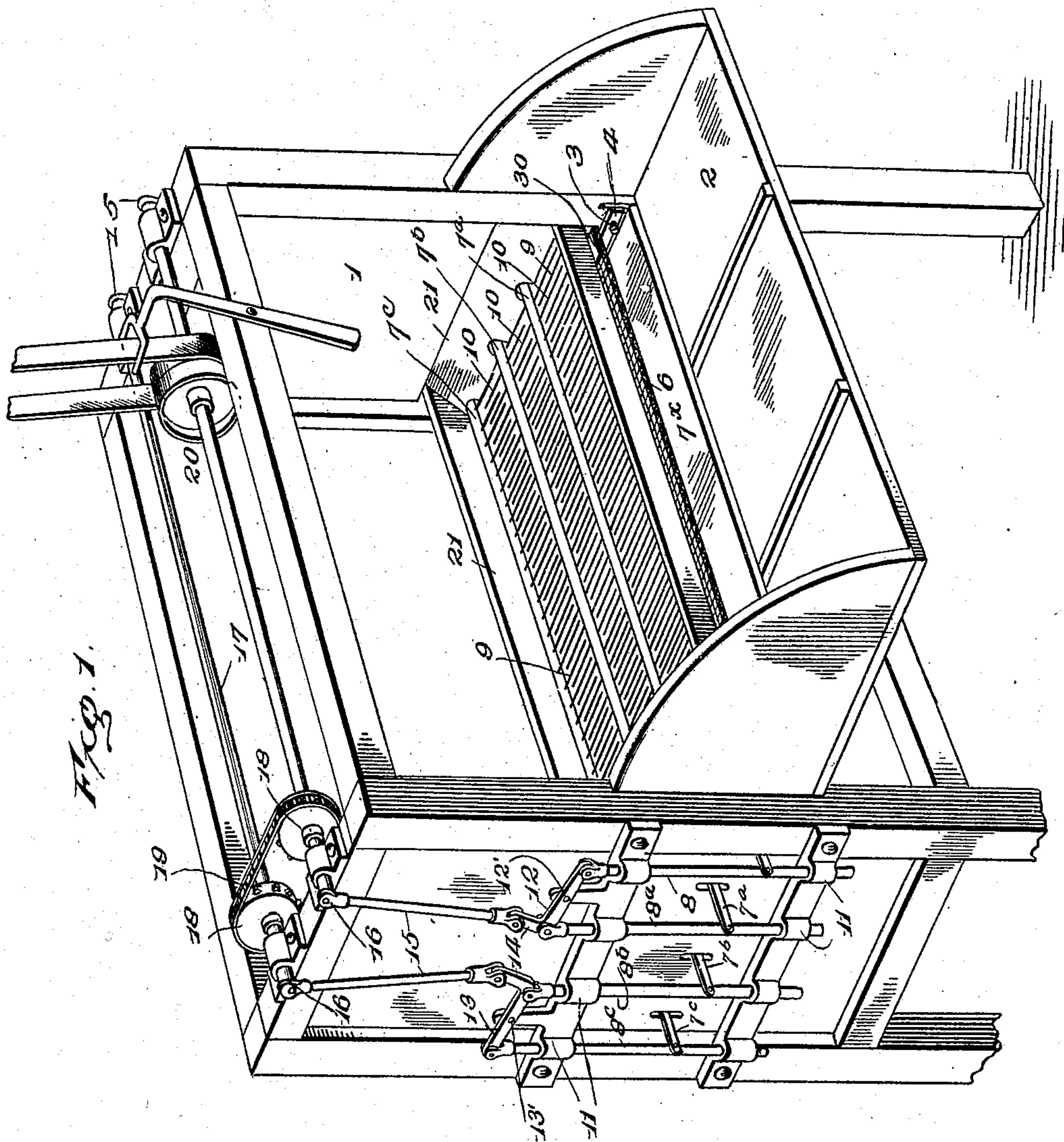


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BRUSH FILLING MACHINE.
APPLICATION FILED JAN. 16, 1908.

919,734.

Patented Apr. 27, 1909.
3 SHEETS—SHEET 1.



