

J. GASSER.
 FLUID MOTOR.
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1,412,400.

Patented Apr. 11, 1922.

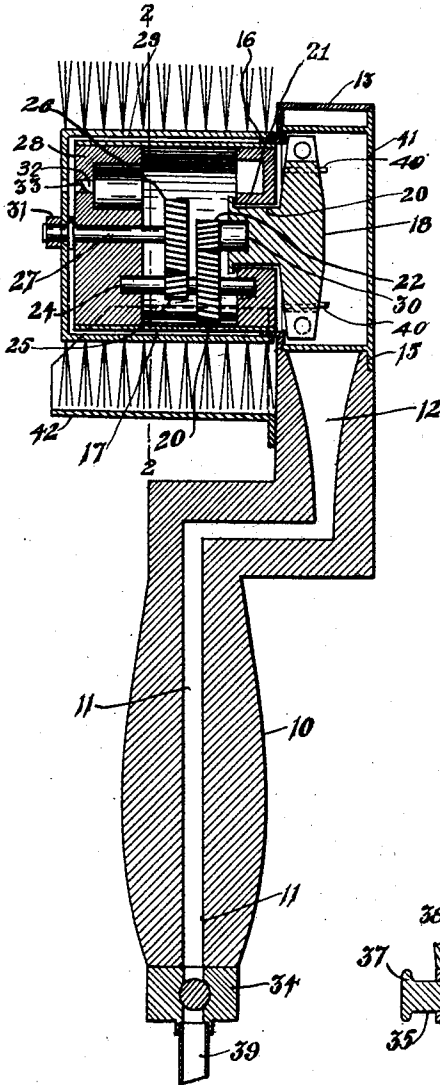


Fig. 1.

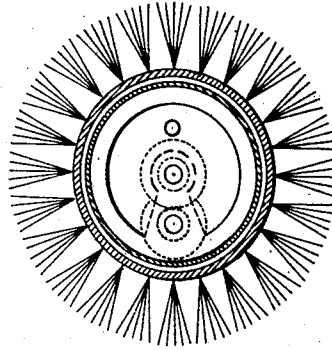


Fig. 2.

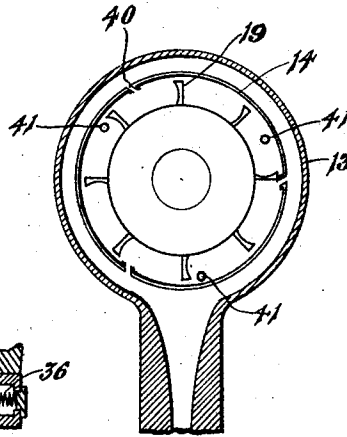


Fig. 3.

Fig. 4.

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JOSEPH GASSER, OF TRENTON, NEW JERSEY.

FLUID MOTOR.

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To all whom it may concern:

Be it known that I, JOSEPH GASSER, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented new and useful Improvements in Fluid Motors, of which the following is a specification.

This invention relates to rotary brushes of the type used in scrubbing metallic surfaces such as iron, steel and the like for the purpose of removing rust, dirt and the like in crustations therefrom, and has for its object the provision of a novel fluid motor for the purpose of driving a rotary brush member.

An important object is the provision of a fluid motor of this character which is provided with a simply operated control valve whereby the passage of the motive fluid may be controlled for the purpose of varying the speed of rotation of the rotor.

An additional object is the provision of a device of this character which will be simple and inexpensive in manufacture, highly efficient in use, positive in action and a general improvement in the art.

With the foregoing and other objects in view as will be hereinafter more apparent, my invention consists essentially in the novel features of construction, combination and arrangement of parts hereinafter fully described and more specifically defined by the appended claim.

In the further disclosure of the invention, reference is to be had to the accompanying sheet of explanatory drawings constituting a part of this specification and in which like characters of reference designate the same or similar parts in all the views.

Figure 1— is a longitudinal section through an air brush embodying my improvements.

Figure 2— is a cross sectional view taken approximately on the line 2—2 in Figure 1, and looking towards the left hand.

Figure 3— is a detail sectional view of the air supply control; and

Figure 4— is a sectional detail of the rotor and its casing.

