

No. 694,731.

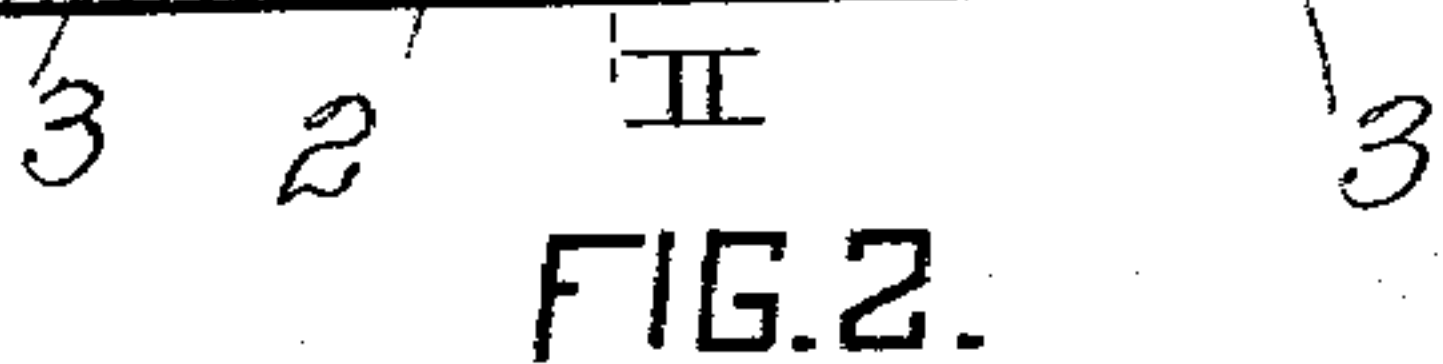
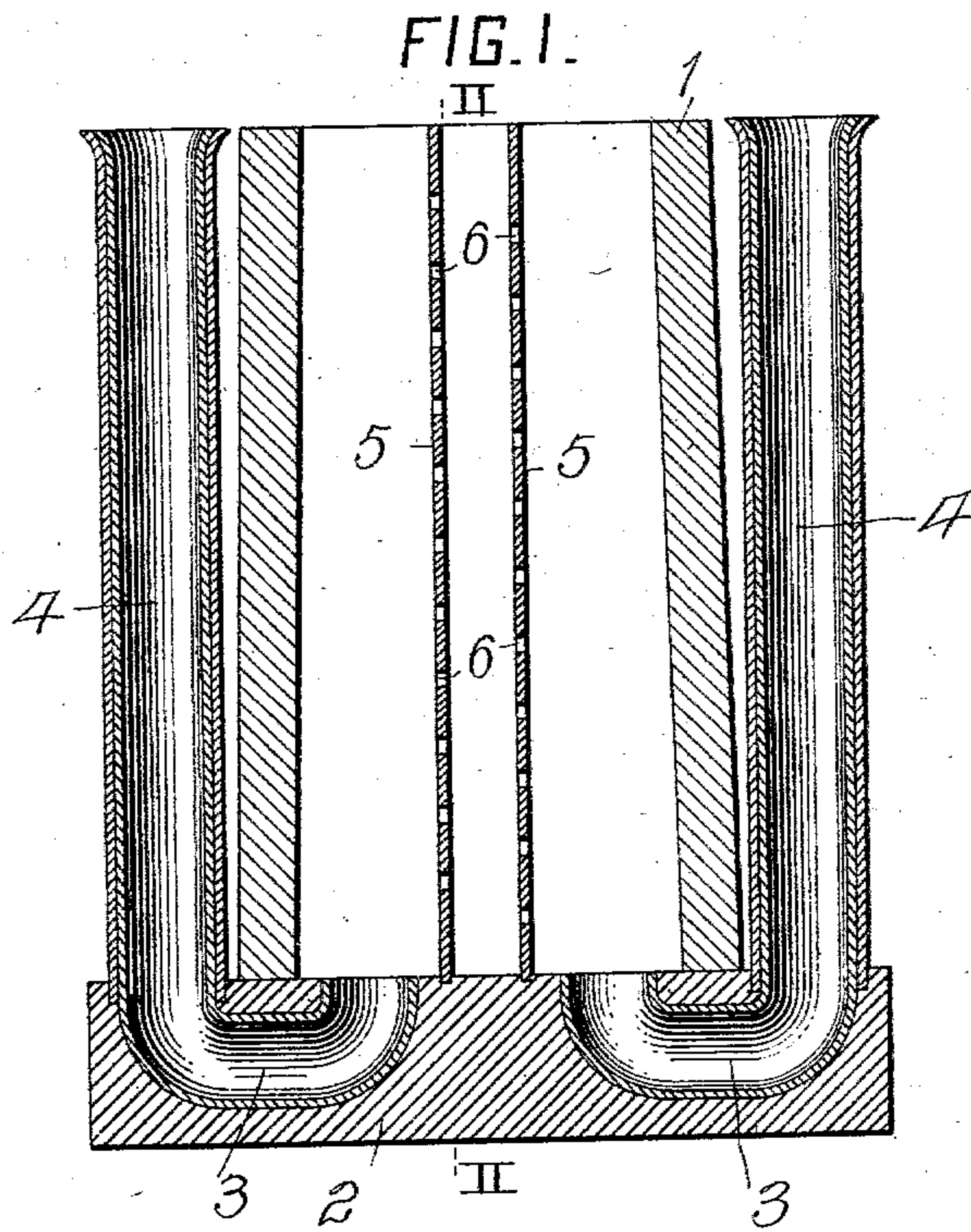
Patented Mar. 4, 1902.

