

No. 859,518.

PATENTED JULY 9, 1907.

C. H. RASMUSSEN.
BRUSH FILLING APPARATUS.

APPLICATION FILED DEC. 7, 1906.

3 SHEETS—SHEET 1.

FIG. 4

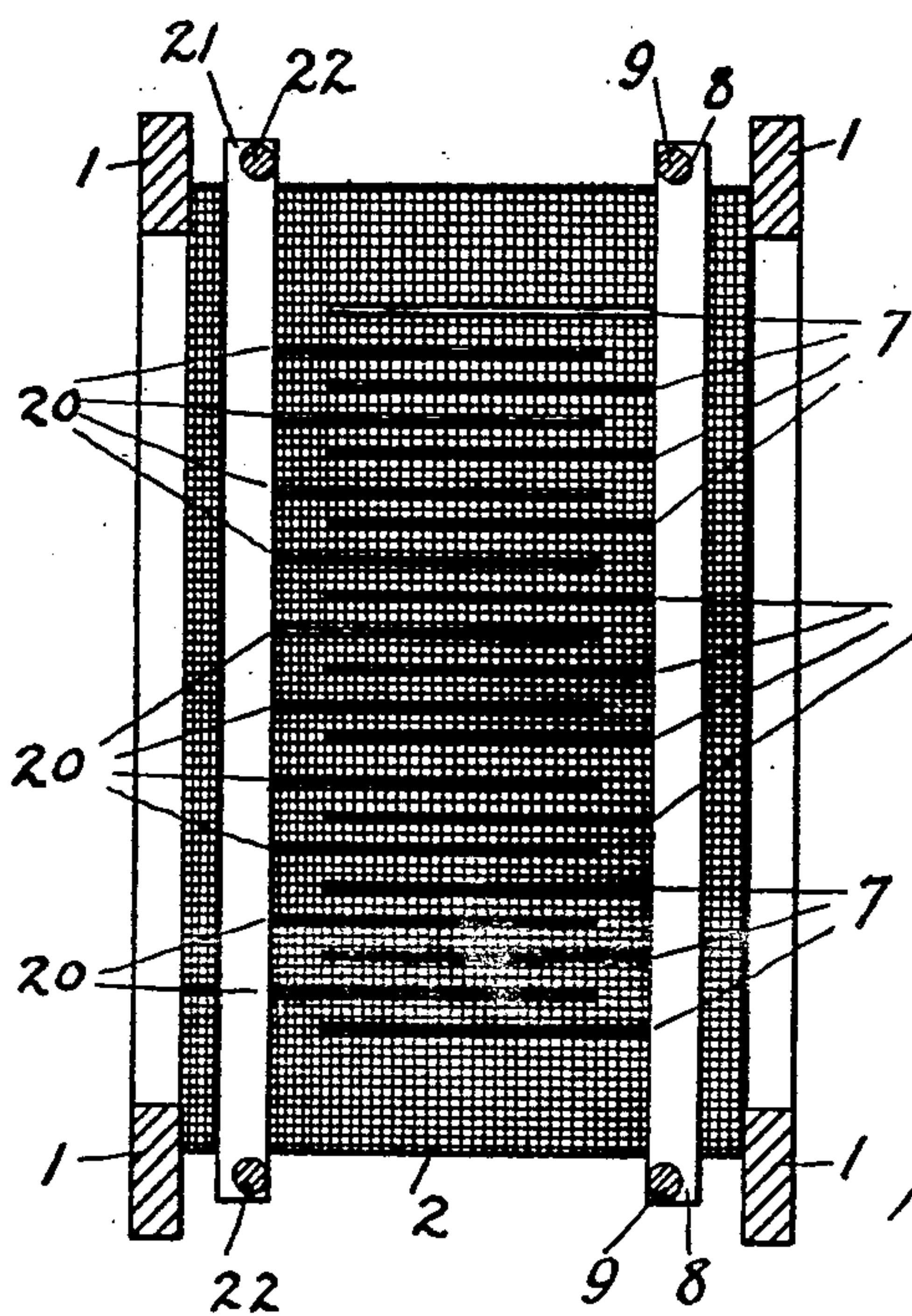
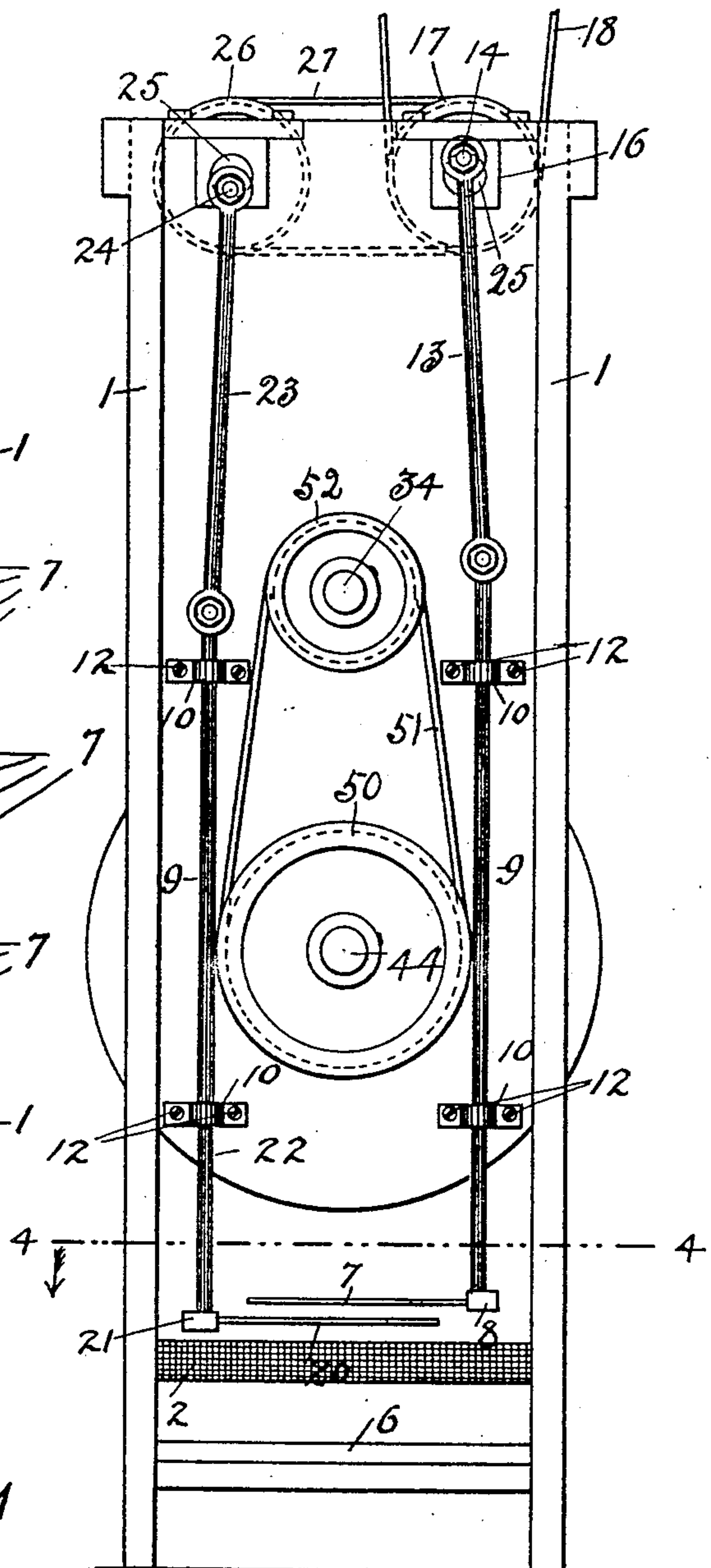


