

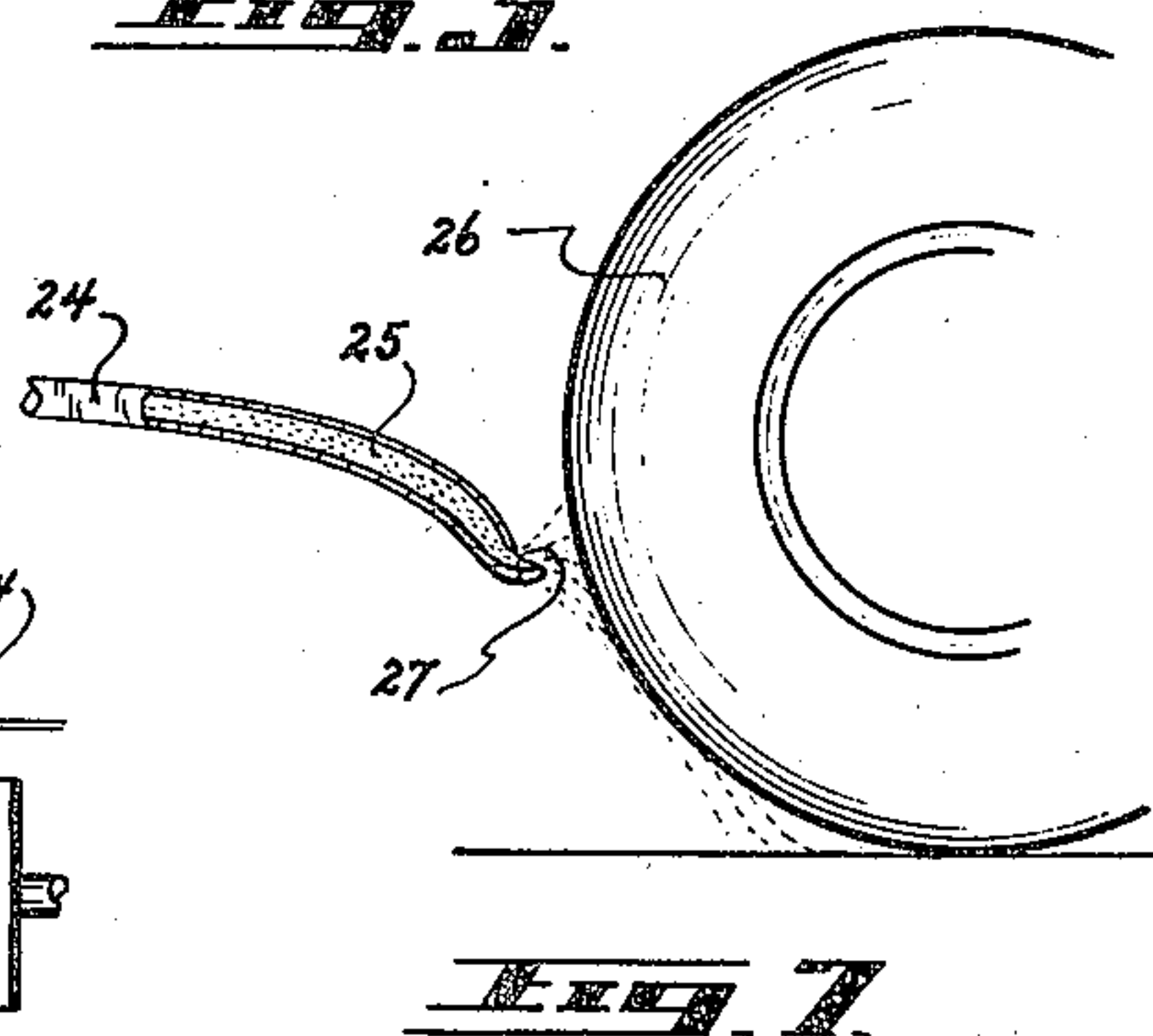
