United States Patent Office.

CHARLES GRASSER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO METALLIC COMPRESSION CASTING COMPANY, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 90,257, *dated May* 18, 1869.

IMPROVED COMPOSITION FOR MOULDS AND CORES FOR CASTING METALS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, CHARLES GRASSER, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and improved Composition for Moulds and Cores for Casting Metals; and I do hereby declare the following to be a full, clear, and exact description of the same.

The subject of this invention is a composition for the purpose of making moulds and cores, used for casting bronze, brass, or copper.

The nature of this composition is such that it may be mixed with water to a thin, flowing paste, like plaster of Paris, and that it will set and harden, like plaster. It also will resist a considerable degree of heat, without cracking, is of a porous nature, to permit the escape of gases and air in the mould, and will take just as perfect an impression of a design as plaster of Paris will do.

Manner of Mixing, and Use in Application.

Take one part of marble pieces, ground to dust, one part of clean sand, one part of plaster of Paris, and one part of lamp-black. All are ground together to a fine powder.

For the marble-dust and sand may be used an equivalent substance, which may be had at any mill where marble blocks are sawn, and which is produced by saw and sand cutting the marble block.

The above-described composition is mixed with water in the same manner as plaster of Paris is used, when cast. It is poured over the wax, or metallic pattern, and when set and hardened, which will take place in about half an hour, the pattern may be taken out. The proper gates and sprues are cut in the same manner as by sand-moulding, and the mould is ready for burning.

The nature of the composition is such, that it may be put into great heat at once, without injury, or cracking. When the moulds are brought to red heat, they are kept so for several hours, and then the furnace must cool gradually, as too sudden exposure of the moulds to cold air will crack them. When the moulds are cooled, they are placed between two plates, held together by screws, or clamps, in manner like sand moulds, and the metal is poured in, as in ordinary casting. The bronze and brass, or copper castings made in such moulds are far superior to sand-mould castings, sharper and smoother.

One great advantage of this compositon is, its applicability to cores and undercut castings, where a wax pattern is employed and melted out; the composition will not be washed, or injured in the least by the melting wax.

Having thus described my invention,

The following is what I claim, and for which I desire to secure Letters Patent:

A composition of the specified materials, in proportion about the same, or their chemical equivalents, to be used for making moulds and cores, used in casting metals.

CHARLES GRASSER.

Witnesses:

JOHN JOS. CH. SMITH,

MICHAEL SMITH.