

H. M. SCHWARTZ.
BRUSH MAKING MACHINE.
APPLICATION FILED MAR. 2, 1908.

928,548.

Patented July 20, 1909.

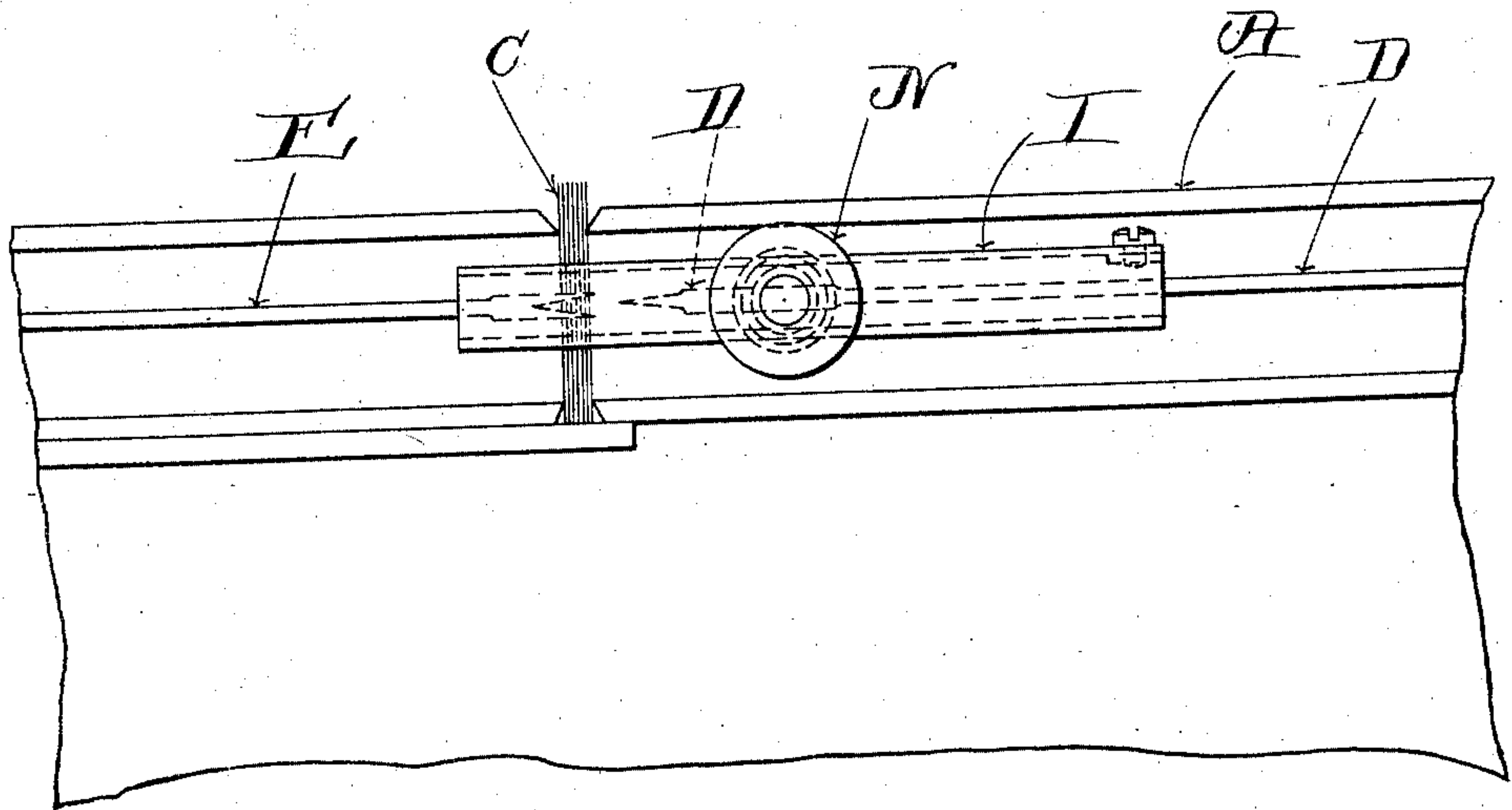


Fig. 2.

