UNITED STATES PATENT OFFICE.

JOHN WAGNER AND JOHN FERENCZ, OF CLEVELAND, OHIO.

CORE-FORMING MATERIAL.

No. 921,030. Specification of Letters Patent. Patented May 11, 1909.

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To all whom it may concern:

Be it known that we, JOHN WAGNER, a subject of the Emperor of Austria-Hungary, residing at Cleveland, in the county of Cuyahoga and State of Ohio, and JOHN FERENCZ, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Core-Forming Material; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to improvements in core mixtures and materials or ingredients therefor.

The cores constructed of the materials usually employed at the present time, are unsatisfactory in many respects, among which are, the time and labor required in drying or baking the cores, the conditions of the surfaces of the cores after being dried, and on account of the action of the heat of the molten metal on the materials of the core mixture. At the present time, on account of the materials generally employed, including molasses, rosin, flour, oil, etc., the cores are not impervious to moisture and it is frequently necessary that they be dried repeatedly. Furthermore, in the drying process the surfaces of the cores become pitted and roughened and this roughness causes rough castings. After the cores are in the molds and when the metal is being poured, the molten metal burns the core materials, generating gas and smoke which may spread the casting and ruin the same. The gas in escaping usually ignites and burns the flasks, and in case it does not ignite it escapes in the form of smoke which is detrimental to the health of the molders and by obstructing their view of the work interferes seriously with the casting. In case the cores contain oil and if the vents are even partially obstructed, the gas is liable to explode throwing the metal over the workmen and causing serious or fatal burns.

Among the objects of the present invention is the provision of a core mixture which will overcome all the difficulties and undesirable features enumerated above.

In carrying out our invention we employ as one of the main materials or ingredients of the core mixture, cornmeal which is preferably employed in the form of a thick paste. To this cornmeal paste we add a quantity of syrup, forming the core mixture which is added to the mold to form the complete core mixture or material.

In forming the mixture a certain quantity of dry cornmeal, say about two quarts, is added to a sufficient quantity of water, and the water and cornmeal is then boiled until the mass becomes sticky or pasty and of about the thickness or consistency of ordinary syrup. After the cornmeal paste cools, we add to the same about a pint of syrup.

In using the above mixture to form the complete core material, a certain quantity is mixed with sand, the proportions of the mixture and of the sand depending upon the kind of metal to be cast. For casting iron we preferably employ about one part of the mixture to about ten parts of the sand; for brass one part of the mixture to about thirteen parts of sand; for aluminum and bronze about one part of the mixture to about fourteen parts of sand.

Our improved core mixture produces stronger and smoother cores than the mixtures generally employed; the cores can be dried and baked in less time and with less heat, and after once being dried, are impervious to moisture and do not require redrying. Furthermore, when the metal is being poured, the cores do not burn and no gas or smoke is produced.

We do not desire to be confined to the exact proportions stated above, but aim in our claims to cover all modifications which do not involve a departure in the spirit and scope of our invention.

What we claim is,—

1. A core mixture comprising about four parts of cornmeal added to water and boiled to a thick or sticky mass, and about one part syrup.

2. A core material comprising cornmeal boiled in water until the mass is thick, syrup and sand.

3. A core material comprising about four parts of cornmeal boiled in water until the mass is thick, about one part of syrup and sand.

Signed by us at Cleveland, Ohio, this 10th day of September, 1908.

JOHN WAGNER.
JOHN FERENCZ.

Witnesses:
VICTOR C. LYNCH,
B. C. BROWN.