FIG. 1



WITNESSES
E. M. O'Reilly.
J. Donabach.

INVENTOR
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By *Arthur C. Curtis*
Attys.



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3 SHEETS—SHEET 2.

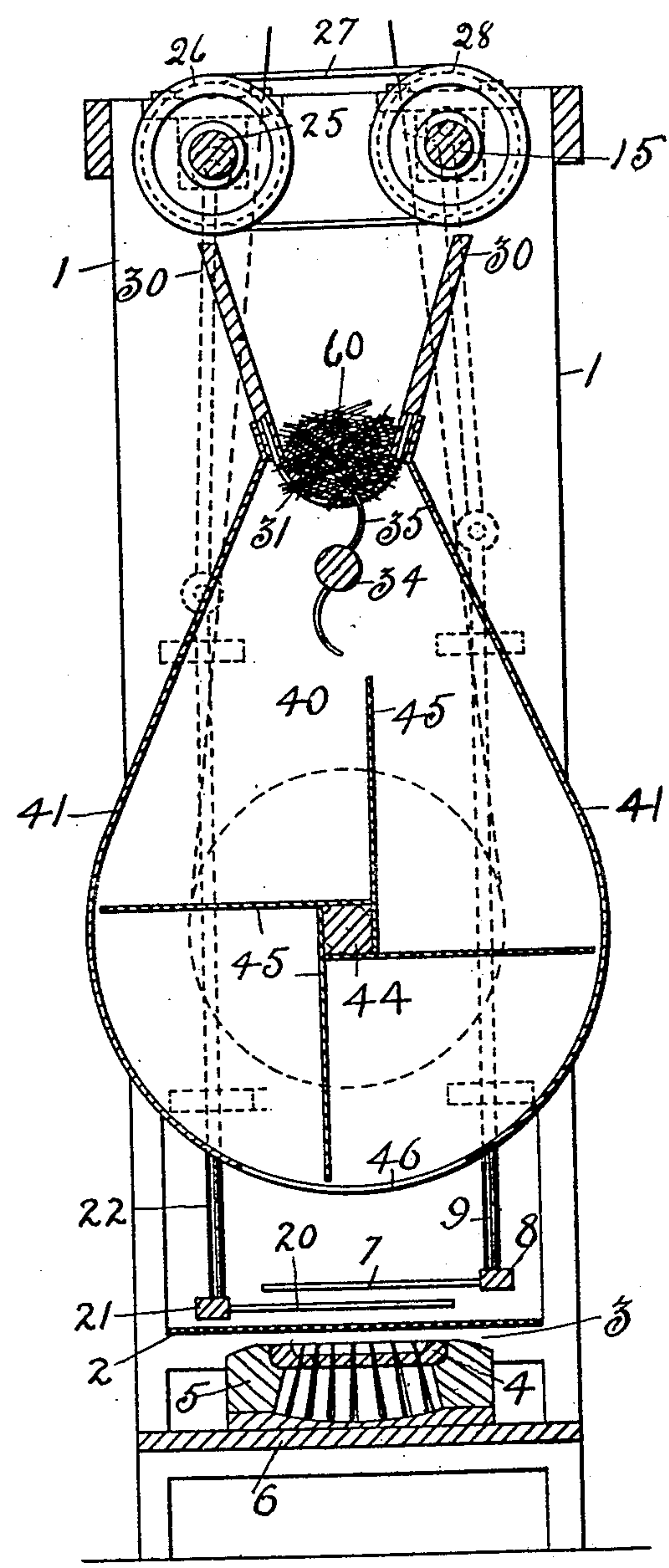


FIG. 2

WITNESSES
E. M. O'Reilly.
J. Donsbach.

INVENTOR
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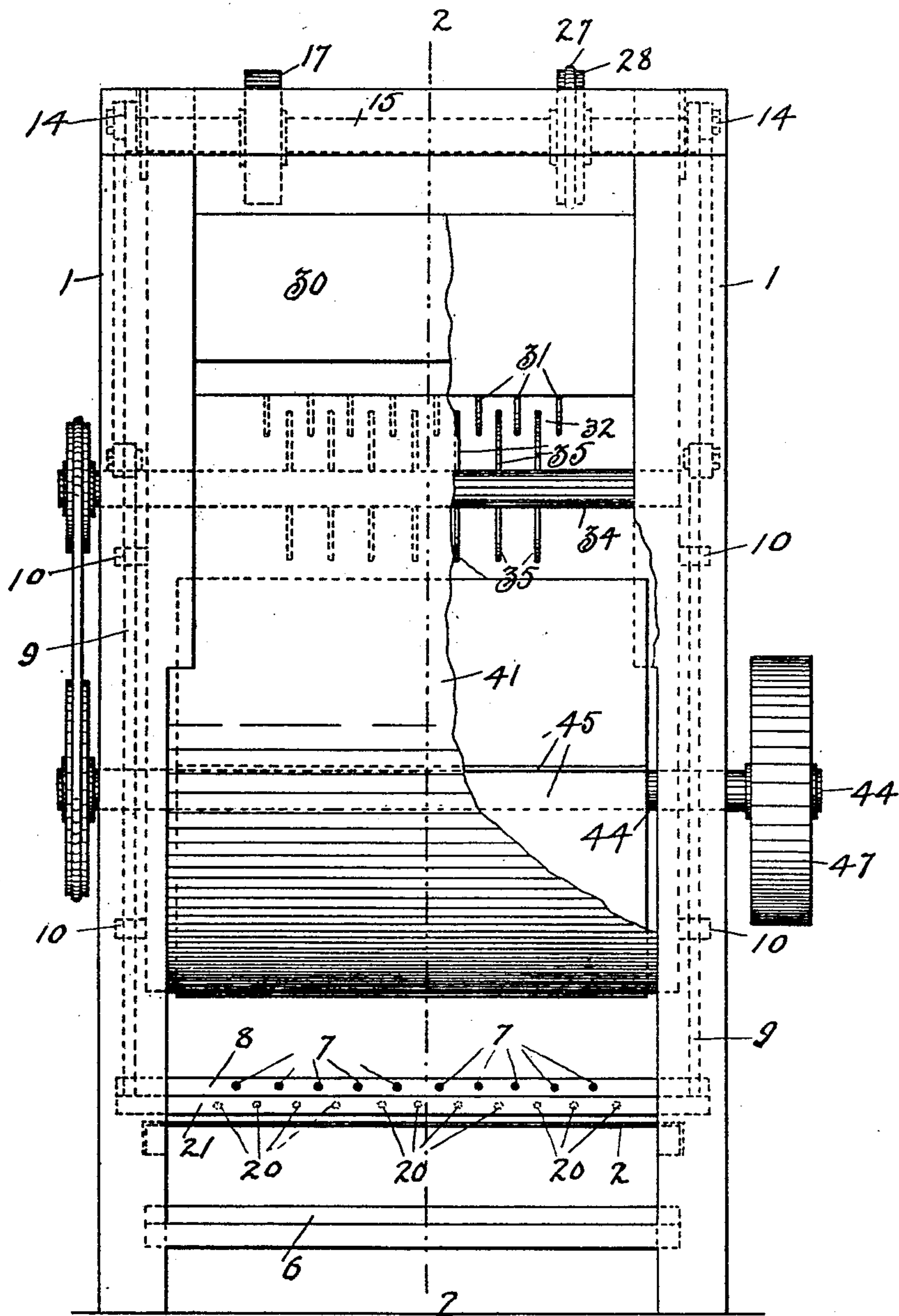
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3 SHEETS—SHEET 3.



