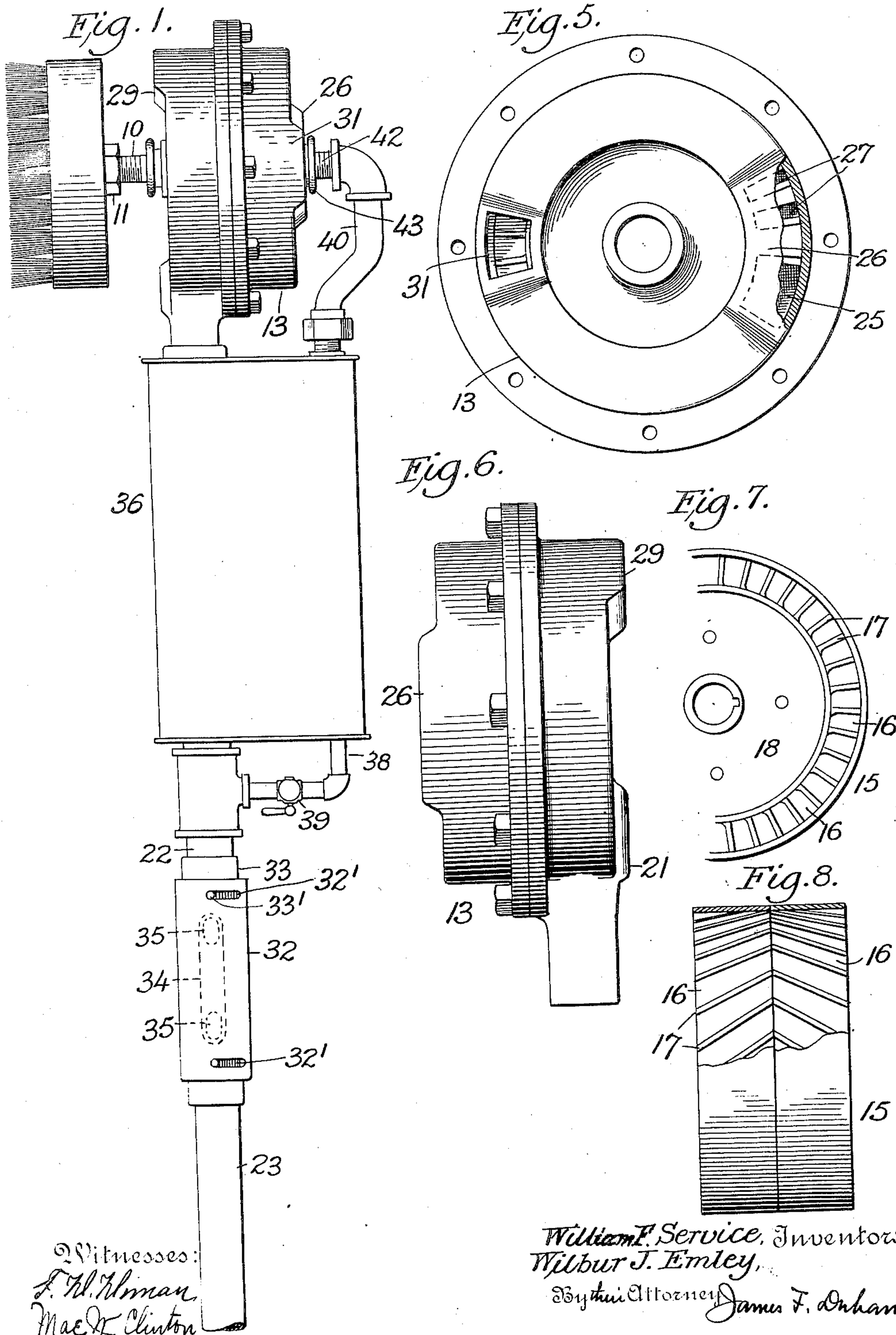


W. F. SERVICE & W. J. EMLEY.  
SCOURING, GRINDING, AND POLISHING MACHINE.  
APPLICATION FILED DEC. 15, 1908.

Patented July 5, 1910.

2 SHEETS—SHEET 1.

963,477.



