

(No Model.)

2 Sheets—Sheet 1.

W. F. HUTCHINSON.
BOX FOR BRUSH MACHINES.

No. 538,783.

Patented May 7, 1895.

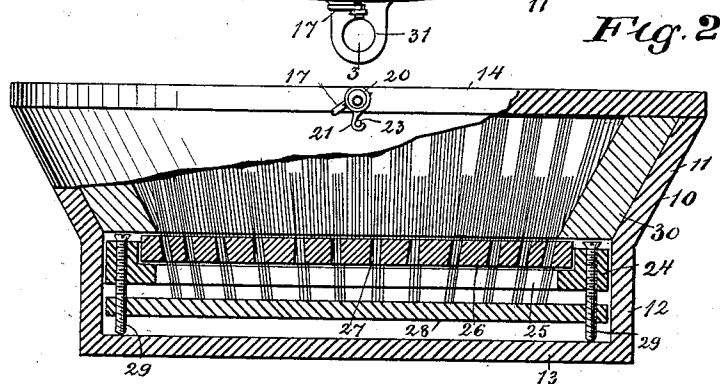
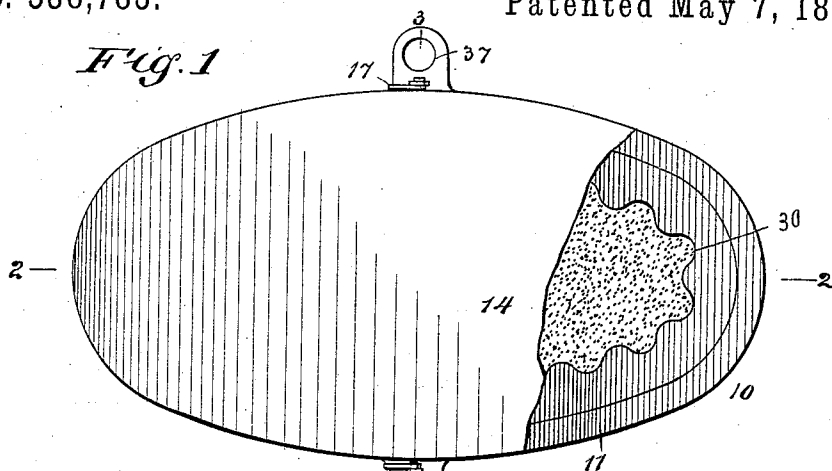


Fig. 4

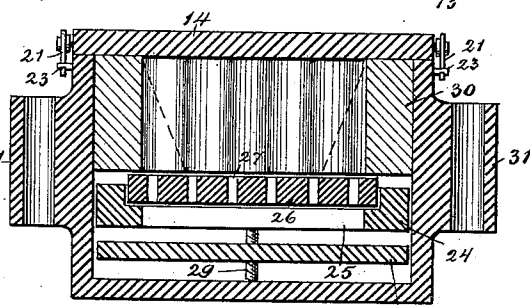
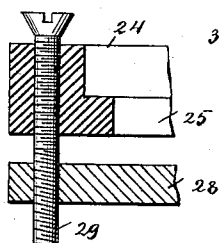


Fig. 7

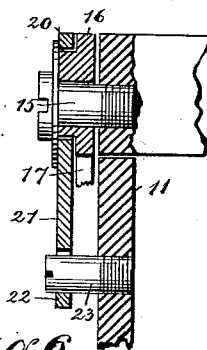


Fig. 5

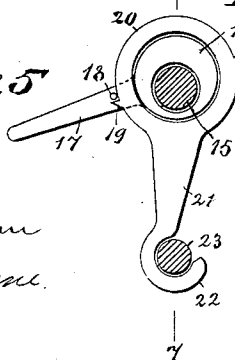


Fig. 3

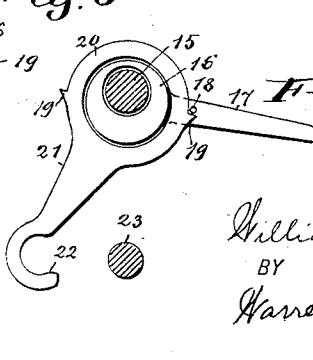
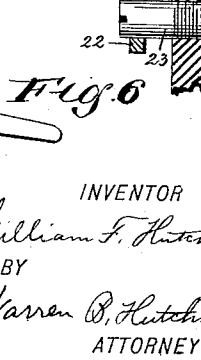


Fig. 6



WITNESSES:

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(No Model.)

