

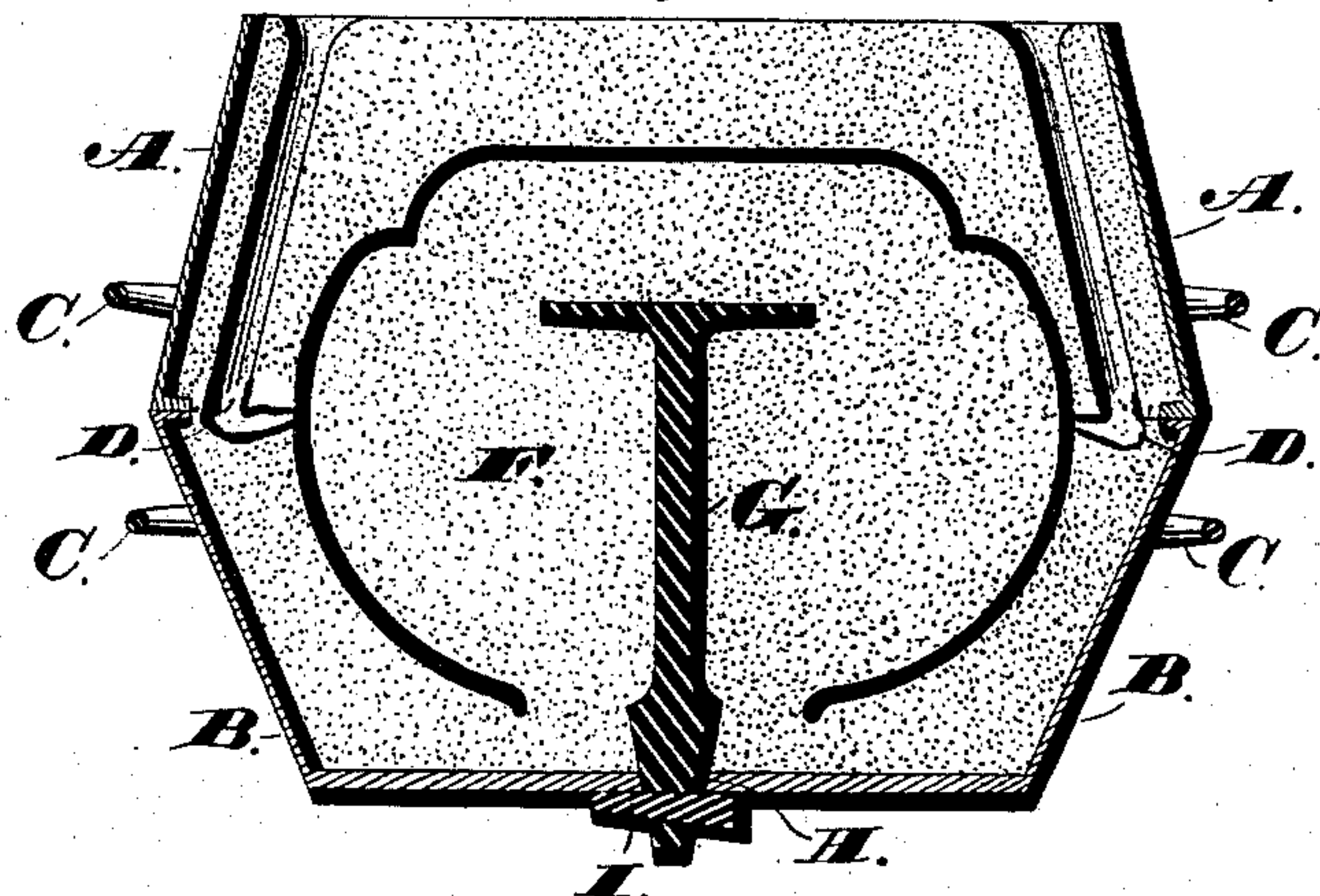
(No Model.)

