No. 878,344. PATENTED FEB. 4, 1908.

P. CHAZAL.

MANUFACTURE OF BRUSHES.

APPLICATION FILED JUNE 18, 1906.

FIG-6

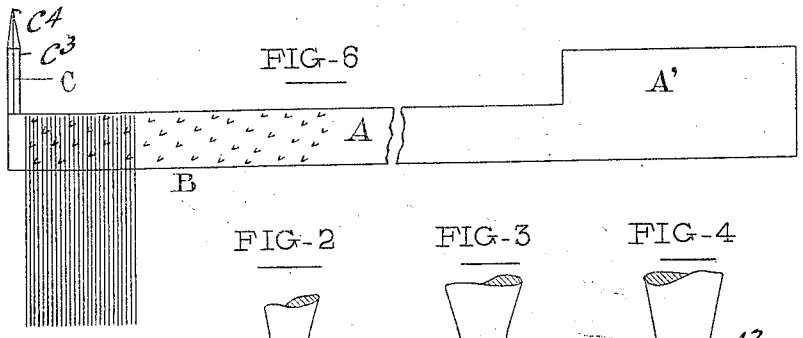


FIG-2

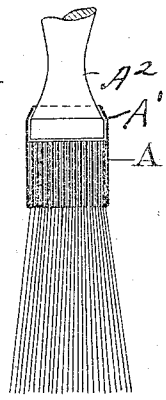


FIG-3

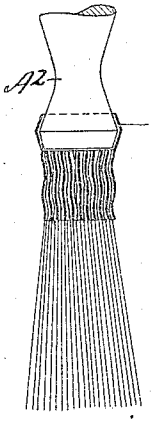


FIG-4

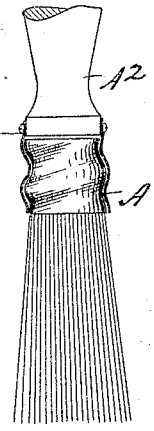
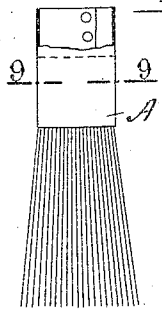


FIG-1



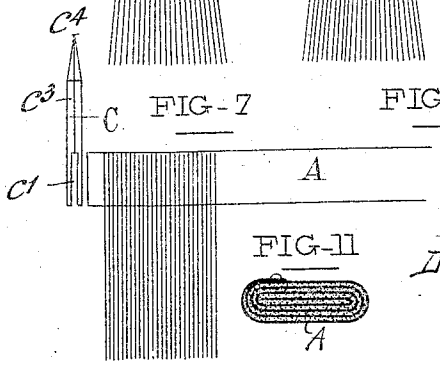


FIG-7

FIG-5

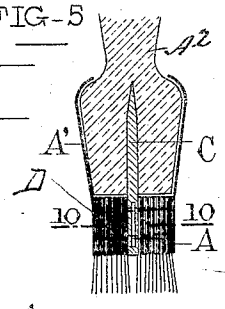


FIG-13

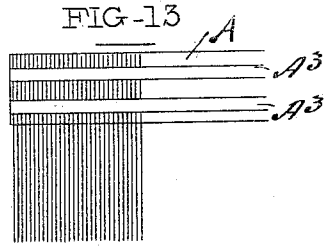


FIG-11

FIG-12



FIG-10



FIG-9



FIG-8

Witnesses:

Jean Germain

Guillaume Bioche

Inventor:

Philippe Chazal

UNITED STATES PATENT OFFICE.

PHILIPPE CHAZAL, OF LYON, FRANCE.

MANUFACTURE OF BRUSHES.

No. 878,344. Specification of Letters Patent. Patented Feb. 4, 1908.

Application filed June 18, 1906. Serial No. 322,200.

To all whom it may concern:

Be it known that I, PHILIPPE CHAZAL, a manufacturer, and a citizen of the French Republic, residing at Lyon, France, have invented certain new and useful Improvements in the Manufacture of Brushes, of which the following is a specification.

This invention relates to improvements in the manufacture of brushes, and the object is to produce such articles having a solidity hitherto unknown by wrapping the tuft or tufts of bristles or the like in a spirally rolled up band of metal or other suitable material such as paper, leather, cardboard, independent from the handle.