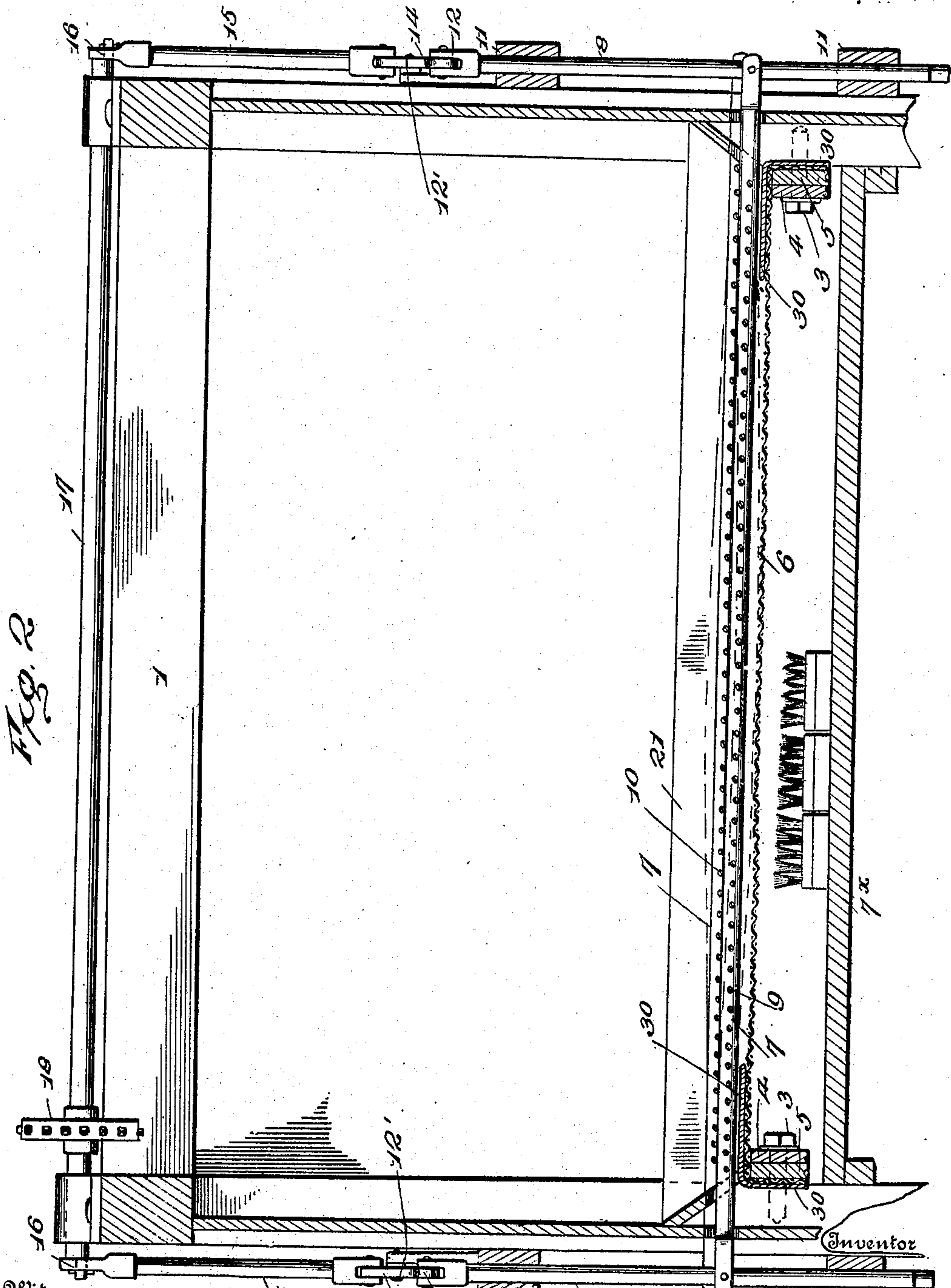
Witnesses
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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

SOLOMON LEVI, OF ALBANY, NEW YORK, ASSIGNOR TO MOHAWK BRUSH CO., OF COHOES, NEW YORK, A CORPORATION OF NEW YORK.

BRUSH-FILLING MACHINE.

No. 919,734.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed January 16, 1908. Serial No. 411,167.

To all whom it may concern:

Be it known that I, SOLOMON LEVI, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Brush-Filling Machines, of which the following is a specification.

This invention relates to improvements in brush filling machines.

