

No. 734,805.

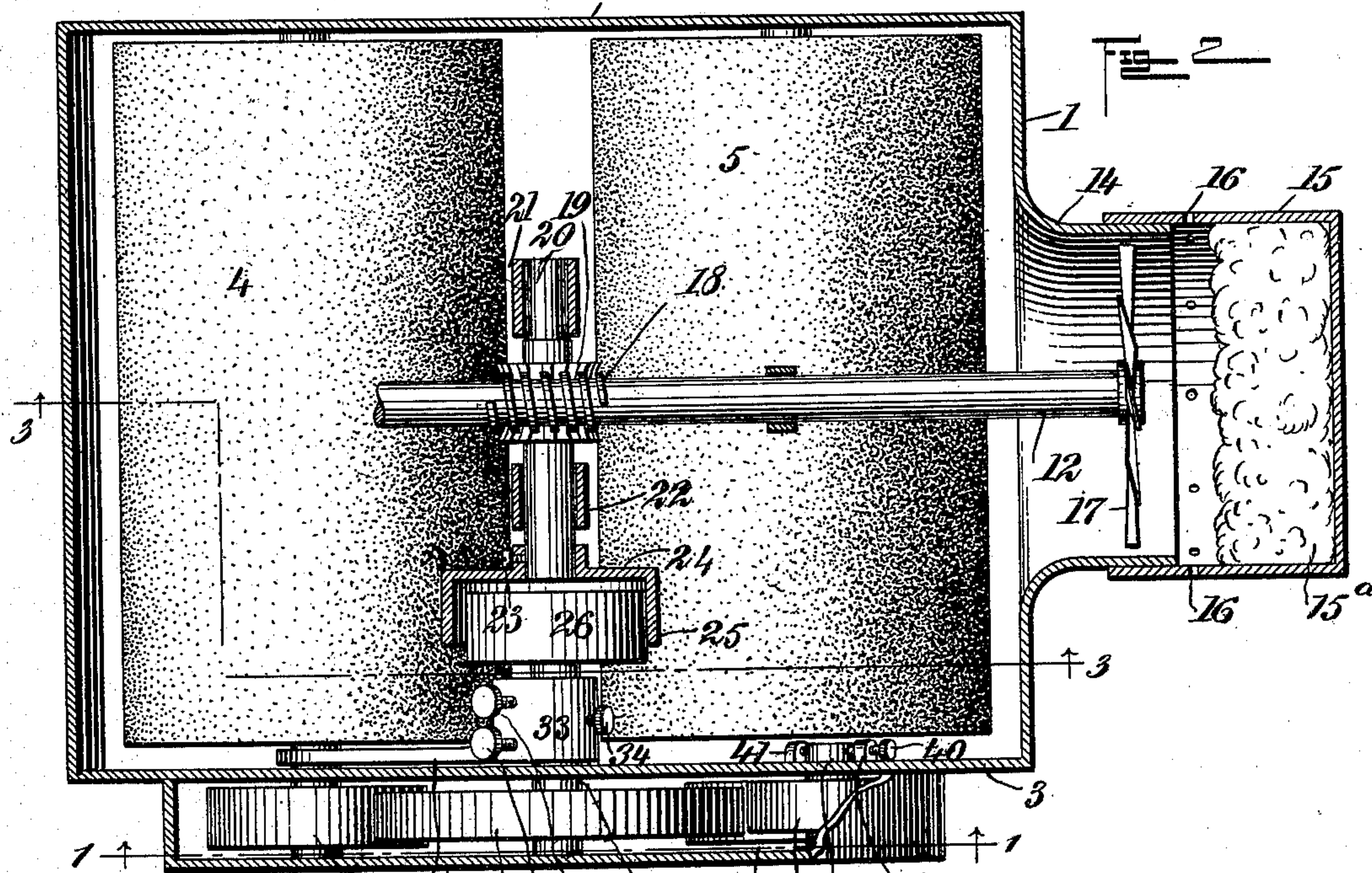
