June 28, 1932. G. E. PEARSON ET AL 1,864,612

ROAD SURFACING EQUIPMENT

Filed Oct. 4, 1930 4 Sheets-Sheet 1

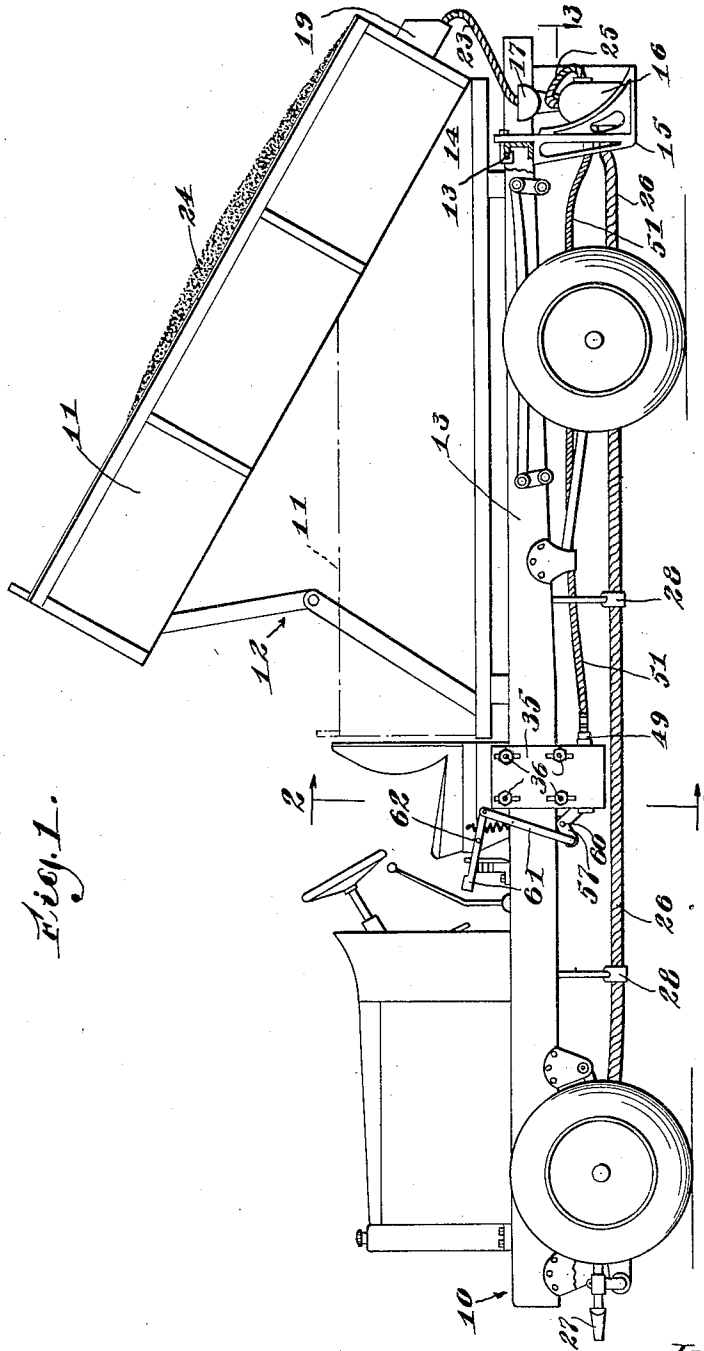

Fig. 1.

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Filed Oct. 4, 1930 4 Sheets-Sheet 2

