

BRUSH, BRUSH & MOP MAKING

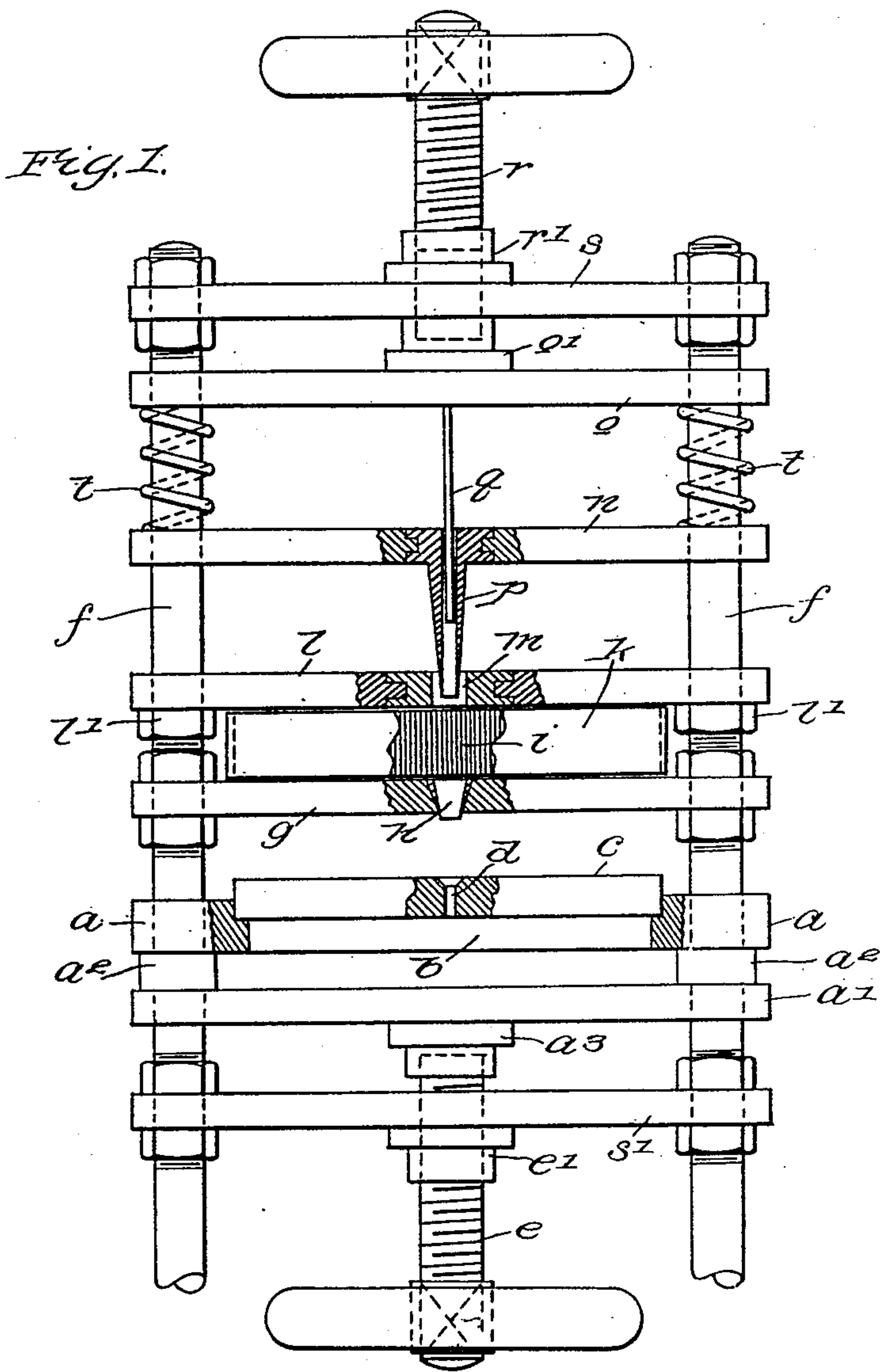
No. 868,237.

PATENTED OCT. 15, 1907.

H. WEIHERMÜLLER.
APPARATUS FOR MANUFACTURING BRUSHES.

APPLICATION FILED JAN. 10, 1907.

