June 7, 1932. N. W. McLEOD 1,862,232

ROAD SPRAYING AND MIXING APPARATUS

Filed March 10, 1931 4 Sheets-Sheet 1

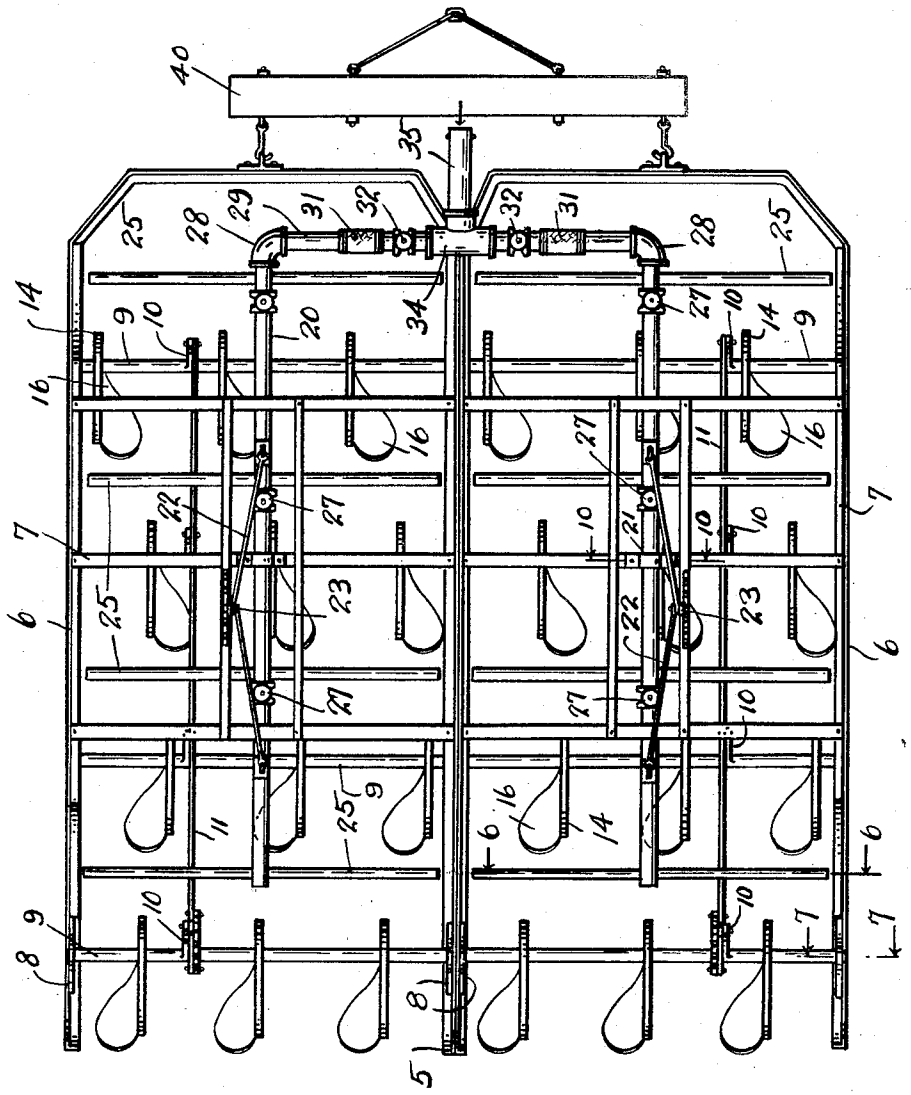


Fig. 1.

