Dec. 31, 1957 R. E. PAYNE 2,818,299

PORTABLE PAVEMENT MARKER

Filed Sept. 7, 1956 2 Sheets-Sheet 1

Fig. 1

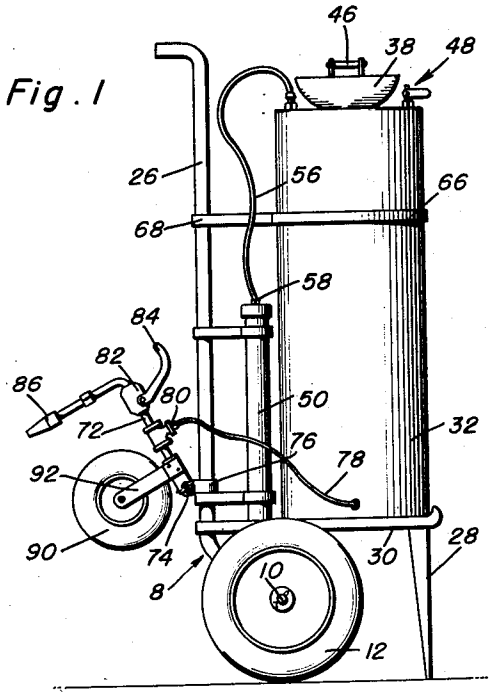
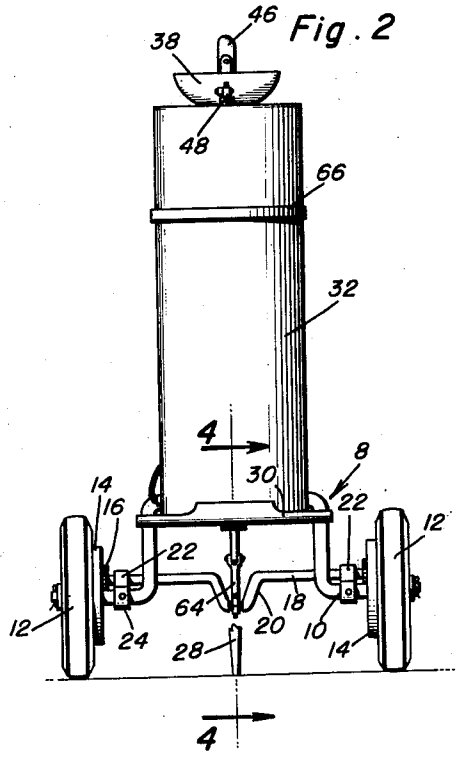


Fig. 2



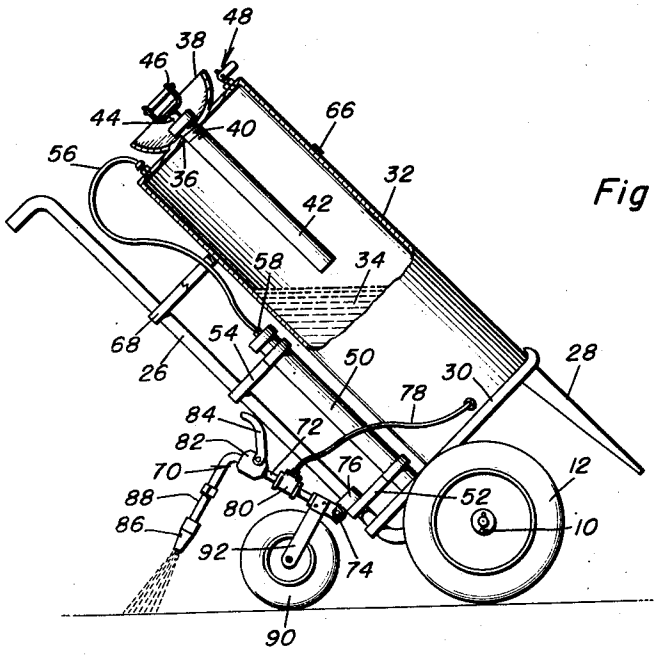


Fig. 3

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Dec. 31, 1957 R. E. PAYNE 2,818,299

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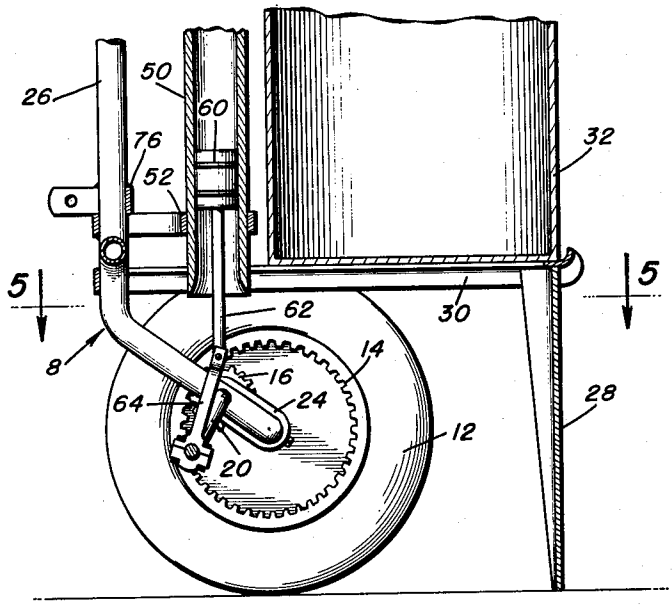
Filed Sept. 7, 1956 2 Sheets-Sheet 2

