a sand mold, showing one of the parts upon which the core rests and is supported, showing also a similar view of the core centering, holding, and ventilating device. Fig. 7 represents a face view of one end of a pattern, showing the nipple-opening portion attached to it.

Referring to the drawings for the details of the construction, I have shown an ordinary molder's flask, constructed, preferably, of cast-iron and consisting of two parts 1 and 2. The pattern 3 is secured by screw-bolts 4 to a platform 5, upon which the mold is made. The pattern, it will be noticed, represents one-half of a radiator-section, so that when a mold is made from it in the two halves of the flask and they are put together with

the core 6 in its proper position between them, as in Fig. 2, a complete mold for a radiator-section is made. At each end of the pattern is a practically true circular opening, in which is nicely fitted the portion 7 of the pattern which forms the nipple-openings and the parts of the mold upon which the core 6 rests. The portions 7 are turned as true as possible, and the bolts 4 pass down exactly through the center of each until stopped by the enlarged portions 8 of said bolt, which portions taper upward to their points 9. (See Fig. 1.) They are made easily removable.

The core centering, holding, and ventilating portions 10 are adapted to fit nicely on the tapering portions 8 and are easily removable therefrom, as they form a portion of the sand mold and go with it when it is removed from the pattern. (See Fig. 2, where these portions are shown in their proper positions within a sand mold.)

The core supporting and ventilating devices 10 are preferably made of cast-iron. They are turned in a lathe perfectly true, and when in their proper position in a sand mold are wholly inclosed therein, so that the molten metal does not touch them. Consequently whenever a casting is made they are taken from the mold and used again.

The core 6 is provided with a convex portion 11 (see Figs. 2 and 3) at each end, adapted to fit in the enlarged opening 12 in the parts 10, which being exactly central holds and supports the core in its true position until a casting is made. The parts 10 being of metal do not yield or move. Consequently the core, being a dry-sand core and hard, is held rigidly in place. The core is provided with the vent-openings 13^a 13^a, which communicate with the openings 14 through the supporting portions 10 and the openings 15 through the mold 16, thereby allowing a free outlet for the gases generated within it to escape.

The operation is as follows: When making a mold, the first thing to be done is to place one part of the flask 2 in position over the pattern, as in Fig. 1. Then the holding, centering, and ventilating devices 10 are put onto the tapering portions 8, substantially as shown in Fig. 1, and by the usual operations one-half of a sand mold is made in that part of the flask. The flask is then lifted off from

the pattern and turned over, the parts 10 remaining in and materially strengthening the parts of the mold in which it is inclosed and also providing a suitable outlet for the ventilation of the core. The core is now put in place, the convex portions 11 fitting exactly in the central openings 12. The top portion 1 of the flask is now put over a pattern and the other half of the mold made in the same way. It is then set on top of the flask 2, as in Fig. 2, and securely clamped, the vent-openings 13^a of the core communicating with the mold-openings 14 and 15, thereby affording a perfect ventilation.

15 If desired, the portions 8 of the bolt 4 may be of the same diameter from the bottom shoulder to the top instead of being made tapering. I make them tapering for convenience in placing the core centering, supporting, and ventilating device thereon or removing it.

I claim as my invention—

1. In an apparatus for casting radiator-

sections, the combination with the pattern, of bolts for securing it to the molding-plat- 25 form, said bolts having tapering portions which extend up above the pattern, and a removable core centering, supporting and ventilating device, adapted to fit said bolts as above set forth. 30

2. In an apparatus for casting radiator-sections, the combination with the pattern, of two upright bolts located centrally near each end of the pattern for securing it to the molding-platform, the upper ends of said 35 bolts extending upward above it to the top of the sand mold or substantially so, and removable core supporting and ventilating devices, adapted to fit the upper portions of said bolts and form portions of the mold with 40 which they are removable, for the purposes described.

ORRIN BRYANT.

Witnesses:

JAMES SANGSTER,
L. M. SPONG.