

M. DILLON.
Brush-Machines.

No. 135,634.

Patented Feb. 11, 1873.

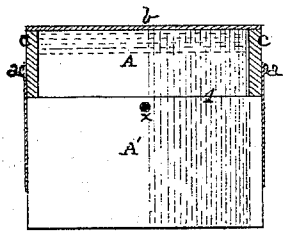


Fig. 1.

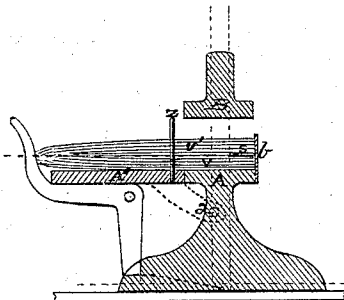


Fig. 2.

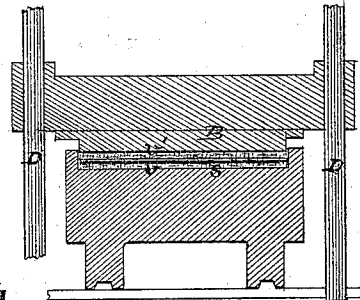


Fig. 3.

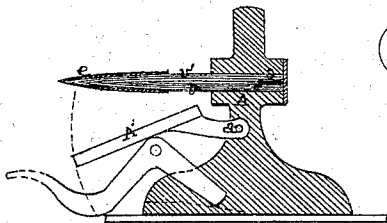


Fig. 4.

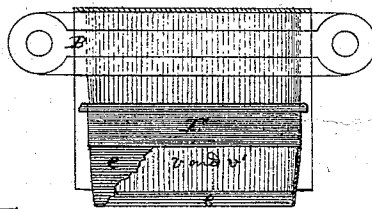


Fig. 5.

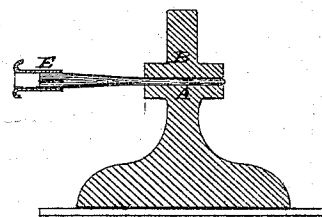


Fig. 6.

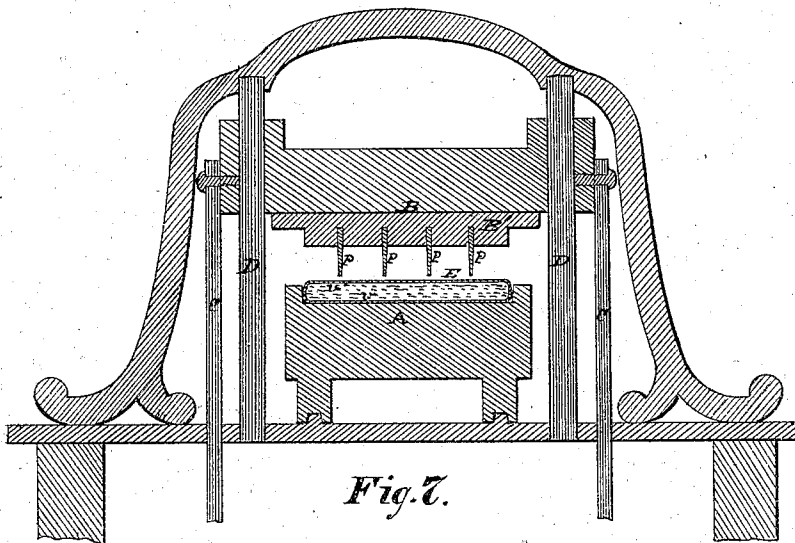


Fig. 7.

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UNITED STATES PATENT OFFICE.

MILES DILLON, OF ALBANY, NEW YORK, ASSIGNOR TO HIMSELF AND JOHN B. ARMOUR, OF SAME PLACE.

IMPROVEMENT IN BRUSH-MACHINES.

Specification forming part of Letters Patent No. 135,634, dated February 11, 1873.

To all whom it may concern:

Be it known that I, MILES DILLON, of the city and county of Albany, State of New York, have invented a new and Improved Method of Constructing Flat-Band Brushes; and I do hereby declare that the following is a description thereof, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 illustrates by a vertical view the manner of the arrangement of the bristles on the table of the machine used in this invention. Fig. 2 is a sectional elevation illustrating the same. Fig. 3 is a transverse sectional view illustrating the mode of clamping the bristles preliminary to the application of the band. Fig. 4 is a sectional elevation of the arrangement of the envelope with the clamping bristles. Fig. 5 is a vertical view of the clamped and enveloped bristles with the same partially entered into the band. Fig. 6 illustrates the method by which the band is set properly in its place on the bristles. Fig. 7 represents a vertical lateral view of the apparatus which I use to effect the construction of the brush in the manner of my invention.

