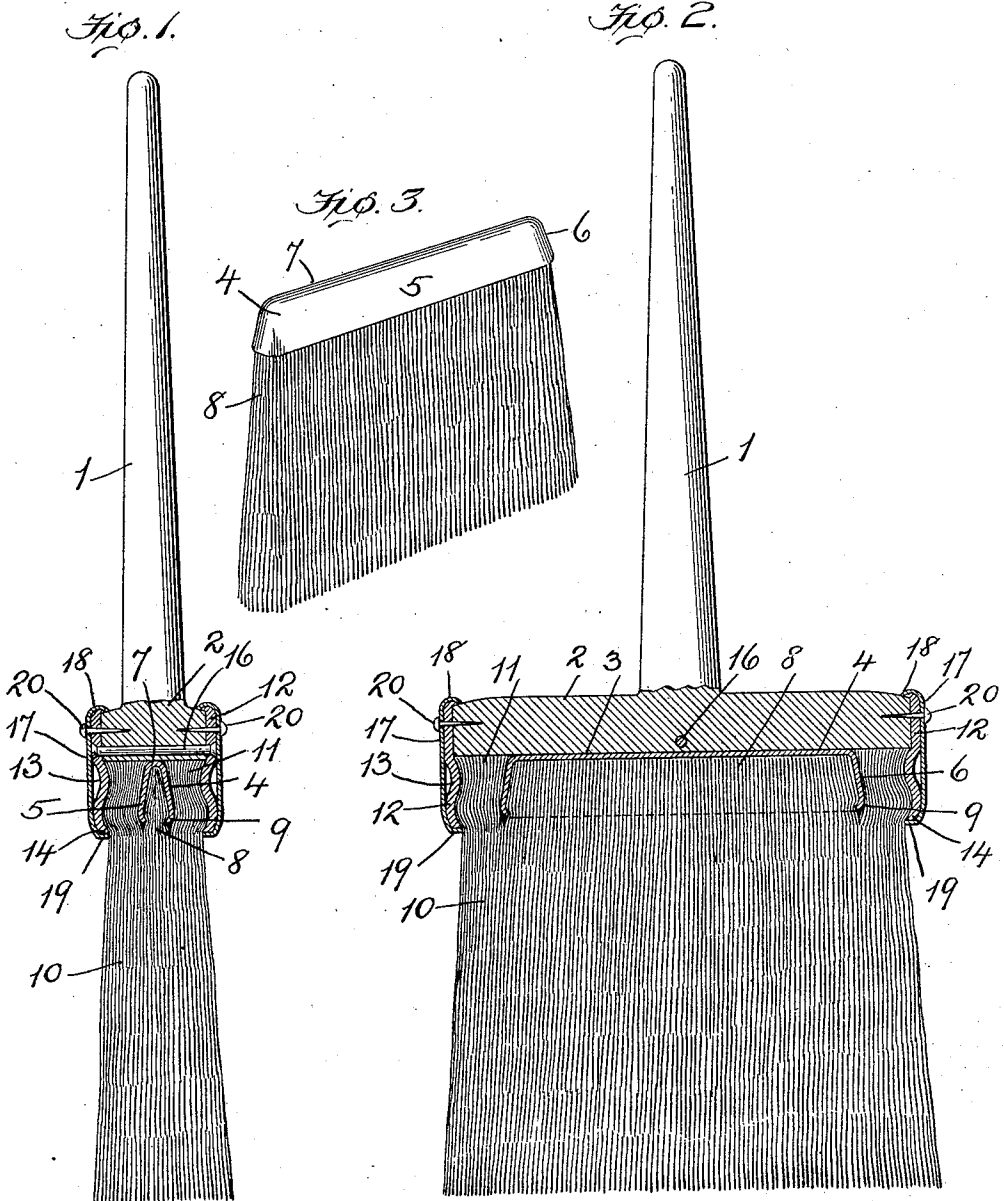


M. P. TOTTLE.
BRUSH.

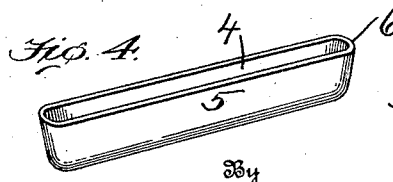
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Patented Dec. 28, 1909.

944,833.



Witnesses
Edwin L. Bradford
S. Ferdinand Vogt.



By

Inventor

Morton P. Tottle

Mann & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

MORTON P. TOTTLE, OF BALTIMORE, MARYLAND.

BRUSH.

944,833.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed March 12, 1909. Serial No. 482,890.

To all whom it may concern:

Be it known that I, MORTON P. TOTTLE, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Brushes, of which the following is a specification.

This invention relates to improvements in brushes and particularly to flat brushes used for painting and varnishing.

One object of the invention is to provide a well-made brush strong and durable and which will effectively secure the bristles so as to prevent their becoming loose during the ordinary operations of spreading a coating of a sticky consistency which ordinarily pulls the bristles away from the brush block.

Another object is to provide an improved construction of means for connecting the bristles with the brush block, and a further object is to provide an improved construction of ferrule in combination with a center shell between which the bristles may be compressed in a peculiar manner whereby to retain said bristles in place.