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ROAD SPRAYING AND MIXING APPARATUS

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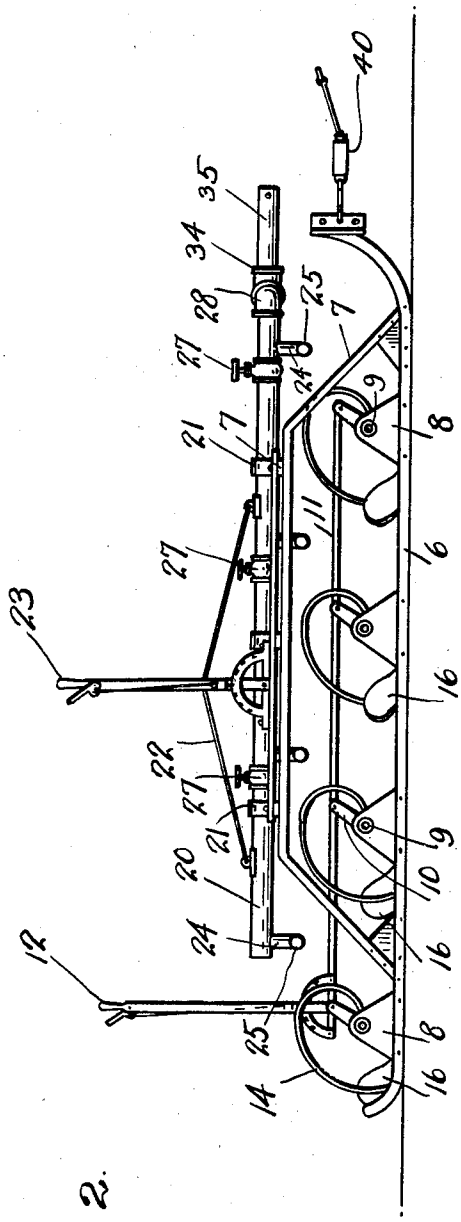


Fig. 2.

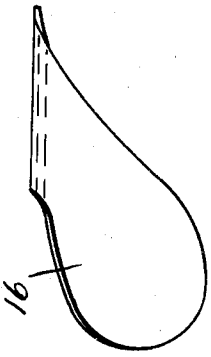


Fig. 4.

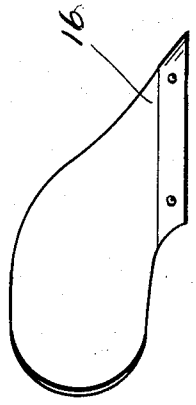


Fig. 3.

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ROAD SPRAYING AND MIXING APPARATUS