2 SHEETS—SHEET 1.



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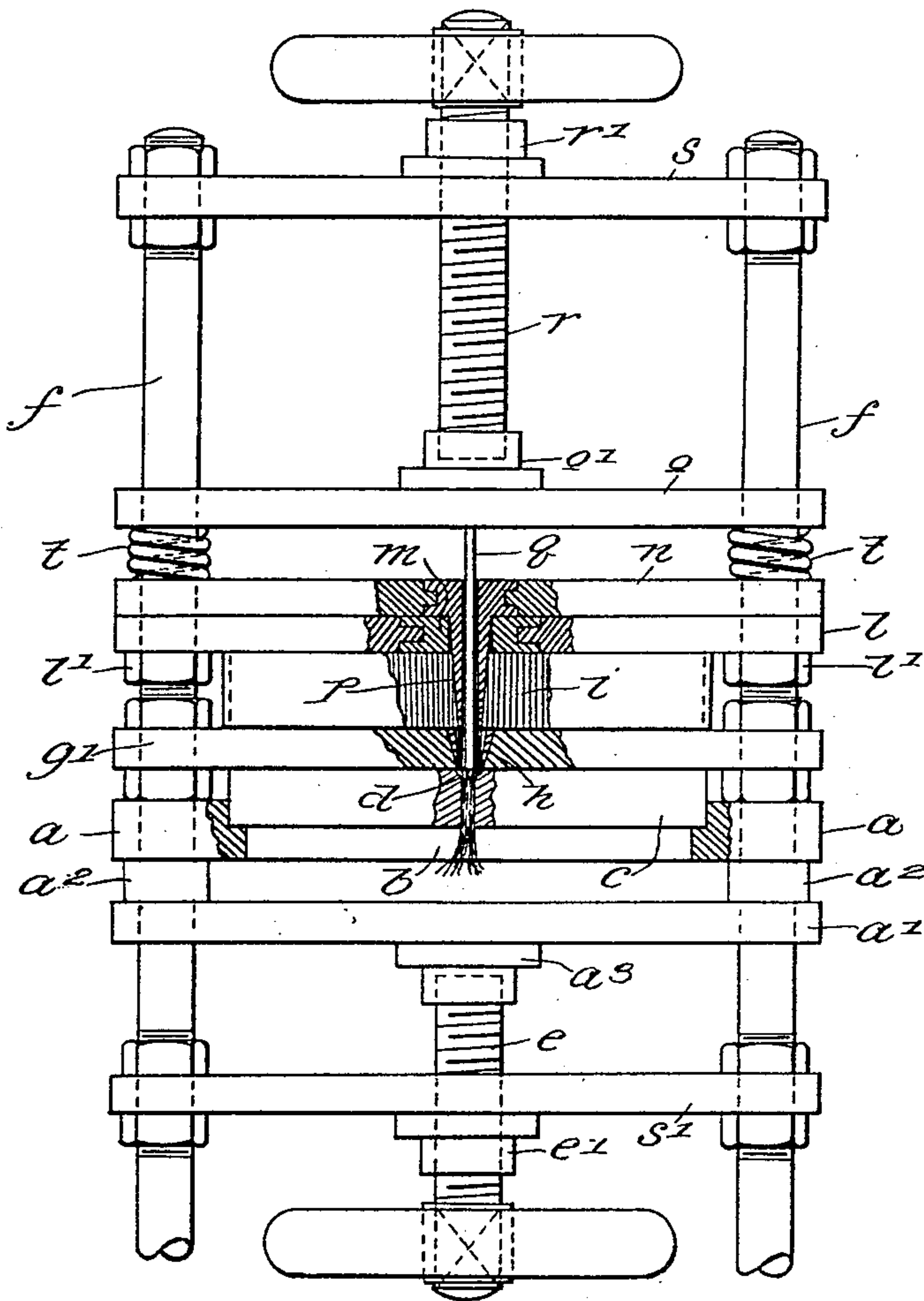
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

HANS WEIHERMÜLLER, OF NUREMBERG, GERMANY.

APPARATUS FOR MANUFACTURING BRUSHES.

No. 868,237.

Specification of Letters Patent.

Patented Oct. 15, 1907.

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To all whom it may concern:

Be it known that I, HANS WEIHERMÜLLER, whose post-office address is No. 64 Schwabenstrasse, Nuremberg, Bavaria, Germany, manufacturer, have invented certain new and useful Improvements in Apparatus for Manufacturing Brushes, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in machines for supplying or inserting bristles into the stocks or bodies of brushes.

The invention consists generally in means adapted to support the bristles in bulk and also adapted to support the stock in receiving proximity thereto together with selector and projector devices adapted to operate on the bristles in bulk to select tufts therefrom and project or insert the selected tufts into the stock or brush body.

