E. E. ROBINSON.

MANUFACTURE OF BRUSHES.

APPLICATION FILED FEB. 24, 1917.

**1,230,518.**

Patented June 19, 1917.

Fig. 1.

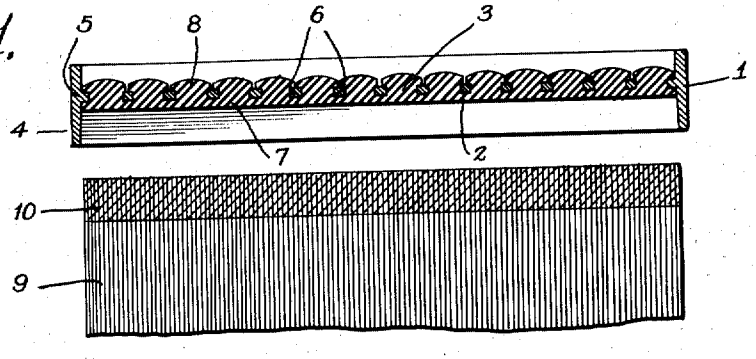



Fig. 2.

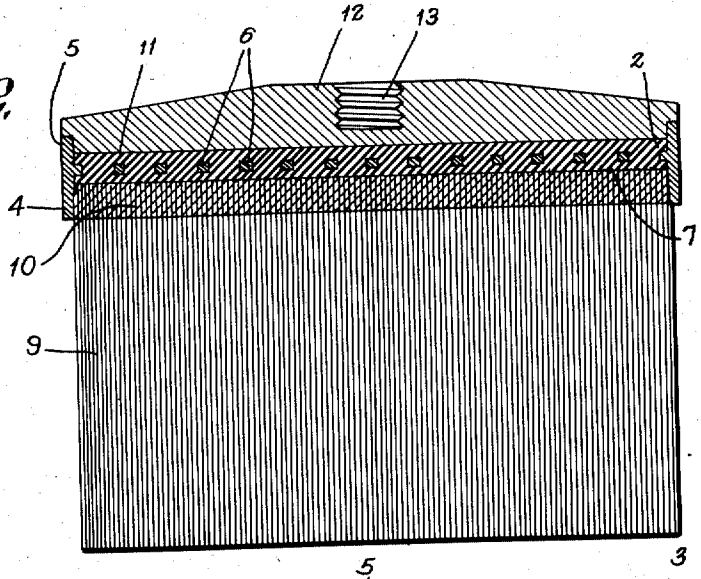
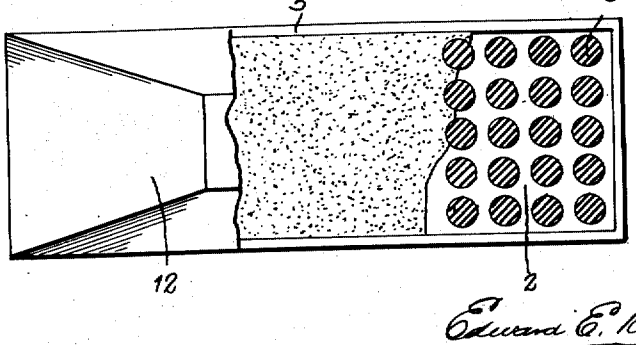



Fig. 3.




INVENTOR.

Edward E. Robinson

BY J. O. Edmunds

ATTORNEY

# UNITED STATES PATENT OFFICE.

EDWARD R. ROBINSON, OF BELLEVILLE, NEW JERSEY, ASSIGNOR TO HANLON & GOODMAN CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## MANUFACTURE OF BRUSHES.

1,230,518. Specification of Letters Patent. Patented June 19, 1917.

Application filed February 24, 1917. Serial No. 150,651.

*To all whom it may concern:*

Be it known that I, EDWARD E. ROBINSON, a citizen of the United States, residing at Belleville, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in the Manufacture of Brushes, of which the following is a specification.

My invention relates to the manufacture of brushes, particularly paint brushes, and my object is to provide such brushes as a new article of manufacture and also to provide a suitable process for manufacturing the same. My invention is chiefly directed toward the manner in which the bristles are secured in position. A frame is used comprising a perforated plate having upwardly and downwardly directed marginal flanges. Plastic material, specifically rubber, is placed or poured on one surface of the plate in sufficiently fluid condition to partly flow or be caused to flow through the perforations, the material which has thus flowed, or been forced through the perforations, forming buttons on the other side of the plate. A sufficient quantity of bristles to form the brush then have their upper ends dipped in similar plastic material and these are inserted within the bounding flange of the plate on the side thereof on which the plastic material was first poured, with the upper ends of the bristles pressed against and into the layer of plastic material formed on that surface of the plate. Additional fluid plastic material is then poured on the other or upper surface of the plate, covering the buttons of plastic material which have been forced through the perforations, the plastic material on both surfaces of the plate and extending through the perforations joining together to form an integral mass. The plastic material is then hardened, in the case of rubber or the like, by vulcanizing the same, or otherwise, to form a hard integral mass having interlocking connections through the perforations of the plate, the bristles being firmly bound therein by extending into the material on the under side of the plate. The handle may then be secured in position as by securing within the flanges on the upper side of the plate a suitable block to which the handle is secured or with which it is integral.