Witnesses:  
F. H. Korman  
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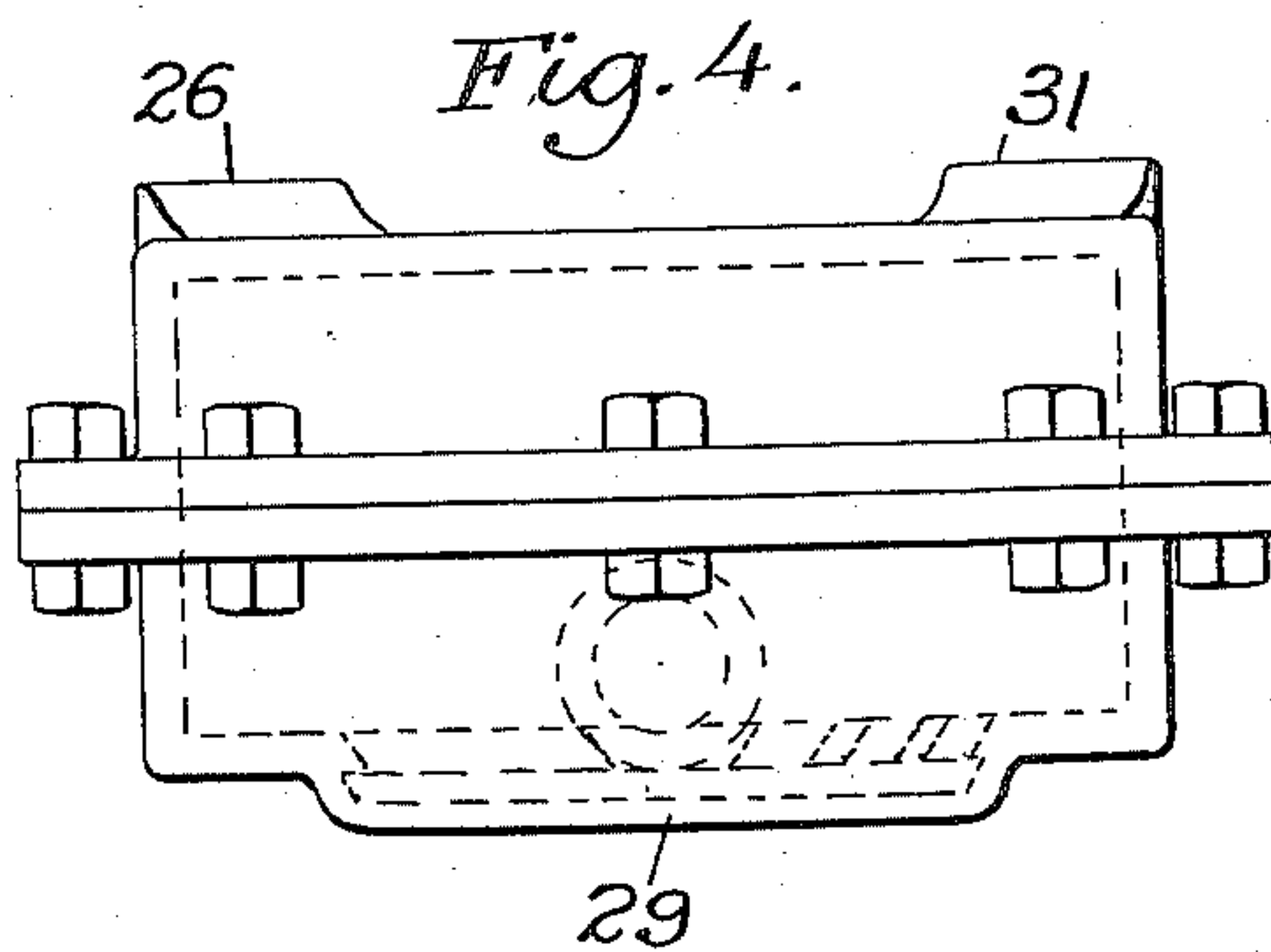
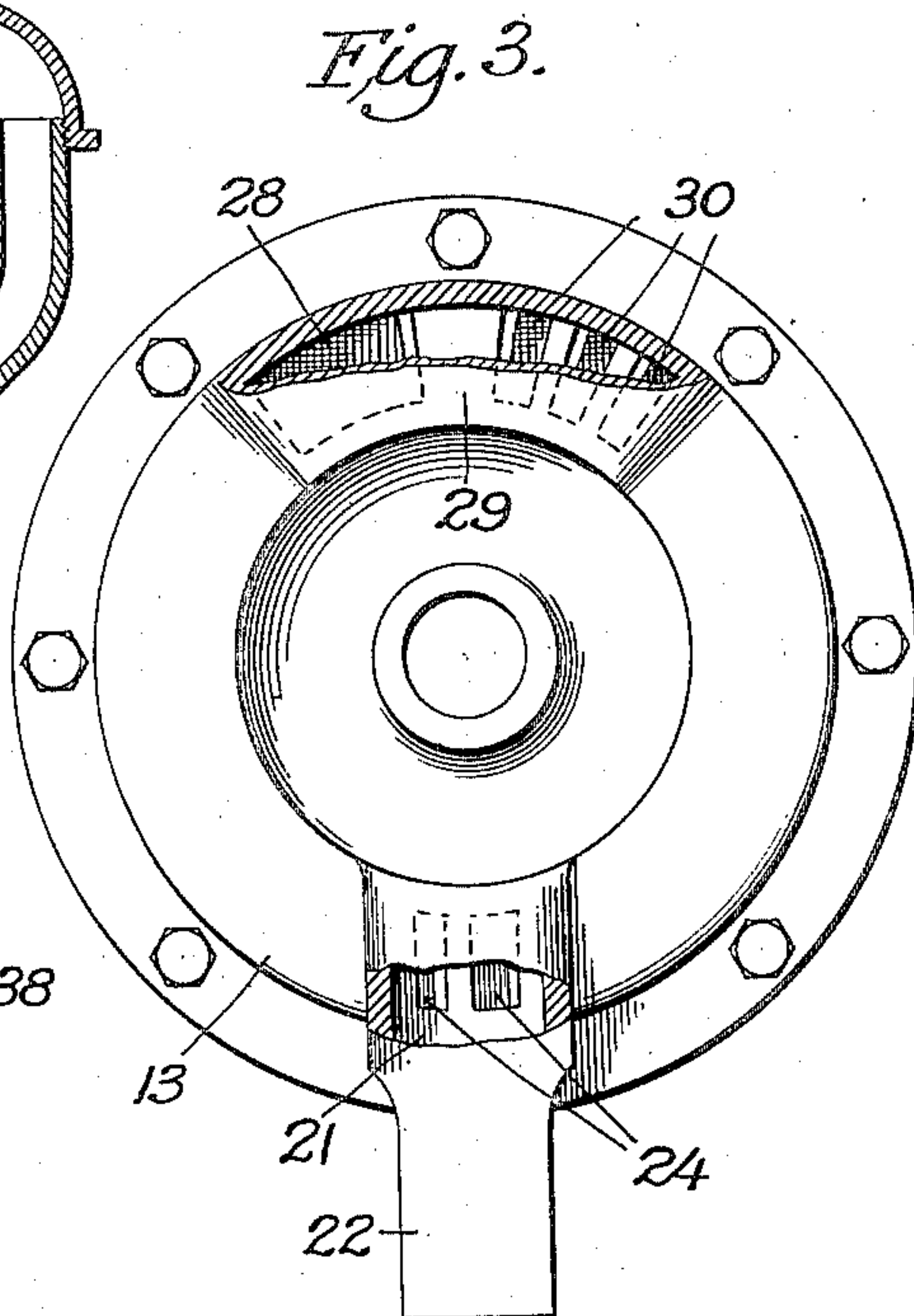
