Nov. 3, 1931. G. I. JOHNSON 1,830,362

BRUSH ATTACHMENT FOR FLOOR TREATING MACHINES

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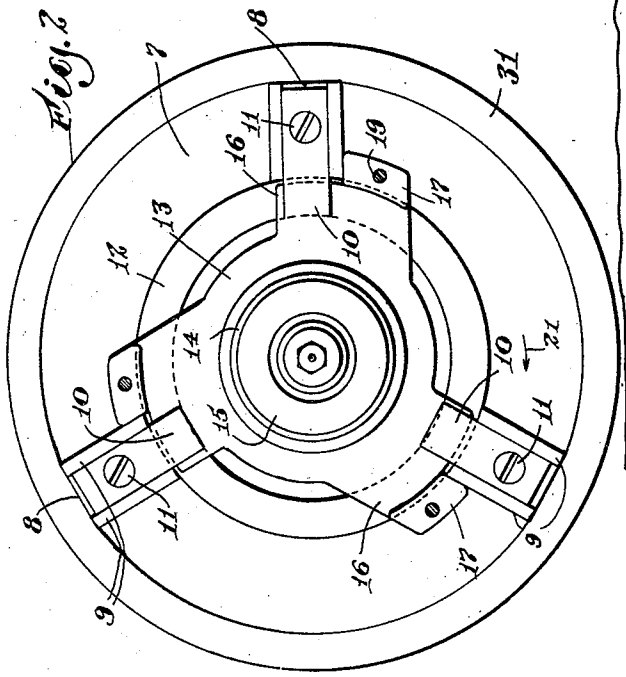


Fig. 2.

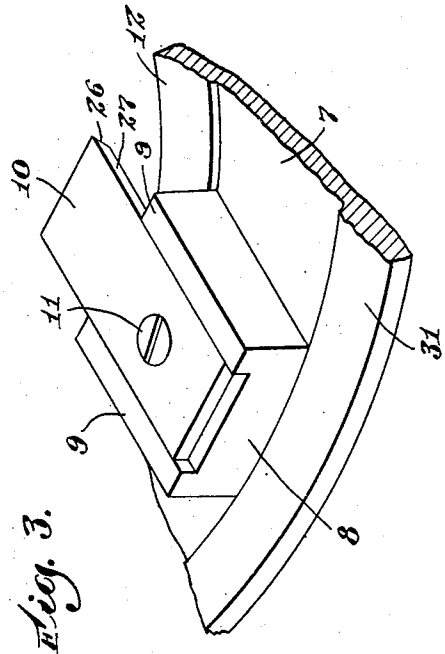


Fig. 3.