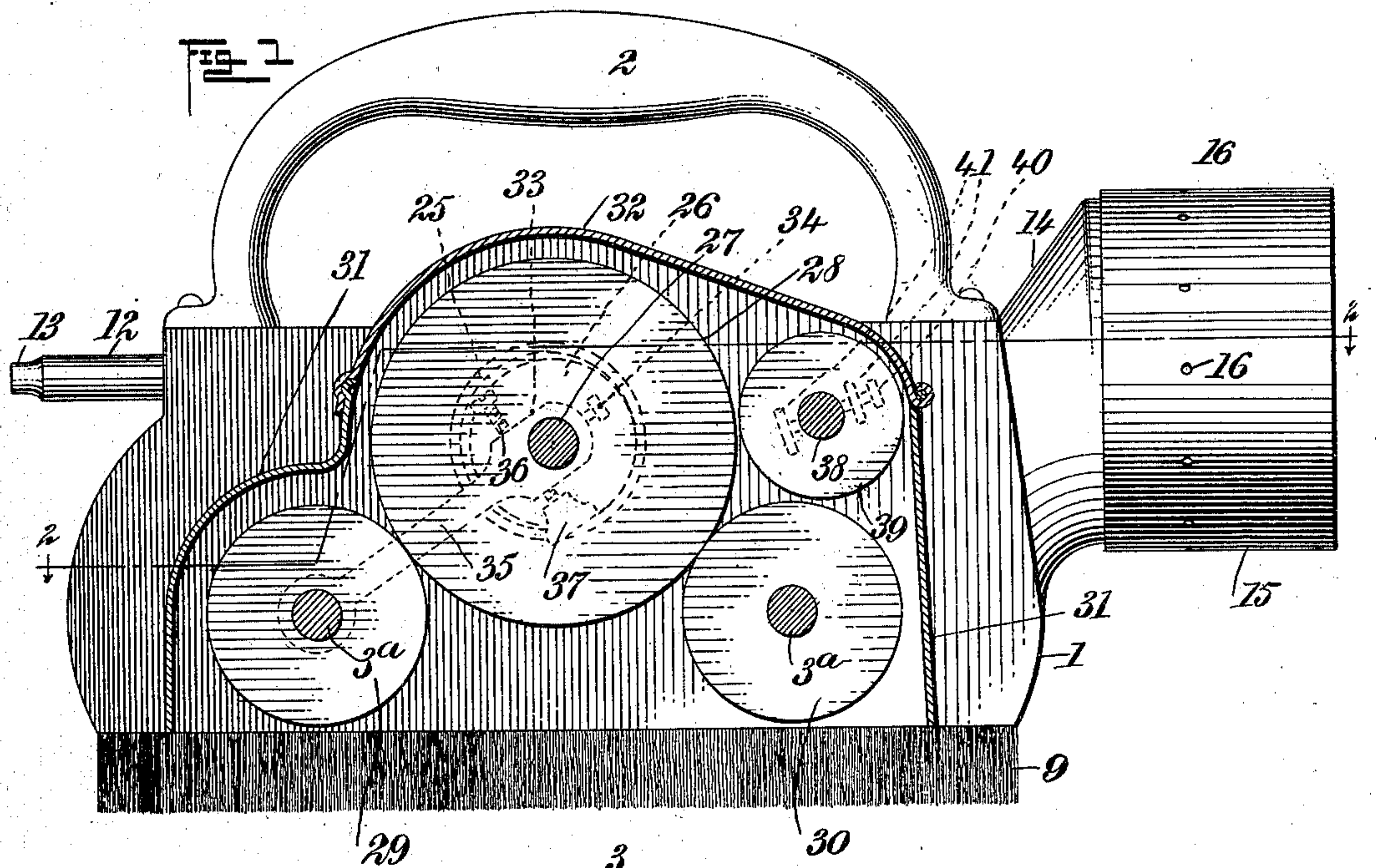
PATENTED JULY 28, 1903.