In the annexed drawing Figures 1 to 5 are views partly in section showing various forms of application of the invention to a paint brush. Figs. 6, 7 and 8 are elevations showing the band to which the bristles are applied before rolling. Fig. 9 is a section on line 9—9 of Fig 1. Fig. 10 is a section on line 10—10 of Fig. 5. Figs. 11 and 12 are cross-sections showing two other forms of the band after rolling or bending and pressure, and Fig. 13 is an elevation of a band having narrower superposed bands which after rolling permit of giving the outer band an undulating form to prevent removal of the bristles.

The formation of the brushes according to this invention is effected in the following manner: I take a band A of thin metal, linen, felt, cardboard or the like which may be corrugated, grooved, molded or provided with small perforations B produced by stamping and bending up tongues of the material so that on one surface of the band numerous projections B are formed. This band A is then cut out in such a manner as to have an enlargement A^1 at or adjacent one of its ends. The bristles or similar material for forming the brush are spread over the band A up to the enlargement A^1 which must be left free, whereupon said band is rolled upon itself beginning at the narrow end, to which, for the purpose of giving greater hold to the operator, is fixed a small metal stem or tube C, for instance either by soldering as shown in Fig. 6; by a saw-slit C^1 as in Fig. 7; by a mortise and tenon C^2 C^3 respectively as in Fig. 8, or by any other convenient means. The said stem C being of metal, is adapted to become flattened during rolling or compression. When such a stem is used it is given a very small diameter in order not to form an empty space in the center of the brush, and the part of said stem which engages the handle A^2 is given a flattened or angular form as at C^3 to prevent rotation thereof, and is provided with a pointed end C^4 in order to facilitate its penetration into the wood of a handle. After rolling, the stem may be either left in the tuft of bristles, or if loosely attached as in Fig. 7, it may be removed therefrom.

The rolling up of the band A about the stem C may be effected whether the stem C has been previously secured to a handle or not, as desired. During rolling, pressure may be exerted on the band with a tool of suitable shape for the purpose of producing therein a milling or series of grooves for increasing the rigidity of connection of the bristles (see Figs. 3 and 4). When the rolling is finished the enlarged part A^1 of the band forms a ferrule extending beyond the butts of the bristles and the remainder of the band, and adapted to surround the end of the handle for securing the brush thereto (see Figs. 2, 3, 4 and 5). The connection of the handle to said ferrule may be effected in any suitable or known manner. After having rolled the band, the various layers or convolutions thereof are connected together by means of nails D (Fig. 5), whereupon the band is compressed in a mold of the form of a truncated cone.

I may previously insert into that part of the ferrule into which the handle is to be fixed a solid material adapted to melt at a temperature above 100°. This material is first melted, then compressed in the ferrule in which it soon fills any existing interstices. The butts of the bristles and convolutions of the band are thus embedded in this material.

It will be understood that it is not necessary that the brushes have a cylindrical form as shown in Figs. 9 and 10; but they may be given an oblong, or elongated shape (Fig. 11) by compression in a mold or by other convenient means, or in place of rolling the band, I may fold the same for example as shown in Fig. 12. Small additional bands A^3 may also be placed on the bristles as shown in Fig. 13 before the band is rolled up. By this means undulation or corrugation of the bristles is produced when

the rolling is finished which prevents said bristles from becoming detached.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. A brush comprising a flexible band coiled and compressed to form a stock, brush fiber located between the convolutions of said band, a handle, and a lateral enlargement at one end of the band forming a ferrule whereby the latter may be attached to the handle substantially as described.

2. A brush comprising a flexible band coiled and compressed to form a stock, brush fiber located between the convolutions of said band, a compressible metallic stem attached to the inner end of said band, a handle, and an enlargement at the other end of said band adapted to form a ferrule for reception of the handle substantially as described.

3. A brush comprising a flexible band coiled and compressed to form a stock, brush fiber located between the convolutions of said band, a handle, an enlargement at one end of the band adapted to form a ferrule for reception of the handle, nails connecting together the convolutions of the band, and binding material disposed in said ferrule for connecting the band and brush material substantially as described.

In witness whereof I have signed this specification in the presence of two witnesses.

PHILIPPE CHAZAL.

Witnesses:
JEAN GERMAIN,
GUILLAUME PIOCHE.