J. B. HARKER.  
CASTING HOLLOW WARE.

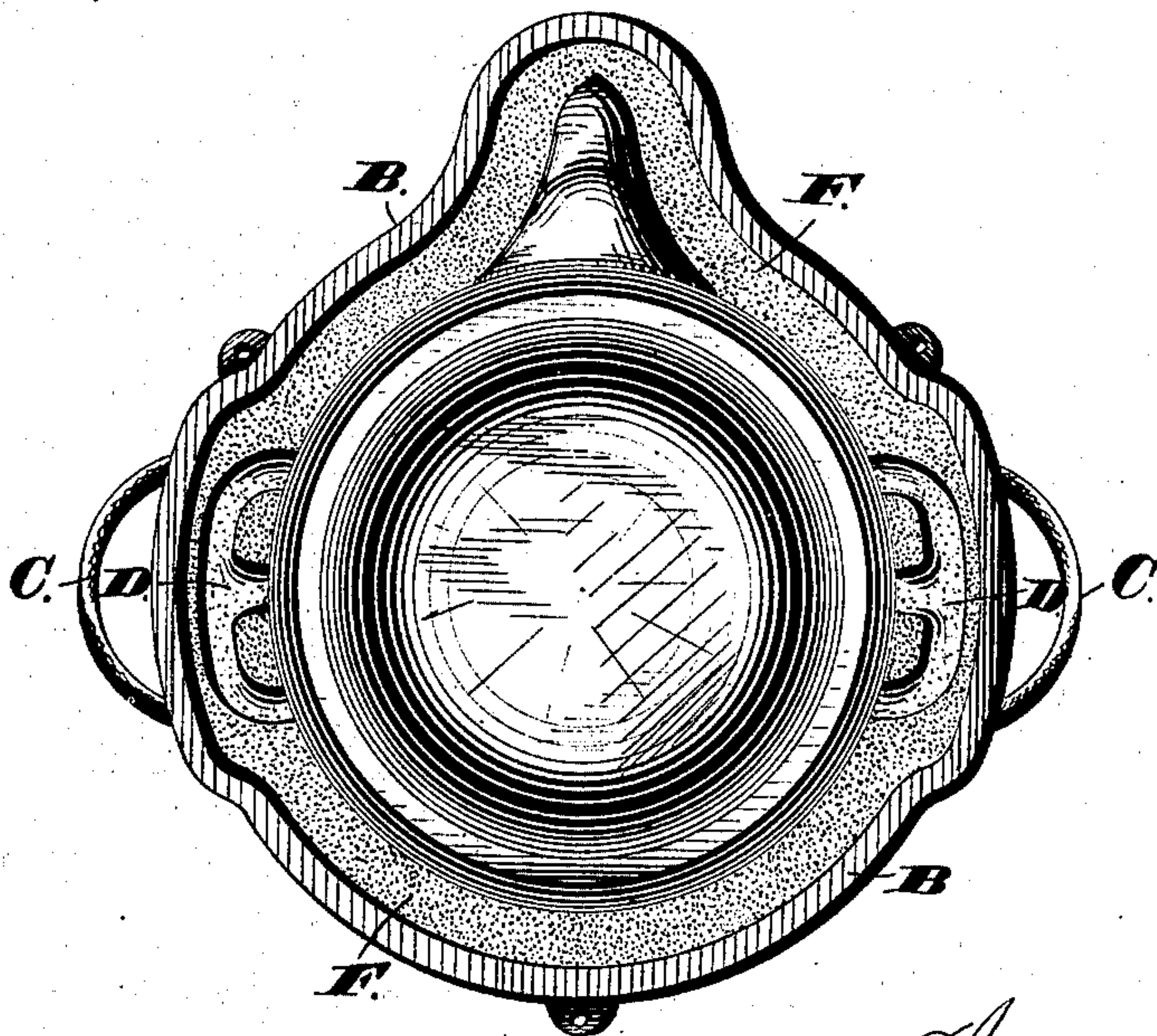
No. 272,044.