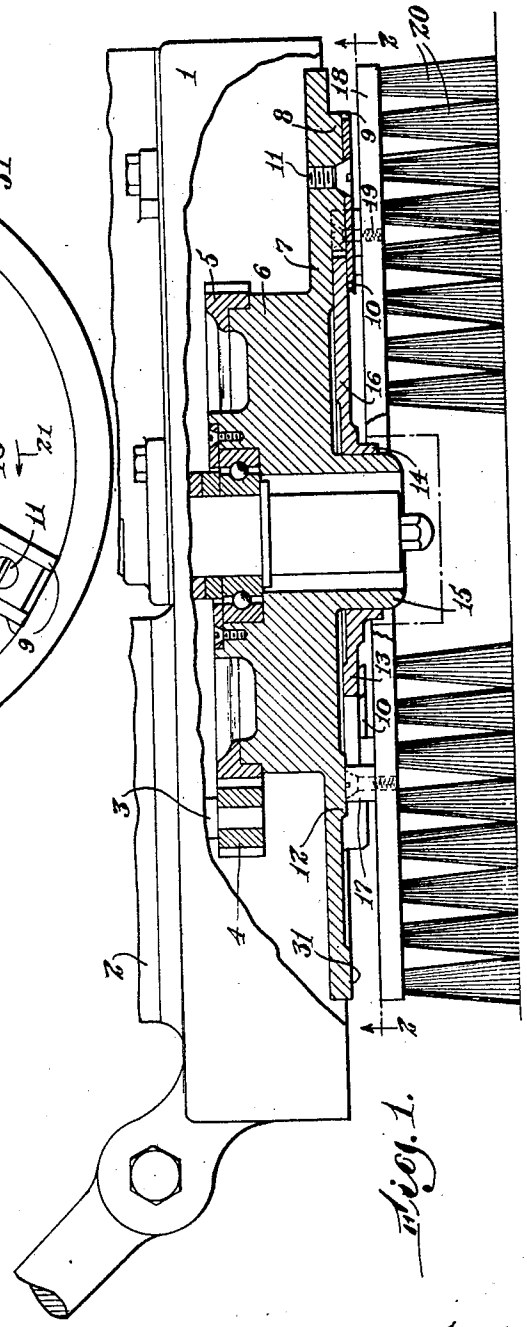


Fig. 1.

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Fig. 5.

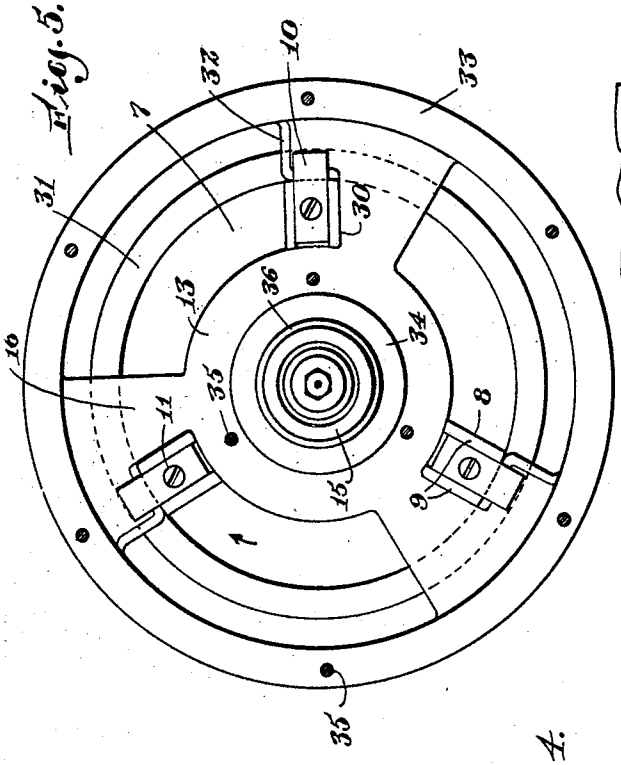


Fig. 4.

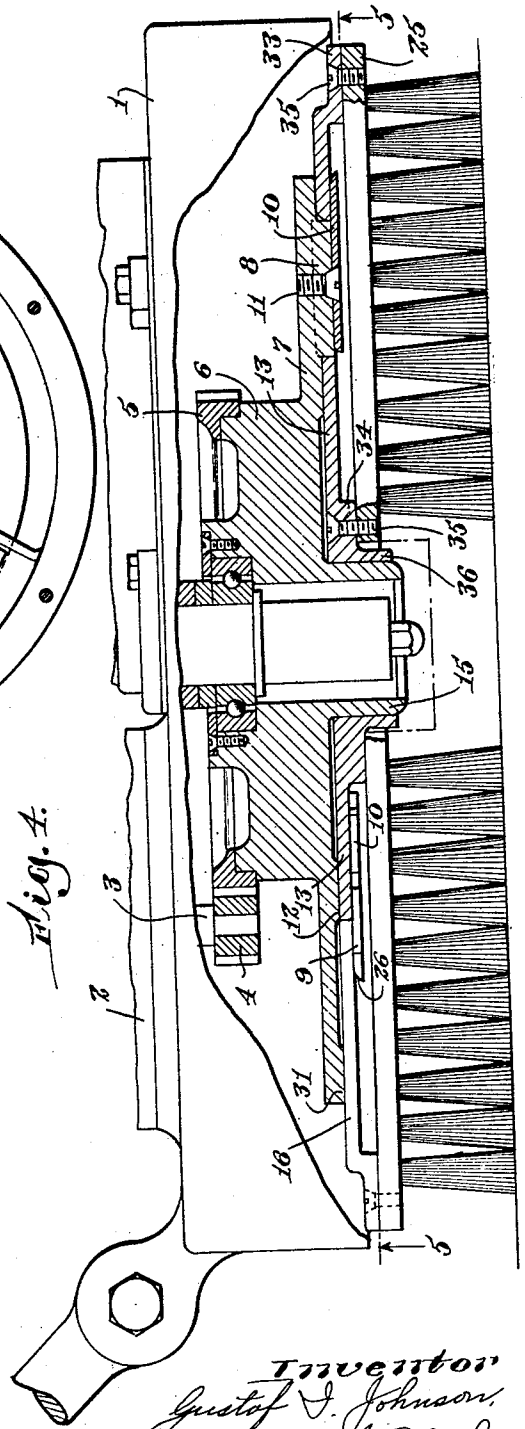
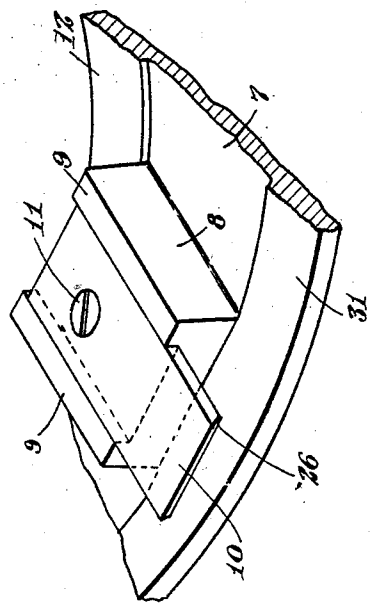


