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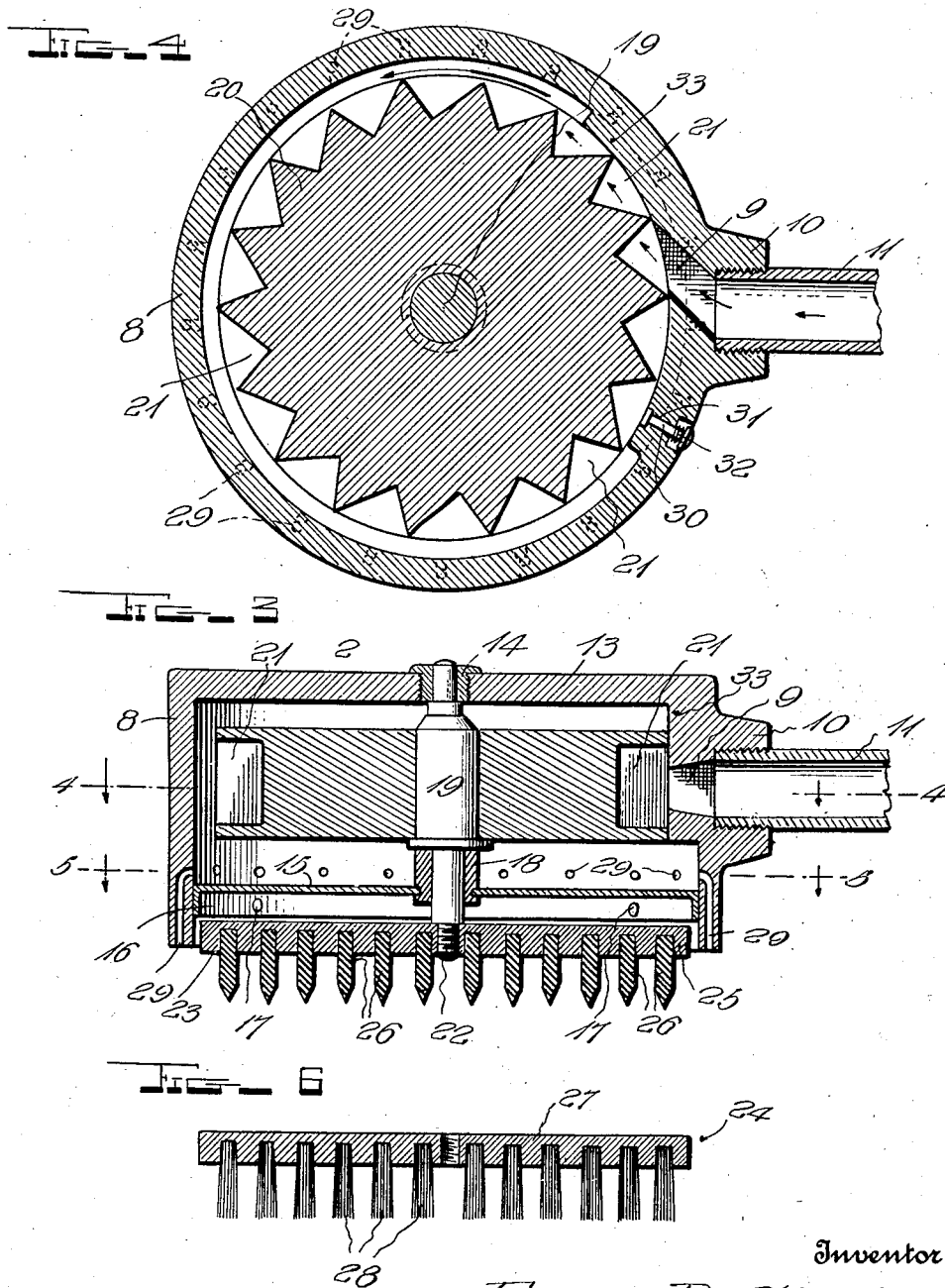
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ROTARY BRUSH

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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ROTARY BRUSH.

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The invention relates to rotary, turbine-driven cleaners, such as brushes, in which the turbine is operated by water pressure and in which the water exhausted from the turbine casing, acts in conjunction with the rotary brush or the like for cleaning or scrubbing purposes.

It is the principal object of the invention to provide a generally improved and simplified device of the class set forth.

Another aim is to provide novel means for holding the turbine wheel and its shaft against rotation while one brush or the like is being detached therefrom and another substituted.

With the foregoing in view, the invention resides in the novel subject matter herein-after described and claimed, the description being supplemented by the accompanying drawings.

Fig. 1 is a side elevation of a cleaner constructed in accordance with my invention.

Fig. 2 is a bottom plan view.

Fig. 3 is a longitudinal section partly broken away.