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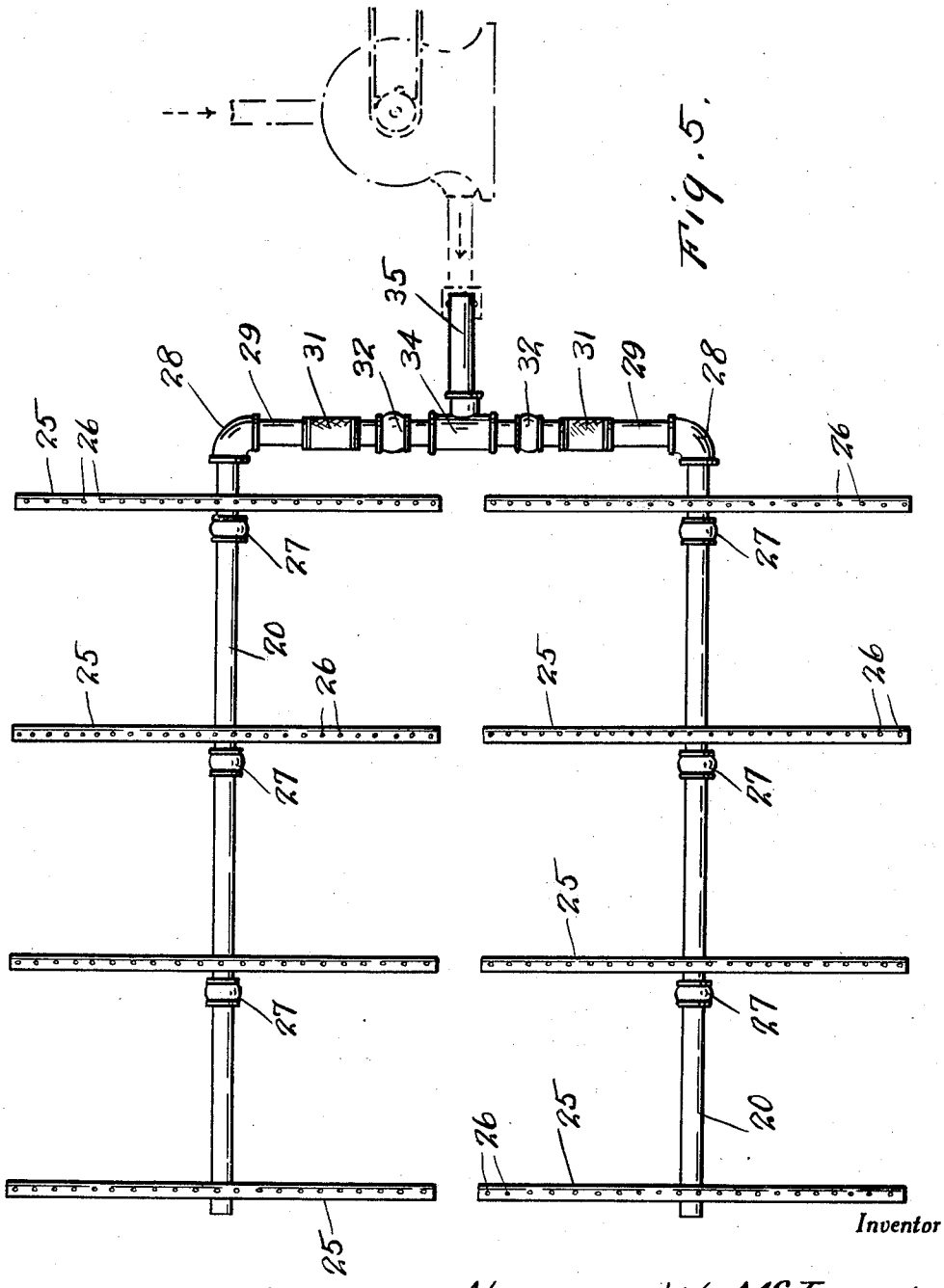


Fig. 5.

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ROAD SPRAYING AND MIXING APPARATUS