WITNESSES
E. M. O'Reilly.
J. Donsbach.

FIG. 3

INVENTOR
Christian H. Rasmussen.
By Joshua Curtis
Atty.

UNITED STATES PATENT OFFICE.

CHRISTIAN H. RASMUSSEN, OF TROY, NEW YORK.

BRUSH-FILLING APPARATUS.

No. 859,518.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed December 7, 1906. Serial No. 346,713.

To all whom it may concern:

Be it known that I, CHRISTIAN H. RASMUSSEN, a citizen of the United States, residing at Troy, county of Rensselaer, and State of New York, have invented
5 certain new and useful Improvements in Brush-Filling Apparatus, of which the following is a specification.

The invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

10 Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures therein.

15 My invention relates more particularly to an apparatus for filling short length bristles into a perforated plate or brush-blank, and of the class shown and described in U. S. Letters Patent, for brush machines, one of such patents being No. 570,604, dated Nov. 3,
20 1896, and another No. 798,381, dated August 29, 1905.

The invention consists in feeding bristles down upon agitating fingers located just above and across a reticulated brush-filling plate, and means for agitating the
25 the plate into the perforations in the subjacent plate or brush-blank, as will be hereinafter more fully described and set forth in the claims.

The object of the invention is to facilitate and cheapen the process of disintegrating bunches of promiscuously interlaced bristles, and feeding them in a loose condition to the reticulated plate.

Figure 1 of the drawings is a side elevation of my improved apparatus with a portion of the guide-plate broken away to show the interior mechanism. Fig. 2
35 is a vertical, central, cross-section taken on the broken line 2—2 in Fig. 1. Fig. 3 is an end elevation of the apparatus shown in Fig. 1. Fig. 4 is a horizontal cross-section taken on the broken line 4—4, seen in direction of the arrow, and showing the reticulated filling-
40 plate with the superposed agitating fingers in plan.

1, represents the frame of the machine which may be of any known form adapted to support at its lower end the reticulated filling-plate, 2, which is shown supported by the cross-bars 3. Beneath the filling-plate
45 is shown a perforated brush-blank, 4, resting in the form, 5, supported by the cross-bars 6.

There are two sets or series of agitating fingers one set, 7, being supported by the longitudinal bar, 8, secured to the lower ends of the rods, 9, which rods are
50 adapted to slide vertically in the bearing supports, 10, secured to the frame of the machine as by screws 12. The rods, 9, are connected by links, 13, with the crank-pins, 14, projecting from the shaft, 15, rotary in bearings, 16, and provided with a pulley, 17, driven by a
55 band, 18, leading from a motor-pulley, not shown. The other set of fingers, 20, are similarly supported by

bars, 21, and rods, 22, which rods are connected by links, 23, with the crank-pins, 24, projecting from the shaft, 25, rotated by a pulley 26.