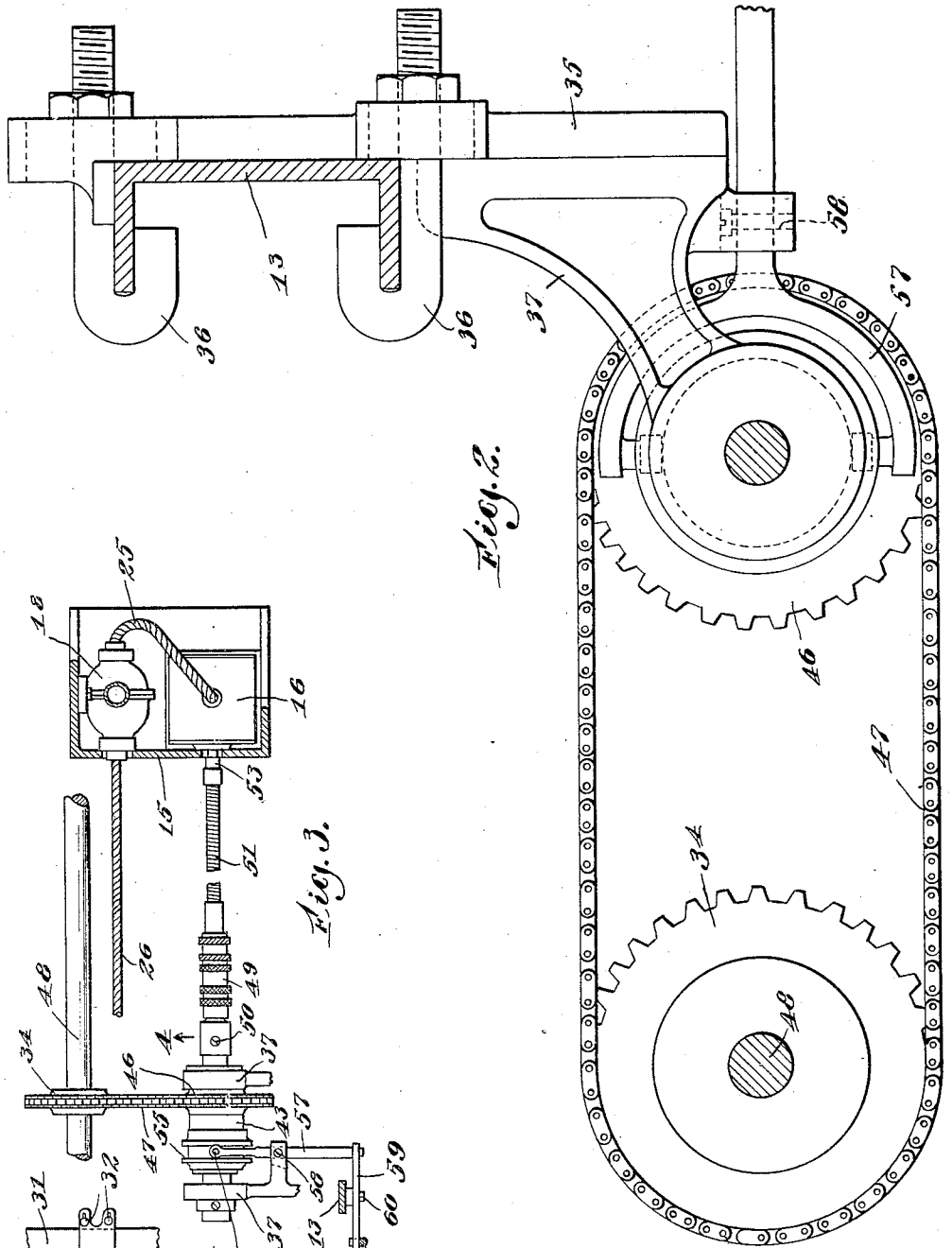

Fig. 2.

Fig. 3.

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Filed Oct. 4, 1930 4 Sheets-Sheet 3

Fig. 4.

