

UNITED STATES PATENT OFFICE.

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MANUFACTURE OF MOLDS FOR CASTING METALS.

No. 924,728.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERNST L. BOHL, a citizen of the United States, and residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in the Manufacture of Molds for Casting Metals, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to molds for casting metal, and the object thereof is to provide an improved mold or molds for this purpose by means of which the delicate outlines and designs of a finely wrought pattern can be perfectly reproduced in a mold made from or on said pattern; a further object being to provide a mold for the purpose specified which will stand or resist the heat of a furnace and also the heat of the melted metals poured into it without being fractured or broken.

In the practice of my invention, I take equal quantities of plaster of paris and ashes, which after being thoroughly ground or pulverized and thoroughly mingled, are reduced to a thick liquid of the consistency of cream by stirring thereinto and mingling therewith a requisite amount of water. In this operation there will be formed on the surface of the liquid a greater or less amount of dirt or refuse matter which should be skimmed off. The liquid thus formed is poured over or around a desired pattern in a suitable receptacle to form the desired mold; and after the liquid has been allowed to set or become hard, which operation takes about half an hour, the mold so formed is removed from the pattern or the pattern from the mold. The mold is then covered or painted with melted lard, after which the said mold is put in an oven or furnace to be heated and dried. The plaster of paris contains some objectionable or interfering substances which will be burned out in the above operation, and this completes the mold which is now ready for use.

The above method of making a mold has an advantage over other and somewhat similar methods, in that the liquid composition consisting of plaster of paris, ashes and water can be poured into a receptacle around a pattern instead of being pressed or rolled over or on the pattern, and by reason of this fact molds can be made to a great advantage, especially when undercut patterns are used. A mold made in this manner will give a fine

result in casting various metals and especially brass which is one of the hardest metals to cast on account of the quantities of fumes or gases which it discharges in the operation of casting.

The object of covering or painting the mold with melted lard and then heating and drying it in an oven as hereinbefore described is to prevent the mold from absorbing moisture, and this renders my improved mold far more efficient than others of its class especially in the operation of casting brass, for which purpose no practical mold has heretofore been made though many have claimed to be able to do so.

By means of this process a mold can also be made in much less time than is ordinarily necessary, this process requiring but one or two hours, in some cases, in which other processes would require days. A mold made in this manner will also stand any metal or mixture of metals, this result being also accomplished by reason of the porous quality of the mold. I may also strengthen a mold made in this manner, especially when large molds are desired, by placing in the liquid mass, in the operation of forming the mold, fine fibrous material or finely divided wire or both.

Although I have described my invention as particularly applicable to the making of molds for the purpose specified, it will be apparent that my said invention is not limited to such use, and the same may be applied in the making, or manufacture, of non-heat conducting coverings for steam pipes and other articles, and although I have described the use of lard only, for the purpose of painting the mold or other article after it is formed and before heating the same in an oven, it will be apparent that other oleaginous substances may be used.

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

1. The method of making molds and other articles herein described, which consists in mixing plaster of paris and ashes, reducing the product by mingling water therewith to a thick liquid, pouring said liquid over or around a pattern in a suitable receptacle to form the mold, allowing the mold to set or become hard, separating the mold and pattern, "painting" the mold with melted lard and heating the mold in an oven.

2. The method of making molds and other articles herein described which consists in forming the said mold or article from a composition of matter containing plaster of paris, painting or covering the mold or other article with an oleaginous substance and heating the said mold or other article in an oven.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 24th day of July, 1908.

ERNST L. BOHL.

Witnesses:

C. E. MULREANY,
A. R. APPLEMAN.