The pulley, 26, is connected by a band, 27, with a similar pulley, 28, on the shaft, 15, whereby comparatively rapid reciprocatory movements are communicated to the fingers in vertical planes, one set moving upwardly, while the other set moves downwardly, as will be seen from the position of the crank-pins, 14 and
60 24. These fingers serve to agitate the bristles directly above the reticulated feeding-plate and allow some of them to pass down endwise through the opening in such plate and enter the perforations in the blank or plate below, as seen in Fig. 2. 70

As a means for feeding the bristles through the fingers and reticulated plate a hopper, 30, is employed, being practically the same length as the reticulated plate, and located some distance above the plate. The bottom of the hopper is open except that it is partially
75 closed by the cross wires, 31, inserted in the lower edges of the side walls, as shown in Figs. 1 and 2, presenting openings, 32, between the cross wires.

Just below the hopper is located a rotary shaft, 34, provided with the projecting fingers, 35, adapted to project into the lower portion of the hopper through the openings, 32, and draw through the openings bristles which might be resting in bunches upon the cross wires, 31, and throw such bristles down into the chamber, 40, formed by the sides and guide-casings 41. Located in
85 this chamber is a rotary shaft, 44, rotary in suitable bearings on the frame of the apparatus and provided with four vanes, 45, which receive the bristles drawn from the hopper by the fingers, 35, and deposit them through the opening, 46, upon the agitating fingers
90 beneath. Rotary movements are communicated to the shaft, 44, by means of the pulley, 47, fixed upon the shaft, 44, the pulley being driven in any well-known manner. The shaft, 44, is provided with a pulley, 50, fixed thereon and connected by a band, 51, with a pulley, 52, fixed upon the shaft, 34, by which revoluble
95 movements are communicated to the fingers 35. In Fig. 2 the fingers are shown engaging a matted bunch of bristles, 60, located in the bottom of the hopper.

It is well-known by those skilled in the art of brush making that short length bristles, such as are adapted to be fed into the perforated plates or brush blanks by power apparatus, during shipment are matted together in a promiscuous manner so that the individual bristles are interlaced and so firmly adhere to each other that it
105 is frequently a difficult matter to loosen up the bunches and separate one bristle from another, but the improved feeding mechanism shown and described herein serves to wholly disintegrate the matted bunches of bristles and to feed them down upon the agitating fingers in a loose condition, such that the agitating fingers will easily toss them up and cause them to fall in such a
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manner that one bristle does not materially interfere with another, and that many of them will go endwise through the openings in the reticulated plate into the perforated plate below. Should the bristles accumulate upon the fingers or plate without passing through the reticulated plate, it is an easy matter to brush them from the fingers and plate by means of a brush.

What I claim as new and desire to secure by Letters Patent is

- 10 1. In a brush-filling apparatus, the combination with a reticulated platform; of a series of fingers extending across and just above the platform; means for imparting to the fingers reciprocating movements in vertical planes; and means for feeding bristles down upon the fingers.
- 15 2. In a brush-filling apparatus, the combination of a double series of fingers extending across and just above the platform; means for communicating to each series of fingers reciprocating movements in vertical planes, one series of fingers having an upward movement, while
- 20 the other series has a corresponding downward movement; and means for feeding bristles down upon the fingers.
- 25 3. In a brush-filling apparatus, the combination with a reticulated bristle-feeding platform; of bristle-feeding mechanism comprising a superposed hopper provided with openings in the bottom; revoluble fingers beneath the

hopper and adapted to project through the openings in the bottom of the hopper; and means for communicating revoluble movements to such fingers.

4. In a brush-filling apparatus, the combination with a 30 reticulated filling-plate; of mechanism for feeding the bristles to the plate comprising a hopper located above the plate, provided with openings in its bottom; revoluble fingers adapted to project through said openings into the hopper, revoluble vanes located beneath the revoluble 35 fingers in position to receive the bristles drawn from the hopper by the fingers and deposit the same upon the reticulated plate; and means for communicating revoluble movements to the fingers and vanes.

5. In a brush-filling apparatus, the combination with a 40 reticulated filling-plate; of a bristle-feeding hopper located above the plate having a plurality of openings in its bottom; guide-plates leading from the hopper to a position just above the reticulated plate; means for withdrawing the bristles from the hopper openings and per- 4 mitting them to fall down the guide-plate to the filling-plate.

In testimony whereof, I have hereunto set my hand this 5th day of December, 1906.

CHRISTIAN H. RASMUSSEN.

Witnesses:

GEO. A. MOSHER,
E. M. O'REILLY.