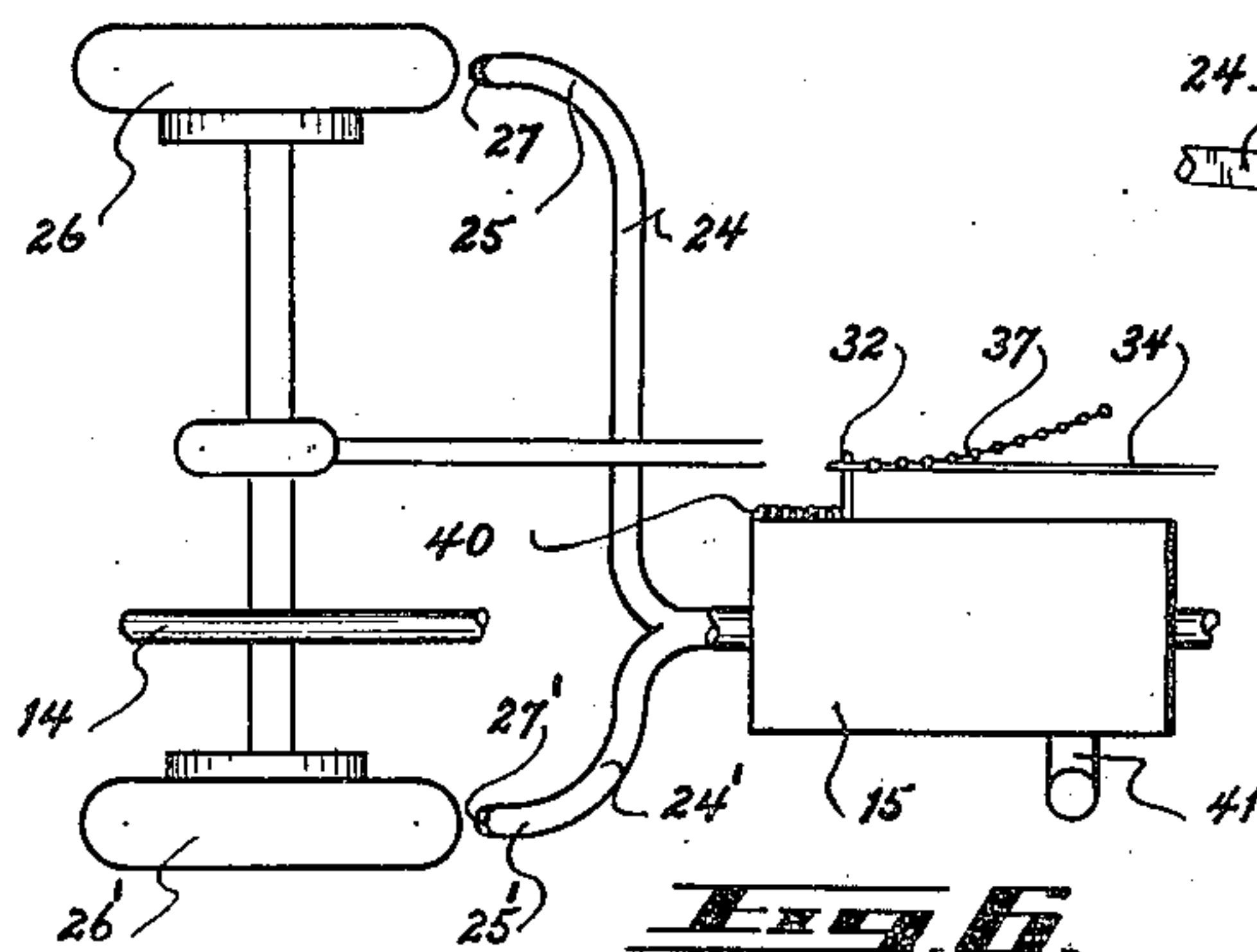
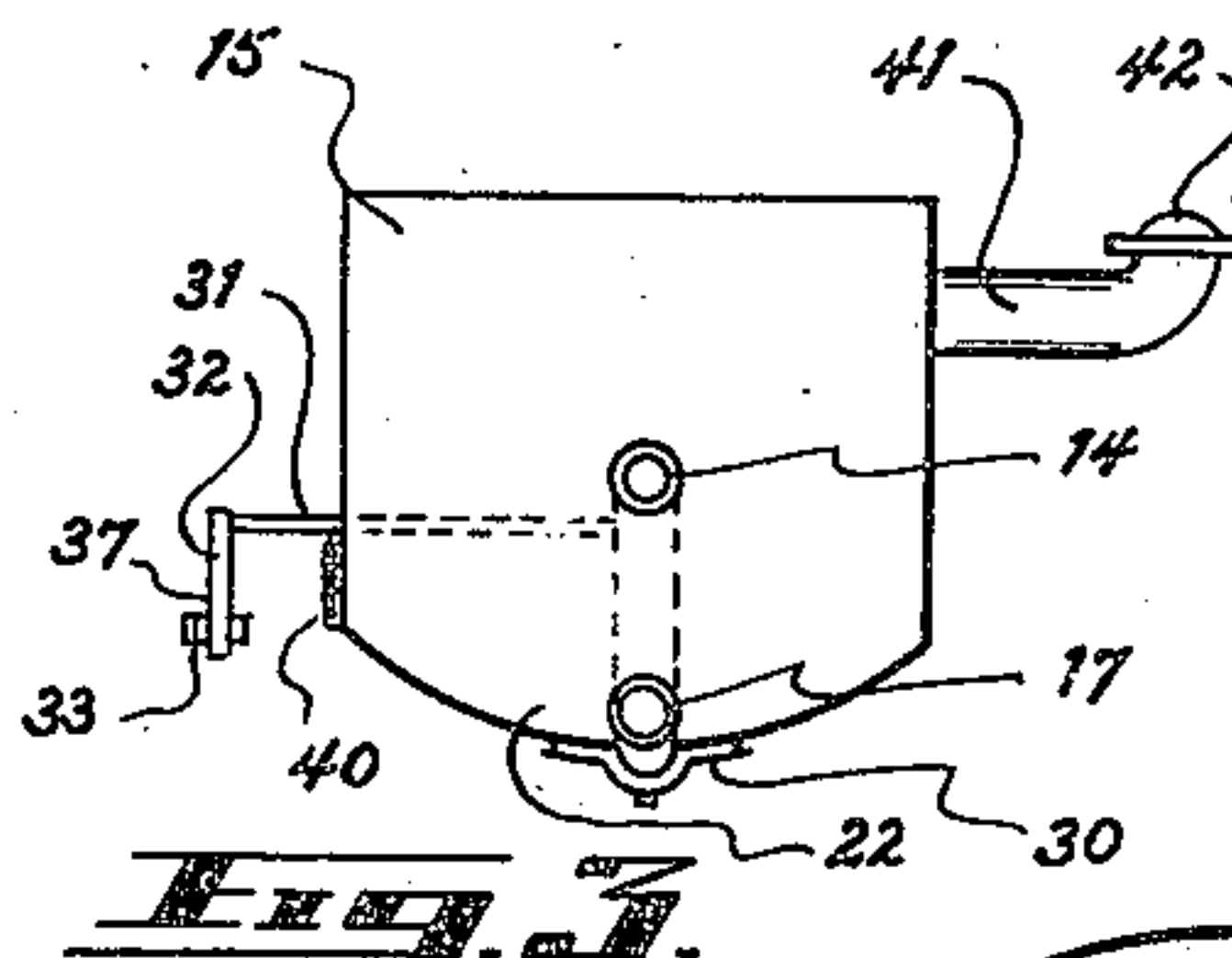
