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METHOD AND MEANS FOR MARKING CASTINGS

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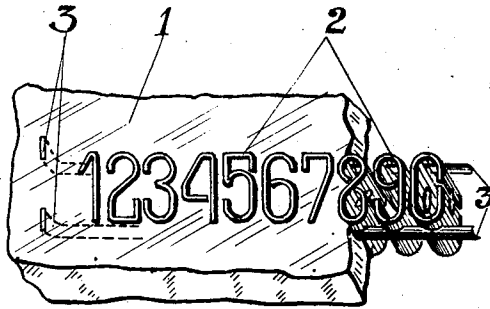


Fig. I

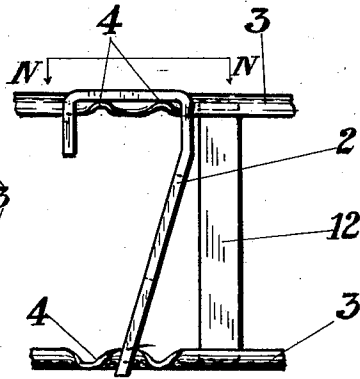


Fig. II.

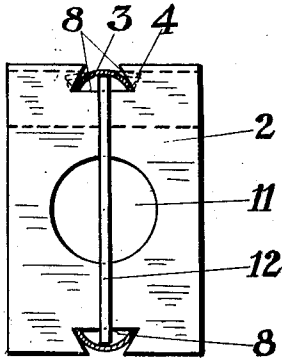


Fig. III

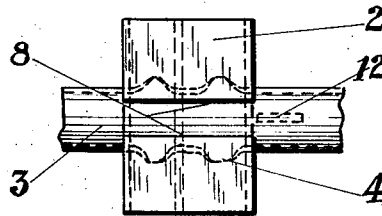


Fig. IV.

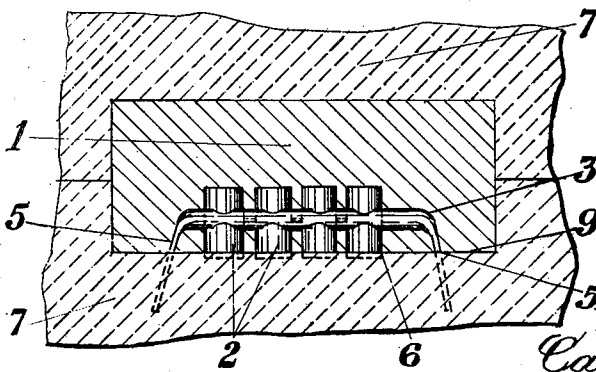


Fig. V.

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METHOD AND MEANS FOR MARKING CASTINGS.

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To all whom it may concern:

Be it known that I, CARL T. FORSBERG, a citizen of the United States, and residing at Mountain View, county of Passaic, State of New Jersey, have invented certain new and useful Improvements in Methods and Means for Marking Castings, of which the following is a specification.

This invention relates to improvements in marking castings for identification in such a manner that the mark can not be removed without destroying the usefulness of the casting so marked. A method of marking castings in such a manner is particularly desirable for automobile motors and chassis to prevent the re-marking of stolen automobiles.

In the drawings in which similar characters of reference indicate similar parts throughout various views,

Fig. I represents a view of a portion of a machine casting marked by a method embodying the invention.

Fig. II is an enlarged elevation of one of the characters.

Fig. III is a side view of Fig. II.

Fig. IV is an elevation of Fig. II as indicated by arrows thereon.

Fig. V is a sectional view through a portion of a moulding flask and casting showing the marking characters in position therein.