10 The object of the invention is to provide a reticulated platform located under and in close proximity to a plurality of vertically reciprocating intermeshing fingers, the movement of the latter vibrating the reticulated
15 platform at different points, to shake and thereby separate the bristles that they may fall by gravity into brush forms.

A further object of the invention is to provide a series of reciprocating fingers in
20 juxtaposition to a reticulated platform, with mechanism to raise and lower the fingers in opposite direction throughout the whole surface, whereby the bristles when thrown into the machine will be caused to fall vertically
25 between said fingers and through the openings in the reticulated platform.

The invention also relates to the particular arrangement of parts, and the peculiar construction of the same, which will be hereinafter fully described, and pointed out in
30 the claims.

In the drawings: Figure 1 is a perspective view of my improved machine. Fig. 2 is a transverse section of the same. Fig. 3
35 is a longitudinal section. Fig. 4 is a horizontal sectional view, parts being broken away to show the fingers and the reticulated platform. Fig. 5 is a detail section of the end of the reticulated platform.

40 The numeral 1, indicates a frame of appropriate construction, and 2, an outwardly extending work shelf. Secured to opposite ends of the frame 1, by bolts 3, are clamping bars 4, to which are fastened wooden
45 strips 5. Stretched between the wooden strips, is a piece of wire mesh 6, having openings of appropriate size, to form a reticulated platform. The strips 5, being of wood will permit of the wire mesh being
50 drawn tightly between the ends, at the same time it will give sufficiently to vibrate the platform to cause the bristles to fall by gravity through the openings into the brush forms which are supported on a platform
55 7^x, as shown in Fig 2.

Extending through the ends of the frame 1, are a series of "preferably four" bars 7, 7^a, 7^b and 7^c, located directly above the reticulated platform, and connected at their ends to vertically reciprocated rods 8, 8^a, 8^b and 8^c. Extending from the bars 7 and 7^c, are a series of fingers 9, which extend in opposite direction, while from the bars 7^a, 7^b, other fingers 10, extend from opposite sides thereof. All of the fingers 9 and 10, intermesh
65 with each other to thoroughly agitate the bristles, and to cause them to be shaken in the spaces formed between them in a vertical direction, onto and through the reticulated platform 6. The length and resiliency of the rods are such that as they are moved downwardly toward the reticulated platform, they will be swayed in the middle to contact with said platform (as shown in dotted lines, Fig. 2) and thereby vibrate the
75 same to assist the individual bristles to fall through the openings onto the brush forms below. The mechanism employed for vertically reciprocating the bars and fingers, is such as will cause one set of said fingers and bars, to be forced downwardly toward the reticulated platform, while the other set of said fingers and bars is moved upwardly away from the platform. The purpose of this peculiar action is to vibrate
85 the reticulated platform along two individual lines or points at the same time. The distance between the bars and the reticulated platform is so proportioned as will cause this contact at different points to be
90 made substantially at a time before the previous vibrations, due to the downward movement of the companion bars has ceased. In other words, the vibrations given to the reticulated platform by the rods and fingers
95 is scattered throughout the whole area of the reticulated surface to produce numerous and quick vibrations to effectually scatter and agitate the bristles, so they will fall by gravity through the openings, once their
100 ends are positioned over the openings. The vertically reciprocating rods are guided in bearings 11, the bars 8, 8^a, being connected by a link 12, and the bars 8^b and 8^c, are connected by a link 13. The links 12 and 13,
105 are pivotally supported at 12' and 13' between their respective rods and have extensions 14, connected to pitmen 15, with eccentrics or cranks 16, on shafts 17, which extend across the top of the frame 1.

The reciprocating mechanism just described is duplicated on both sides of the apparatus, and is connected in the same manner so that a uniform vertically reciprocated movement is imparted to the rods and the fingers.

Each shaft 17, is provided with a sprocket wheel 18, and they in turn are connected by a sprocket chain 19, and one of said shafts 17, has a fast and loose pulley indicated at 20, by which means motion is imparted to the reciprocating mechanism.

Around the fingers are slats 21, to form a hopper, but this detail of construction may be dispensed with, and the frame be made to perform the function.