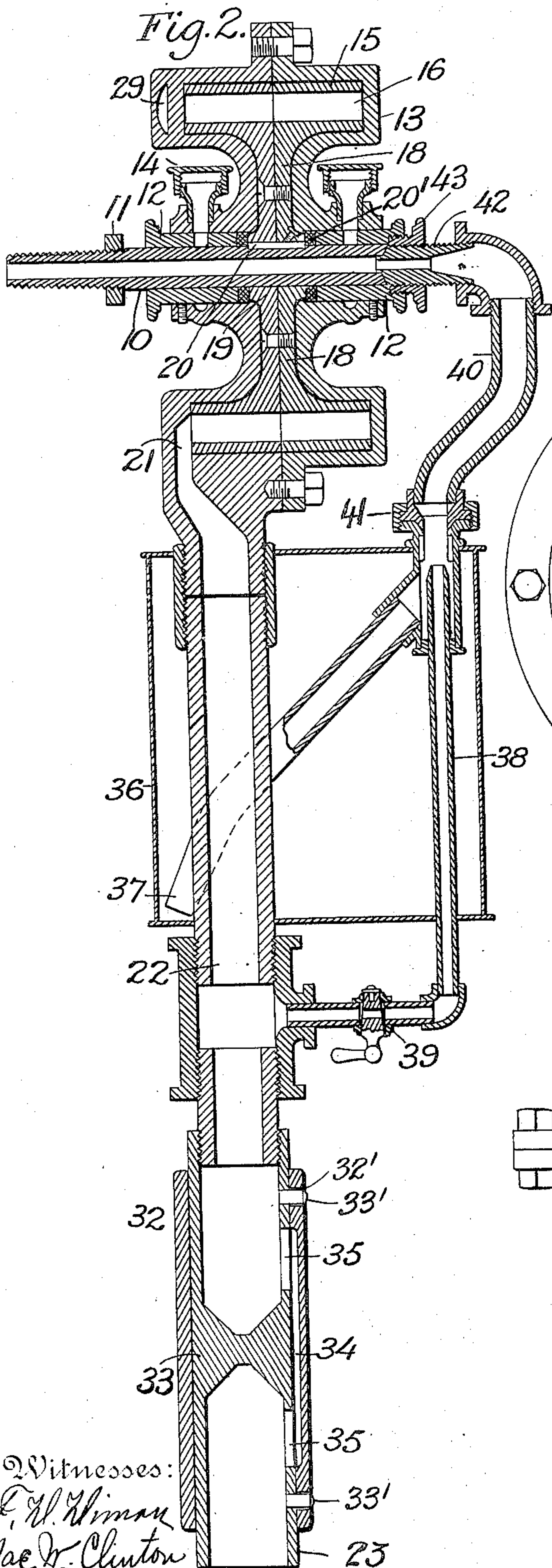
William F. Service, Inventors;  
Wilbur J. Emley,  
By their Attorney James F. Onhamel.

