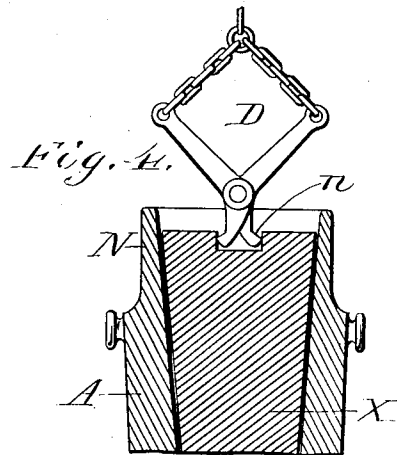
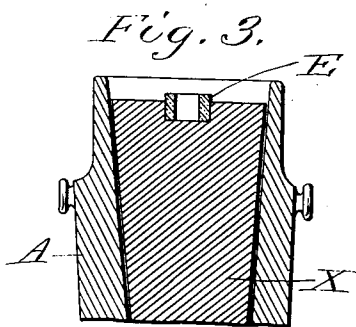
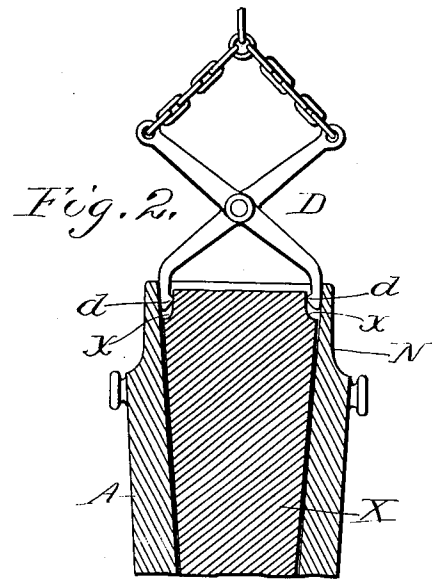
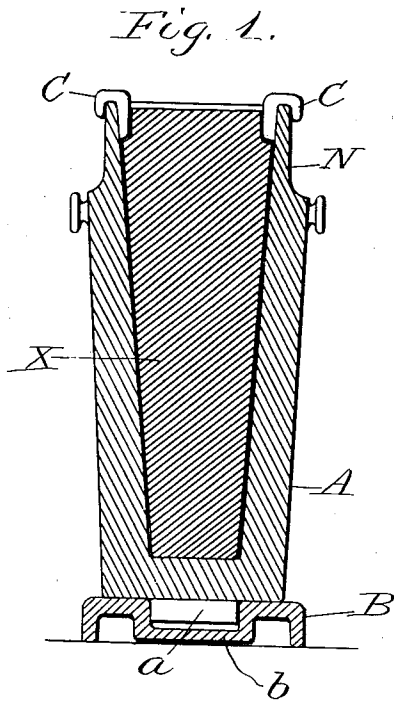


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METHOD OF AND MEANS FOR STRIPPING INGOTS.
APPLICATION FILED APR. 27, 1911.

1,039,725.

Patented Oct. 1, 1912.



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UNITED STATES PATENT OFFICE.

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METHOD OF AND MEANS FOR STRIPPING INGOTS.

1,039,725.

Specification of Letters Patent.

Patented Oct. 1, 1912.

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To all whom it may concern:

Be it known that I, EMIL GATHMANN, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Methods of and Means for Stripping Ingots, of which the following is a specification.

According to this invention I provide a new way of stripping ingots from molds in which the mold chamber is larger at the top than at the bottom.

In my U. S. Patent No. 921,972 of May 18, 1909, I have shown an ingot mold in which the mold chamber is larger at the bottom than at the top, and the ingot is stripped by lifting the mold from the ingot while the latter rests undisturbed upon its stool. This, of course, cannot be done when the mold chamber is relatively larger at the top and the practice has been in such cases to reverse the mold with its contained ingot, i. e., to turn the mold bottom side up and then lift the mold vertically from the ingot. This method of procedure has the objection that when early stripping is attempted objectionable pipes are produced owing to the fact that the liquid or unsolidified metal which remains at the top or larger end of the ingot before the mold is reversed, will after the reversal of the mold cause a cavity to rise toward the upper or smaller end of the ingot and cause the formation of pipes in the body of the ingot. By my present invention I avoid this reversal of the mold and thus prevent the formation of low deep seated pipes. This I accomplish by providing the ingot at its upper or larger end with means adapted to engage lifting devices which raise the ingot out of the mold while the latter remains undisturbed in the position it occupied while being teemed. It is also a common practice in molds of this class to make the mold in two sections, that is to say, the mold is longitudinally divided and the sections are secured together by bolts or the like and after the ingot is cast the bolts are removed and the mold sections withdrawn. This avoids the reversal of the mold but this construction is objectionable in some cases as being relatively expensive and necessitating the expenditure of considerable time and labor in separating and assembling the mold parts, while by my inven-

tion the mold may be made in one single casting without any deformation of the body of the ingot and without any reversal of the ingot.

In the accompanying drawings, Figure 1 shows a vertical central section through a mold with an ingot therein and provided with devices which form in the top or crop end of the ingot means adapted to engage devices for lifting the ingot from the mold chamber. Fig. 2 shows a vertical central section through the upper portion of a mold and an ingot and illustrates how lifting devices may be applied to the larger end of the ingot to lift it vertically from the mold chamber without in any way disturbing the mold. Fig. 3 shows a modification in which a recess is formed in the central portion of the crop end of the ingot which is adapted to receive lifting devices. Fig. 4 is a view similar to Fig. 3 but showing in addition how lifting devices are applied to the central recess of the ingot.

The mold is made of suitable metal with a mold chamber larger at top than at bottom and the lower portion A is made relatively thick, while the upper portion or neck N is made relatively thin in order that the lower portion of the ingot may cool more rapidly than the upper portion in the manner described in my patent above mentioned and in other prior patents granted to me. The bottom of the mold may be provided with a boss *a* adapted to rest in the socket *b* of a stool B.

I prefer to teem the mold at the top. The walls may be ribbed in the manner described in my former patents, but my invention is not necessarily limited to ribbed molds because in some cases by properly proportioning the thickness of the mold walls to promote heat radiation and absorption in the lower portion of the mold and to retard heat radiation at the top thereof, piping may be greatly reduced and confined to the upper end of the ingot as described in my former patents.

It is well understood that in casting ingots the upper end thereof is usually cut off or cropped. Often this cropped end constitutes a considerable portion of the ingot. By the inventions described in my prior patents the piping is confined to a relatively small portion at the top of the ingot so that

