

No. 772,247.

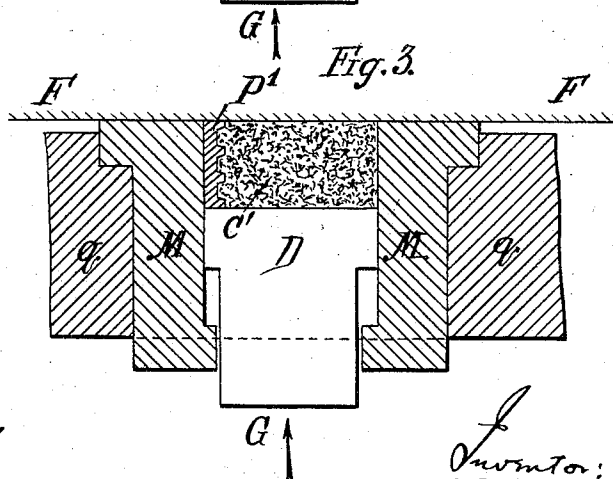
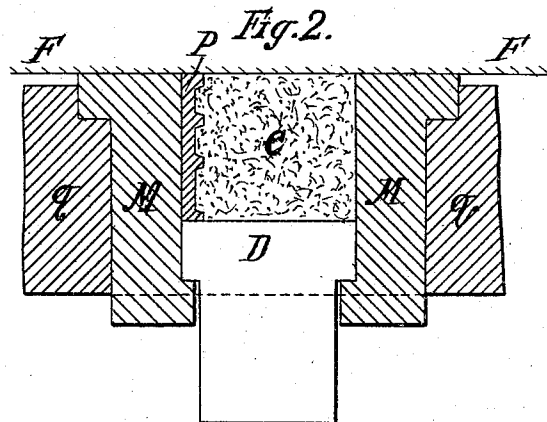
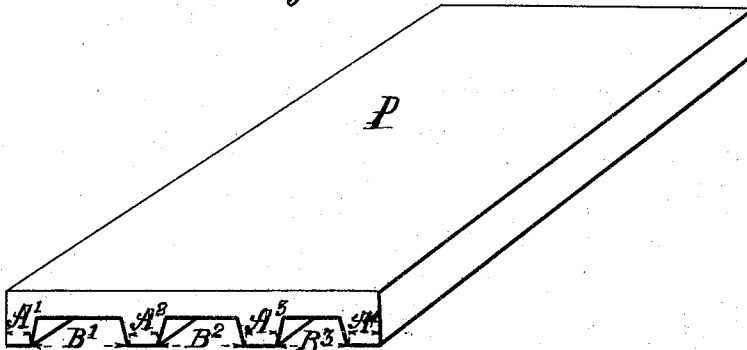
PATENTED OCT. 11, 1904.

LOUIS EMILE MULLER, DIT LOUIS D'EMILE MULLER.
METHOD OF PRODUCING BRICKS, &c., WITH COATINGS OF CARBORUNDUM
OR SIMILAR MATERIAL.

APPLICATION FILED JULY 12, 1904.

NO MODEL.

Fig. 1



Witnesses:

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UNITED STATES PATENT OFFICE.

LOUIS EMILE MULLER, DIT LOUIS D'EMILE MULLER, OF PARIS, FRANCE.

METHOD OF PRODUCING BRICKS, &c., WITH COATINGS OF CARBORUNDUM OR SIMILAR MATERIAL.

SPECIFICATION forming part of Letters Patent No. 772,247, dated October 11, 1904.

Application filed July 12, 1904. Serial No. 216,284. (No model.)

To all whom it may concern:

Be it known that I, LOUIS EMILE MULLER, dit LOUIS D'EMILE MULLER, of Paris, France, have invented a new and useful Method of
5 Producing Bricks, which invention is fully set forth in the following specification.

As is well known, the preparation of a coating of clay, colored or not, for the surface of ceramic or like articles is very difficult on account of the variations in the expansion or
10 contraction and of the differences of cohesion between the two materials, one being the body and the other the skin or coating of the product. Means have been found by which
15 the contraction and expansion of the two materials are made to be practically the same; but other difficulties are met with as regards to the unequal heating or the unequal cooling which often produce the detachment of the
20 coating. These difficulties are still increased when the product is designed for the construction of fireproof brickwork which are submitted to various changes and alterations. Another difficulty consists in applying economically and practically a thick coating on
25 the product to be made. Indeed, this coating must have a uniform thickness. It must be homogeneous, but without getting mixed with the materials of the body proper. Any
30 useless mixing between the coating material and the body material must be avoided, for there would be a loss of coating material, the latter being generally rather valuable. The regularity of disposition inside the mold of the pulverulent coating at the side of a pulverulent body, which is the real body proper of the product, may be effected only with peculiar care, with much time, and consequently great cost.