Patented Feb. 13, 1883.

*Fig. 1.*



*Fig. 2.*



Witnesses:  
Jas. E. Hutchinson.  
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# UNITED STATES PATENT OFFICE.

JOHN B. HARKER, OF COLUMBUS, OHIO.

## CASTING HOLLOW WARE.

SPECIFICATION forming part of Letters Patent No. 272,044, dated February 13, 1883.

Application filed October 12, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. HARKER, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful  
5 Improvements in Casting Hollow Ware; 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 pertains to make and use the same.

10 My invention relates to an improved process for manufacturing tea-kettles.

Heretofore tea-kettles have been cast bottom up and gated on the bottom of the kettle. This method is objectionable for the following  
15 reasons: The slag and impurities of the metal will be incorporated in the bottoms of the kettles and render them weakest at the point subjected to the greatest wear. Again, owing to the shape of the sprues employed, the metal  
20 cuts the sharp edge of the sand at the bottoms of the sprues, and results in sand imperfections in the bottoms of the castings, and, further, in removing the gates the bottoms of the kettles are left rough and oftentimes very  
25 thin.

The object of my invention is to obviate the objectionable features above recited, and to cast tea-kettles in such a manner that the bottoms of the tea-kettles will be free from slag  
30 or impurities, and of even thickness and homogeneity throughout their entire area.

With these ends in view my invention consists in a certain process of casting tea-kettles, as will hereinafter be described, and be specified in the claim.  
35

In the accompanying drawings, Figure 1 is a view in vertical section of a two-part flask for casting tea-kettles. Fig. 2 is a plan view of the nowel, the cope being removed to show  
40 that portion of the core which forms the bottom of the kettle.

A represents the cope, and B the nowel, each part being provided with handles C. The cope is provided with two or more sprues, E, funnel-shaped at their upper ends, which conduct the molten metal to the gates D, located  
45 in the nowel B, and respectively composed of three passages leading to the mold, the said passages being contracted as they approach  
50 the mold in order to decrease as much as pos-

sible the ledge uniting the article cast, and the surplus metal remaining in the gates. By the employment of gates constructed as described much of the slag and impurities is prevented from flowing into the mold, and is  
55 caused to collect and remain in the sprues. By providing the cope with two or more sprues and the nowel with a corresponding number of gates the casting is much facilitated in the matter of time.  
60

A sectional pattern is employed in the preparation of the core F, which is held together by the anchor G, extending through the aperture H, formed in the bottom of the nowel, and secured in place by the key I.  
65

Inasmuch as that portion of the mold representing the bottom of the kettle is uppermost, the top of the kettle will be formed first, the metal gradually rising to form the bottom portion, which will contain the purest and best  
70 quality of iron. By casting the kettles in this manner the bottoms of the kettles are of uniform thickness, homogeneity in crystallization, and free from sand and dross. The sprues in the cope extend for some distance above the  
75 mold and have a capacity for holding considerable metal, the object being to cause the molten metal to flow into the upper portion of the mold by the superincumbent weight of  
80 the metal in the sprues. When the metal remaining in the gates is broken off a small ledge or rib will be left on the vessel, which rib is readily ground off, thereby obliterating all traces of the gating.

I am aware that hollow door-knobs, cannon-  
85 balls, and other articles have been gated at the sides in the process of casting; but such method has not been resorted to in order to produce a better quality of casting at the top, but simply to facilitate the casting; and hence  
90 I would have it understood that I make no claim to casting hollow ware bottom upward. Neither do I claim the method of gating at the side instead of the top. My invention relates to an improved process of casting tea-  
95 kettles, and although certain steps in the process are not, broadly speaking, new, yet the complete process as applied to tea-kettles is novel and a most valuable improvement on the prior art.  
100

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

5 The method of casting tea-kettles, consisting in molding them with their bottoms uppermost and gating the molds between their top and bottom portions, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN B. HARKER.

Witnesses:

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