

(No Model.)

W. STREETMAN.
GAS VENT FOR MOLDS.

No. 576,482.

Patented Feb. 2, 1897.

Fig. 1.

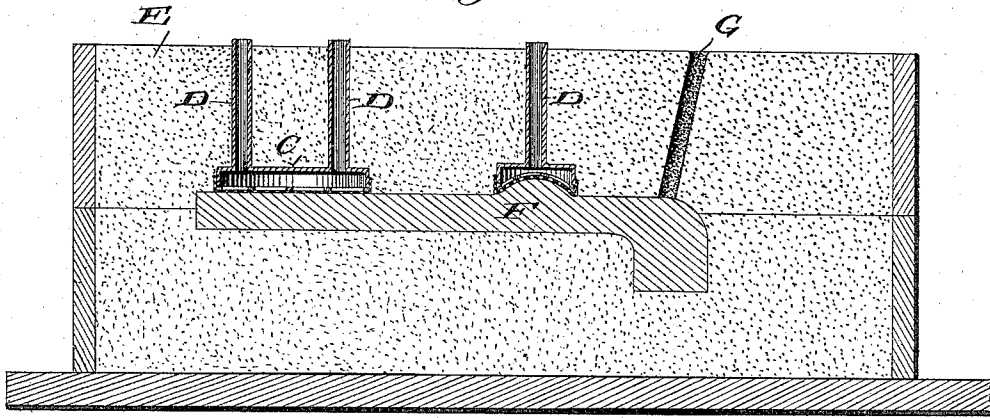


Fig. 2.

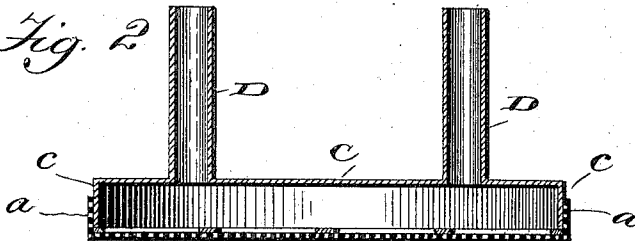


Fig. 3.

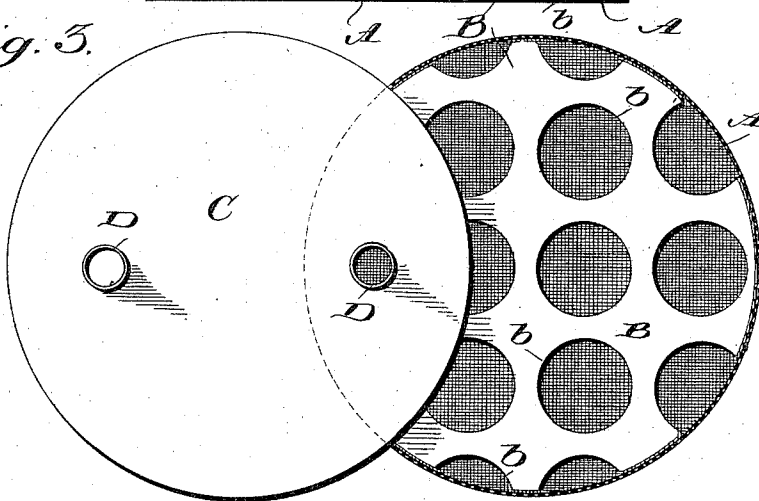
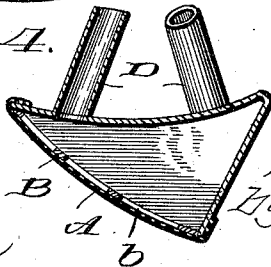


Fig. 4.



Witnesses.

L. C. Hills

E. A. Bond

Inventor.

Willard Streetman,

By E. B. Stocking
Atty.

UNITED STATES PATENT OFFICE.

WILLARD STREETMAN, OF CLEBURNE, TEXAS.

GAS-VENT FOR MOLDS.

SPECIFICATION forming part of Letters Patent No. 576,482, dated February 2, 1897.

Application filed June 2, 1896. Serial No. 594,052. (No model.)

To all whom it may concern:

Be it known that I, WILLARD STREETMAN, a citizen of the United States, residing at Cleburne, in the county of Johnson, State of Texas, have invented certain new and useful Improvements in Gas-Vents for Molds, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in gas-vents for molds; and it has for its object, among others, to provide a simple and cheap construction whereby free escape of the gas or air is permitted from the mold into which molten
15 metals, especially those of light weight, are to be poured for the purpose of forming a casting. The device may assume a variety of forms, and in its construction may vary
20 within certain limits in accordance with the character of the casting being made.

