

UNITED STATES PATENT OFFICE.

ANDREW J. ROY, OF CHICAGO, ILLINOIS.

CORE-BINDER.

1,127,523.

Specification of Letters Patent.

Patented Feb. 9, 1915.

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To all whom it may concern:

Be it known that I, ANDREW J. ROY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Core-Binders, of which the following is a specification.

This invention relates to a material for making cores for sand molds, and has for its object to provide a new and improved material of this description. These cores are made out of sand and this material is mixed with the sand so as to make it properly adhere. The core is then molded and baked and is ready to be inserted in the mold in the usual way.

One of the objects of my invention is to provide a material that can be made at very little expense and which will yet be effective in cheaply and efficiently securing the desired result.

In carrying out my invention, I take a suitable adhesive material which can be used to cause the particles of sand to adhere and which will not be driven off when the core is baked, such for example as petroleum pitch the residuum of petroleum in the process of distillation or stearin pitch. The pitch is heated so as to melt it, and is then reduced by some reducing or thinning agent such as kerosene, or any other suitable vegetable or mineral oil.

I prefer to use the pitch and the reducing agent in about equal proportions, that is 50% of each, but it is, of course, evident that this proportion may be varied. If more than 50% of the reducing oil is used the strength of the composition will, of course, be decreased. I may, for example, increase the proportion of reducing oil and still secure a commercial article, but the proportion of this oil cannot be reduced much below 50% without producing a composition which is too viscous to be conveniently handled at ordinary atmospheric temperatures. After the pitch has been heated and melted, the reducing oil is placed therein and the whole is properly stirred so as to form the composition. This composition is, when cool, in a fluid state and is added to the sand from which the cores are made. The sand is then formed into a core of the proper shape and is baked, the heat driving off the reducing oil but leaving the pitch which forms an adhesive element and holds

the particles of sand together, so that the core will maintain its proper shape while being handled.

The pitch herein used, whether petroleum pitch or stearin pitch, is a black pitch, and in the claims, we have used the term "black pitch" to cover either the stearin pitch or the petroleum pitch.

By using such materials, for example, as petroleum pitch or stearin pitch as the adhesive material and kerosene as the reducing oil, I am able to make a composition which is very cheap, which can be easily and cheaply made, and which is effective in securing the proper results.

I have described in detail a particular composition, but it is, of course, evident that the proportions and elements may be varied without departing from the spirit of the invention.

The term black pitch as used in the claims means stearin pitch, or petroleum pitch the latter being made artificially by the process of distilling petroleum, as I have found that only the artificial petroleum pitch has the proper adhesiveness necessary to make cores.

I claim:

1. A material for making cores for molds comprising a composition of a black pitch and a reducing oil.

2. A material for making cores for molds comprising a composition of a black pitch and a reducing oil in equal proportions.

3. A material for making cores for molds comprising a composition of a black pitch and a mineral oil thoroughly mixed in such proportions as to secure a fluid composition under ordinary temperatures.

4. A material for making cores for molds comprising a composition of stearin pitch and kerosene thoroughly mixed in proper proportions to secure a liquid composition under normal atmospheric temperatures.

5. A material for making cores for molds comprising a composition of stearin pitch and kerosene in equal proportions.

In testimony whereof, I affix my signature in the presence of two witnesses this 7th day of July, 1914.

ANDREW J. ROY.

Witnesses:

MINNIE M. LINDENAU,
L. M. EISZNER.