As the ends of the reticulated platform are taut, and to protect the mesh from the downward thrust of the finger bars, I provide wear strips 30,

In operation, the operator throws a bunch of bristles on the series of reciprocating fingers, where they are agitated and consequently separated, and caused to fall downwardly between the fingers onto and through the reticulated platform 6. Experience has demonstrated, however, that when the bristles fall on a stationary reticulated platform they are likely to stick and eventually clog the space usually formed between the fingers and platform, and they prevent the operation of the apparatus. But by making the bars of such length and the fingers of proper proportion they will when moved downwardly yield sufficiently to contact with the platform and vibrate the latter which shakes the bristles through the openings, into the brush form below. The multiplicity of intermeshing fingers insures of the mass of bristles being separated, and as one set rises and the other is lowered, the individual bristles are tilted, and should they contact with the surface between the openings of the reticulated platform the jarring or vibrating action of the latter, causes them to be moved toward the openings when they will fall by gravity. Furthermore, by the arrangement of the vibrating means, that is, causing the fingers and their bars to strike the reticulated platform at different points, a varied or irregular vibrating action is imparted which effectually shakes the bristles until they find openings through which they will fall.

The time of causing the particular set of fingers and their supporting bars to strike the reticulated platform, can be changed to suit the convenience of the operator. For instance if it be found desirable to cause the set of fingers on the bars 7, 7^c, to go down simultaneously, or the bars 7^a, 7^b, obviously this change can be brought about by changing the position of the connections between the links and the eccentrics.

What I claim is:

1. In a brush filling apparatus, the combination with a reticulated platform, a series of bars having fingers and located above the platform, means for moving the bars, the bars being so located with reference to the reticulated platform that in their movement toward the same they will contact with the body of said platform at a point distant from the edges and vibrate the same.

2. In a brush filling machine, the combination with a reticulated platform, a series of reciprocating bars having fingers located above and adjacent said platform, means for reciprocating the bars, the position of said bars with relation to the platform being such as to strike the body of the platform at a point distant from the edges thereof to vibrate the same when reciprocated downwardly.

3. In a brush filling apparatus, the combination with a reticulated platform, bristle vibrating means, the bristle vibrating means being of sufficient resiliency and located above the reticulated platform and adapted to contact with and vibrate said platform, and means for vibrating the bristle vibrating means.

4. In a brush filling apparatus, the combination with a plurality of bars having fingers and arranged in sets, each set being movable in opposite direction to the companion set, a reticulated platform located under said bars and fingers the bars and fingers being of sufficient resiliency to contact with and vibrate the reticulated platform.

5. In a brush filling apparatus, the combination with a plurality of agitating devices including supporting bars and fingers, a reticulated platform located under the fingers, means for agitating the fingers, the bars and fingers yielding when moving toward the reticulated platform and striking the latter at a point distant from the edges thereof for vibrating the said reticulated platform.

6. In a brush filling apparatus, the combination with a reticulated platform, a plurality of bristle agitating devices located above the reticulated platform and extending beyond the same, and means for imparting movement to the agitating devices, the agitating devices being so positioned with relation to the reticulated platform that in their movement toward the latter a portion will contact with the body portion of the platform and vibrate the same.

7. In a brush filling apparatus, the combination with a reticulated platform, two sets of bars having fingers above the platform, means connecting each set of bars for imparting reciprocating movement thereto independent of the other set of bars, the reticulated platform being so positioned relative to the bars that it will be struck thereby when moved toward said platform to vibrate

the latter, the reticulated platform being struck at a point distant from the edges thereof.

5 8. In a brush filling apparatus, the combination with a reticulated platform, two sets of bars having fingers located above the platform, the bars being of sufficient resiliency to strike the reticulated platform when moved toward the latter, and means connected to each set of bars to reciprocate the same independent of the other set of said bars.

15 9. In a brush filling apparatus the combination with a brush back filling compartment, a reticulated platform for supporting bristles situated directly over and adjacent to the brush back filling compartment, a series of fingers situated above the reticulated platform and adapted to operate directly
20 upon the bristles, and means for creating

relative movement between the fingers and the reticulated platform to cause the fingers and platform to contact to shake bristles through said platform into the brush back filling compartment.

25 10. In a brush filling apparatus, the combination with a reticulated platform, a series of bars having fingers and located above the platform, means for moving the bars, the bars being of sufficient resiliency and located
30 with reference to the reticulated platform that in their movement toward the same they will contact with said platform and vibrate the same.

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

SOLOMON LEVI.

Witnesses:

LOUIS A. TESSIER,
CHAS. A. NORTHEY.