

# UNITED STATES PATENT OFFICE.

AUGUSTUS L. SIMONDI, OF SILVER CITY, IDAHO TERRITORY.

## PREPARATION FOR COATING INGOT-MOLDS.

SPECIFICATION forming part of Letters Patent No. 226,933, dated April 27, 1880.

Application filed July 9, 1879.

*To all whom it may concern:*

Be it known that I, AUGUSTUS LAWRENCE SIMONDI, of Silver City, county of Owyhee, Territory of Idaho, have invented a Preparation for Coating Ingot-Molds; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improved compound for the coating of ingot-molds to prepare them for the reception of melted metal.

In the casting of bars or ingots of gold or silver it is desirable to make clean, smooth, and solid castings; but it is very difficult to do so. Various methods have been employed for this purpose, the principal being to coat the mold with oil or with the soot of resin or other smoky substance. When oil is employed it burns off rapidly and dries up, not having sufficient body, while the loosely-attached soot is easily carried away in the pouring, thus leaving the iron of the mold exposed, as before.

My invention consists in the application of a compound to the interior of the mold, said compound being of such a nature and consistency that it will form a coating or film between the molten metal and the iron mold, and prevent the adhesion of air and the formation of blow-holes or other undesirable appearances.

This mixture or preparation is made as follows: Take common beef-suet from which the tallow is obtained and render or draw it. After this tallow becomes hard weigh the amount required, and to every one hundred parts of tallow add twenty-seven parts of lamp-black. The tallow should be first melted, then add the lamp-black, and it will readily mix by stirring in for a short time. After it is well mixed it is ready for use. If left to cool, it is prepared for use by heating the can or vessel containing it. Great care should always be taken that no moisture comes in contact either with the tallow or lamp-black. If such is the case, the materials are useless for this purpose, as also would be the case with the compound after being made.

When the mixture is to be used for casting gold or silver bars the mold used for that purpose should be cleaned while cold, and then heated to a temperature sufficient to melt the compound. Then, shortly before using the

mold, apply some of the mixture either by putting a little in the mold itself, or, which is better still, heat the mixture and distribute it inside the mold, with a small piece of cloth entwined or fastened in some shape with fine wire at the end of a stick. After the mixture has been distributed thoroughly throughout the mold, take another small piece of cloth, and with some iron instrument swab it about gently inside of the mold, in order to take up any excess of the mixture. When this is done the mold is ready for use, having a uniform coating of the mixture all over. If the mold is heated too hot in the first place, it will burn up the greasy substance of the mixture, and the mold is in not much better condition than if it had been smoked; at the same time it must not be too cold. Any melter with a little knowledge of his business soon becomes accustomed to the temperature his molds should be.

The mold being in readiness, the melted metal is poured into it to and fro along the mold, gently at first, so as to keep the mold at an even temperature. When about half full, pour rapidly, taking care not to overflow the metal in the mold. When sufficiently cool the mold is reversed, the bar removed, and if the instructions have been fully carried out the result is a smooth cast, without gas-holes or blow-holes or other imperfections.

I claim superiority of this mixture over anything now in use for this purpose, for these reasons: When the molten metal is first poured into the mold the greasy substance, together with the inflammable parts of the lamp-black, ignite, thereby keeping the cold air from the metal, which does not solidify so suddenly but what it has time, so long as it is in a liquid state, to fill every part of the mold. If the pattern or mold is smooth, it leaves its counterpart in the cast. The lamp-black serves the double purpose, in addition to the above, of, first, leaving a coating between the mold and the metal after the greasy substance has been burned off, and, second, to prevent the greasy part of the mixture from burning off too rapidly.

I am aware that molds have been greased, smoked, and also have been lined with a compound consisting of fatty matter and plum-

bago. I do not therefore claim either of these substances.

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

The improved compound for coating ingot-molds, consisting of tallow and lamp-black mixed in about the proportions, by weight, of

one hundred parts of tallow to twenty-seven parts of lamp-black, substantially as described.

In witness whereof I have hereunto set my hand and seal.

AUGUSTUS LAWRENCE SIMONDI. [L. S.]

Witnesses:

WM. MOODY,

P. H. REGAN.