A. & P. BOLUND.  
HORSE GROOMING AND SHAMPOOING MACHINE.

APPLICATION FILED APR. 4, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES: 29 35 31 36 36 27 30 39 38 41

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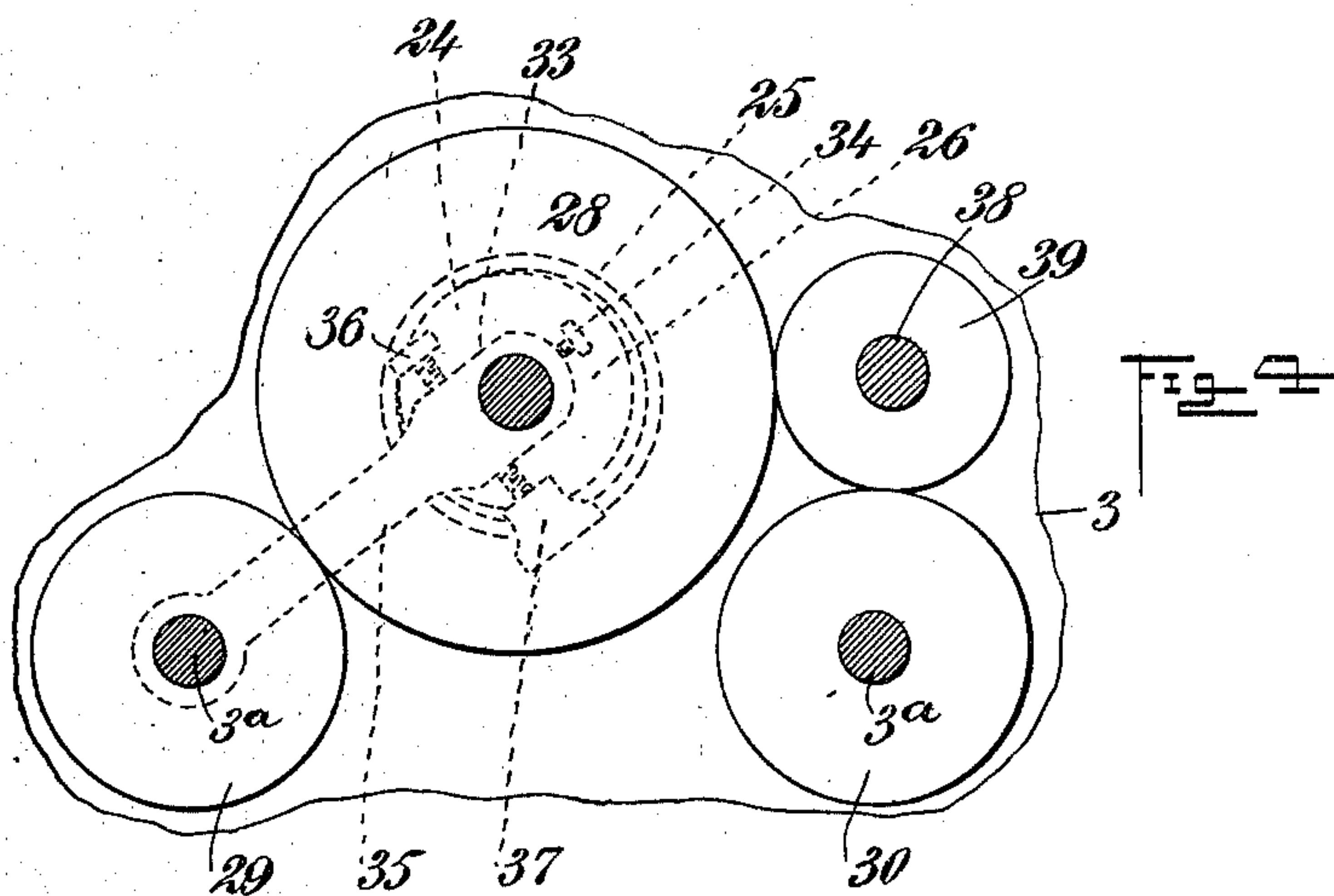