Filed March 10, 1931 4 Sheets-Sheet 4

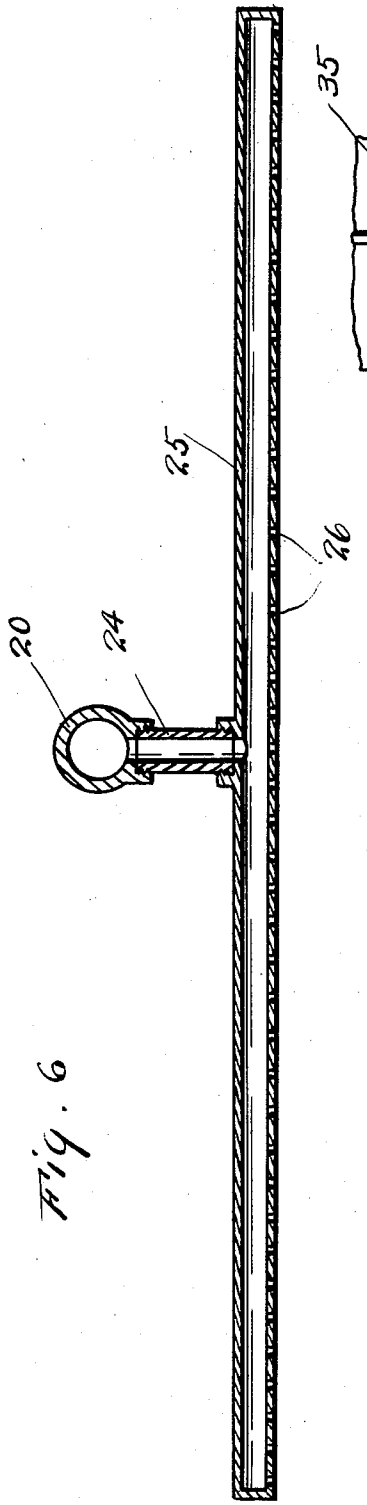


Fig. 6

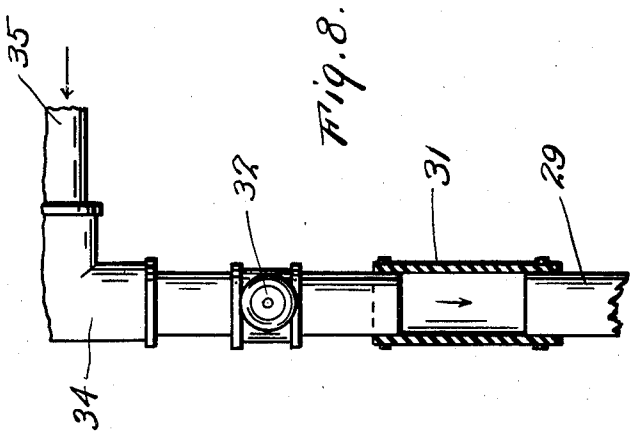


Fig. 8.

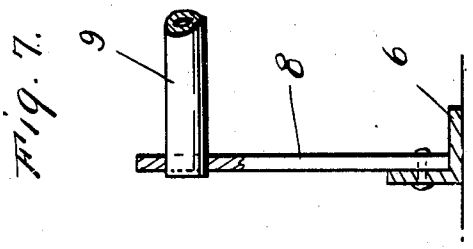


Fig. 7.

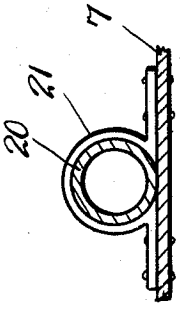


Fig. 10.

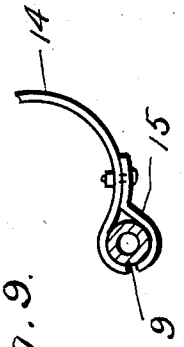


Fig. 9.

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UNITED STATES PATENT OFFICE

NORMAN WILLIAM McLEOD, OF REGINA, SASKATCHEWAN, CANADA

ROAD SPRAYING AND MIXING APPARATUS

Application filed March 10, 1931. Serial No. 521,605.

The present invention relates to a multiple spray bar and mixer for spraying and mixing road oil and aggregate on the road.

An important object of the invention resides in the provision of an apparatus of this nature which is simple in its construction, comparatively inexpensive to manufacture, thoroughly efficient and reliable in use and operation, and otherwise well adapted to the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawings:

Figure 1 is a top plan view of the apparatus embodying the features of my invention.

Figure 2 is a side elevation thereof.

Figure 3 is a side elevation of one of the shoes.

Figure 4 is a top plan view thereof.

Figure 5 is a bottom plan view of the spraying apparatus.

Figure 6 is a longitudinal section through one of the perforated spraying bars.

Figure 7 is a detail section taken substantially on the line 7—7 of Figure 1.

Figure 8 is a section through one of the flexible couplings.

Figure 9 is a detail view showing the means used for clamping one of the spring arms to a rocker, and

Figure 10 is a sectional view taken substantially on the line 10—10 of Figure 1.