Fig. 4



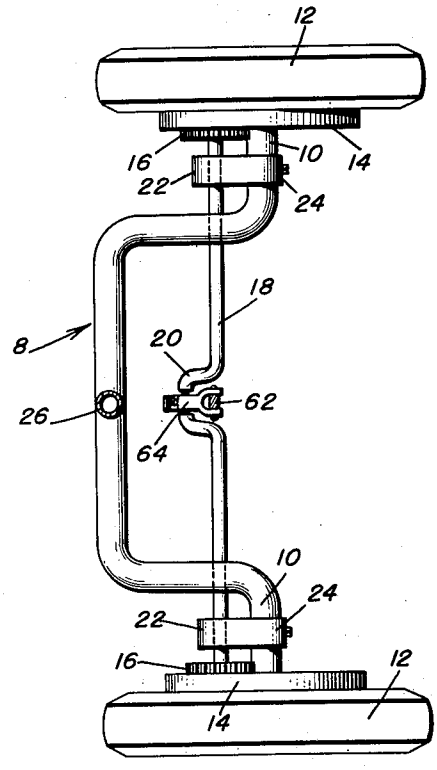


Fig. 5

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2,818,299

PORTABLE PAVEMENT MARKER

Richard E. Payne, San Bernardino, Calif., assignor, by direct and mesne assignments, of fifty percent to Mildred A. Payne and Richard E. Payne and fifty percent to M. L. O'Harra and Edna Mae O'Harra, Barstow, Calif.

Application September 7, 1956, Serial No. 608,498

3 Claims. (Cl. 299—43)

The present invention relates to certain new and useful improvements in a mobile manually maneuverable pavement marker, that is, a simple, practical and economical machine which is aptly constructed and equipped with the necessary means and expedients to enable a user thereof to spray paint by way of a nozzle on the pavement surface to provide either an uninterrupted marker line or an interrupted line, whichever is desired.

Briefly, the invention in its preferred embodiment is characterized by a wheel supported or an equivalent mobile carriage or truck on which an upstanding tank is fixedly mounted. The tank contains the paint or other liquid striping and marking material. A push-pull handle is provided to maneuver the carriage in a prescribed manner. Pump means is also provided and cooperates with the tank for pressurizing and dispensing the paint from the tank. A suitable conduit, such as a hose, is connected to the bottom of the tank and conducts the pressurized paint to a manifold also mounted for operation on the carriage. The manifold has a paint discharge end terminating in a delivery nozzle, a cut-off valve being mounted in the manifold at the desired place and a gage roller is mounted for free rotation and usually supported on the manifold and is adapted to depend into rolling contact with the pavement surface in a manner to properly position and regulate the position of the nozzle with respect to the surface which is being treated.

In carrying out a preferred embodiment of the invention the manifold, which is generally L-shaped in elevation, has one end hingedly and adjustably mounted on the handle. The valve is located in the manifold between the intake end of the supply or delivery conduit and the nozzle and it is spring-closed and is equipped with a trip lever which is positioned in alignment with the handle. The arrangement is such that when the handle is in a so-called "down" operating position, the handle actuates the lever and the lever serves to open the valve and when the handle is in its "up" or non-operating position it is disengaged from the lever, allowing the spring to close the valve in an automatic manner.

The invention also features a crankshaft which is geared to the truck supporting wheels and which by way of a connecting rod serves to reciprocate a piston in a pump cylinder, the pump cylinder being joined by a suitable air hose or line to the upper end of the tank.

Other objects, features and advantages will become more readily apparent from the following description and the accompanying sheets of illustrative, but not restrictive, drawings.

In the accompanying drawings wherein like numerals are employed to designate like parts throughout the views:

Fig. 1 is a side elevation of the portable pavement marking machine constructed in accordance with the principles of the invention showing the same in its non-operating position;

Fig. 2 is a view at right angles observing the structure of Fig. 1 in a direction from right to left;

Fig. 3 is a side view with portions broken away and shown in section and illustrating the position and relationship of the parts when the machine is in operation;

Fig. 4 is a section on the line 4—4 of Fig. 2; and

Fig. 5 is a horizontal section on the line 5—5 of Fig. 4.