2 Sheets—Sheet 2.

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No. 538,783.

Patented May 7, 1895.

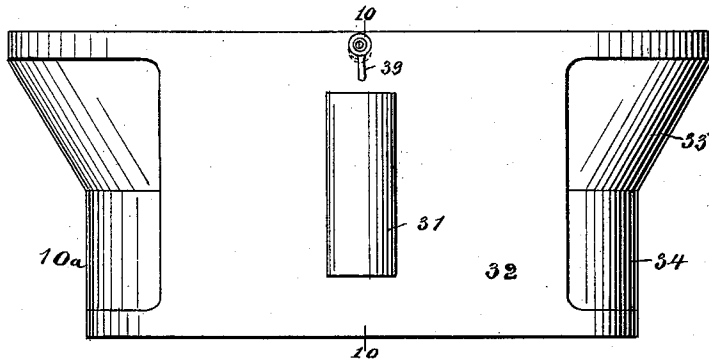


Fig. 8

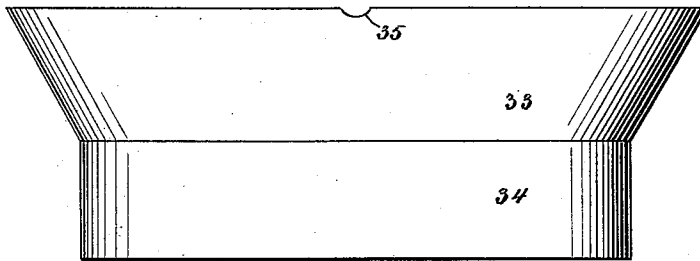


Fig. 9

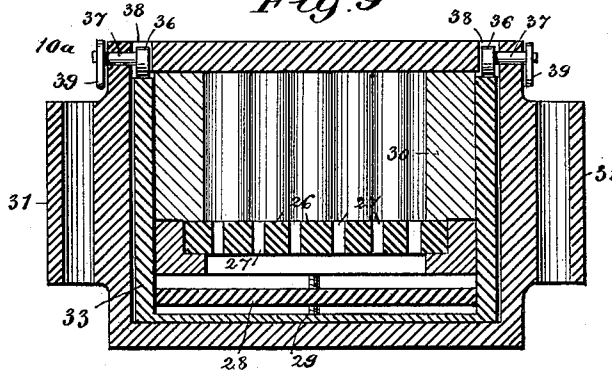


Fig. 10

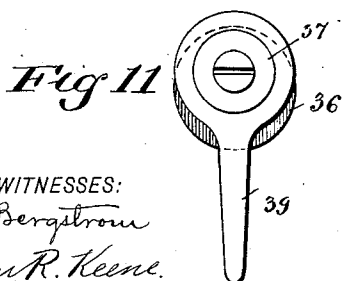


Fig. 11

WITNESSES:

J. A. Bergstrom
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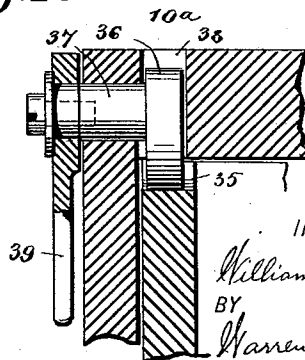


Fig. 12

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UNITED STATES PATENT OFFICE.

WILLIAM F. HUTCHINSON, OF PASSAIC, NEW JERSEY, ASSIGNOR TO WALLACE A. DOWNS, TRUSTEE, OF NEW YORK, N. Y.

BOX FOR BRUSH-MACHINES.

SPECIFICATION forming part of Letters Patent No. 538,783, dated May 7, 1895.