To obtain an indelible mark on a casting, I form characters 2 of sheet metal of a color different from that of the casting, and of a higher melting point; these characters are assembled on gauge bars 3, which fit into dovetail shaped notches 8 cut into the top and bottom sides of said characters. The gauge bars 3 are preferably shaped to form semi-circular channels and consist of the same material as the characters. To form a number or word, the characters 2 composing the same are arranged in proper order on a pair of gauge bars 3, by sliding them thereon. The required distance between the characters is obtained by inserting distance strips 12 between each two characters. The ends of these strips fit into the hollow part of channels 3. To secure the characters tightly on bars 3, I bend these bars between the characters as shown at 4 Fig. II. When all characters required for a mark are assembled on the bars 3, the ends of these bars are bent as shown at 5 Fig. V, and the whole mark so assembled is set into the

mould 7 for casting; the ends 6 of characters 2 are pressed slightly below surface 9 into the sand forming the mould. The downwardly bent ends of bars 3 penetrating deep into the mould, form an anchor for the assembled mark against movement by the incoming molten metal. To permit penetration of the molten metal into all parts of the characters, the latter are perforated as shown at 11 Fig. III in a parallel direction to the gauge bars 3. The completed mark is shown in Fig. I in which a part of the metal cast around the mark is removed. It will be noticed that the characters protrude above the surface of the casting; this part may be removed by grinding if desired, to allow the different color of the characters to show clearly against the surface of the casting. If the casting is a thin one, the characters may penetrate the whole thickness of the casting. In a thick casting, they extend to a considerable depth.

This method of marking castings can be easily applied and the mark can not be removed or burned away by a gas flame without the destruction of the casting, nor can a new mark be produced on an old casting resembling the original mark in style without easy detection.

The strength of the casting is not affected by the marking and the mark is easily assembled for any word or number.

The following metals are proposed for use in marking the following castings, as these metals have higher melting points and in general, different colors than those of the corresponding castings.

For aluminum castings—Copper characters.

For brass castings—Steel or wrought iron characters.

For iron castings—Wrought iron or tungsten steel characters with a percentage of copper for coloring.

The characters, gauge bars and spacing pieces can be produced in advance of their use and assembled to form series of numbers. The labor of placing such preformed marks in the moulds is negligible compared with the present method of stamping numbers one figure at a time by a mechanic.

The marking of automobiles by this method, and the marking of the engine is self-evident from the above description and the drawing.

In marking structural parts such as

chassis, a hole is cut where the member is least weakened, thereby, as at the neutral axis in the web of channel shaped members. The hole is made to be large enough to receive a number unit identical with that used on the engine; this number is held in position in a pad of metal cast into the hole described above. For a $\frac{1}{8}$ " thickness of steel frame for example, we would have a casting $\frac{3}{8}$ " in thickness with characters extending completely through it; this casting would project $\frac{1}{8}$ " in front and $\frac{1}{8}$ " in rear of the steel of the frame and would be larger than the hole in the frame, by about $\frac{1}{4}$ " in both directions, so as to over-lap at the front and back, all around the edges of the hole, thus securing a mechanical or welded bond firmly anchoring the casting containing the number in place.

The casting of marks of this kind may be done easily by the aluminothermic process.

Having thus described my invention, what I claim as new is:

1. The method of marking castings, which consists of embedding characters formed of sheet metal in said casting, so that the edge of said sheet metal appears on the surface of said casting, and the faces of said sheet metal are embedded in said casting.

2. The method of marking castings, which consists of placing an assembled marking means into a mould for a casting, and by casting molten metal into said mould, so that said metal completely encloses said marking means except its face, and fills all spaces in and between the characters of said marking means.

3. Means to produce a mark on a casting consisting of preformed material infusible at the melting temperature of said casting and composed of separate characters, adapted to be anchored in the mould for said casting, and to be surrounded and penetrated by the metal of said casting.

4. Means to produce a mark on a casting adapted to be placed into the mould for said casting and consisting of single characters, a bar forming means to hold said characters in alignment on said bar, and means to anchor each character separately in said casting.

5. Means to produce a mark on a casting consisting of separate preformed characters adapted to be assembled into a word, number or code, and means on each character to anchor it within the metal of said casting.

6. Means to produce a mark on a casting, said means consisting of separate characters adapted to be assembled into a word, number or code. A mould to form said casting, means to hold said characters in alignment with each other, and means to hold said characters in said mould while said casting is being formed.

7. The method of marking castings which consists in the combination with the body of a metallic casting of a plurality of metallic characters embedded therein, having a higher melting point than said casting, said characters being formed of relatively thin metal extending edgewise deeply into said casting.

CARL T. FORSBERG.