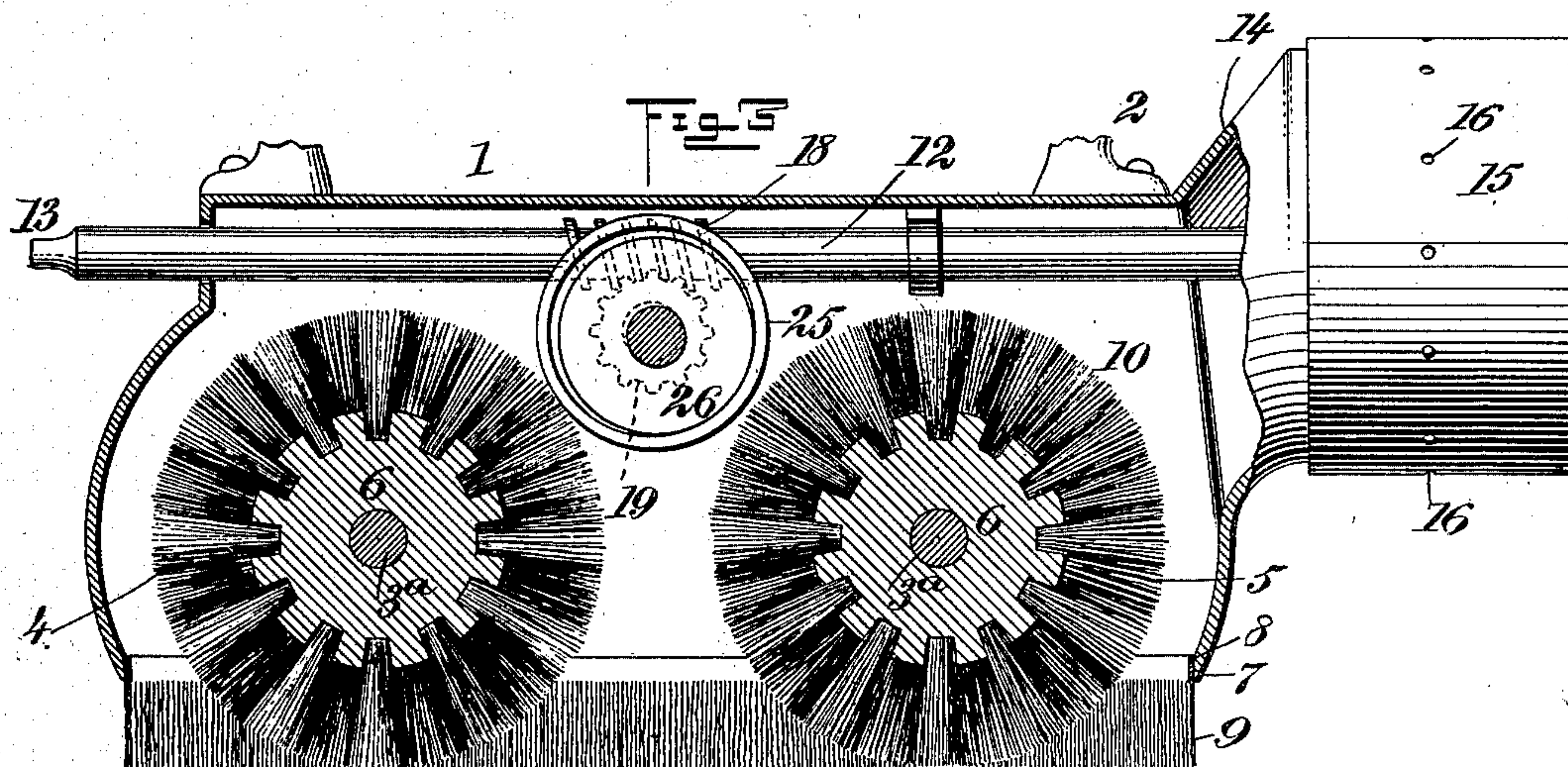
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NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ANDERS BOLUND AND PEHR BOLUND, OF SAN JOSE, CALIFORNIA.