Figs. 4 and 5 are horizontal sectional views on the correspondingly numbered lines of Fig. 3.

Fig. 6 is a sectional view through a different kind of cleaning element which may be substituted for that shown in Figs. 1, 2 and 3.

Fig. 7 is a detail vertical section on line 7--7 of Fig. 1.

The drawings above briefly described, illustrate the preferred form of construction and while this construction will be herein specifically described, it is to be understood that within the scope of the invention as claimed, variations may be made.

The numeral 8 designates a cylindrical casing wall having a substantially tangential water inlet 9 and a boss 10 at the other end thereof. A tubular handle 11 is threaded into this boss and is provided with means 12 at its outer end, for connection with a hose.

At one of its ends, the wall 8 is integral with an end wall 13 having a central bearing 14. A second end wall 15 fits removably within the opposite end portion of the side wall 8 and is preferably provided with an outstanding peripheral flange 16 secured by screws 17 to said wall 8, this wall 15 being inwardly spaced from the end of the wall 8 remote from the end wall 13. At its center, the wall 15 is provided with a bearing 18

aligned with the bearing 14, and a shaft 19, rigid with a turbine wheel 20, is rotatably mounted in these bearings, the wheel being provided with peripheral pockets 21 disposed to receive water from the inlet 9. One end of the shaft 19 passes entirely through the bearing 18 of the end wall 15 and is threaded as denoted at 22, for the attachment of a cleaning element such as that denoted at 23 in Figs. 1, 2 and 3, or the type shown at 24 in Fig. 6. The element 23 comprises a back 25 and a plurality of flexible fingers 26 formed of rubber, or any other desired material, said fingers being secured to and projecting from said back. The element 24 consists of a back 27 and tufts of bristles 28 carried thereby. These two forms of cleaning elements are only illustrative of many which may be used in connection with the device.

To provide for the discharge of water from the casing and to permit such water to act in conjunction with the rotary cleaning element, I provide the peripheral casing wall 8 with a multiplicity of circumferentially spaced ports 29. The inlet ends of these ports are disposed at the inner side of the wall, near the inner side of the end wall 15, while the discharge ends of said ports open through the end of the wall 8 remote from the end wall 13. These ports discharge an annular series of water jets around the rotary cleaning element and the water so discharged is of course acted upon by said element to effect thorough cleaning of any desired object. The device is well adapted for washing automobiles, but is not restricted to this particular field of use.

Whenever one cleaning element is to be detached from the shaft and another substituted, it is necessary to hold said shaft and the wheel 20 against rotation while one element is being unscrewed from the shaft and another is being threaded onto said shaft. To accomplish this, I provide a spring-retracted, manually-projectable detent 30 passing slidably through a radial opening 31 in the wall 8, in position to be received in one of the pockets 21, when said detent is inwardly projected by hand. Ordinarily however, the spring 32 of the detent, outwardly retracts it so that it will clear the turbine wheel 20.

Preferably, the pockets 21 do not open through opposite sides of the turbine wheel 20 and to close these pockets, while they are

receiving water from the inlet 9, the casing wall 8 is preferably provided with an inwardly projecting arcuate portion 33. This portion prevents the water from splashing out of the pockets as soon as it enters them and consequently the water will exert a more forcible tendency to drive the wheel.

I claim:

1. A rotary cleaner comprising a cylindrical casing having a water inlet, said casing being closed at both ends and formed in its end walls with aligned central bearings, a turbine wheel in the casing disposed to receive water from said inlet, said wheel having a shaft rotatably mounted in said bearings and projecting at one end to the exterior of the casing, said one end being provided with a cleaning element, the peripheral wall of said casing being formed with circumferentially spaced water discharge ports, the receiving ends of said ports opening through the inner side of said wall while the discharge ends of said ports open through one end of said wall.

2. A rotary cleaner comprising a cylindrical casing side wall having a water inlet, an end wall secured to said side wall and having a central bearing, a second end wall

fitting and secured within said side wall and having a central bearing, said second end wall being inwardly spaced from one end of said side wall and the latter being formed with circumferentially spaced water discharge ports from its inner side to said one end of the wall, a turbine wheel in the casing having a shaft rotatably mounted in said bearings and extending entirely through said second end wall, and a cleaner on the shaft within the ported end portion of the aforesaid side wall.

3. In a rotary cleaner embodying a casing, a turbine wheel therein having peripheral pockets, and a shaft projecting from the wheel to the exterior of the casing, and having an end threaded for the attachment of a cleaning element; a spring-retracted, manually-projected detent passing through the casing wall in position for reception in a pocket of the turbine wheel when projected, whereby said wheel and its shaft may be held while applying a cleaning element to or removing it from said shaft.

In testimony whereof I have hereunto affixed my signature.

ERVIN B. STACK.