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# UNITED STATES PATENT OFFICE.

WILLIAM F. SERVICE AND WILBUR J. EMLEY, OF JERSEY CITY, NEW JERSEY, AS-  
SIGNORS OF ONE-THIRD TO JOHN A. BARRY, OF VINELAND, NEW JERSEY.

SCOURING, GRINDING, AND POLISHING MACHINE.

963,477.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed December 15, 1908. Serial No. 467,625.

*To all whom it may concern:*

Be it known that we, WILLIAM F. SERVICE and WILBUR J. EMLEY, citizens of the United States, and residents of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Scouring, Grinding, and Polishing Machines, of which the following is a specification.

10 This invention relates to scouring, grinding, painting and polishing machines and its object is to provide means for driving a spindle carrying a brush which at the same time shall afford means for supplying the brush with the necessary water or polish-  
15 ing and scouring solution to a greater or less degree, the whole to be conveniently and compactly carried about for operation at any desired point and driven by a fluid under compression as will be more fully explained in the following specification, set forth in the claims and illustrated in the drawings, where:

Figure 1 is a side elevation of the device.  
25 Fig. 2 is a vertical sectional view. Fig. 3 is a side view of the motor casing. Fig. 4 is a plan view of same. Fig. 5 is a view of the opposite side of Fig. 3. Fig. 6 is an edge view of the casing. Fig. 7 is a side  
30 view of part of the motor wheel. Fig. 8 is an edge view of same partly in section.

The device is adapted to carry and operate a brush for scouring or a wheel for polishing and which is held securely on the  
35 shaft 10 by screwing it thereon and locking it by means of the nut 11 or in any other manner that may be found desirable. The shaft 10 is hollow and is journaled in the sleeves 12 of the two part casing 13 being lu-  
40 bricated by means of the oil cups 14 and keyed to the shaft is a motor wheel 15 preferably made in two parts and having near its outer edge the V-shaped openings 16 passing from one side of the wheel to the other  
45 and separated by the walls 17. The center of the wheel is formed as a web 18 and its hub 19 receives the key 20 which secures it to the shaft 10 and has at each side the packing 20'.