Application filed January 19, 1895. Serial No. 535,460. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. HUTCHINSON, of Passaic, in the county of Passaic and State of New Jersey, have invented a new and
5 Improved Box for Brush-Making Machines, of which the following is a full, clear, and exact description.

It is customary in making bristle or hair brushes, to hold the perforated brush back in
10 a box, place the bristles or hair in the box above the brush back, and then shake or jolt the box up and down until the bristles or hairs are forced into the perforations of the brush back.

My invention relates to improvements in
15 boxes of this class; and the object of my invention is to produce a box which can be easily arranged in a shaking or jolting machine, which has internal mechanism of a simple character adapted to be applied to brush
20 backs of different sizes, which has an abutment plate beneath the brush back holder, which has a simple means of adjusting the abutment plate in relation to the brush back,
25 and which is constructed in such a way as to be very durable and to work without rattling.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate
30 corresponding parts in all the views.

Figure 1 is a broken plan view of my improved box, showing the bristles therein. Fig. 2 is a broken side elevation, partly in longitudinal section, of the box with a brush-back and bristles therein. Fig. 3 is a cross-section
40 on the line 3 3 of Fig. 1. Fig. 4 is an enlarged detail sectional view of the brush-back-holding ring, the abutment-plate beneath the ring, and the means of adjusting the ring and plate. Fig. 5 is a sectional elevation of the locking
45 device to fasten the cover on the box, the device being shown in locked position. Fig. 6 is a view similar to Fig. 5, but with the locking device in unlocked position. Fig. 7 is a vertical section on the line 7 7 of Fig. 5. Fig. 8
50 is a side elevation of a modified form of the box. Fig. 9 is a side elevation of the inner receptacle or box proper used in connection

with the outer shell shown in Fig. 8. Fig. 10 is a cross-section on the line 10 10 of Fig. 8. Fig. 11 is a detail front elevation of the fasten-
55 ing device used to secure the box to its outer shell, and Fig. 12 is a detail sectional view of the fastening device as applied to the box and its shell.

The box 10 has a flaring top portion 11 and
60 a straight or vertical lower portion 12, the inclination of the top serving to assist in guiding the bristles as described below, and the lower portion being adapted to hold the mechanism
65 for holding the brush back and gaging the bristles. The box is of a generally elliptical shape to correspond with the usual form of brush back, but obviously it may be of any necessary shape. The box is closed at the bot-
70 tom, and has a removable cover 14, which can be fastened in any suitable way, but as the cover must be attached firmly and yet be quickly applied or removed, the fastening de-
vice shown is desirable.

The fastening devices are applied to oppo-
75 site sides of the cover, and each has a stud 15 on the cover, on which is journaled an eccentric 16 having a handle 17 with a laterally protruding pin 18, which is adapted to engage the shoulders 19 on diametrically op-
80 posite sides of the eccentric strap 20, this strap being mounted on the eccentric 16 and having secured to it a depending arm 21 with a hook 22 at its free end, to engage a pin 23
85 on the side of the box.

When the handle 17 is swung in one direction, the pin 18 strikes one of the shoulders 19 and carries the hook 22 into engagement with the pin 23, while the movement of the eccentric 16 causes the cover to be hugged
90 tightly to the box, and when the handle 17 is turned in the opposite direction, the pin 18 strikes the other shoulder 19 and releases the hook.

In the lower portion 12 of the box is a ring
95 24, which is movable up and down and has an inner shoulder 25 to support a brush back 26, the shoulder being placed so that when the brush back is on it the brush back will project slightly above the ring in order that
100 it may be rigidly held as presently described. The brush back has perforations 27 to receive the bristles as shown in Fig. 2.

Beneath the ring 24 and extending entirely

across the box is an abutment plate 28 upon which the ends of the bristles strike when the bristles drop through the perforations in the brush back. The distance between the
5 brush back and abutment plate should be equal to the thickness of the brush back. The reason for this is that the protruding ends of the bristles are covered with a cement then drawn back into the brush back, when
10 the cement fastens them to the brush back, after which a false or finish back is applied.