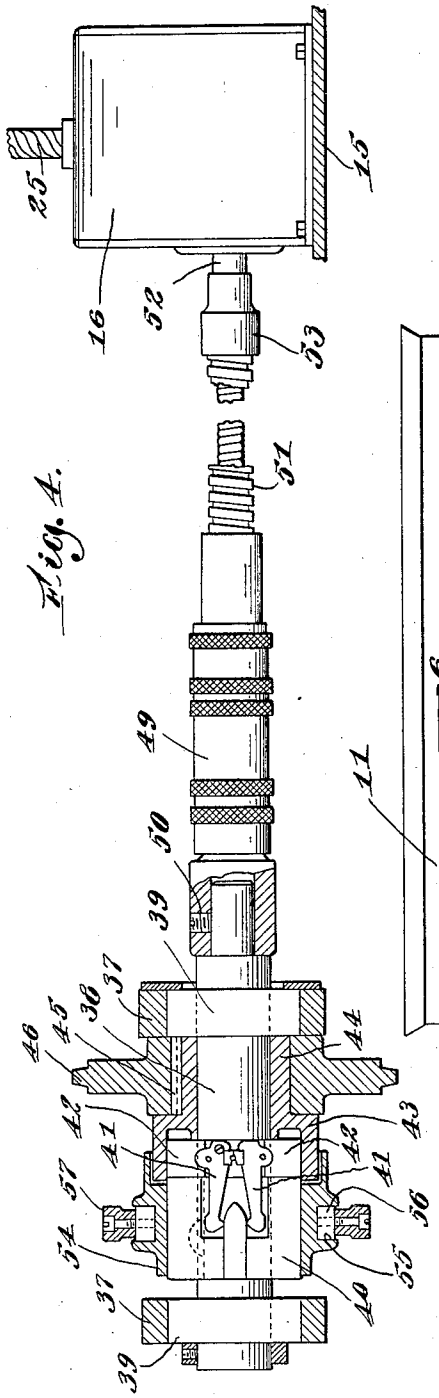
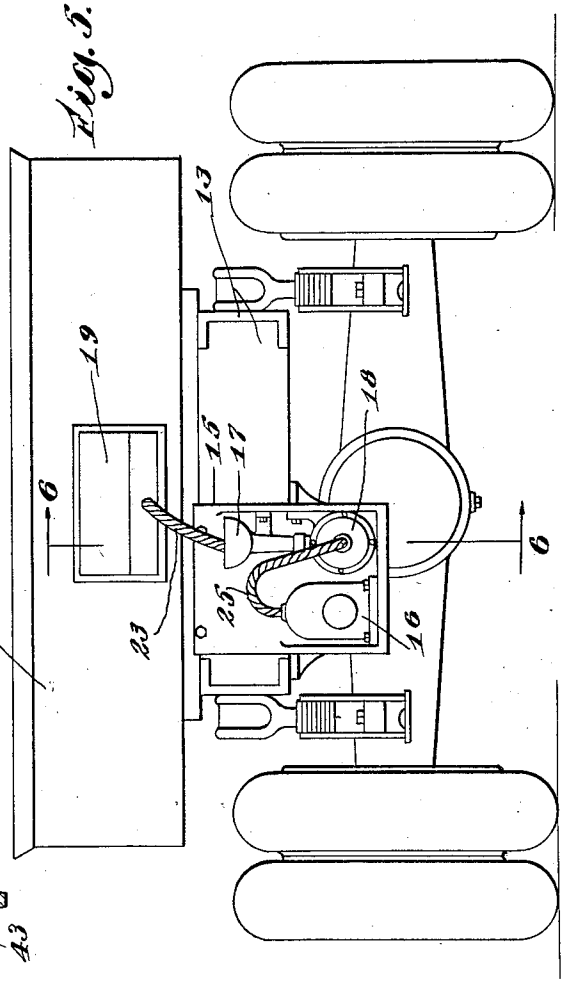


Fig. 5.