The aforementioned truck or carriage as it is sometimes called is characterized by an arched or yoke-like axle denoted generally by the numeral 8 in Fig. 5. The axially aligned outstanding ends 10 provide journals and the ground engaging wheels 12 are suitably journaled thereon. The interior of each wheel is provided with a fixed ring gear 14 to accommodate cooperating pinions 16 on the ends of a horizontal motion transmitting shaft 18 having a central crank 20 and referred to generally as a crankshaft. The end portions are journaled in bearings 22 provided in block-like mounts 24 suitably and adjustably mounted on the aforementioned journals 10. Connected centrally to the axle and rising vertically therefrom is the aforementioned push-pull handle 26. Connected to the handle at one end and supported in part by the prop or leg 28 is an appropriate frame 30 which supports the tank 32. The tank is vertically elongated and is adapted to contain paint 34 and the upper end of the tank is provided with a screw-threaded filler hole 36 and a basin-like funnel 38 for convenient filling purposes. The screw-threaded hole serves to accommodate the threaded portion 40 of the cylinder 42 of a detachable hand pump. The plunger of the pump is denoted at 44 and the handle at 46. To one side is a pressure relief valve 48 of any appropriate construction. The numeral 50 designates a second pump cylinder which is bracketed at 52 to the lower portion of the handle. Its upper end is also connected or bracketed in place as at 54. A hose line 56 is connected with the cylinder as at 58 and also connected with the upper end of the tank in the manner seen in Fig. 3. A piston 60 is operable in the pump cylinder as shown in Fig. 4 and this is denoted by the numeral 60 and a piston rod is denoted at 62 and this is joined by a connecting rod 64 to the aforementioned crank 20. Therefore, as the wheels 12 contact the pavement the gearing, crankshaft and connecting rod serve to operate the exterior pump 50. If desired, a brace band 66 may be provided and this embraces the tank and is appropriately joined to the handle as at 68.

The aforementioned L-shaped manifold is denoted by the numeral 70 and has one branch 72 hingedly connected at 74 to a bracket 76 on the lower portion of the handle. A delivery hose or conduit 78 delivers the paint from the lower portion of the tank to a coupling 80 on the intermediate portion of the manifold branch 72. The aforementioned spring-closed valve 82 is also mounted in this branch and the opening and closing lever for the valve is denoted at 84. It will be noticed that this is in alignment with the handle 26. The valve is between the coupling 80 and the spray nozzle 86 on the discharge end or depending branch 88 of the manifold. The aforementioned gage wheel is denoted at 90 and this is mounted in a yoke 92 bracketed to the hinged end of the manifold. It is located close to the hinge and therefore the manifold assembly including the trippable valve, gage wheel and nozzle are operable as a unit. The hinge means 74 may include a suitable tightening nut so that the manifold may be adjusted and held in the "up" out-of-the-way position seen in Fig. 1. In fact, the manifold is usually so regulated that when the tank is in the vertical position seen in Figs. 1 and 2, the manifold and nozzle are "up" and, of course, not in use. When the tank is swung down to the angular operating position seen in Fig. 3 and the gage wheel 90 comes into contact with the pavement or surface, continuous lowering of the handle 26 causes the latter to engage and trip the valve 82 by way of the controller lever 84. The nozzle

e end to the bottom portion of said tank and at its
er end to said manifold, a cut-off valve mounted for
ration in said manifold, a gage roller mounted for free
ation on said manifold and adapted to regulate the
rative position of the nozzle with respect to the sur-
e of said pavement, said valve being spring-closed and
ipped with a trip lever positioned in alignment with
d handle so that when the handle is in a "down"
rating position the lever functions to open the valve
d when it is in an "up" non-operating position, it func-
ns to allow the valve to close automatically.

3. A portable pavement marker comprising, in combi-
ion, a wheel supported axle, a base frame fixedly
unted on said axle, said frame having a leg serving
a prop, a tank fixed on said frame, a push-pull handle
d on said frame and manually maneuverable, said
eels having ring gears fixed thereon, a crankshaft
unted for operation on said axle and provided with
ions in mesh with their respective ring gears, a pump
inder carried by said handle and cooperable with said
k, a piston mounted for reciprocation in said cylinder,
operating connection between said piston and crank-
ft, a manifold mounted for operation on said carriage,
l manifold having a paint discharge end terminating
a delivery nozzle, a supply conduit communicatively
ed at one end to the bottom portion of said tank and
its other end to said manifold, a cut-off valve mounted
operation in said manifold, and a gage roller mounted
free rotation on said manifold and adapted to regulate
operative position of the nozzle with respect to the
face of said pavement, said manifold being hingedly
l adjustably mounted, and said valve being spring-
sed and equipped with a trip lever positioned in align-
nt with said handle so that when the handle is in a
wn" operating position the lever functions to open the
ve and when it is in an "up" non-operating position
unctions to allow the valve to close automatically.

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