50 The casing 13 has an inlet 21 for the motive fluid which is supplied through the pipe 22 carried at the outer end of the hose 23 and the compressed air or other fluid passes

through the ports 24 and strikes the walls 17 acting upon the inclined faces so as to 55 force the wheel around and as the air passes through the openings 16 and reaches the other side of the casing it leaves the port 25 of Fig. 5 moving through the by-pass 26 and reenters the ports 27 again acting upon 60 the faces of the walls 17 and crossing to the front side of the casing where it leaves the openings 16 through the port 28 and enters the by-pass 29, leaving it through the ports 30 to again act upon the walls of the open- 65 ings and pass to the rear side of the casing where it leaves the exhaust port 31.

While the force of the air decreases it will be seen that the sizes of the ports by which it enters and leaves the openings increase 70 in order to equalize the power of same and have its effect at all of the ports about the same.

The supply of air is regulated by means of a sleeve 32 carried by the coupling 33 75 which has the by-pass 34 connecting the openings 35 but as the sleeve is turned the connection may be made smaller or entirely closed cutting off the air supply. The rotation of the sleeve is limited by pins 32' play- 80 ing in slots 33'.

While the shaft and brush are rotating the liquid necessary for the scrubbing or scouring is supplied from a tank 36 attached to the pipe and may be of any suitable size or 85 length. The supply pipe 37 collects the liquid from the bottom of the tank and it is fed by means of the air blast issuing from the jet 38 connected with the pipe 22 and having a supply regulating cock 39. The air blast 90 discharges into a pipe 40 carrying with it the liquid from the tank 36 which it carries through the hollow spindle and out of same at the center of the brush. The pipe 40 is connected with the supply pipe 37 by a suit- 95 able air tight coupling 41 and with the rotating shaft 10 by the sleeve 42 which is locked to the sleeve 12 by the nut 43.

This apparatus combines a scourer or rotating brush or grinder, means for rotat- 100 ing same and a blast for supplying water all carried at the end of a flexible hose so that the device may be carried to any point and the scouring, polishing and cleaning be done about a room or apartment or in connection 105 with wagons, cars and similar articles, the



compressed air from the single tube being used to operate the brush and supply the water.

It is obvious that we do not limit the construction of the various parts of our apparatus to the exact form and shape shown nor do we expect to arrange the various parts in the exact relation as shown but may alter them as the occasion demands.

The use of the device may not be limited to scouring alone but it may be used in the operation of all similar apparatus where a rotating member requires an air or water blast which is furnished by the means which operates the rotating member.

The use of the receptacle 36 is not limited to liquid as in case it is deemed expedient to use a powder or similar material and spray same or throw it with a blast it may be kept in the tank for that purpose.

The use of this device is not limited to scrubbing or polishing as paint, whitewash or calcimine may be carried in the receptacle 36 and sprayed alone or in connection with a soft brush driven at a slow rate of speed. By disconnecting the motor the device may be used as a spray only and utilized in many ways where an air blast may be needed.

The use of air is not absolutely necessary to drive the motor as steam, water or even an electric motor may be used in connection with a fluid.

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

1. In an apparatus of the character described, the combination with a compressed-air supply-pipe, of a motor carried by said pipe, a hollow shaft for the motor, a brush on said shaft, a tank, a pipe connection between the tank and hollow shaft, and means

operated by compressed-air for delivering material from the tank to the hollow shaft through the pipe connection.

2. In an apparatus of the character described, the combination with a compressed air supply-pipe having at its end a casing carrying a motor adapted to be driven by the air, of a hollow shaft for the motor adapted to carry a tool, a tank carried by the supply-pipe, and means to inject the material from the tank through the hollow shaft while the motor is in motion.

3. An apparatus of the character described, comprising a compressed-air supply pipe, a motor adapted to be operated by the air mounted on the pipe and directly connected thereto, a shaft for the motor, a brush on said shaft, a tank, a separate conduit extending from the tank to the brush, and means operated by compressed-air for delivering material from the tank through the conduit to the brush.

4. An apparatus of the character described comprising a compressed-air supply pipe, a motor adapted to be operated by the air mounted on the pipe and directly connected thereto, a shaft for the motor, a brush on said shaft, a tank on the supply pipe, a separate conduit extending from the tank to the brush, and means operated by compressed air for delivering material from the tank through the conduit to the brush.

Signed at Jersey City in the county of Hudson and State of New Jersey this first day of December A. D. 1908.

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