40 The object of my present invention is to overcome these difficulties—*i. e.*, reduce the loss of material and lower the cost price; and the invention consists in a process for the production of coated blocks—namely, blocks
45 with carborundum or silicide of carbon coatings—which will be capable of resisting the action of fire and of all physical or chemical agents producing disintegration.

The invention is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of one form of a carborundum plate ready for the coating operation. Fig. 2 shows the arrangement of the carborundum plate for the coating and the powder which forms the body of the
55 product before pressure is applied. Fig. 3 is a similar view of that of Fig. 2, but after pressure, and shows the deformation of the carborundum plate, which now sticks close to the body of the product.

60 The carborundum plate P, Fig. 1, is produced, as ordinary in the dry process, by means of any suitable press, such as an hydraulic or a mechanic press. The said plate is formed of elements which are mixed according to given proportions with regard to the body of the article to be coated, so as to obtain similarity of expansion and contraction. The powdered carborundum is placed in a mold, where it is subjected to a slight
70 pressure which is just sufficient to permit of the manipulation of the said plate. The plate P is then placed vertically against one of the faces of a mold M, Fig. 2, which is filled with the powder C, forming the body of the product. The filling takes place above a piston D, which will serve first for the pressure and then for the discharging. The mold M is rigidly connected with a movable table *q q*,
80 by means of which the upper part of the said mold, and consequently the material to be pressed, may be brought either by rotation or by sliding opposite a fixed table F, which is rigid and against which the compression will take place, as shown by the arrow G. 85 By this compression the piston D is moved and brought close to the fixed table F. The said compression may be produced either mechanically by means of screws, cams, &c., or preferably by a hydraulic piston with or without the aid of interposed accumulators. When the pressure has reached its utmost limits, the movable piece or piston D stands as it is shown in Fig. 3. The plate P takes the position and the form P' and the material C becomes like C'. The pulverulent elements of
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the body C are moved transversely and vertically, while the plate P supports a vertical compression. The materials are moved progressively—that is to say, the maximum of displacement takes place in the layers situated nearest to the upper face of the piston D. The vertical shifting is considerable next to the piston and very limited close to the fixed table F, where the lateral shifting is of a high value. The result is that the plate P will be greatly distorted on the lower part near the movable piston D, while the changes near the fixed table F will be of no importance. For this reason it has been necessary to find the suitable form and successive spacings for A' A² A³ A⁴, B' B² B³ on the plate P, Fig. 1, in order to obtain the same uniformity of value for the ribs A and the grooves B after vertical compression. Evidently the relative size and spacing of the ribs A' A² A⁴ of the carborundum plate will vary according to the possible settling of the pulverulent materials, the pressure available for the compression, the integrant moisture of the employed powder materials, and the final thickness of the product to be made. This depends on practical skill and study for each new product to be made in order to get a good result. As a result of the compression the body C of the article has been forced into the plate P, the ribs A' A² A⁴ have been moved on the body C and confined in the body of the product, and it is only necessary to withdraw the mold from the fixed table F so as to clear the upper face of the mold M. The piston P is then drawn up so as to enable the removing of the product C from the mold.

It will easily be understood that by this process I can obtain products of any suitable form—namely, for brickwork—by having molds with multiple faces and arranging the plates P on any convenient faces of the mold. The compressing device is the same what-

ever may be the number of faces to be coated by this method.

The advantages of my method are the following: First, the coating materials are manipulated independently of the body of the product in the manufacture of the coating-plate, so that no injurious mixing and no loss of coating material are liable to occur; second, uniformity of thickness and composition of the coating; third, rapidity and homogeneity in the production; fourth, production of coated products the coating of which is cramped in the body of the product.

I claim—

1. A method of coating the surface of ceramic material consisting in compressing the powdered coating material into a plate, placing the plate in a mold, applying the powdered ceramic backing material to the plate and while the materials are thus arranged in the mold compressing the same, thereby causing the opposing surfaces of the plate and ceramic material to interpenetrate and bind the surfaces together.

2. A method of coating the surface of ceramic material, consisting in compressing the powdered coating material into a plate provided with a series of ridges on one side, placing the plate in a mold, applying the powdered ceramic backing material to the ridged side of said plate and while the materials are thus arranged in the mold compressing the same, thereby causing the opposing surfaces of the plate and ceramic material to interpenetrate and bind the surfaces together.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LOUIS EMILE MULLER, DIT
LOUIS D'EMILE MULLER.

Witnesses:

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