## HORSE GROOMING AND SHAMPOOING MACHINE.

SPECIFICATION forming part of Letters Patent No. 734,805, dated July 28, 1903.

Application filed April 4, 1903. Serial No. 151,130. (No model.)

*To all whom it may concern:*

Be it known that we, ANDERS BOLUND and PEHR BOLUND, both citizens of the United States, and residents of San Jose, in the county of Santa Clara and State of California, have invented a new and Improved Horse Grooming and Shampooing Machine, of which the following is a full, clear, and exact description.

This invention relates to brushing-machines; and it consists, substantially, in the construction, organization, and combination of parts hereinafter particularly described and claimed.

Though applicable to other purposes in the arts, our improvements have reference more especially to machines for currying or grooming and shampooing horses and other animals; and the principal object of our invention is to provide a machine of this kind which is simple and comparatively inexpensive to manufacture and one which is thoroughly effective and reliable in use, besides possessing the capacity for long and repeated service.

A further object of the invention is to provide a brushing-machine of the character referred to which is composed of few parts, not liable to get out of order, and one also which is light in weight, easy of manipulation while in use, besides being strong and durable and capable of performing its intended work with cleanliness and facility.

The above and additional objects are attained by means substantially such as are illustrated in the accompanying drawings, in which—

Figure 1 is a vertical transverse sectional elevation of our improved brushing or cleaning machine, taken on the line 1 1 of Fig. 2. Fig. 2 is a horizontal sectional plan view of the machine, taken on the line 2 2 of Fig. 1. Fig. 3 is a vertical transverse sectional elevation of the machine, taken on the line 3 3 of Fig. 2; and Fig. 4 is substantially a diagrammatic view, in part section, illustrating the adjustment of the devices employed for reversing the direction of rotation of one of the brushes of the machine.

Before proceeding with a more detailed description it may be stated that in the embodiment of our invention, such as we have herein selected for the purposes of illustration,

we employ a casing for the several operative elements or parts which is of special construction, and we also employ special means for assisting to confine the dust or sweepings in the chamber therefor, from whence the same are caused to pass into a collector or receiver, from which latter they may be removed from time to time, as may be required.

The main operative elements or parts of the machine may be suitably connected by means of an ordinary flexible shaft (not shown) with any motive power apparatus or device, and it may be stated that a plurality of the machines may be also connected with a single driving-shaft, if desired, in which case each machine may be provided with means whereby the same may be thrown into and out of operation at will.

Our improved machine is admirably adapted for the purpose mentioned, and it may be here stated that while we have herein shown a certain preferred embodiment of our invention we are not limited to the precise details thereof in practice, since immaterial changes therein may be resorted to coming within the scope of our invention.

Specific reference being had to the accompanying drawings by the designating characters marked thereon, 1 represents, preferably, the metal casing or housing of the machine, the same being closed at the top or upper part thereof and provided with a suitable handle or grip 2, by which the machine may be conveniently handled or manipulated in use. Having their bearings in end sections 3 3 of the casing or housing are the shafts 3<sup>a</sup> of duplicate brushes 4 and 5, the same being designated for convenience as the "forward" and "rearward" brush, respectively, said brushes each being of circular form, as shown, and having tufts or bristles of any desired stiffness fitted in the heads 6 thereof. Attached to the lower open edge 7 of the said casing or housing 1 in any suitable way is a frame 8, having hanging therefrom all around a closely-assembled fringework 9 of proper flexibility, which serves to a very great extent to confine the sweepings or dust from the brushes within the chamber, thereby preventing escape thereof laterally, as is apparent, it being noted in Fig. 3 that the lower edge of said fringe is about flush



or even with the ends of the bristles or tufts of the said brushes, although such edge may be made to occupy a different relationship by providing any suitable means (not shown) for adjusting the said frame 8 with reference to the said edge 7 of the casing or housing.

Mounted transversely at the upper part of the machine, about centrally thereof, is a main driving-shaft 12, one end 13 of which extends beyond the casing or housing and may be connected with any suitable means for driving the shaft, while the other end thereof projects into a fan-casing 14, formed with or attached to the said casing or housing 1 at such end and preferably provided with a detachable cap or cover 15, having therein a number or series of holes or openings 16 (see Figs. 1, 2, and 3) and provided with a sponge or other dust-absorber 15<sup>a</sup>. This latter end of the shaft 12 is provided with a suction-fan 17, and said shaft is provided, about centrally of its length, with a worm-gear 18, which meshes with a worm-wheel 19, fitting upon a shorter shaft 20, mounted at right angles to the shaft 12 in suitable bearings 21 and 22 therefor. The outer end of said shorter shaft 20 has fitted thereto, by means of a set-screw or other suitable device 23, a friction device 24, provided at its edge with a laterally-projecting annular flange 25, and working within or interiorly of such flange is a friction-pulley 26, carried at the inner end of another short shaft 27, the outer end of this latter shaft having fitted thereto an enlarged friction drive-pulley 28, which, as shown in Fig. 1, is in frictional engagement with similar smaller pulleys 29 and 30, carried at the corresponding projecting ends of the shafts 3<sup>a</sup> of the said forward and rearward brushes 4 and 5, respectively, it being remarked that the several pulleys referred are contained within a supplementary casing or housing 31 therefor, (see Figs. 1 and 2,) having a hinged lid or cover 32, by the opening of which access to said pulleys may be had. Fitted to said shaft 27, within the adjacent end section 3 of the casing 1, is a yoke 33, having a set-screw 34, bearing upon the shaft for taking up lost motion, the yoke also having an arm 35, which is loosely mounted at the lower end thereof upon the shaft of the brush 4. (See Figs. 1 and 2.) Said yoke is also provided with adjusting-screws 36, passing all the way through the same and bearing at their inner ends upon a stationary part 37 (see dotted lines, Fig. 1) of the machine, said latter screws being for the purpose of causing the friction-pulley to be raised or lowered, so as to be engaged by one side or the other of the inner surface of the flange 25 of the said friction device 24, as and for the purpose presently explained. Also contained within the supplementary casing 31 and carried by a short spindle 38 is an idle friction-pulley 39, said shaft being adjustable by means of a screw 40, passing through the same and through duplicate lugs 41 on the inner surface of the adjacent end