Fig. 6.



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UNITED STATES PATENT OFFICE

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BRUSH ATTACHMENT FOR FLOOR TREATING MACHINES

Application filed January 15, 1930. Serial No. 420,975.

My present invention relates to floor treating machines, and more particularly to a novel and improved brush attachment, or means for attaching brushes, therefor.

Floor treating machines, and particularly waxing or polishing machines, utilizing a brush as the waxing or polishing medium, and also utilizing power to operate the brush, are of considerable weight.

An important object of my invention, therefore, is the provision of a brush attachment for machines of this type which will enable the operator to attach the brush to the machine without using his hands, in a simple and rapid manner.

Another object of the invention is the provision of attaching means which will permit the instant detachment of the brush from the machine, without the use of tools or of loosening or adjusting any parts.

My invention enables an operator to shift from one type of brush or floor treating device to another with a minimum of time and effort, and without even bending over to touch the brush.

These advantages will be readily apparent to, and appreciated by, operators of these machines and others skilled in the art.

Other features and objects of the invention reside in the particular construction and arrangement of parts thereof. The above and other objects and features of the invention will be hereinafter more fully pointed out, described and claimed.

Referring to the drawings, illustrating a preferred embodiment of the invention,

Fig. 1 is a side elevation, partly in section, of a floor treating machine utilizing my novel brush attachment;

Fig. 2 is a cross sectional view on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged fragmentary detail of one of the attaching devices;

Fig. 4 is a side elevation partly in section, illustrating my invention utilized with a larger brush;

Fig. 5 is a cross sectional view on the line 5—5 of Fig. 4; and

Fig. 6 is an enlarged fragmentary detail of one of the attaching devices positioned to accommodate a larger brush.

Referring now to the drawings, for a particular description of the invention, its construction, assembly, and operation, 1 designates the frame of a floor treating machine, on which a motor (not shown), is enclosed in a housing 2, a motor shaft 3 depending below the frame and having thereon a driving pinion 4. This pinion meshes with and rotates a gear 5, fixed to the hub 6 of a plate 7, so that said plate 7 is rotated upon rotation of the gear 5. On the under surface of the plate 7, at predetermined intervals, are a plurality of bosses 8, each provided, at the sides thereof, with lugs 9. Between each pair of said lugs is positioned a plate 10 projecting beyond the boss 8 at one end thereof, and being secured to said boss by a screw 11, or other suitable and preferably removable attaching device.

Formed on the plate 7 is an annular shoulder 12, and adapted to ride on said shoulder is a flat ring 13 having a central flange 14 to provide a bearing for said ring 13 on the boss 15 of the plate 7. Projecting from the ring 13 are a plurality of tongues 16, one of these tongues being provided for each boss 8 on the plate 7. Projecting from the outer edge of each tongue and depending below the surface of said tongue is a boss 17, to which a brush frame or back 18 is adapted to be affixed by screws 19 or other holding devices, tufts of bristles 20 being attached to said brush frame 18.