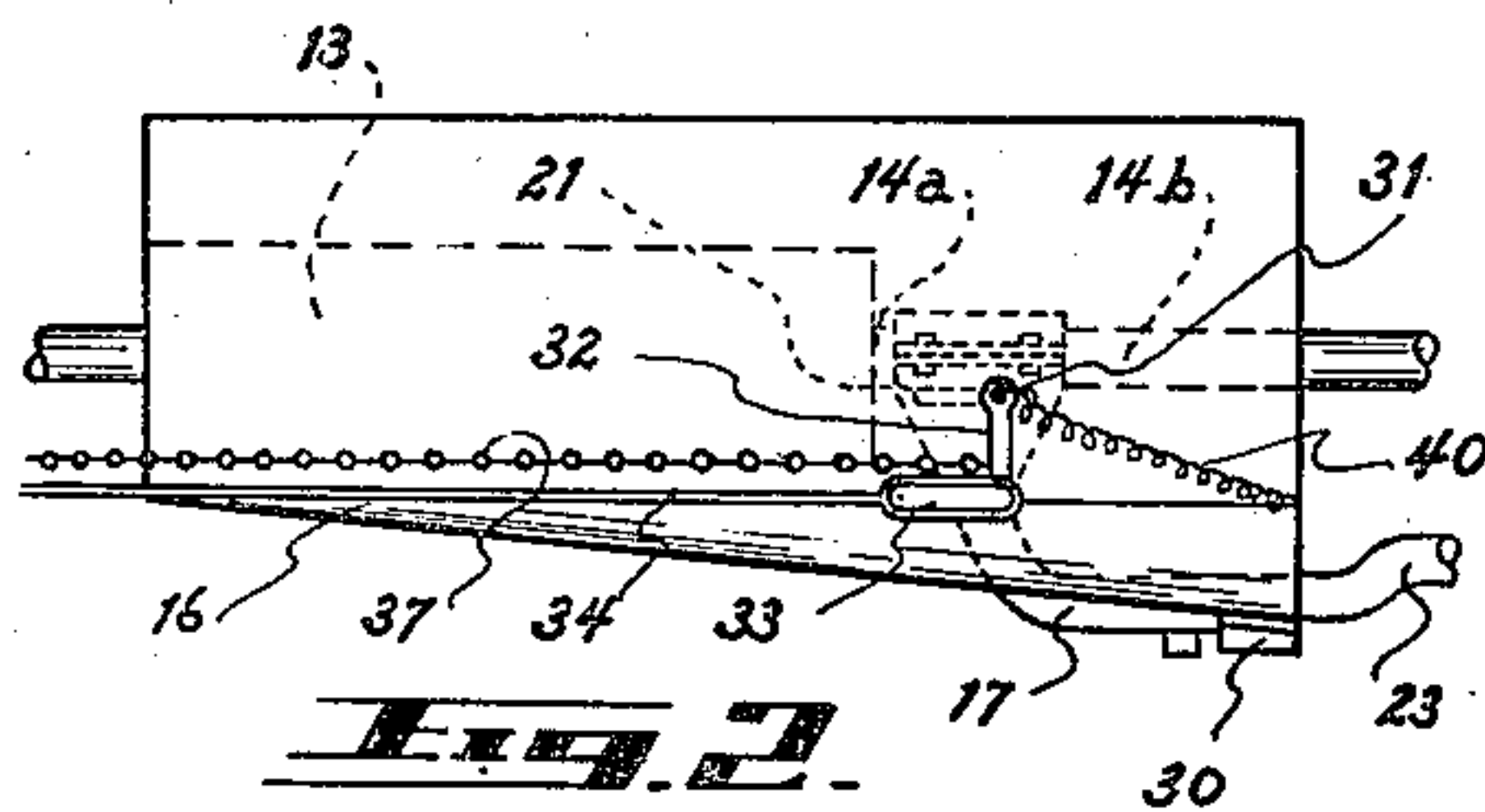
