Jan. 26, 1926. 1,570,635

A. K. LAUKEL

METHOD FOR THE PRODUCTION OF DEPOSITED METAL PATTERNS AND METAL PATTERN PRODUCED BY SUCH METHOD

Filed August 2, 1924

Fig. 1.

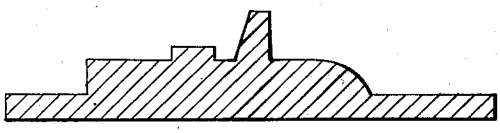


Fig. 2.

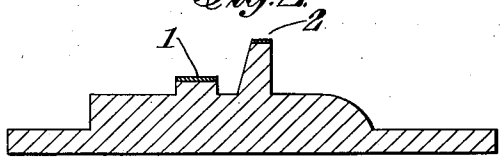
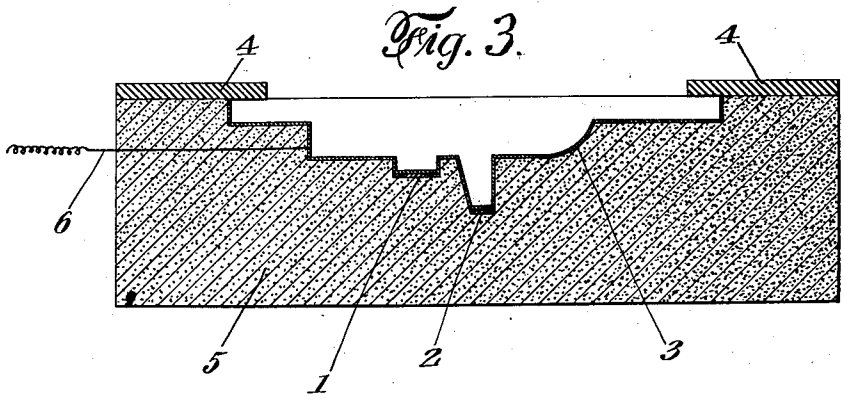


Fig. 3.



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UNITED STATES PATENT OFFICE.

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METHOD FOR THE PRODUCTION OF DEPOSITED-METAL PATTERNS AND METAL PATTERN PRODUCED BY SUCH METHOD.

Application filed August 2, 1924. Serial No. 729,674.

To all whom it may concern:

Be it known that I, ARTHUR K. LAUKEL, a citizen of the United States, a resident of Detroit, in the county of Wayne and State of Michigan, have invented a certain new and useful Method for the Production of Deposited-Metal Patterns and Metal Pattern Produced by Such Method, of which the following is a specification.

This invention relates to a method for the production of deposited metal patterns in which certain parts, ordinarily exposed to wear, are replaced by other metals. The invention also relates to a novel form of metal pattern. In metal patterns made by the usual process of the present day, replacement of parts is a difficult thing. For example, if patterns are made of brass the replacement of any parts exposed to wear by steel would be impractical due to excessive cost. The casting of the pieces in place is also an impractical scheme and is practically never done. It would also be difficult to solder or screw the pieces in place. While in certain cases such as replacement of bosses, it may be practical to a certain extent to screw or rivet them in position, it is, generally speaking, an impractical procedure to make similar attempts for all purposes.

It is accordingly an object of my invention to avoid these difficulties in the manufacture of metal patterns by substituting certain other metals in exposed portions where wear is ordinarily excessive and severe in its action on the metal.

In the accompanying drawings which form part of the specification, there is shown in Fig. 1 a section of a metal pattern as ordinarily made integrally of one metal;

Fig. 2 shows a section wherein the exposed boss and flange are formed of a different metal from the metal of the casting; and

Fig. 3 shows the manner in which the electro-deposition is carried out in the presence of inserted metal parts at the bottom of the plaster of Paris mold.

In said drawings the replaced metal parts are indicated by numerals 1 and 2, the electrolytic shell by 3, the protective card board or other covering by 4, and the plaster of Paris mold by 5, and the cathode wire by 6.

In accomplishing my object I preferably proceed by making use of the process described in my previous application, Serial No. 563,188, filed May 24, 1922, in which a method of electro-deposition is described for the manufacture of metal patterns. In carrying out my method I make a desired number of molds or casts from the wood or metal pattern that I wish to duplicate, as for example, by making plaster of Paris casts or other suitable molding material. Thereafter I prepare the molds for depositing as described in said application, namely, by connecting the cathode wire to the surfaces and providing the latter with a conductive coating of carbon. Then I prepare pieces of metals of desired form and composition by machining them to the desired size or otherwise forming them and I then place them in the desired position in the mold where they will ultimately form part of the entire deposited pattern. Thereafter the deposition of the metal is carried out in the manner described in my aforesaid application and when a shell of sufficient thickness has been built up it will, of course, include the inserted metal parts.

The pieces inserted may consist of any metal suitable for the particular use to which the pattern is to be put, such as steel, nickel, monel metal, brass, bronze, etc. In case the metal used is likely to be attacked in the bath, the pieces are first plated with some suitable resistant metal and thereafter used as above described, for example, if the metal would be steel, which is attacked by an electrolytic bath, it would be first plated with copper in a cyanide bath in which condition it would better stand the action of an acid copper bath.

The part to be inserted can also be made by deposition with some suitable hard, tough, metal such as nickel or iron, and in this case the cast sections of parts to be replaced are made of plaster of Paris and deposited with the metal. When finished they are taken from the mold and placed in the large mold proper and the depositing is continued with some other metal in the solution, for example, pieces are prepared by nickel deposition and these are placed in the mold proper and the rest of the pattern is finished by deposition of copper.

Although in the above specification the invention has been particularly set forth with

respect to the manufacture of patterns, it is to be understood that it is likewise adapted to the manufacture of cores or core boxes in a similar manner, and therefore in the specification and claims where the word "patterns" is used, it is to be understood that cores or core boxes are also contemplated and covered.

As many apparently widely different embodiments of this invention may be made without departing from the spirit thereof, it is understood that I do not intend to limit myself to the specific embodiment above described, except as indicated in the appended claims.

I claim:

1. A method for the production of deposited metal patterns consisting in making a mold of the desired form, preparing it for electro-deposition, placing therein metal parts and depositing metal in the molds to form the pattern.

2. A method for the production of deposited metal patterns consisting in making a mold of the desired form, preparing it for electro-deposition, placing therein metal parts formed of deposited metal, and depositing metal in the molds to form the pattern.

3. The process of claim 1 in which the inserted metal parts are previously coated with a resistant metal to resist the action of the electrolytic bath.

4. The method for the production of deposited metal patterns consisting in making a mold of the desired form, preparing it for electro-deposition, placing therein metal parts made of hard metals in such a position as to lie in the portions of the pattern which are eventually to be exposed to heavy wear, and then depositing metal in the molds to form the pattern with said metal parts embedded in the same.

5. A metal pattern consisting of a strong, relatively thick deposited metal shell capable of being used without reinforcement, said shell having embedded therein pieces of hard metal at places where the pattern is subjected to heavy wear.

6. A metal pattern consisting of a strong, relatively thick deposited metal shell capable of being used without reinforcement said shell having embedded therein pieces of hard metal at places where the pattern is subjected to heavy wear, and the molding surfaces of the pattern being in finished and exact form without having been machined, filed or scraped.

In testimony that I claim the foregoing, I have hereunto set my hand this 29 day of July, 1924.

ARTHUR K. LAUKEL.