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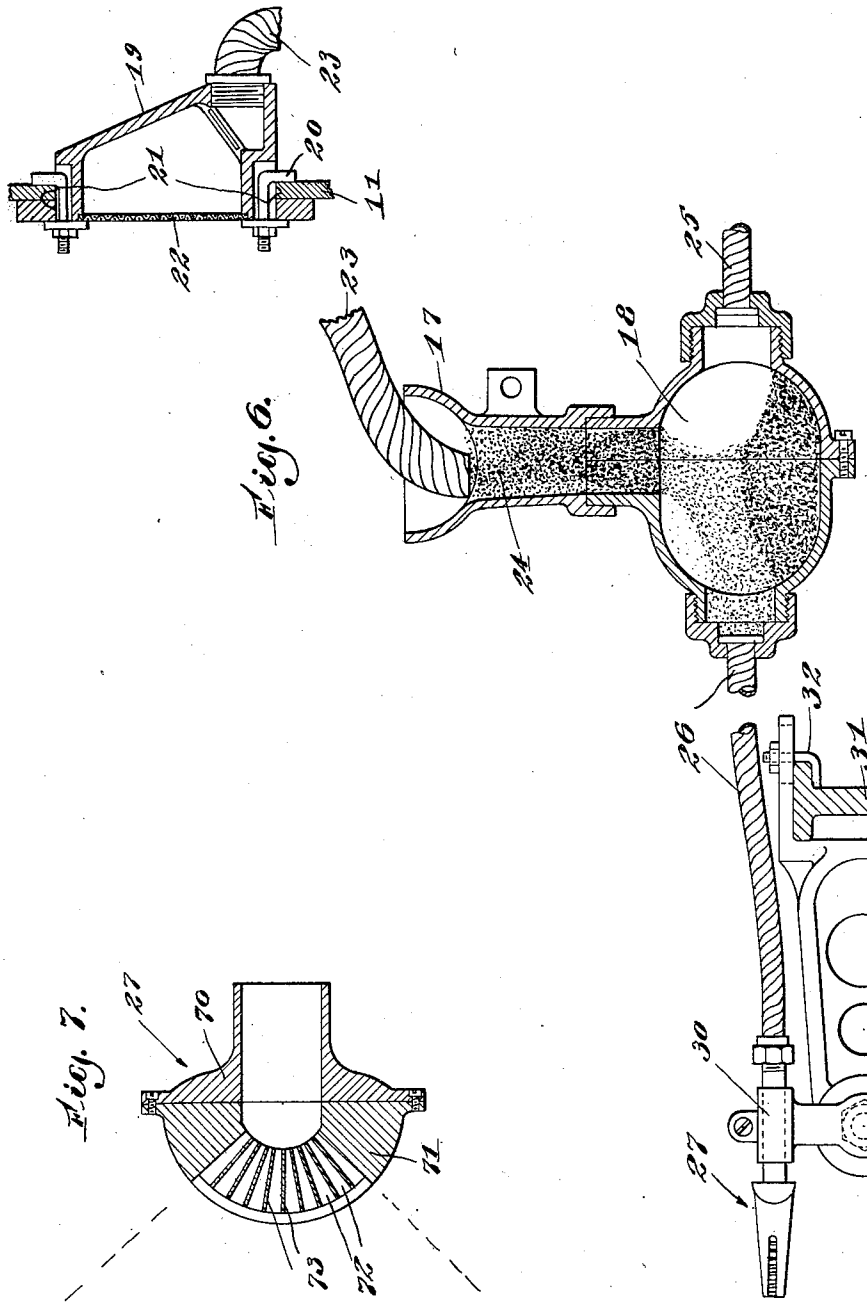

Fig. 6.

Fig. 7.

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UNITED STATES PATENT OFFICE

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ROAD SURFACING EQUIPMENT

Application filed October 4, 1930. Serial No. 486,497.

Our present invention relates to road surfacing equipment, and more particularly to a motor truck equipment which will handle sand, gravel, and fluids such as oils, coal tar mixtures, etc.

Practically all equipment in use today is designed to deliver from the rear of the truck chassis and because of such design are to a great extent restricted in their use.

In our present invention we have developed a mechanism which will not only deliver from the front of the truck but which will handle a large variety of materials.

A truck of this character may, for instance, be loaded with fine screened sand and be used to sand streets in the winter time. With the old type of sander much difficulty is encountered when used for this purpose because of poor traction of the truck itself and where slippery grades are present it is necessary to reverse the truck and back it up or down the grade in order to get the advantage of the sand deposited from its rear. It will be apparent in our device that this difficulty is removed as the truck sands its own traction surface on the road as it progresses. This feature also applies to the sanding of roads after coal tar mixtures have been sprayed over the road prior to sanding.