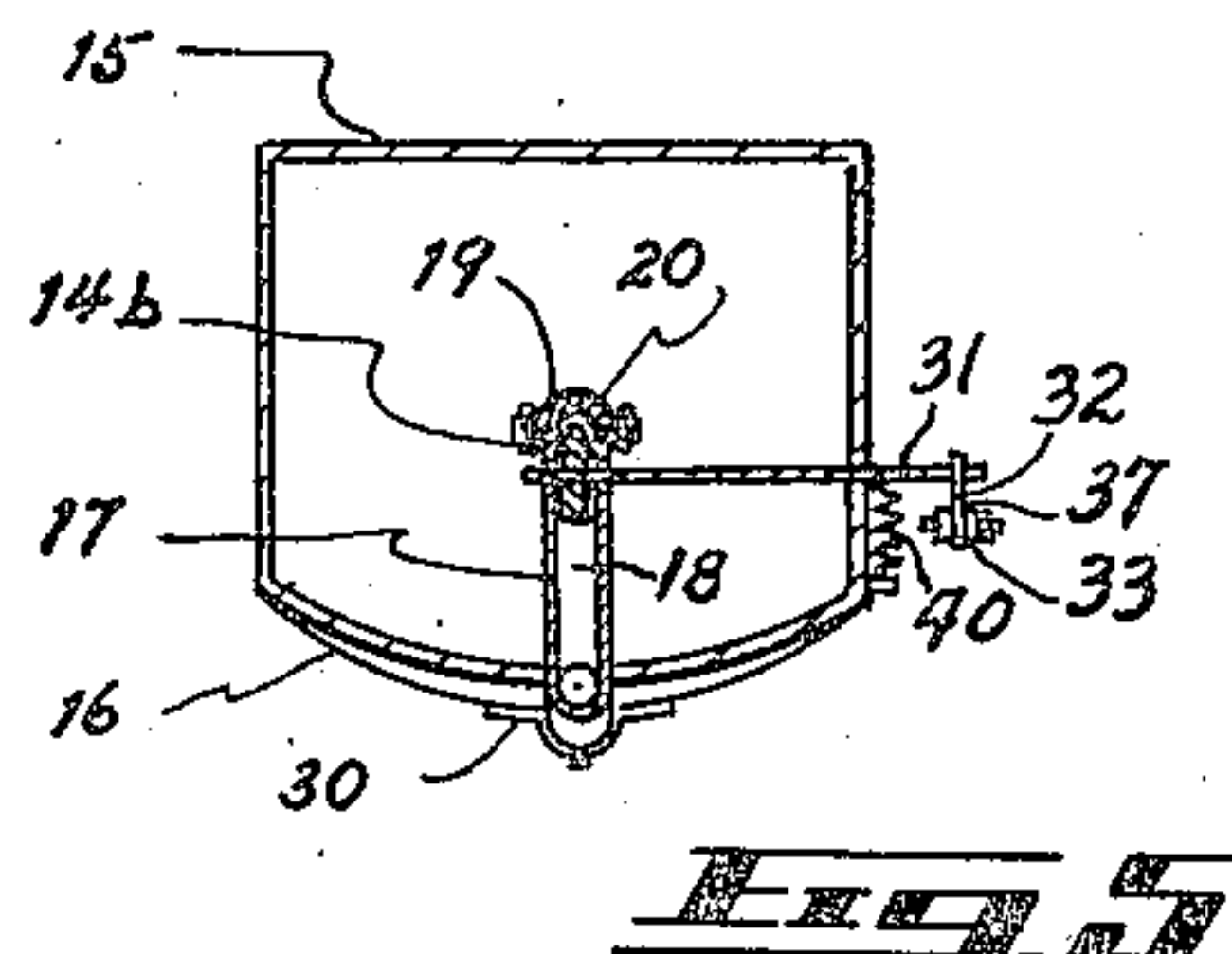
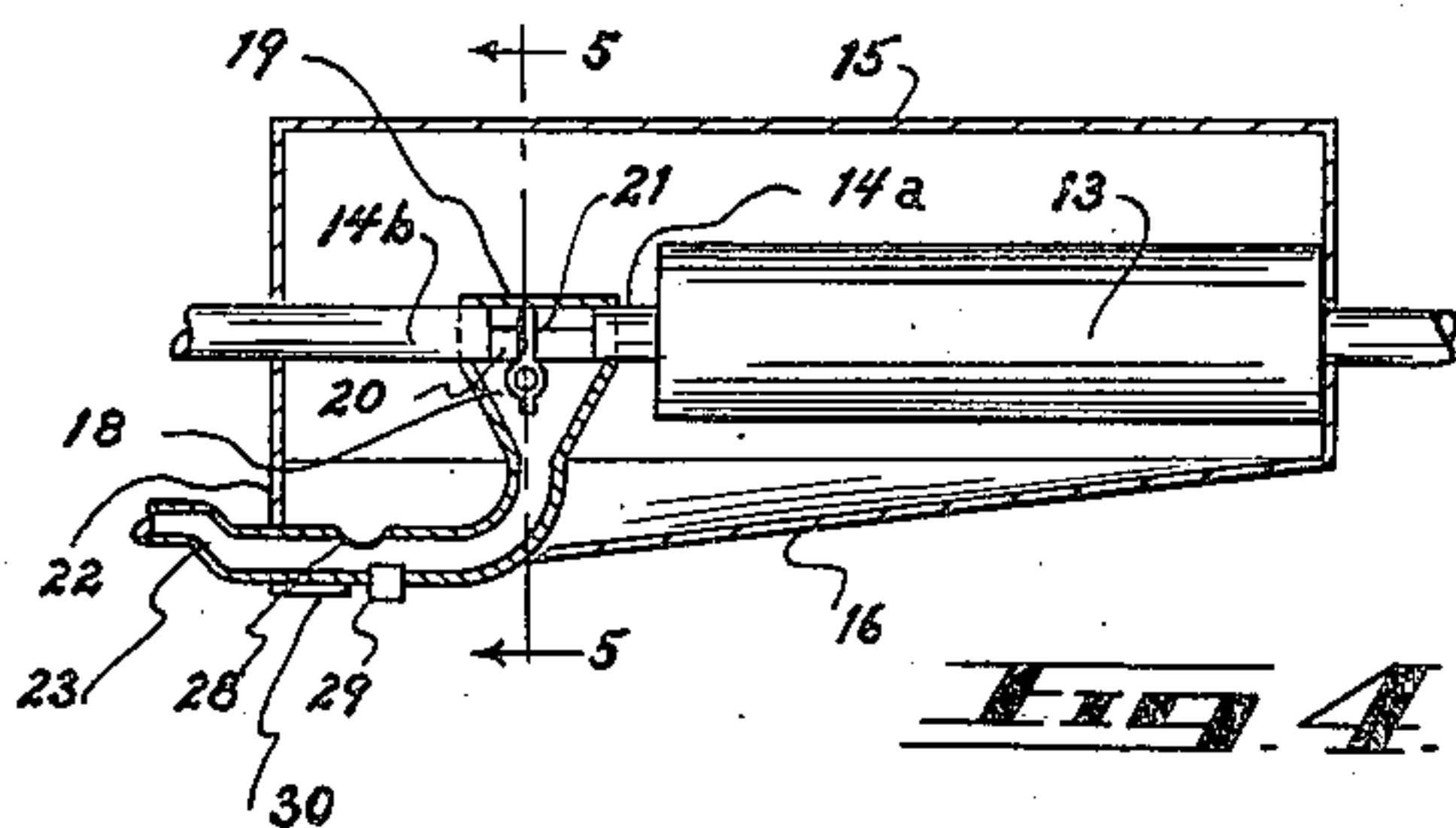