section 3 of the casing 1, the said pulley 39 being employed as a means for imparting to the brush 5 a reverse motion to that of the brush 4 whenever desired. In practice the spindle 38 will be rigidly fastened to a slide working in guides set on the inside of the frame and at the proper angle, so that the pulley 39 will mesh with the pulleys 28 and 30, the slide being adjusted by means of the screw 40. Thus the several operative elements or parts of the machine being in the positions indicated in Fig. 1 and motion being imparted to the driving-shaft 12 in any suitable way, it is apparent that both brushes will be rotated in the same direction, the pulley 26 at this time being in the position indicated in Fig. 2, so as to receive its motion from the one side of the flange 25 of the friction device 24, which device in turn receives its motion from the shaft 12 through the short shaft 20. Now by proper adjustment of the yoke 33 through the medium of the screws 36 the arm 35 of the yoke will be moved upwardly at its upper end by which to slightly shift the position of the shaft 27, so as to carry the main driving-pulley 28 out of frictional contact with the pulley 30, (see Fig. 4,) while still maintaining driving contact with the pulley 29, whereupon by properly adjusting the spindle 38 by the means already described the said idle pulley may be carried into peripheral contact with both the pulleys 28 and 30, and in this way the two said pulleys 29 and 30 will be driven or rotated in opposite directions, said reverse motions being of course communicated to the brushes. On this shifting of the parts the friction-pulley 26 is simply carried to the opposite side of the inner surface of the flange 25 of the friction device, the movable contact between the friction device 24 and this pulley being thus maintained, by which the motion of the shaft 12 will be communicated to the parts driven therefrom. During this operation of the machine the fan 17 on the shaft 12 produces a draft or suction through the machine from beneath, as is apparent, and in this way the dust or sweepings are carried into the fan-chamber and there arrested by the sponge or similar absorbent 15<sup>a</sup> therein, the air meantime passing out through the holes or perforations 16 in the sides of said chamber.

As already mentioned, various changes of construction and organization of parts may be made without altering the spirit or scope of our invention.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A machine of the character described, comprising a casing, a pair of brushes, means for rotating the brushes in the same direction, and means for reversing the direction of rotation of one of the brushes, said means being constructed in part of a friction device, a pulley coöperating therewith, a driving-pulley, an idle pulley, and devices



for shifting said driving-pulley to alter the position of the first-named pulley relative to said friction device.

2. A machine of the character described, comprising a casing, duplicate brushes therein, a main shaft, and means for operating the brushes from this shaft, consisting of a short shaft at right angles to said main shaft and carrying at an end thereof a friction device, another short shaft having at the inner end a pulley receiving motion from said device, and provided at its outer end with a driving-pulley, means for shifting the driving-pulley to change the position of the first-named pulley relative to the friction device, an idle pulley, and pulleys on the shafts of the brushes operated from said driving-pulley.

3. A machine of the character described, comprising a casing, duplicate brushes therein, a main shaft, and means for operating the brushes from this shaft consisting of a short shaft at right angles to said main shaft, and carrying at its end a friction device, another short shaft having at its inner end a pulley receiving motion from said device, and pro-

vided at its outer end with a driving-pulley, and pulleys on the shafts of the brushes operated from said driving-pulley.

4. A machine of the character described, comprising a casing having duplicate brushes mounted therein, a drive-shaft, a shaft at right angles thereto and geared therewith, a friction device on the outer end of this latter shaft, constructed with a lateral annular flange, another shaft carrying a pulley engaged by said flange, and also carrying a drive-pulley, pulleys on the shafts of the brushes, an adjustable idle pulley, and an adjustable yoke on the shaft of the driving-pulley, having an arm movably mounted on one of the brush-shafts.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ANDERS BOLUND.  
PEHR BOLUND.

Witnesses:

NILES E. WRETMAN,  
G. S. WILSON.