The improvement embodies a diaphragm which should be burnished to the pattern to be copied. This diaphragm is sufficiently porous to permit the gas and air to escape, but preventing escape of the metal. The diaphragm is braced by a brace or support of sufficient rigidity to prevent changing of shape by the pressure of the metal, and the
25 perforations therein may be of greater or less dimensions, as may be desired. This diaphragm is placed within a chamber or receptacle designed therefor and which embraces the edges of the diaphragm and the brace or
30 support and may be united thereto in any suitable manner. It may be united by some plastic substance which will not produce gas when the metal is poured into the mold. The objects of this chamber are to provide for the
35 free escape of the gas and air through the diaphragm and at the same time limit the amount of atmospheric air in contact with the casting, thus preventing improper cooling; also to provide the protecting covering
40 over the diaphragm without interfering with the free escape of the air and gas from the mold. This chamber can further be so constructed that one or more tubes or passages for the air and gas may lead to the surface
45 of the investing material, thus permitting free escape of the gas and air first through the diaphragm into the chamber, and thence

through the chamber and through the air-passages and through the mold.

Among the advantages resulting from the use of my invention may be mentioned the following: It affords a more certain and ready escape of the air and gas, and thus prevents blow-holes and bubbles. It allows the use of more moisture in the material of which the mold is formed. It removes all obstruction from the parts of the mold where it is applied, and thus permits of a sharper and more accurate copy when even the lightest metals are used, and provides for the perfect escape of gas, and thereby the metal settles more densely in the mold. It takes up shrinkage at place of application and thus controls contraction on cooling. It makes possible the production of many useful articles in the art of the lighter metals and alloys not otherwise possible. It may be applied to any part of a mold, large or small, without in any way interfering with the process of casting, but facilitating the same.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form part of this specification, and in which—

Figure 1 is a vertical section through a flask, showing the application of the invention. Fig. 2 is a central vertical section through one form. Fig. 3 is a plan of the diaphragm and its support and the chamber separated, and Fig. 4 is a sectional view of a different form of the invention.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the diaphragm of wire-gauze or any suitable reticulated medium the mesh or perforations of which may be of any required size, provided they are not sufficiently large to allow of the passage of the metal therethrough, although permitting the free escape of the air and gas.

B is a brace or support for said diaphragm and is shown as arranged within the same and provided with openings b, which may be of any suitable or required size, and the object

of the said part B is to brace the diaphragm and prevent distortion thereof under pressure or by the action of the metal. The diaphragm has preferably its edges bent at right angles, as seen at *a*, and the support B is held within the same, and the chamber C, which may be of any suitable material, is applied as indicated, having its flange *c* fitted within the upturned flange *a* of the diaphragm, as seen more clearly in Fig. 2, and the parts may be retained together in any suitable manner or by any suitable material, such as a plastic substance which will not produce gas when metal is poured into the mold, or if such is used, as wax, it may be melted out previous to pouring. The chamber C may have extending therefrom one or more tubes or pipes D, forming outlets to the exterior of the mold.

The shape of the device may vary as circumstances may require. In Fig. 1 I have shown two forms, one of which has the diaphragm concaved, while in the other it is straight, while in Fig. 4 is shown another form in which the diaphragm is convex. This form is shown, also, as provided with the tubes or outlets D. These are but some of the forms in which the invention may be embodied.

The manner of use will be apparent. In Fig. 1 I have shown two of the forms in position for use, the mold E being of any well-known form and F designating the casting. G is the sprue-hole. As the molten metal is poured in the air and gas escape through the openings in the diaphragm, thence through the openings in the support B into the chamber, and from thence through the tubes or outlets through the mold to the open air.

Various other modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

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

1. The combination with a reticulated diaphragm and a perforated support therefor having openings of greater dimension than those of the diaphragm, of a chamber held to said diaphragm, and having outlets for the air and gas; substantially as described.

2. The combination with a reticulated diaphragm and a perforated support therefor having openings of greater dimension than those of the diaphragm, of a chamber held to said diaphragm, and having outlets for the air and gas, and tubes communicating with said outlets; substantially as described.

3. A device for the purpose described, comprising a perforated diaphragm having upturned edges, a perforated brace or support for the diaphragm confined between said upturned edges and a chamber secured to said diaphragm and tubes extending upward from said chamber; substantially as described.

4. A device for the purpose described, comprising a perforated diaphragm having upturned edges, a perforated brace or support for the diaphragm confined between said upturned edges and a chamber secured to said diaphragm, and having tubes extending from its upper surface and communicating with the interior thereof; substantially as described.

5. A device for the purpose described, comprising a perforated diaphragm having upturned edges, a perforated brace or support for the diaphragm confined between said upturned edges and a chamber secured to said diaphragm and having tubes extending from its upper surface and communicating with the interior thereof, the under face of said diaphragm being upon curved lines; all as specified.

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

WILLARD STREETMAN.

Witnesses:

FRED. T. VICKERS,
JAKE COHEN.