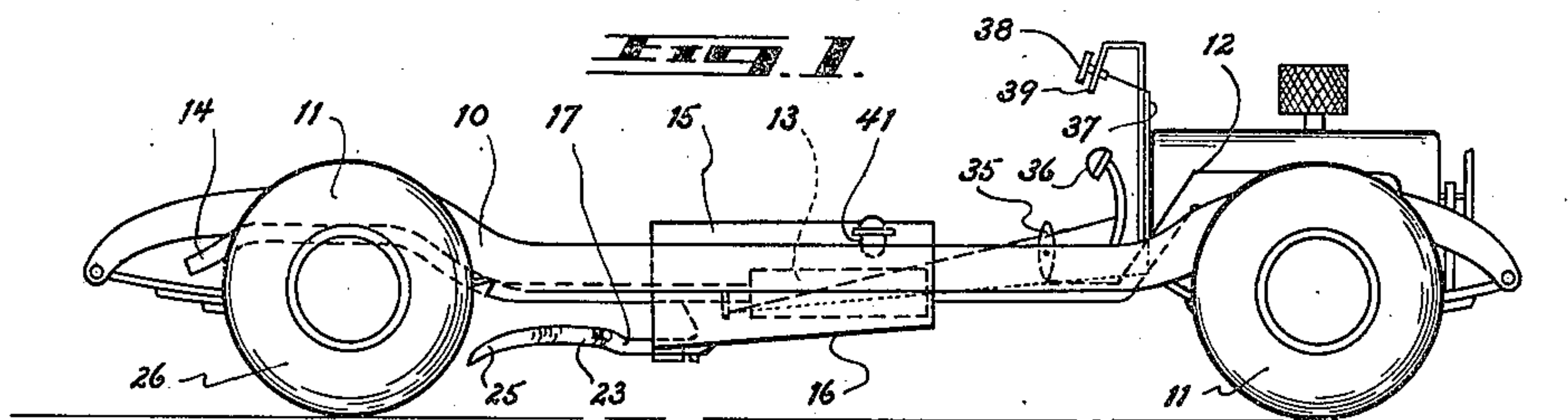
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SANDING DEVICE