Our arrangement will handle efficiently all grades of sand chips up to quite heavy gravel.

The principal object, therefore, is an improved road surfacing machine:

Another object is a road surfacing machine adapted to distribute sand, gravel, and fluids from the front of the machine:

Still another object is a machine of the above qualifications provided with an auxiliary drive adapted to operate the blower directly from the transmission mechanism of the machine:

Other features comprising the construction and operation of the machine will appear as the description of the same progresses.

Referring to the drawings comprising a part of this specification and application:

Fig. 1 shows a side elevation of an automobile truck the body of which is elevated at one end in position to discharge;

Fig. 2 is a cross-section taken on the line 2—2 of Fig. 1 showing the drive from the automobile transmission shaft to the flexible drive shaft which operates the blower at the rear of the truck chassis;

Fig. 3 is a contracted plan cross-section taken on the line 3—3 of Fig. 1 showing the drive assembly and the delivery nozzle attached to the front axle of the truck chassis;

Fig. 4 is a partial cross-section of the blower drive taken on line 4—4 of Fig. 3, particularly showing the clutch mechanism indicated in plan view in Fig. 3;

Fig. 5 is a rear elevation of the truck body and chassis showing the arrangement of the blower and the conduit from the truck body to the hopper associated with the blower;

Fig. 6 is a cross-section taken on the line 6—6 of Fig. 5 greatly enlarged in scale and broken away for the purpose of showing the discharge end of the truck body; the hopper to which the blower is attached, and the discharge nozzle attached to the front axle of the truck chassis; and

Fig. 7 shows a transverse cross-section taken through the spray nozzle.

Referring more in detail to the drawings, 10 indicates a truck chassis generally upon which is mounted a body 11 which is adapted to pivot at its rear end and be elevated at its front end, as shown in Fig. 1, by standard mechanism, a portion of which is indicated at 12.

The elevation of the body 11 is, of course, for the purpose of sliding the contents toward the lower rear end by gravity, this being common practice in delivery trucks of this type.

Attached to the rear of the chassis frame 13 by means of clamp bolts 14, is a bracket 15 adapted to support a blower 16 and a receiving and discharging hopper.

This receiving and discharging hopper comprises two main parts, a hopper member 17 and a chamber 18. The hopper 17 connects with another hopper 19 attached to the body 11 of the truck by means of bolts 20 passing through the opening 21 of the body, and is provided with a screen 22 located across the opening 21 to prevent large stones or voids of too great a size to pass through the

flexible conduit 23 connecting hoppers 19 and 17.

When the body 11 is elevated as shown at Fig. 1, the contents 24 such as sand, gravel, and the like, flows down through the screen 22, conduit 23, into the hopper 17 and thence into the chamber 18. A flexible air conduit 25 connects the chamber 18 with the blower 16, and air from this blower drives the material 24 into the opposite flexible conduit 26 and out through the spray nozzle 27 on to the road surface.

The conduit 26 may be supported along the chassis frame 13 at intervals, as indicated at 28 until it connects with the nozzle 27. The nozzle 27 may be secured to a bracket 29 as indicated at 30, the bracket 29 being attached to and supported on the front axle 31 by means of bolts 32 and 33, better shown in Fig. 6.

Figs. 2, 3, 4 and 5 particularly show the drive mechanism for the blower, comprising a sprocket 34 permanently attached to a counter shaft located on the transmission of the truck.