In the preferred embodiment of the invention the selector and projector are operated progressively so that after a quantity of bristles has been selected the selector serves as a guide to insure proper insertion into the brush stock.

The invention will be more fully described in connection with the accompanying drawings and will be more particularly pointed out and ascertained in and by the appended claims.

In the drawings Figure 1 is a side elevation with parts in section of a machine embodying the main features of my invention. Fig. 2 is a similar view showing the parts in a different position.

Like characters of reference designate similar parts throughout the different figures of the drawings.

As shown the device of my invention comprises upright columns f to which are rigidly secured tie members s , s' and a bristle support g . Said tie members s and s' afford mountings for adjusting devices which as shown are in the form of threaded rods r and e respectively each of which is provided with a hand wheel. Said rods r and e have threaded engagement with collars r' , e' fixed to said members s and s' respectively. The inner end of rod e desirably engages a stock support which as shown comprises a form a in which the stock c is directly mounted and an adjusting member a' , spaced apart from the form a , by rings a^2 . The members comprising the stock support are loosely mounted on the upright columns f to afford adjustment and the member a' is provided with a socket a^3 adapted to receive the threaded rod e . By means of the foregoing construction the form a may be adjusted toward or from the bristle support g as desired by turning the hand wheel of the threaded rod e . Desirably the form a is open at b to accommodate the bristles when they are inserted in the stock from the rear thereof and by

means of the spacing rings a^2 the member a' of the support is spaced apart from the form a a sufficient distance to prevent the projecting bristles from engaging said member a' when inserted in the manner hereinbefore described. The stock c is provided with an aperture d for receiving a tuft of bristles and as shown said aperture is provided with a conical enlargement at its upper end. It will be understood of course that in practice a plurality of such apertures will be provided for the brush stock although only one is herein shown for the purposes of simplifying the mechanism.

The bristles i are desirably disposed endwise upon the support g and means are provided, in the preferred construction, for maintaining said bristles in endwise relation upon the support and as shown said means consists of a box-like structure k open at both sides and resting loosely upon the support g . The bristles are inserted in bulk in the box k in a manner to fit relatively snugly therein and the box k is preferably provided with a cover l having a selector aperture m . The cover l as shown is loosely mounted on the columns f and may be adjusted thereon by means of nuts l' to accommodate for different sized boxes. It will be understood however that the cover l is not essential to the operation of the machine, as the mechanism hereinafter described is adapted to enter the box and select and insert the bristles into the brush stock without the selected aperture.

The selector and projector devices will next be described in detail.

As shown the selector comprises a tube p open at both ends and mounted on a support such for instance as n . The selector tube p is preferably tapered toward its lower end so that when it passes into the box k it will select and group the bristles lying in the plane of its bore without engaging the ends and bending the bristles adjacent to those selected. Said support g as shown is provided with a bristle guide preferably in the form of a tapering tube h and the latter is co-axially arranged with respect to the aperture d in the brush stock c and the selector aperture m of the cover l . In practice the number of guides h and apertures m will correspond to the number of apertures in the brush stock and it will be understood that the bristles i are crowded into the box k with sufficient firmness to prevent said bristles from descending through the guide h by gravity. The projector device comprises, as shown a rod q mounted upon a suitable support such for instance as o and said projector desirably and normally extends into the selector tube p as shown but the lower end of the projector is somewhat above the lower end of the selector when said devices are at their initial or starting positions. The supports n and o are slidably mounted on the columns f and there is desirably provided yielding means in the form of springs t between the supports o and n to normally maintain the same in

the position shown in Fig. 1 although said springs are not essential to the operation of said device. When the springs are used the adjusting or actuating means serves to operate the projector and selector devices by engaging the latter and to this end the support *o* is provided with a socket *o'* adapted to receive the inner end of the threaded rod *r*. The operation is as follows.

Assuming that the parts are in the position shown in Fig. 1 the adjusting device for the stock support will be operated to raise the stock in the position shown in Fig. 2 so that the guide *h* will project into the conical upper end of the opening *d*. The rod *r* will next be rotated and will act through the support *o* and springs *t* to depress the selector and projector devices. The selector tube *p* will first enter the box *k* by the aperture *m* and all of the bristles in alinement with the bore of the selector will be engaged thereby and the selector will pass downwardly through the guide *h* to the opening *d* of the brush stock as shown in Fig. 2. The parts are preferably so proportioned that when the selector is in the position shown in Fig. 2 the support *n* will engage the cover *l* and limit further movement of the selector.