Referring to the drawings in detail it will be seen that numeral 5 denotes a central runner and numeral 6 a pair of side runners. A frame structure 7 is mounted on the runners. Bearings 8 rise from the runners and have rocker shafts 9 journalled therein transversely of the apparatus. These rocker shafts are controlled by cranks 10 connected to links 11 so that they may be simultaneously rocked through the medium of a lever 12. Curved spring arms 14 are fastened to the rocker shafts by clamp means 15 as shown in Figure 9. Shoes 16 are mounted on these arms 14. The shoes are provided with mold boards for turning the fresh oiled surface down and definitely bringing a strip of the gravel at the bottom right to the surface.

It will be noted that the shoes on each alternate row of spring arms throw the gravel in opposite direction. This eliminates end thrust and keeps the apparatus in balance as well as greatly aiding in further mixing. The number of shoes can be modified by the number of spring arms and wider or narrower shoes may be used as desired.

Longitudinal pipes 20 are slidably mounted in the frame structure 5 by suitable brackets 21 and may be adjusted through links 22, and levers 23.

Depending nipples 24 from the pipes 20 support elongated hollow spray bars 25 having rows of perforations 26 on their bottom. Valves 27 are provided in the pipe 20 to control the flow of oil to different sections thereof. Elbows 28 connect the pipes 20 to pipe sections 29 which are connected to pipe sections 30 by flexible couplings 31. Pipe sections 30 have valves 32 therein and are connected to a T-coupling 34 from which extends forwardly a pipe 35 which may be connected in any suitable manner with the oil pump on the truck which is dragging the apparatus along the road.

The action of the apparatus is as follows: It is fastened to the rear of a road oil distributor by the draw bar assembly 40. A length of flexible rubber hose makes connection between the pressure chamber of the pump of the distributor and the pipe 35.

The machine starts forwardly. The shoes of the machine are set in the aggregate to the required depth. The oil is pumped from the distributor into the spray bars and into the aggregate in quantities regulated by the speed of the machine forward and by the speed of the pump.

The aggregate sprayed by the leading spray bars is turned over by the road shoes. Fresh aggregate is thus brought to the surface and sprayed by the next spray bar and so on with each row of shoes and spray bars until all of the underneath gravel has been sprayed.

Any number of rows of spray bars and shoes may be used. The spray bars can be set at any distance above the road surface which seems advisable.

It is thought that the construction, operation, and utility of the invention will now be quite apparent to those skilled in this art without a more detailed description thereof.

The present embodiment of the invention has been described merely for the purposes of exemplification since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description.

It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:

1. An apparatus of the class described including a frame, ground engaging elements on the frame and spray bars on the frame, said spray bars being arranged between rows of the ground engaging elements transversely of the apparatus, means for adjusting the spray bars longitudinally of the frame.

2. An apparatus of the class described including a frame, ground engaging elements on the frame and spray bars on the frame, said spray bars being arranged between rows of the ground engaging elements transversely of the apparatus, means for adjusting the spray bars longitudinally of the frame, means for adjusting the ground engaging elements.

3. In an apparatus of the class described, a plurality of relatively spaced transverse rock shafts supporting means therefor, a plurality of relatively spaced spring arms secured at one end to each of the shafts and earth working elements on the free end of each arm, a plurality of relatively spaced longitudinally shiftable pipes mounted above the shafts, a series of relatively spaced transverse spray pipes connected with each of the longitudinal pipes and arranged in alternate relation with respect to the shaft, means for simultaneously rocking all of the shafts, and means for simultaneously shifting the first mentioned pipes.

4. A road spraying and mixing apparatus including in combination means for spraying a liquid, an earth agitating means, said last mentioned means including a plurality of rockably mounted shafts, curved arms on the shaft, earth working elements on said arms, and means for simultaneously rocking said shafts.

5. A road spraying and mixing apparatus including in combination means for agitating and turning the surface to be treated and means for distributing oil on to said surface, said means including a plurality of spray pipes, and means for simultaneously shifting said spray pipe.

In testimony whereof I affix my signature.

NORMAN WILLIAM McLEOD.