My invention relates to the arrangement of the bristles in layers of equal quantities on a proper table, and the insertion of the usual strap between the bristles previous to their insertion in the band, the enveloping of the bristles and insertion of the same in one bulk into the band, by which mode of construction of flat-band brushes I am enabled to use a mechanical apparatus to facilitate the necessary manipulations of the bristles and produce a better article in a far less period of time than can be had by the old mode of constructing flat-band brushes.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it in reference to the drawing and the letters of reference marked thereon, the same letters indicating like parts.

In my invention I use a proper table, consisting of the parts A A', shown in Figs. 1, 2, and 4, which parts may be connected by any suitable hinges *a a*, so as to render one part, A', capable of dropping away from the other part, A, as shown in Fig. 4; or the said table may have the said parts detachable, so that

the part A' can be removed away from the part A when desired, either of which tables would answer equally as well for my purposes in this invention. I also furnish the said table at its rear with the guard *b*, which rises vertically about an inch, more or less, above the surface of the table. I also arrange on the sides of the table the gage-pieces *c c*, which are to decide the thickness of the brush to be made. In the detachable portion A' of the table is made one or more small perforations, *x*, Fig. 1, into which is inserted a corresponding number of pins, *z*, Fig. 2, to divide the said table contained between the gage-pieces *c c* into equal sections, which may be in halves, thirds, or quarters, according to the size of the brush to be made.

On the table, constructed substantially as above described, I arrange the bristles, or equivalent material, of which the brush is to be made, in a manner substantially as follows:

I weigh out a certain quantity of bristles, according to the size of the brush to be made—say one ounce—and spread them evenly on the said table on one side of the pin *z* in the hole *x*, as on section 1 in Fig. 1, with their butts against the guard *b*, and in such a manner that the natural bend of their flag ends will turn up, as shown in the lower stratum *v* in Fig. 2. I then weigh out a like second quantity and arrange them on section 2 of the table in the same manner as the first quantity. Should the table be divided into three or more sections I would proceed with each section in the same manner, and for small brushes no division is necessary. After the table or the several sections thereof have been thus supplied with their proper quantities of material to form the first stratum *v*, I lay over their butts, next to the guard *b*, the straps *s*, as shown in Figs. 2, 3, 4, and 6. After the strap *s* has been properly laid I proceed to lay the second stratum *v*² of bristles, which are to be arranged by sections, and in quantities uniform with those in the first stratum *v*, and in substantially the same manner, excepting that the flag ends of the bristles are turned down, as shown in Fig. 2. I then bring down on the butt of the bristles thus arranged the clamping-piece B, which is to clamp and hold tightly the bristles on the table. I then arrange

over the flag ends of the bristles the temporary envelope *e e*, shown in cross-section in Fig. 4, and in a vertical view with part torn away in Fig. 5. The said envelope may be made of paper, cloth, or other suitable material, which can be readily wrapped around the said bristles, so as to envelope a major portion of the bristles unclamped, as shown in Fig. 4. After the envelope has been properly wrapped around the flag ends of the bristles I introduce the said enveloped flag ends in one bulk into the band *E* by slipping the said band over the envelope and crowding the same toward the clamped butt ends of the bristles when the envelope is removed. The clamped butt ends of the bristles are then released from under the clamping-piece *B*, and the flag ends of the bristles are placed on the table (the detachable portion being dropped) and gripped by the clamping-piece *B* in a firm manner, when the band *E*, before partially placed, is drawn back over the butts of the bristles to a proper distance on the same, as shown in Fig. 6, when the brush is ready for cementing. After the bristles have been cemented in its band I attach to the clamping-piece *B* the supplementary piece *B'*, provided with one or more punches or awls *p*, when the brush will be placed on the table *A* and beneath the awl or awls *p*, which awl or awls will be forced down to perforate the band and bristles for the nails to be inserted, which nails may be inserted and driven down by any suitable mechanism.

By the improvements in this invention flat-band brushes can be made more perfect, and

with a saving of material and labor, than can be performed in the present method of hand manipulation.

The operation of the several parts of this invention is simple, and requires no expert to make this class of brush, as is now required by hand-labor.

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

1. The bristle-table, consisting of the parts *A* and *A'*, so arranged that the portion *A'* will be rendered detachable from the portion *A*, in combination with the guard *b* and gage-pieces *c c*, substantially as and for the purpose set forth.

2. In combination with the table *A A'* and gage-pieces *c c*, the pin *z*, (one or more,) when arranged to be operated substantially as and for the purpose set forth.

3. The combination of the clamping-piece *B* with the table *A* and gage-pieces *c c*, substantially as and for the purpose set forth.

4. In combination with the table *A A'* and clamping-piece *B*, the envelope *e e*, when the said envelope is arranged to operate substantially as and for the purpose set forth.

5. The combination of the supplementary piece *B'* and awls or punches *p* (one or more) with the clamping-piece *B* and table *A*, substantially as and for the purpose set forth.

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Witnesses:

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