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G. ROSENQVIST
METHOD OF MAKING MOLDS

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1,850,141

Fig. 2.

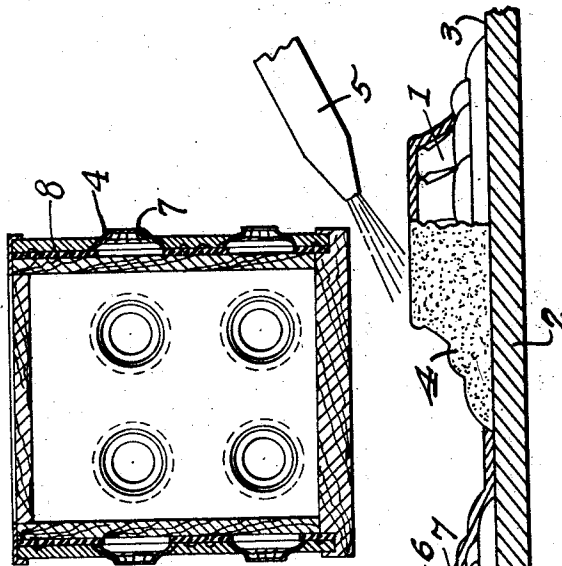


Fig. 1.

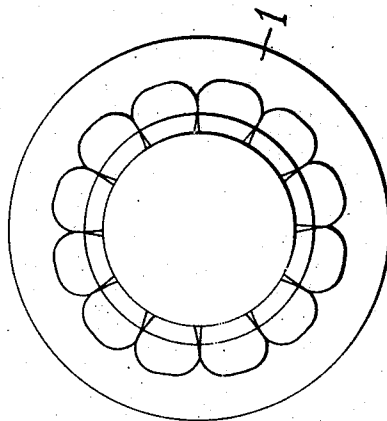
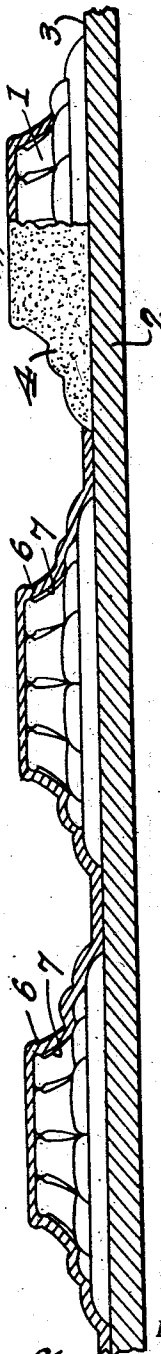


Fig. 3.



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METHOD OF MAKING MOLDS

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This invention relates to method of making molds for forming articles of plastic materials or of electro-deposition of metal and it is among the objects of the invention to provide a simple and relatively inexpensive method of producing such molds.

Another object of the invention is to produce a mold of a lead base alloy for use in galvanoplastic processes which possesses the characteristic of receiving a deposition of galvanoplastic metal without causing the latter to adhere thereto and without requiring any preliminary preparation of the matrix surface of the mold to prevent adherence of the deposition made thereon.

Another object of the invention is to provide a method of making molds whereby a single pattern may be utilized to form a mold having a plurality of matrices of the shape of the article to be made.

Molds for forming articles of galvanoplastic metal are generally constructed by preparing a wax pattern or imprint of the surface to be reproduced, coating the wax member with graphite or other metallic preparation and submerging the same in an electric solution in which is provided a cathode of scrap metal which is deposited on the coated surface of the wax member which is constituted an anode in a suitable electrical circuit adapted for effecting the deposition of metal thereon.

Molds of this character are expensive to manufacture and have usually been made of metals which were best adapted for subsequent use as matrices for forming other articles of galvanoplastic metal.

I have discovered that lead and antimony alloys can be successfully utilized as molds and that they possess the advantage of freeing the deposition without any difficulty and without requiring the preliminary preparation of the mold surface prior to effecting the deposition of the metal thereon. On account of these non-adhering properties of such alloys, it is desirable to utilize them in preference to copper molds or molds of other metals as has been heretofore customarily practiced.

I have also discovered that lead and an-

timony alloys may be made into suitable mold sections by employing a metal spray for effecting the deposition of the metal either in the form of small particles or as molten metal by applying such powdered or molten metal to the object on which the mold section is to be formed under pressure.

Metal spraying has been developed for plating objects and to provide a coating on the exterior of articles for various purposes. It is applied by depositing a very thin layer of coating on the article to be treated. In accordance with the present invention, I propose to form molds of relatively heavy wall sections by a metal spray process and by employing such a method, a single pattern may be utilized to form a mold having any desired number of matrices for reproducing a particular article by galvanoplastic process.

In the accompanying drawings constituting a part hereof, and in which like reference characters designate like parts, Fig. 1 is a plan view of a pattern in the form of a wall bracket for lighting fixtures from which the mold is to be made. Fig. 2 is a sectional elevational view of a mold made in accordance with the invention, and Fig. 3 is a sectional elevational view of a portion of the mold illustrating the manner in which it is formed.

Referring to Fig. 3, to form a mold such as is illustrated in Fig. 2, I place the pattern 1 of Fig. 1 on a suitable support 2 having a plain smooth upper surface 3. I then apply a coating 4 of metal either in powdered form or molten metal by means of the spray gun 5 which operates in a well known manner and which does not form a part of the present invention. The deposit can be made in any desirable thickness forming a wall section 6 which constitutes the mold section.

After the pattern 1 has been completely covered with the deposited metal, it is removed and placed on the support 2 in suitable relation to the deposit formed thereon and a second coating is applied which is extended over to the original deposition to form a continuous integral wall section and in this manner any desired number of matrices 7 may be formed integrally, three being shown in Fig. 3 to form a mold section which is

trimmed along the edge and assembled with other mold sections to a supporting frame 8, Fig. 2, to which it is joined to constitute a unitary mold structure capable of holding an electrolytic solution, such a mold structure having been described in my Patent No. 1,785,909.

By the use of the method described, molds can be cheaply made by the use of a single pattern and can accurately reproduce the configuration and dimensions of the pattern from which it is made. Molds as heretofore constructed were very expensive and greatly enhanced the cost of the articles made therefrom. With the present method, articles can be made of galvanoplastic metal, and other plastic materials, at a cost far below the cost of manufacturing similar articles when made either by galvanoplastic process or by the die forming machine methods. Another advantage of the utilization of the present invention is in the speeding up of production, since the long delays of waiting on molds or dies is thereby eliminated.

It is obvious that any of the methods of forming molds as herein described may be applied to other shapes than that illustrated and for other purposes without departing from the spirit of my invention.

I claim herein as my invention:

1. The method of making molds having a plurality of matrices of identical form which comprises, depositing particles of metal under pressure on a pattern to form a wall section therearound, removing said pattern and forming a deposit of metal thereon adjacent said first named deposit and joining the same to said first deposit, said deposits forming an integral mold section having matrices of the form and dimensions of the articles to be formed.

2. The method of making molds which comprises, depositing particles of metal under pressure on a pattern to form a wall section, removing said pattern and forming a deposit thereon integrally with said first named deposit, shaping said deposits to the form of a slab to constitute sections of a mold and joining a plurality of the sections so formed to constitute a unitary mold adapted to contain an electrical solution.

In testimony whereof I have hereunto set my hand.

GUNNAR ROSENQVIST.