When it is desired to attach the brush to a machine, the brush may be placed on the floor, bristles down, and the machine placed over the brush, the plates 10 projecting inwardly from the lugs 8 and being positioned intermediate the tongues 16. Thereupon the motor may be started and instantly stopped. This will cause a rotation of the plate 7, and will cause the plates 10 to ride over the tongues 16 until the bosses 17 strike against the bosses 8 on the plate 7. The brush is then in position, ready for operation, and if the machine should inadvertently be lifted, the tongues 16 will ride on the inwardly projecting plates 10, and be supported thereby.

Thereafter, when power is imparted to the gear 5 and plate 7, the bosses 8, on said plate 7, will be in engagement with the bosses 17 on the tongues 16, and will thus rotate the ring 13 with the plate 7. The brush back 18 being fixed to the bosses 17 will likewise be rotated therewith, in the direction of the arrow 21 in Fig. 2. When the operator desires to release and remove the brush, to be replaced by another, or for any other purpose, he may simply kick the brush out of engagement with its locks, and transfer the machine to another brush, or kick another brush under the machine for attachment in the manner above described.

It will be noted that the end 26 of the plate 10, as well as the side 27 adjacent to said end 26, is beveled, to facilitate riding of the locking plates 10 over the tongues 16.

If it is desired to utilize a larger brush, such, for example, as brush back 25 in Fig. 4, the plates 10 will be reversed, by simply removing the screw 11, reversing the plate 10 to the position illustrated in Fig. 6, and again replacing and tightening said screw 11.

When the larger brushes 25 are utilized, a different type of retainer is also utilized, as illustrated in Figs. 5 and 6. In this form of the invention, the ring 13 has the tongues 16 projecting therefrom, but to a greater extent, each tongue having formed therein a recess 30, to receive the bosses 8 on the plate 7. The plate 7 is also provided with an annular shoulder 31 on its outer periphery, ring 13 resting on the shoulder 12 and the tongues 16 resting on the shoulder 31. The portion of each tongue 16, which is adapted to extend under the plate 10, is beveled, as shown at 32, to facilitate the sliding of said tongues under said plates.

Formed as a part of the frame which comprises the ring 13 and tongue 16 is a ring 33, which depends below the normal level of the ring 13 and tongues 16, as clearly shown in Fig. 4. The brush back 25 is affixed to the ring 33 as well as to the boss 34 of the ring 13 by screws 35, or the like. The ring 13 also has an annular flange 36 adapted to constitute a bearing against boss 15 of the plate 7.

The method of attachment and detachment of the brush and holder illustrated in Figs. 4 and 5 is the same as for that illustrated in Figs. 1 and 2. The machine is placed on to the brush with the bosses 8 intermediate the tongues 16, whereupon slight rotation of the plate 7 will cause the lugs 8 to enter the recesses 30 and bear against the tongues 16, the beveled portions 32 of said tongues extending under plates 10. The bosses 8, during operation of the machine, will bear against the inner wall of the recesses 30, and rotate the frame and brush carried thereby with the plate 7.

It will thus be appreciated that I have devised an extremely simple, and yet efficient brush attachment, one which is economical to construct, easy to change or reverse, and since I believe that these brush attachments are novel, I have claimed the same herein.

While I have necessarily described my present invention somewhat in detail, it will be appreciated that I may vary the size, shape and arrangement of parts within reasonably wide limits without departing from the spirit of the invention.

My invention is further described and defined in the form of claim as follows:

A brush attachment of the kind described, comprising a plate, a plurality of bosses on the lower face of said plate, a pair of lugs on each of said bosses, a locking plate attached to each of said bosses between said lugs and projecting beyond one end of said boss, a disc located below said plate, a plurality of tongues on said disc adapted to be positioned between said locking plates and said first plate, and means on each of said tongues adapted to be engaged by said bosses to effect rotation of said disc with said first plate.

In testimony whereof, I have signed my name to this specification.

GUSTAF I. JOHNSON.