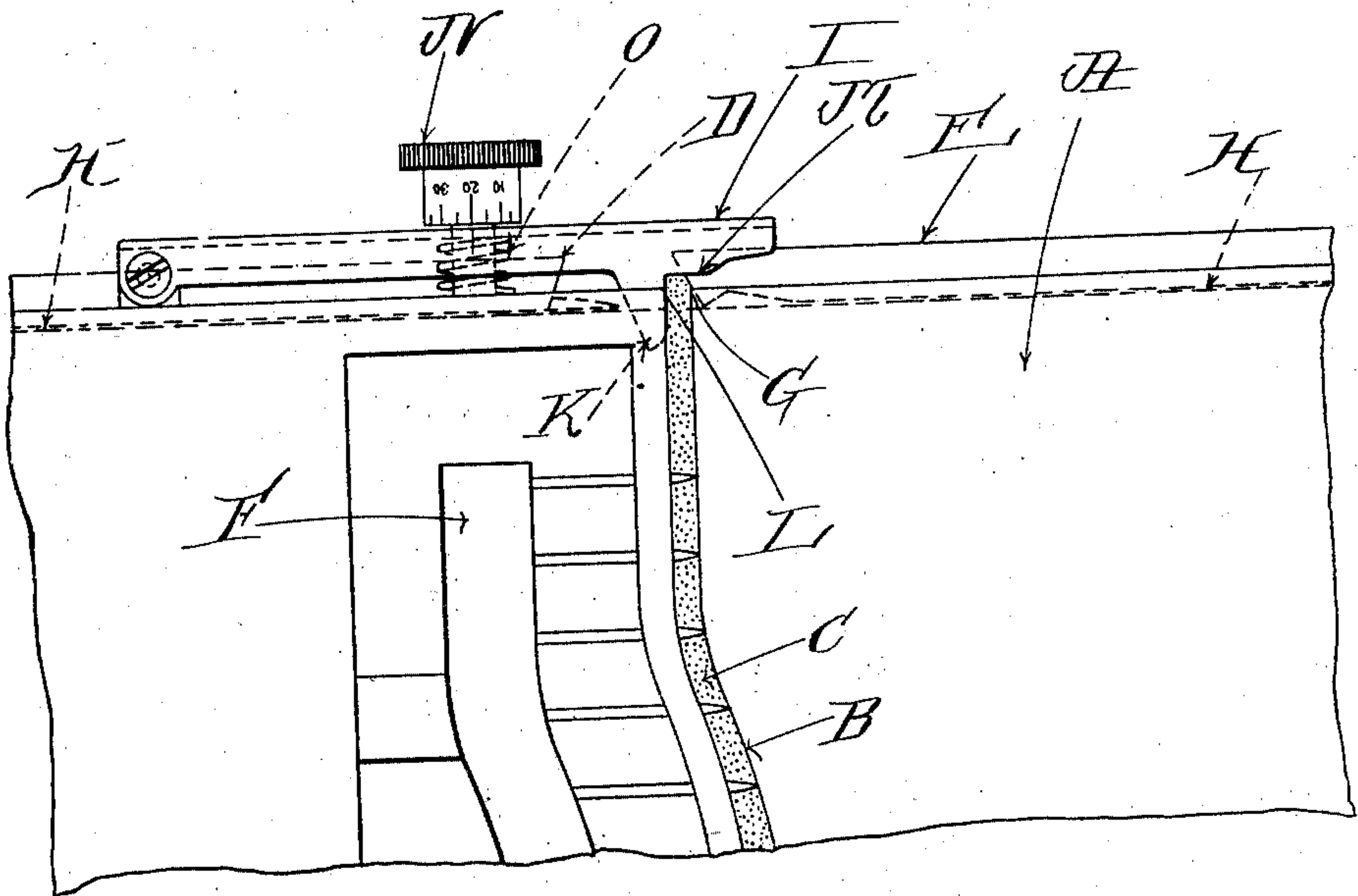


Fig. 1.

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UNITED STATES PATENT OFFICE.

HERMAN M. SCHWARTZ, OF NORTHAMPTON, MASSACHUSETTS, ASSIGNOR TO THE FLORENCE MANUFACTURING COMPANY, OF NORTHAMPTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

BRUSH-MAKING MACHINE.

No. 928,548.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed March 2, 1908. Serial No. 418,668.

To all whom it may concern:

Be it known that I, HERMAN M. SCHWARTZ, a citizen of the United States, residing at Northampton, county of Hampshire, State of Massachusetts, have invented certain new and useful Improvements in Brush-Making Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 In brush making machines of the general type known as the Gane machine, the bristles require to be formed into tufts or knots each of which should contain the same quantity of bristles. This result is essential to the production of the best brushes and to the rapidity of action of the machine. It is, therefore, necessary that the size of each knot or tuft be determined with the greatest nicety. Considerable difficulty has heretofore been experienced on this account with machines of this kind, and this has resulted in the uneven filling of the brush backs, some of the knots or tufts being filled so full that part of the bristles are broken or cut off when the knot or tuft is inserted in the hole, and subsequently come out, while other holes contain so few bristles that these are not held securely in place by the staple or anchor. It is also highly desirable that the operator of the machine have it within his control to regulate the size of the tuft or knot produced so that any variation in the size and texture of the bristles may be compensated for if desired.