The invention is illustrated in the accompanying drawing in which,—

Figure 1 is a vertical transverse cross-section through the brush constructed in accordance with the invention. Fig. 2, a longitudinal cross-section through the base block and the parts connecting the bristles thereto. Fig. 3, is a perspective view of the inner shell and the bristles carried therein, and Fig. 4, is a perspective view of the inner shell inverted.

In the drawing the numeral, 1, designates the handle and, 2, the brush block to which the handle is connected and which in the present instance is comparatively long and narrow and has a flat bottom surface, 3.

Directly beneath the brush block and extending longitudinally and parallel therewith is a former, comprising a metal shell, 4, which has outwardly and downwardly flaring side walls, 5, and rounded end walls, 6, which also flare and which are formed integrally with the side walls. The narrower top, 7, of the shell is closed while the wider or flared lower end is open so that the butt-ends of bristles, 8, may have position in the shell and be secured therein by means of the lower rim edge, 9, which is turned inwardly from the side and rounded end walls to securely lock the bristles therein in place.

Bristles, 10, are arranged with their butt

ends, 11, around the flared side and rounded end walls of the shell and are to be secured in place by means of a ferrule, 12, of a novel shape. The particular method of assembling the brush parts and the order of procedure is not material to the present invention, and the shell, 4, and bristles, 8, may be driven up through the bristles, 10, after the latter have been set in the ferrule, 12, and prior to their final compression. The ferrule is designed so that a peculiar compression of the bristles, 10, may be effected about the butt ends of those bristles so as to effectively lock them in place. The bristles, 10, however are placed in the ferrule prior to the formation of the curves therein that effect the compression of the bristles and, if the center brush and shell have not already been driven in place the operation will take place next. At this time the bristles, 10, are wedged in the ferrule by the center shell and the ferrule will have substantially vertical walls which will then be placed in a suitable machine and subjected to the action of compressing dies. The action of the compressing dies on the exterior of the ferrule is such as to produce an ogee curve therein in a vertical plane as indicated by the numeral, 13.

The ogee curve in the ferrule forms what might properly be termed horizontal corrugations which are broad enough to permit the butt ends of the bristles to enter therein and assume a corresponding shape or curve when compressed. In order to permit the butt ends of the bristles to readily assume the curved form of the inner surface of the ferrule I prefer to omit the application of cement thereto, but if the application of cement and the compression operation is effected in quick succession and before the cement sets it is obvious that the cement might be used to advantage. The lower or bottom edge, 14, of the ferrule is turned inwardly by the compressing dies so as to produce the greatest compression in a horizontal plane at or between said ends. This compression also serves to force the bristles upwardly around and beneath the shell and thereby hold the latter in place. In order to prevent the long side walls, 15, of the ferrule spreading I preferably provide a rivet, 16, which extends through the brush block and has its ends riveted in perforations in the said walls.

An outer thin metal ferrule, 17, is placed

about the inner ferrule and has its upper and lower edges, 18, and, 19, respectively turned inwardly so as to cover the edges of the inner ferrule and thus prevent accumulation of paint or other substances in the
 5 concave portions of the inner ferrule and about the rivet heads.

In order to positively secure the two ferrules to the wood block I preferably provide
 10 suitable fastenings, such as nails, 20, which are driven through the outer and inner ferrules and into the wood block, 2.

Having thus described my invention what I claim and desire to secure by Letters
 15 Patent is,—

1. A brush comprising a block which is longer in one direction than the other and having a handle, an inner metal shell also longer in one direction than the other and
 20 having a closed horizontal upper end and downwardly extending side and end walls and said metal shell having position below but disconnected from the block, bristles secured within the inner metal shell, a ferrule
 25 engaging the block and depending therefrom and a filling of bristles between the depending ferrule and the side and end walls of the filled inner metal shell.

2. A brush comprising a block and handle
 30 connected thereto, an inner shell beneath the block and being narrower at the upper than at its lower portion and having spreading side and end walls with inturned lower edges, bristles in the inner shell and held
 35 therein by the inturned lower edges of the spreading walls, bristles around the spreading walls of the shell, a ferrule having its upper portion engaging the block and its

lower portion depending below the latter and encircling the butt ends of the bristles around the inner shell,—said depending portion of the ferrule having an inwardly curved portion in a horizontal plane around the upper narrower portion of the shell and an outwardly-curved portion in a horizontal
 40 plane around the lower larger portion of said shell to engage and compress the outer bristles about the spreading side and end walls of the shell.

3. A brush comprising a block which is longer in one direction than the other and having a handle, an inner metal shell also longer in one direction than the other and having a closed horizontal upper end and downwardly-extending side and end walls
 50 and said metal shell having position below but disconnected from the block, bristles secured within the inner metal shell, an inner ferrule engaging the block and depending therefrom, means extending through the ferrule and also the block whereby to hold the diametrically opposite walls of the ferrule in place, a filling of bristles between the inner depending ferrule and the side and end walls of the filled inner metal shell,
 55 an outer ferrule around the inner ferrule and covering the latter and securing devices passing through both ferrules and entering the brush block.

In testimony whereof I affix my signature
 70 in presence of two witnesses.

MORTON P. TOTTLE.

Witnesses:

CHARLES B. MANN, Jr.,
 G. FERDINAND VOGT.