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SANDING DEVICE

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This invention relates to improvements in a sanding device for motor vehicles and the like and appertains particularly to an exhaust-impeled sand spray for affording better driving and/or braking traction for the vehicle's ground wheels, that is instantly available to the operator.

An object of the invention is to provide a sanding device, operable from the driver's seat, for delivering sand or other granular substance to the front and/or rear of any or all of the vehicle's wheels.

A further object of the invention is to provide a sanding device having the sand box built about the exhaust line muffler and a valved connection between the exhaust pipe and the sand delivery tube whereby the operator at will can direct the exhaust through the said delivery tube to discharge a spray of sand.

A still further object of the invention is the provision of an improved sander characterized by structural simplicity, ease and efficiency of operation, and low cost of construction and installation whereby the same is rendered commercially desirable.

To the accomplishment of these and related objects as shall become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts as shall be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the claims hereunto appended.

The invention will be best understood and can be more clearly described when reference is had to the drawings forming a part of this disclosure, wherein like characters indicate like parts throughout the several views.

In the drawings:

Figure 1 is a side elevation of a motor car chassis embodying this invention;

Figure 2 is an elevation of the opposite side of the sand-box;

Figure 3 is a rear elevation;

Figure 4 is a longitudinal vertical section, with the exhaust-deflecting valve in operating position;

Figure 5 is a transverse section, as taken on line 5—5 of Figure 4;

Figure 6 is a plan; and

Figure 7 is an elevational detail, with part in section, of the nozzle through which the sand is sprayed.

The stripped chassis 10 of a motor car having ground wheels 11, is shown in Figure 1, as provided with an exhaust manifold 12 delivering to

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a muffler 13 from which an outlet exhaust pipe 14 extends.

A sand box 15 is built about the muffler 13 and adjoining portion of the exhaust pipe 14 with its bottom 16 declining towards the rear. A sand delivery tube 17 connects with the exhaust pipe 14, branching off therefrom within the said box 15 and just to the rear of the muffler 13. In the instant embodiment, the connecting end of the tube 17 appears as a longitudinally flared mouth 18 with a companion cap piece 19 that together embrace and enclose a break 20 between spaced divisions 14a and 14b of the exhaust pipe. A butterfly valve 21 whose control mechanism will be later described operates in the T formed at the branch or juncture of the tube 17 with the pipe 14 to direct the exhaust output of the muffler 13 through the direct route of the pipe 14 or via the sand delivery tube 17. Reaching to the rearwardly sloping bottom of the hopper-like sand box 15, the discharge tube 17 bends backwards to pass outwards, substantially horizontally, through the bottom 16 and rear 22 of the box, exterior of which the said tube offsets upwardly a short distance as at 23 to provide a trap or weir, thence forks to provide two passageways 24 and 24' that extend respectively to opposite sides of the vehicle and rounding rearwardly are provided with discharge nozzles 25 and 25', directed toward the traction surface of the adjacent wheels 26 and 26' respectively, being terminally provided with spray lips 27 and 27'. Within the box 15 and just above the floor level thereof the rearwardly bent, horizontal part of the tube 17 has an inlet opening 28 in its upper side through which sand in the box is drawn when the exhaust is deflected into the tube 17 by the valve 21. A clean-out plug 29 occurs in the lower side of this sand-trap reach of the discharge tube 17 and a reinforcing bracket 30 is strapped across the underside of the tube.