The ring 24 and abutment plate 28 are adjusted in relation to each other by screws 29 which extend vertically through the ring and
15 plate and rest on the floor of the box, while the heads extend above the ring to the level of the brush back and against the lining and guide 30 to be more specifically referred to presently. The lower ends of the screws are
20 of greater pitch than the upper ends, to give the abutment plate 28 a relatively fast movement, thus enabling it to be quickly adjusted to different thicknesses of brush backs and yet leave the screw heads level with the brush
25 back.

After the brush back is placed in the ring 24 the lining or guide 30 is placed in the box. This guide is thick enough to overlap the edge of the brush back and it also rests on the
30 screws 29 and extends to the cover 14. Consequently when the cover is locked, the guide is clamped firmly in place and prevents the displacement of the parts below it. Some such arrangement as this is essential to hold
35 the parts in place, as the box is subjected to violent concussions.

The lining 30 tapers downward and its inner wall is vertically corrugated to prevent the bristles from tipping over when in contact
40 with it. The taper of the guide serves to assemble the bristles in a compact mass on the brush back, so that when the box is shaken the bristles readily enter the holes in the brush back. On the sides of the box are per-
45 forated lugs 21 which serve as guides and which are adapted to run on guide posts on which the box is held when it is shaken.

In Figs 8 to 12 I have shown a slightly modified form of box, which has the cover integral
50 the main shell of the box and is therefore with rather stronger than the box shown in Figs. 1 to 7.

The modified form of box 10^a has an outer shell 32 which is open at the ends only, while
55 the inner box comprises the flaring top portion 33, and vertical base portion 34 and is substantially like the box 10 with its cover removed. The box 33, 34 has the same internal arrangement as the box 10, see Fig. 10,
60 and it is slipped endwise into the shell 32 which has the guide lugs 31, so that when the inner box is in place the whole device can be readily shaken up and down.

Any suitable means may be employed to
65 lock the box to the shell, a convenient and secure device being illustrated, which has

notches 35 in the top edge and opposite sides of the inner box adapted to engage eccentrics or cams 36 carried by shafts 37 which are jour-
70 naled in the outer shell. The eccentrics turn in slots 38 in the top of the shell 32. The outer ends of the shafts have handles 39 by which the shafts can be turned and the eccentrics moved into or out of engagement with the notches 35.
75

When either form of box is to be used, the brush back is adjusted in the ring 24, the lining and guide 30 inserted above the ring and brush back, the box filled with bristles placed
80 endwise to the brush back, and the parts held in place by fastening the cover to the box; in the modified form the top of the shell 32 serving as a cover. The box is then jolted up and down, being preferably held on guide posts
85 extending through the lugs 31, and the bristles drop through the holes in the brush back with their lower ends resting on the abutment plate 28.

By using a series of rings 24 and linings or guides 30, of varying internal diameters, one
90 box may be used for many sizes of brushes, thus obviating the necessity of using the customary large number of boxes and thereby making a substantial saving in the cost of an outfit for making brushes.
95

I know that it is not new to form a box with an inclined or tapering top, a brush back holder, and a bristle gage, and I do not claim such features broadly but only in the combinations herein expressed.
100

I claim, then—

1. The combination, with the box, of the brush back holding ring, the abutment plate held below the ring, the removable guide
105 above the ring, and a cover to close the box top and fasten the parts in place, substantially as described.

2. The combination with the box, of the brush back holding ring, the abutment plate secured to the ring and held beneath it, a tapering guide above the ring, and a cover for
110 the box, substantially as described.

3. The combination with the box, of the brush back holding ring, the abutment plate adjustably secured to the under side of the
115 holding ring, the tapering guide to rest above a brush back and extend to the top edge of the box, and a cover to rest on the guide and lock the parts in the box, substantially as described.
120

4. The combination of the box having a closed bottom and a top closure, of the brush back holding ring, the abutment plate, the adjusting screws extending through the brush
125 back holder and abutment plate and resting on the box bottom, and the guide between the brush back holding ring and box top, substantially as described.

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Witnesses:

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