15 My invention affords means for regulating with great nicety the size of the knots or tufts of bristles supplied by the knot separating mechanism to the knot setting mechanism. The means provided is extremely simple and effective, is under the easy control of the operator, it being possible to adjust the size of the knot while the machine is in operation, and is not likely to get out of order.

20 The device embodying my invention does not depend for its action upon a lateral compression of the stream of bristles in the bristle-feeding channel, nor upon any constriction of said channel which for various reasons is objectionable and tends to irregular and imperfect operation of the machine, but on the contrary the bristle feeding channel is open to its full width at all times.

25 While I have shown my device in the accompanying drawing as applied to bristle

feeding mechanism of a Gane machine of the ordinary well known construction, it is obvious that it may be employed upon any machine in which a stream of bristles is fed through a passageway in which the bristles lie at right angles with their line of motion.

The invention will be fully understood from the following description taken in connection with the accompanying drawing, and the novel features will be pointed out and clearly defined in the claims at the close of the specification.

In the drawings, Figure 1 is a plan view of a portion of a brush stapling machine to which my invention has been applied. Fig. 2 is an elevation of the parts shown in Fig. 1.

Referring to the drawing,—there is shown at A a portion of the table of the machine in which a channel B is formed. The bristles C pass through the channel B to the knot picker D and finger E by means of which the stream of bristles C is separated into knots or tufts and transferred to the tuft setting mechanism. The said knot picker D and finger E slide in a groove H in the table A, said groove being indicated in the drawing by a dotted line. At F is shown the reciprocating rake by means of which the stream of bristles C is forced forward through the passage B.

The parts thus far described are old and well known to those skilled in this art, and form no part of my invention.

The corner G of the table A at the orifice of the passage B is very slightly rounded, and the bristles C pass around this corner G to the mechanism which transfers them to the tuft setting mechanism. Opposite to the mouth or orifice of the channel B, I place a pivoted gate I provided with a face of peculiar shape by means of which the size of the knot or tuft of bristles delivered to the knot picker D is determined. On said gate I is a projection K, one face of which L is substantially in line with the left hand side of the channel B. The portion M of the face of the gate I which is opposite the orifice of the channel B, is substantially at right angles to the line of the channel and is movable toward or away from the mouth of the channel B, and the position of this face M with relation to the mouth of the channel B determines the size of the tuft or knot of bristles. The position of the said gate I is accurately controlled by means of a microme-

ter screw N and a spring O serves to hold the gate I against the head of the said micrometer screw N. It will be seen therefore, that by turning the micrometer screw N, the position of the gate and accordingly the size of the tuft may be determined with extreme nicety. Another reason for use of a micrometer screw is that having once determined the position of the gate by the numbered graduations on the micrometer for producing a tuft or knot of given size, tufts or knots of the same size may subsequently be produced by setting the micrometer screw in the same position as previously.

When the parts of the machine are in the position shown in the drawing, the bristles in the channel B are forced forward by the rake F until they occupy substantially the position shown in the drawing; that is, a portion of the bristles have been forced through the mouth of the channel B and stand in the line of the knot picker D so that when the knot picker D advances, it takes all the bristles which are outside of the channel B to form the tuft. If the gate I is at a greater distance from the mouth of the channel B, more bristles are permitted to be forced forward from the said channel B and the number of bristles picked up by the knot picker to form the tuft is correspondingly larger. In the same manner, if the gate I is brought closer to the mouth of the channel B, the number of bristles picked up by the knot picker is correspondingly smaller.

It will be seen that the device embodying

my invention does not depend for its action on any constriction of the bristle feeding channel B, but rather upon the number of bristles which are permitted to extrude from the orifice of the bristle feeding channel. By this means the danger of clogging the bristle feeding channel is greatly lessened, and the accuracy of the size of knot is considerably increased.

I claim as my invention:

1. In a brush making machine, the combination with abutments forming a bristle feeding channel, of a pivoted gate having a face at right angles to the line of motion of the bristles in said bristle feeding channel and opposite to the orifice thereof, and means for moving said gate with relation to said orifice.

2. In a brush making machine, the combination with abutments forming a bristle feeding channel, of a movable gate having a face at right angles to the line of motion of the bristles in said bristle feeding channel and opposite to the orifice thereof, and a screw provided with a graduated head for moving said gate with relation to the said orifice whereby the said gate may be reset at any predetermined position.

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

HERMAN M. SCHWARTZ.

Witnesses:

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