

UNITED STATES PATENT OFFICE.

MARSHALL B. OWEN, OF GRANITE CITY, ILLINOIS.

MOLD-FACING.

SPECIFICATION forming part of Letters Patent No. 678,124, dated July 9, 1901.

Application filed October 16, 1899. Serial No. 733,801. (No specimens.)

To all whom it may concern:

Be it known that I, MARSHALL B. OWEN, a citizen of the United States, residing at Granite City, Madison county, Illinois, have invented a certain new and useful Improvement in Mold-Facings, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

10 This invention relates to a new and useful improvement in mold-facings, the object being to provide a facing of the character described which is readily freed from the metal, leaving a good clean casting.

15 With this object in view the invention consists in the composition facing hereinafter described, which, briefly stated, comprises a facing such as is usually employed combined with a chlorid, whereby upon the introduction of the molten metal into the mold the heat of the incoming metal forms chlorin gas at the surface of the facing, so that when the casting has been formed the facing is readily freed therefrom, leaving a clean smooth finish on the casting.

25 In preparing my improved facing I take facing such as is usually employed, consisting, preferably, of the following ingredients in about the proportions mentioned: four barrels of black sand, one barrel of white sand, and one-half barrel of fire-clay, this being mixed together, and afterward I add about one-quarter of a barrel of some suitable chlorid—such, for instance, as chlorid of ammonia (sal-ammoniac)—dissolved in a suitable quantity of water, so that the chlorid solution also serves to moisten the facing.

35 This facing is designed to be employed in the usual manner—that is, the matrix is formed and the pattern withdrawn, after which molten metal is introduced. The molten metal coming in contact with the surface of the facing heats the same, decomposing the chlorid and forming chlorin gas, which in its nascent state thoroughly cleanses the face of the metal, so that when the casting is removed it has a clean smooth surface or finish. As commercial chlorid of ammonia frequently contains ferrous chlorid, the presence of the latter imparts a bluish color to the casting, which some consider desirable rather than otherwise.

My improved facing is specially designed for use in steel-foundries, where castings are made of steel; but it is obvious that there are other metals with which the same can be employed.

I desire it understood that I do not limit my invention to the use of the particular chlorid mentioned, as the invention contemplates the use of any suitable chlorid capable of evolving chlorin gas when the molten metal is brought into contact with the facing material.

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

1. The herein-described mold-facing comprising sixteen parts by volume of black sand, four parts of white sand, two parts of fire-clay, and one part of sal-ammoniac, the last-mentioned ingredient being dissolved in water to form a solution of a chlorid employed for moistening other ingredients, said solution of a chlorid being capable of evolving chlorin when in contact with molten metal; substantially as described.

2. A material for molding purposes, comprising a mixture of suitable sand and clay, to which is added a chlorid in solution, capable of evolving chlorin when molten metal is brought into contact with the facing material in substantially the proportions of five and one-half barrels of the mixture to one-quarter of a barrel of chlorid in the solution, substantially as described.

3. The herein-described facing material for the purpose described, comprising a mixture in substantially the following proportions to wit; of black sand four barrels, white sand one barrel, fire-clay one-half barrel, and a solution of one-quarter barrel of a chlorid capable of evolving chlorin in contact with the molten metal when the latter is brought into contact with said facing material, substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 11th day of October, 1899.

MARSHALL B. OWEN.

Witnesses:

W. W. WILCOX,
F. M. CAUGER.