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PARTING MATERIAL

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This invention relates to a parting material for use in metal casting operations to prevent the moist molding sand from adhering to the pattern or core box. It is preferably in the form of a dry finely divided material which can be dusted on or otherwise applied to the pattern or core box preliminary to the forming of the sand mold or core.

One object of the invention is to provide a parting material which can be easily and quickly produced at a low cost.

A further object of the invention is to provide a parting material which will have no injurious effect upon the metal which is cast in or about the sand mold or core.

A further object of the invention is to provide a parting material which may be applied either to a pattern or the like for use with water moistened sand or to a core box or the like for use with oil moistened sand.

A further object of the invention is to provide a parting material which will have no injurious effect upon the workmen handling the same, such as causing silicosis or sinus affections.

A further object of the invention is to provide parting material which will be free from objectionable odor both during its application to the pattern or core box.

Other objects of the invention may appear as the material is described in detail.

In the preparation of the parting material we prefer to employ as the essential element thereof a finely divided insoluble mineral which will vaporize at a temperature lower than the melting point of the metal to be cast, thus enabling the material to be used with either water moistened molding sand or oil moistened molding sand and avoiding any injurious effect of the material on the metal which is cast in or about the sand mold. We have found, by investigation and tests, that sulphur when properly prepared has all the characteristics necessary for a satisfactory parting material, that is, a material which when applied to a pattern, core box or the like, will prevent the moist molding sand from adhering thereto. In finely divided form the sulphur can be easily dusted on or otherwise applied to the pattern or core box. It is not soluble in water or oil and can therefore be used with either water moistened sand or oil moistened sand. It evaporates at a temperature substantially lower than the melting temperature of the metal to be cast and has no injurious effect upon the metal. It has no injurious effect upon the workmen because it is free from silicate and cannot produce silicosis and it has no harmful effect on the sinus or any other part of the human body. And it can be easily produced and processed at low cost.

In the preparation of the parting material the sulphur is reduced to a finely divided condition, preferably to such a fineness that it will pass through a two hundred mesh screen. Sulphur produced by sublimation, flowers of sulphur, is satisfactory but the sulphur may be reduced to the desired fineness in any suitable manner, as by grinding. The finely divided sulphur when used alone will effectively prevent the adhesion of the molding sand to the pattern or core box but we prefer to provide the individual particles of the sulphur with a coating which will prevent the particles from adhering one to the other and will eliminate any objectionable odor during the handling of the parting material. The coating material should have a melting temperature approximately the same as that of the sulphur and should be insoluble in water or core oil but should be readily soluble in spirits, such as alcohol. For this purpose we prefer to use a suitable dye, such as an alcohol-soluble "Indulin" dye. The dye is used in a very small quantity in proportion to the sulphur to be treated and we have found in practice that four-tenths of a gram of such a dye when dissolved in a small quantity of alcohol and thoroughly mixed with the sulphur, as by stirring, will coat the individual particles of ten pounds of sulphur. The sulphur being non-soluble in alcohol regains its dry powder form immediately upon the evaporation of the alcohol.

The sulphur being of very light weight it may sometimes be desirable to increase the weight of material by adding to the sulphur a finely divided relatively heavy substance, such as calcium carbonate, but this is not usually necessary or desirable.

It will be apparent from the foregoing description that we have provided a low cost parting material which can be quickly and easily applied to a pattern or core box, which will be effective with either water moistened sand or oil moistened sand, which has no harmful effect on the metal which is cast in and about the sand mold or core, or on the workmen, and which is free from objectionable odor.

While we have described the preferred composition of our parting material we wish it to be understood that we do not wish to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described our invention, what

we claim as new and desire to secure by Letters Patent, is:

1. A parting material for preventing the adhesion of molding sand to a pattern or core box comprising as its main and essential ingredient finely divided sulphur.

2. A parting material for preventing the adhesion of molding sand to a pattern or core box comprising finely divided sulphur, and having the individual particles of the sulphur coated with a material which is insoluble in water or oil.

3. A parting material for preventing the adhesion of molding sand to a pattern or core box comprising finely divided sulphur, and an odor eliminating coating for the individual particles of said sulphur.

4. A parting material for preventing the adhesion of molding sand to a pattern or core box comprising finely divided sulphur the individual particles of which are coated with a spirit-soluble dye.

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