Referring to the views, the numeral 10 designates an elongated body constituting the main or handle portion which is provided with a bore or passage 11 communicating at its upper part with a flared extension 12 which connects with a substantially cylindrical chamber 13 in which is mounted

a concentric sleeve 14 formed with an enclosing flange 15 which seats in or is bolted to the aforesaid cylindrical part 13 so that an air tight joint is ensured. Formed on the opposite face of the chamber 13 is an outstanding flange 16 into which is fitted a cylinder 17 that constitutes a housing for the brush rotating mechanism. This brush rotating mechanism comprises a rotor 18 having radially projecting blades 19 and said rotor is journaled at 20 in the end of the aforesaid cylinder 17. Mounted axially of the aforesaid rotor 18 is a pinion 22 in mesh with a gear 23 mounted on a counter shaft 24 in turn carrying a second pinion 25 in mesh with a gear 26 keyed or otherwise securely mounted on a spindle 27 journaled in the end 28 of the aforesaid cylinder 17. A brush body consisting of a substantially cylindrical element 29 and bristles 30, is securely clamped on the aforesaid spindle 27 by means of a nut 31. Oil ducts 32 and an inlet valve 33 are provided in conjunction with the brush rotating mechanism and it is to be here particularly noted that the cylinder 17 housing the above referred to brush rotating mechanism is filled with a lubricant so that the parts are maintained in perfect working order. Attached or otherwise appropriately secured to the outer end of the main or handle portion 10 is a valve element 34, the valve proper 35 whereof is under the action of a compression spring 36 and said valve is operated by a pressure being exerted on the head 37 which moves the passage 38 therein into register with the bore 11 and the air line connection 39. Now it will be readily understood from inspection more particularly of Figure 3 that this valve construction provides for the easy manipulation of the air brush as well as serving to effectively prevent any wastage of power when the brush is released or laid down, when not in use, as the valve member 35 will automatically close or shut off communication between the air line 39 and the rotor 18.

Longitudinally of the aforesaid sleeve 14 there are provided a series of tangentially inclined slots or air inlets 40 which serve to direct the air under pressure supplied to the brush tangentially to the blades 19 of the rotor 18. this construction insuring a maximum efficiency. Exhaust ports 41 are provided in the outer wall or flange 15 and it is to be noted that they are arranged in

spaced relation to the inlet passages 40. In other words it will be seen on an examination of Figure 4 and assuming that the rotor 18 is rotated in a clockwise direction,—that
5 is to say to the right hand—that the air under pressure admitted through any one port 40 is caused to have an operative effect on the blades 19 for a one-third revolution of the rotor.

10 From the foregoing description it will be readily seen that the motor constructed as above described is particularly simple in construction and I wish it clearly understood that I do not confine myself to the
15 precise details described and shown as various changes in the shape and disposition of the several parts may be effected without in any way departing from the essential features of my above described invention. For
20 example, it will be readily understood that a shield such as is indicated by the dot and dash lines 42, may be fitted in conjunction with the brush so that the rust, dirt or other incrustations removed from a metallic surface over
25 which the brush is operated, will be prevented from flying about. As heretofore mentioned an air brush constructed as above described is particularly adapted for removing rust, dirt and the like from metallic surfaces
30 and is especially serviceable in ship yards,

for cleaning the sides of vessels and that aside from protecting the operator it can be readily positioned at various angles and conveniently held to accomplish the desired result, whilst a great saving is effected in
35 the power employed to wit, the air, in that the push valve 35 automatically shuts off when pressure is removed from the head 37 thereof.

Having described my invention, what I 40 claim as new and useful, is:—

In a device of the character described, a fluid motor comprising an elongated body having an inlet passage extending longitudinally therethrough, a substantially 45 cylindrical head carried by said body, an inner shell member within the head arranged in spaced relation to the inner periphery of the latter and formed with a plurality of tangential inlet ports, a rotor 50 disposed within the confines of said shell, said head being formed in one flat side with a plurality of outlet ports communicating with the interior of said shell, and a control device located in said passage near its juncture 55 with said head whereby to control the passage of fluids through said passage.

In testimony whereof I affix my signature.

JOSEPH GASSER.