In order that a clearer understanding of my invention may be had, attention is hereby directed to the accompanying drawings forming part of this application and illustrating certain embodiments of my invention. In the drawings, Figure 1 represents parts of the brush separated in the process of construction, the perforated plate being shown in section; Fig. 2 represents a vertical section through the completed brush and Fig. 3 represents a top plan view of the same, with parts broken away.

Referring to the drawings, the plate or frame 1 comprises a plate portion 2 of rectangular, oval or other desired shape, having a plurality of perforations 3 therethrough, which preferably are arranged in regular rows, so as to occupy a considerable portion of the surface of the plate. A marginal flange extends about the plate comprising the downwardly extending portions 4 and the upwardly extending portions 5. The plate is formed of metal and preferably comprises a casting in which flanges 4 and 5 are integral with plate 2. In the drawings the metal between adjacent perforations of the same row is represented at 6.

In the manufacture of the brush, the plate 2 is first turned upside down and the layer of rubbish 7 in fluid condition poured or placed thereon. This rubber forms a layer on the surface of the plate, as shown, and a part of the same flows through the perforations 3 to form the buttons 8 on the opposite side thereof, or, if desired, pressure is applied to the layer 7 to force a portion of the same through the perforations 3. The bristles 9, which may be grouped together in a suitable frame, then have their upper ends dipped in fluid rubber, as indicated at 10, and the upper ends thus dipped are pressed between the flanges 4 of the plate with the upper ends of the bristles pressing firmly against the layer 7 of the rubber and extending somewhat into the same. The plate is now held in the position shown in Figs. 1 and 2 and a layer of rubber 11 in fluid condition poured on and around the buttons 8, the entire upper surface of plate 2 and buttons 8 within flange 5 being thus covered. A metal plate (not shown) may then be placed loosely above the layer 11 and the structure placed on a baking table and vulcanized. As a result, the rubber on both sides of the plate and extending through the perforations,

comprising layers 7, 11, and buttons 8, welds together to form an integral construction which is locked in position by the portions of the rubber which extend through the perforations. The wooden block 12 may be secured within the flanges 5 to which block the handle may be secured or with which the handle may be integral. As shown, the block 12 may have a screw-hole 13 therein into which an appropriate handle may be screwed.

While I have specifically referred to the use of rubber in this manufacture, it is, of course, obvious that other plastic materials may be used which may be hardened after the bristles have been secured thereto. It should be noted that the bristles are not secured in place by extending the same through the perforations, the latter being used only to interlock the upper and lower layers of the plastic material. By the described method, the bristles are secured very firmly in position and the method is a simple and inexpensive one to follow.

What I claim is:—

1. In brushes, the combination of a perforated plate having marginal flanges extending upwardly and downwardly therefrom, a bunch of bristles extending within the flanges on the under side of the plate and terminating on the same side, and a mass of vulcanized rubber binding together the upper ends of the bristles, covering the upper and lower surfaces of the plate and extending through the perforations thereof to integrally secure together the rubber on the upper and lower sides of the plate, substantially as set forth.

2. In brushes, the combination of a perforated plate having marginal flanges extending downwardly therefrom, a bunch of bristles extending within the said flanges and terminating on the under side of the plate, and a mass of hardened plastic material comprising a layer on the under side of the plate in which the upper ends of the bristles are secured, a layer on the upper side of the plate, and material extending through the perforations of the plate integral with and binding together the layers on the upper and under sides, substantially as set forth.

This specification signed and witnessed this 21st day of February, 1917.

EDWARD E. ROBINSON.

Witnesses:
RUSSELL K. ROSE,
IRA H. CORNELL.

Correction in Letters Patent No. 1,230,518.

It is hereby certified that in Letters Patent No. 1,230,518, granted June 19, 1917, upon the application of Edward E. Robinson, of Belleville, New Jersey, for an improvement in "The Manufacture of Brushes," an error appears in the printed specification requiring correction as follows: Page 1, line 85, for the word "rubbish" read *rubber;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 31st day of July, A. D., 1917.

[SEAL.]

F. W. H. CLAY,

*Acting Commissioner of Patents.*

Cl. 15–36