G. R. H. Leffler.

Conducting Air from Chill Molds.

No. 53,993. Patented Apr. 17, 1866.

Fig. 1

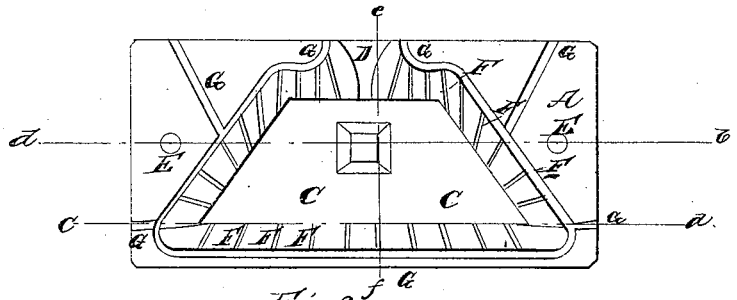


Fig. 2

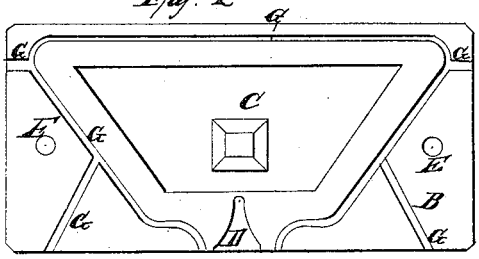


Fig. 3

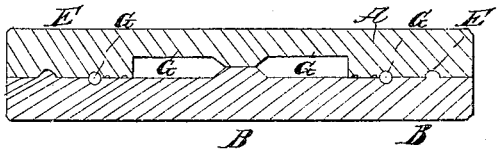


Fig. 4

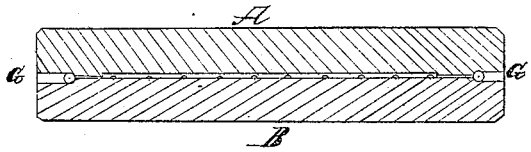
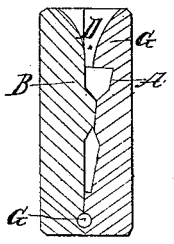


Fig. 5



Witnesses:

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UNITED STATES PATENT OFFICE.

G. R. H. LEFFLER, OF BALTIMORE, MARYLAND.

METHOD OF TAKING AIR OFF CHILL-MOLDS.

Specification forming part of Letters Patent No. **53,993**, dated April 17, 1866.

To all whom it may concern:

Be it known that I, GEORGE R. H. LEFFLER, of the city and county of Baltimore, State of Maryland, have invented a new and useful Improvement in Devices for Taking the Air from Chill-Molds; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, sufficient to enable one skilled in the art to which it appertains to construct and use the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a face view of one part of the mold. Fig. 2 is a face view of the other half of the mold. Fig. 3 is a sectional view on the line *a b*, Fig. 1. Fig. 4 is a sectional view on the line *c d*, Fig. 1. Fig. 5 is a sectional view on the line *e f*, Fig. 1.

The object is to enable the use of a chill-mold for casting by a provision for taking off the air from the mold.

Around the space in the mold which is to be occupied by the casting, and at the point of junction of the parts of the mold, are a series of fine orifices which lead into a channel or channels in the mold, by which the air is discharged from the space when the molten metal is poured therein. The same provision may be made by means of holes drilled through the mold, opening by very small orifices into the space.

In the drawings, A is one part of the mold, and B is the other part. C is the space, which is the counterpart of the pattern, and is to receive the molten metal, which is poured in through the gate D.

E E are the dowel-pins, to insure exact correspondence of the two parts of the mold when laid together and prevent slipping or lateral shifting after the two parts of the mold are placed in position.

F F are small openings which lead from the space C to the ducts or air-passages G, which pass to the exterior.

The number of the passages F and channels G will vary according to the capacity of the chamber C, as the object is to conduct away the air contained in said chamber when the molten metal is poured in.

Much might be said of the superior finish and surface of articles cast in a chill-mold over similar articles cast in sand, but it is not necessary to enumerate the advantages, which are obvious to the expert.

Many accidents have occurred from the use of chilled molds by the rapid expansion of the air therein, which had no sufficient outlet, and I have, by the means described, remedied the difficulty.

The form and number of the passages G provided for collecting the air and disharging it at the exterior will vary with the nature of the case.

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

1. Providing the chill-molds with a number of small air-openings leading from the interior space to the outside, for the purpose of making vent for the air contained in the space when the molten metal is poured in.

2. The combination described and represented of the passages F and channels G, substantially as described.

To the above specification for an improved method of taking air off chill-molds I have signed my hand this 7th day of March, 1866.

G. R. H. LEFFLER.

Witnesses:
W. F. HALL,
EDM. F. BROWN.