The valve 21 is carried on a transverse horizontal shaft 31 that exterior of the sand box 15 has an arm 32 hanging downwards. The slotted rear end 33 of a control rod 34 slidably engages the free end of the arm 32 whose forward end attaches to the lever 35 connected with the brake pedal 36 so that on application of the brakes of the car through the medium of the said brake pedal the control valve 21 is operated to spray sand on the roadway through the nozzles 25 and 25'. For summer driving this mechanism may be disconnected if desired. An auxiliary or alternative valve control comprises a chain or cord 37, attached also to the arm 32 and operated by a

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knob 38 on the dash 39. As is obvious, it is operated independently of the brake pedal control. A closing spring 40 extends from the shaft 31 to a suitable anchorage on the box 15. A filling neck 41, with closure cap 42, is provided near the top at one side of the sand box.

In use, the exhaust of the vehicle engine passes outwards through the muffler 13 and exhaust pipe 14 but when the brake pedal 36 is applied, or alternatively when sand is desired as for starting traction the knob 38 on the dash is drawn out, the exhaust gases are deflected by the valve 21 through the ejector tube 17, drawing sand in through the opening 23 and blowing a spray of sand out the nozzles 25 and 25' into the path of the wheels. On release of the brake pedal or dash knob the valve closes again directing the flow of exhaust gases through the usual outlet. The sand in the hopper box is always kept warm and dry and so flows easily yet spillage is prevented by the upward offset or weir.

From the foregoing description taken in connection with the accompanying drawings, it will be manifest that a sanding device is provided that will fulfill all the necessary requirements of such a device but as many changes could be made in the above description and many apparently widely different embodiments of the invention may be constructed within the scope of the appended claims without departing from the spirit or scope thereof, it is intended that all matters contained in the said accompanying specification and drawing, shall be interpreted as illustrative and not in a limitative or restrictive sense.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:

1. A sanding device for motor vehicles comprising in combination, with the exhaust muffler and pipe, a sand discharge tube branched off said pipe, a valve controlling the flow of the exhaust alternatively through said pipe or said tube, a sand box surrounding said muffler and the juncture of said pipe and tube, and a sand-entering opening in said tube within said box.

2. A sanding device for motor vehicles comprising in combination, with the exhaust muffler and pipe, a sand box surrounding said muffler and adjacent part of said pipe, a sand discharge tube branched off said pipe within said box, a valve in said pipe where the tube branches off, a sand in-

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take opening in said tube within said box and an upward offset in said tube beyond said intake opening.

3. A sanding device for motor vehicles comprising in combination, with the exhaust muffler and pipe, a sand box surrounding said muffler and adjacent part of said pipe, a sand discharge tube branched off said pipe within said box, an exhaust-deflecting valve in said pipe at the junction of the tube therewith, a sand intake opening in the upper side of said tube within said box and just above the floor level thereof, a fork in said tube exterior of said box, the two conduits therefrom terminating in discharge nozzles in advance of the drive wheels of said vehicle, and a sand trap in said discharge tube between said intake opening and said fork.

4. A sanding device for motor vehicles comprising in combination, with the exhaust muffler and pipe, a hopper-like sand box surrounding said muffler and the adjacent part of said pipe having a sloping bottom declining to the rear, a sand discharge tube branched off said pipe extending to the bottom of said box near the rear then bending horizontal to run out the back thereof, valve means in said pipe for selectably deflecting the exhaust flow through said tube, a sand intake opening in the upperside of said horizontal piece of said tube within said box and a spray nozzle on the outer end of said tube.

5. The combination with the structure set forth in claim 4 and wherein the muffler pipe is formed of two spaced pieces and the sand discharge tube branching off therefrom has a longitudinally flared mouth underlying the break between the spaced muffler pieces, of a complementary cap overlying the said muffler pipe break and together with the flared mouth of said tube enclosing the break in said muffler pipe, and a butterfly control valve in the flared mouth of said tube.

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The following references are of record in the file of this patent:

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