On the left-hand side of the truck chassis frame 13 is located a bracket 35 being held thereto by means of bolts 36 and having inwardly extending bearing housings 37. A stubshaft 38 is journalled at 39 within the bearing housings 37 the front end of which is provided with a slidable clutch member 40. The member 40 is provided with toggle member 41 which when separated, as shown in Fig. 4, causes the band members 42 to expand in diameter. Surrounding the bands 42 is a housing 43 having a hub 44 journalled on the stub-shaft 38 and keyed at 45 to a sprocket 46. The sprocket 46 is directly connected to the sprocket 34 by means of the chain 47. When the clutch is engaging as shown in Fig. 4, the transmission shaft 48 revolves, the stub-shaft 38 revolves with it. Connecting with the stub-shaft 38 is a flexible shaft coupling 49 being held thereto by means of a set screw 50. The coupling 49 attaches to the flexible drive shaft 51 connecting with the blower shaft 52 by means of another coupling 53. Surrounding the clutch member 40 and securely attached thereto is an annular band 54 having a centrally located internal track 55 adapted to receive rollers 56 located on the spanner member 57. The spanner member 57 is pivoted at 58 in an offset member comprising a part of the casting 35, the free end of said spanner being engaged by a bell-crank lever 59 pivoted at 60 on the chassis frame 13. Another set of levers 61 are pivoted at 62 at the side of the seat, as shown in Fig. 1, such that the driver may by pulling up or down on the lever 61 cause the clutch member 40 to slide forward or back on the stub-shaft 38 thereby causing the toggle members 41 to spread the bands 42 and frictionally engage the inner surface of the member 43 turning the clutch member 40 which is keyed to the stub-shaft 38.

Normally the sprocket 46 and housing 43 rotate about the stub-shaft 38 freely.

Fig. 7 illustrates a typical cross-section through the spray nozzle, the unit comprising a base 70 and front piece 71. The front piece 71 is provided with a series of openings 72 which may be formed in one casting or by inserting the ribs 73 separately, as may be desired.

Having thus described our invention what we claim as new, is:

1. An improved road surfacing machine comprising in combination, an automobile chassis, a drive mechanism located between the transmission of said chassis and a blower, said blower adapted to deliver air pressure to a chamber attached to said chassis, a hopper adapted to feed road surfacing material into said chamber, a second hopper attached to a body located on said chassis adapted to feed said first hopper, a spray nozzle located at the front of said chassis adapted to connect with said chamber and distribute road surfacing material therefrom, substantially as shown and described.

2. An improved road surfacing machine comprising in combination with an automobile truck chassis, motor and dump body, a receptacle located at the rear of said chassis adapted to receive road surfacing material from said body, a blower adapted to supply air pressure to said receptacle, a discharge nozzle located on the front of said chassis and connected with said receptacle, driving means connected to the motor of said automobile truck chassis adapted to drive said blower.

3. An improved road surfacing machine comprising in combination with an automobile truck chassis, motor and dump body, a receptacle located on the rear of said body adapted to receive screened material therefrom, a blower adapted to supply air pressure to said receptacle, a discharge nozzle located on the front of said chassis and connected with said receptacle, driving means connected to the motor of said automobile truck chassis adapted to drive said blower.

4. An improved road surfacing machine comprising in combination with an automobile truck chassis, motor, and body, a receptacle located on the rear of said body adapted to receive screened material therefrom, a blower located adjacent said receptacle and connected thereto and adapted to supply air under pressure to the interior of said receptacle, a discharge nozzle located on the front of said chassis and connected with said receptacle, driving means connected to the motor of said automobile truck chassis adapted to drive said blower.

5. An improved road surfacing machine comprising in combination with an automo-

bile truck chassis, motor, and body, a receptacle located on the rear of said body adapted to receive screened material therefrom, a blower located adjacent said receptacle and connected thereto and adapted to supply air under pressure to the interior of said receptacle, a discharge nozzle located on the front of said chassis and connecting with the interior of said receptacle, said discharge nozzle provided with a plurality of discharge ports radially disposed to each other, driving means connected to the said motor of said automobile truck chassis adapted to drive said blower.

6. An improved road surfacing machine comprising in combination with an automobile truck chassis, motor, and body, a receptacle located on the rear of said body adapted to receive screened material therefrom, a blower located adjacent said receptacle and connected thereto and adapted to supply air under pressure to the interior of said receptacle, a discharge nozzle located on the front of said chassis and connecting with the interior of said receptacle, said discharge nozzle provided with a plurality of discharge ports radially disposed to each other, driving means connected to the said motor of said automobile truck chassis adapted to intermittently drive said blower.

In testimony whereof we have affixed our signatures.

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