

## UNITED STATES PATENT OFFICE.

AARON R. MARSTELLER, OF ST. LOUIS, MISSOURI.

COMPOSITION OF MATTER ENTERING INTO THE CONSTRUCTION OF FOUNDRY APPLIANCES.

SPECIFICATION forming part of Letters Patent No. 785,562, dated March 21, 1905.

Application filed January 5, 1904. Serial No. 187,789.

*To all whom it may concern:*

Be it known that I, AARON R. MARSTELLER, a citizen of the United States, residing at St. Louis, State of Missouri, have invented a certain new and useful Composition of Matter Entering into the Construction of Foundry Appliances, of which the following is a specification.

My invention has special relation to compositions entering into the construction of foundry matches and dies, the match being the support on which the pattern is laid in the ramming of the drag, and the die being the complement of so much of the pattern as is not impressed in the drag and which is used in forming the impression in the cope.

The special purpose of the composition is to produce a surface to which the sand of the drag or cope will not adhere, thereby dispensing with the necessity of parting sand commonly used between the drag and cope in the formation of the mold.

The composition consists of the following ingredients combined substantially as follows: coarse silicious sand, ten pounds; fine silicious sand, five pounds; boiled linseed-oil, one quart; litharge, one-half to one pound; asphaltum, one-half pint.

In preparing the composition the sand, oil, and litharge are thoroughly mixed and kneaded, and then subsequently molded to the required configuration, depending, of course, on the particular purpose the same is to subserve, whether it be used as a match or whether as a die. After the same is properly molded the surface is brushed or painted over with the asphaltum, preferably thinned with a proper proportion of turpentine. This solution thoroughly permeates or impregnates the composition and becomes a part of it. It is then thoroughly dried before a stove or steam-radiator, this drying hardening the composition and rendering it specially applicable for foundry matches and dies. The surface of such a match or die is perfectly smooth and elastic, and the sand of the drag or flask in no wise adheres thereto when said drag or flask is removed upon the completion of the respective sections of the mold.

I am aware that match-plates have been made of a composition of sand, oil, and litharge finished with shellac or varnish; but I am not aware that asphaltum has been used either in making the composition or in finishing the work. A wood pattern or a composition pattern finished with shellac or varnish is very unsatisfactory, for the reason that the shellac or varnish is very brittle when dry and will not stand hammering, ramming, or other hard usage and that shellac or varnish is very absorbent in the presence of moisture and will cause the patterns to swell and become sticky, so that the sand will adhere and cannot be removed, thus making the patterns rough and short-lived, whereas patterns made from my composition and finished with asphaltum are elastic, tough, strong, and waterproof, so that the patterns or the like will not swell from moisture or heat and will not crack or chip from ramming and so that the sand will not stick to the pattern. I am not aware that such a result has ever before been obtained.

I do not herein make any claim for the "foundry match or die," as such forms the subject-matter of a copending application, filed January 5, 1904, Serial No. 187,788.

Having described my invention, what I claim is—

1. The improved composition of matter for foundry use and the like, consisting of sand, oil, litharge and asphaltum.

2. The improved composition of matter for foundry use and the like, consisting of coarse sand, fine sand, linseed-oil, litharge and asphaltum.

3. The improved composition of matter for foundry use and the like consisting of coarse sand, fine sand, linseed-oil, litharge, asphaltum and turpentine.

In testimony whereof I affix my signature in presence of two witnesses.

AARON R. MARSTELLER.

Witnesses:

EMIL STAREK,  
G. L. BELFRY.