S. A. COSGRAVE.

MANUFACTURE OF COMPOUND INGOTS AND MOLD THEREFOR.

(Application filed May 27, 1901.)

(No Model.)



WITNESSES:
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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF COMPOUND INGOTS AND MOLD THEREFOR.

SPECIFICATION forming part of Letters Patent No. 694,731, dated March 4, 1902.

Application filed May 27, 1901. Serial No. 62,083. (No model.)

To all whom it may concern:

Be it known that I, SYLVESTER A. COSGRAVE, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Manufacture of Compound Ingots and Molds Therefor, of which improvements the following is a specification.

The invention described herein relates to certain improvements in the method of manufacturing compound ingots, and has for its object the formation of an ingot having two or more substantial portions thereof differing in characteristics and one or more substantial portions intermediate of the others and possessing the characteristics of the others, modified the one by the other.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional elevation of an ingot-mold and partitions adapted to the practice of my invention. Fig. 2 is a sectional elevation of the plane indicated by the line II II, Fig. 1.

In the practice of my invention I employ an ingot-mold 1 of any suitable dimensions and supported upon the stool 2, as is usual. When the metal is to be teemed through the bottom of the mold the stool is provided with suitable channel-ways 3, connecting with the compartments of the mold and also with sprues or runners 4, through which the metal passes from the ladle. Within the mold I arrange two or more partitions 5, dependent upon the number of layers of different metal desired in the completed ingot. These partitions, which are formed of thin metal plates, are supported in position in any suitable manner—as, for example, by means of grooves in the vertical walls of the mold and in the stool. The spacing or arranging of the partitions within the mold will be dependent upon the desired thickness of each kind of metal in the completed ingot. Through these partitions are formed openings or perforations 6, extending from the bottom to the top of the partitions, so that when metals are cast into the outer compartments portions thereof

will flow into the space between the partitions and intermingling therein will produce a substantial body of metal having the characteristics of each of the metals cast, but modified the one by the other. It is preferred that these openings or perforations in the partition shall be so proportioned as to capacity that when the outer compartments are being filled the streams of metal flowing from such outer compartments to the space between the partitions shall not be sufficient to maintain the metal in the space between the partitions at the same level as that in the outer compartments. In other words, it is preferred that the casting shall be so effected that the outer compartments, into which the metal is poured, shall be filled more rapidly than the space between the partitions, thereby insuring the flow of metal from each compartment into the space between the partitions, as, for example, when the metal is teemed through the bottom of the mold the total capacity of the perforations in the partitions should be less than the delivering capacity of the sprues and channels through which the metal passes into the mold.

It is preferred that the partition-plates should be formed of approximately the same grades or kinds of metal as that to be cast into the several compartments, although this is not necessary, and that the surfaces of the plates should be pickled and washed, so as to insure the fusion of the metals in contact with each other. The plates or partitions should be made sufficiently thin to be melted and absorbed by the two bodies of metal on each side of the partitions; but if such absorption is not complete and entire the two bodies of metal will nevertheless be firmly tied together by the numerous tongues of metal formed through the perforations, such tongues being integral at their ends with the two bodies on each side of each partition. After the outer compartments have been filled the space between the partitions may be filled by the metal from either of the ladles or from the two bodies of metal flowing through the perforations. It is preferred, however, that so much of the space between the partitions as is empty when the outer

compartments have been filled should be filled by one or the other of the bodies of metal cast.

I claim herein as my invention—

5 1. As an improvement in the art of manufacturing compound ingots, the method herein described, which consists in pouring two or more metals in two compartments or chambers having adjacent walls formed of a material fusible by said metals and filling the
10 space intermediate of said walls from each of said compartments prior to the fusion of the wall of the compartment, substantially as set forth.

15 2. As an improvement in the art of manufacturing compound ingots, the method herein described, which consists in pouring two or more different metals into two compartments or chambers having adjacent walls
20 perforated and formed of a material fusible by said metals and filling the space intermediate of said walls by the metal from each

of said compartments, substantially as set forth.

3. As an improvement in the art of manufacturing compound ingots, the method herein described which consists in pouring two or more different metals into two compartments or chambers having adjacent walls perforated and formed of a material fusible by
25 said metals whereby the metal will flow from said compartments or chambers into the space intermediate of said walls and regulating the
30 flow of metal into the chambers and space so that the chambers will fill more rapidly than the intermediate space, substantially as set forth.

In testimony whereof I have hereunto set my hand.

SYLVESTER A. COSGRAVE.

Witnesses:

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