It will be seen from the foregoing that the selector performs two functions, *i. e.*, it selects the bristles from the mass in bulk and also forms a guide to the same during insertion into the brush stock. Therefore it will be seen that the tube *p* comprises combined selecting and guiding means. After the selector has reached the position shown in Fig. 2 further rotation of the rod *r* will compress the springs *t* and thereby permit the projector *q* to pass downwardly through the selector to engage the upper ends of the selected tuft of bristles and insert the same into the brush stock. The parts are so proportioned that at the limit of movement of the projector as shown in Fig. 2 the tuft of bristles will be inserted through the brush stock a sufficient distance to project below the same but it will be understood that where the bristles are inserted into the stock on the face side thereof instead of from the rear thereof the device of my invention will be equally serviceable.

It will be seen from the foregoing that the selector and projector act progressively in the performance of their functions and that said devices are actuated by a single operating or adjusting mechanism but it will be understood that the said selector and projector could be operated from independent sources of power and that in such arrangement the advantage of the invention could be satisfactorily realized.

I claim:—

1. An apparatus of the class described comprising in combination, a fixed bristle support provided with a tapering bristle guide projecting downwardly therefrom, means for holding said bristles endwise on said support, a stock support maintaining an apertured stock in a position to align its aperture with said guide tube, means for adjusting said stock support toward and from said bristle support, a cover for said bristles provided with a selector aperture alining with said guide and stock aperture, a bristle selector tube adapted to be projected into said apertures, a movably mounted support for said selector tube, a projector rod operating in said selector tube, a movably mounted support for said projector rod, springs interposed between said selector and projector supports, and means associated with the latter for selecting and projecting the bristles from said bristle holding means into said stock.

2. An apparatus of the class described comprising in combination, a fixed bristle support provided with a tapering bristle guide projecting downwardly therefrom, means for holding said bristles endwise on said support, a stock support maintaining an apertured stock in a position to align its aperture with said guide, means for adjusting said stock toward and from said bristle support, a bristle selector tube alining with said guide and aperture, a movably mounted support for said selector tube, a projector rod operating in said tube, a movably mounted support for said projector rod, springs interposed between said selector and projector supports, and means associated with the latter for progressively operating said selector and projector to effect insertion of the bristles into said stock.

3. An apparatus of the class described comprising in combination, a bristle support provided with a bristle guide, means for holding the bristles endwise on said support, a stock support, adapted to receive a brush stock provided with an aperture, means for adjusting said support, a bristle selector, a movably mounted support therefor, a bristle projector, a movably mounted support therefor, springs interposed between said selector and projector supports, and means associated with the latter for progressively operating said selector and projector to effect insertion of the bristles into said stock.

4. An apparatus of the class described comprising in combination, a bristle support provided with a bristle guide, means for holding the bristles endwise on said support, a stock support adapted to receive a brush stock provided with an aperture, means for adjusting said support, a bristle selector, a movably mounted support therefor, a bristle projector, a movably mounted support therefor, yieldingly acting means interposed between said selector and projector supports, and means for operating said supports to progressively operate said selector and projector to effect insertion of said bristles into said stock.

5. An apparatus of the class described comprising in combination, a bristle support provided with a bristle guide, means for holding said bristles endwise on said support, a bristle selector, a movably mounted support therefor, a bristle projector, a movably mounted support therefor, and means for progressively operating said selector and projector supports and the parts thereof to effect insertion of the bristles into a brush stock.

6. An apparatus of the class described comprising in combination, a bristle support provided with a bristle guide, means for holding said bristles endwise on said support, a bristle selector, a bristle projector, and means for progressively operating said selector and projector to effect insertion of the bristles into a brush stock.

7. An apparatus of the class described comprising in combination, a bristle support provided with a bristle guide, means for holding said bristles endwise on said support, a bristle selector, a bristle projector, and means for operating said selector and projector to effect insertion of the bristles into a brush stock.

8. An apparatus of the class described comprising in combination, a bristle support, a bristle selector, a bristle projector, and means for progressively operating said selector and projector to engage the bristles in said support and effect insertion thereof into a brush stock.

9. An apparatus of the class described comprising in combination, a bristle support, a bristle selector, a bristle projector, and means for operating said selector and projector to engage the bristles in said support and effect insertion thereof into a brush stock.

10. An apparatus of the class described comprising in combination, a bristle support, cooperating selecting and projecting devices, and means for progressively operating said devices to engage the bristles in said support and effect insertion thereof into a brush stock.

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

HANS WEIHERMÜLLER.

Witnesses:

ALEX WIELE,
MAX SCHNEIDER.