W. B. CLOSSON.

ART OF MAKING MOLDS AND THEIR COUNTERPARTS.

No. 192,112. Patented June 19, 1877.

Fig 1.



Fig 2.

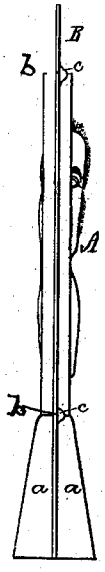


Fig 4.

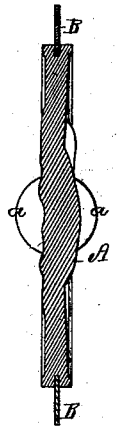
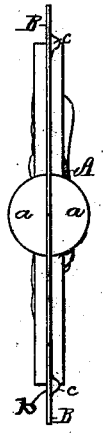


Fig 3.



Witnesses.

S. N. Piper

L. Wiseller

Inventor

William B. Closson

by his attorney

R. H. Eddy

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM B. CLOSSON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN THE ART OF MAKING MOLDS AND THEIR COUNTERPARTS.

Specification forming part of Letters Patent No. **192,112**, dated June 19, 1877; application filed January 19, 1877.

To all whom it may concern:

Be it known that I, WILLIAM B. CLOSSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Art of Making Molds and their Counterparts; and do hereby declare the same to be described in the following specification, and represented in the accompanying drawing, of which—

Figure 1 is a side view, Figs. 2 and 3 edge views, and Fig. 4 a transverse section of an object or medal, as prepared in accordance with my invention, for being electroplated or electrotyped for producing a mold from it, for the casting of fac-similes of such object or medal.

In carrying out my invention I extend from the medal or object A, and at an angle or angles to its surface, wherever such may be necessary, two or other suitable number of thin plates, B, of metal, or of some suitable material susceptable of being covered with powdered graphite.

In the drawing, the plates are shown as encompassing the medal at and around the middle of its circumference, and fitting together and thereto, or into a groove made therein. In this instance the two plates abut together at their inner edges. Furthermore, I arrange and fix on the plates, and to extend from the medal in manner as shown, one or more masses, *a*, of wax, whose outer surface I cover with powdered graphite, such being to form in the electrotype what is usually termed a "sprue" or "passage" or "duct," for conveying the metal into the mold.

Furthermore, each plate I usually indent, so as to form it with concavities *b* in one side, and corresponding and opposite convexities *c* extended from its opposite side.

Having thus prepared the object with the very thin plates and the sprue-formers *a*, such is next to be placed in an electrotyping or electroplating bath, and to have a coating of metal of the necessary thickness deposited on the surfaces and edges of both object and plates, and on the sprue-formers, such deposits being accomplished by the electroplating process.

After such may have been done, the deposit should be removed or filed from the edges of the plate and the outer ends of the sprue-formers. The rest of the deposit will then be found to be separated in two portions, so that all on either side of the object or medal, and the next adjacent sides of the plates, may be removed intact and in one piece of metal. When the two portions so made are put together, so that the convex dents of one fit into the concavities of those of the other, they, the said portions, will form together a matrix or mold for casting or producing a fac-simile of the object or medal.

In order to preserve the two parts of the mold from injury, they may be backed with metal, or plaster-of-paris, or other suitable material.

By my invention molds from statues, busts, bas-reliefs, or various other matters may easily be made for the reproduction, by casting of metal or other fluid material into them, or by depositing metal on them by the electroplating process, of fac-similes of such statues, busts, or other matters.

In order to produce an object by such a mold I sometimes first cast within the mold a small quantity of wax, and turn the mold so as to cause the wax to cover its inner surface with a very thin coating. After the coating may have been so formed in the mold, I cast within it a mass of plaster-of-paris, or other suitable liquid matter or composition that will set and become hard.

Having thus produced an object by the mold, I cover its external or waxen surface with graphite in a state of impalpable powder. Next, the object so produced with a wax surface in the mold is to be placed in an electroplating or electrotyping bath, and have a thin coating of copper, or other suitable metal, deposited on it. In this way a hollow metallic counterpart of the mold may be produced, filled or re-enforced with a plaster or other proper filling.

I claim as my invention as follows:

1. The method, substantially as described, of making a mold from an object, such consisting in the employment of divisional plates therewith, and depositing on their opposite surfaces and those of the object, by means of the electroplating process, a coating of metal, and subsequently separating such coating at,

or removing it from, the edges of the plates, as set forth.

2. The method, substantially as described, of making a mold with a sprue or filling-passage, such consisting in the employment of divisional plates and sprue-formers, as described, therewith, and depositing on their opposite surfaces and those of the object, by means of the electroplating or electrotyping process, a coating of metal, and subsequently separating such coating at, or removing it from, the edges of the plates and outer ends of the sprue-formers, all as set forth.

3. The method, substantially as described, of producing a fac-simile from such mold, such consisting in covering the surface of the matrix with a very thin coating of wax, and filling such coating with a re-enforce of plaster, or other suitable material, and subsequently applying powdered graphite to the waxen coating, and depositing thereon, by the electroplating or electrotyping process, a thin coating of metal.

4. As a new manufacture, a mold made, in the manner described, with projections and corresponding cavities to the parts about its matrix, to enable the said parts to be readily adjusted to each other, so as to bring the opposite parts of the matrix in their true relations to each other, as set forth.

WM. B. CLOSSON.

Witnesses:
R. H. EDDY,
J. R. SNOW.