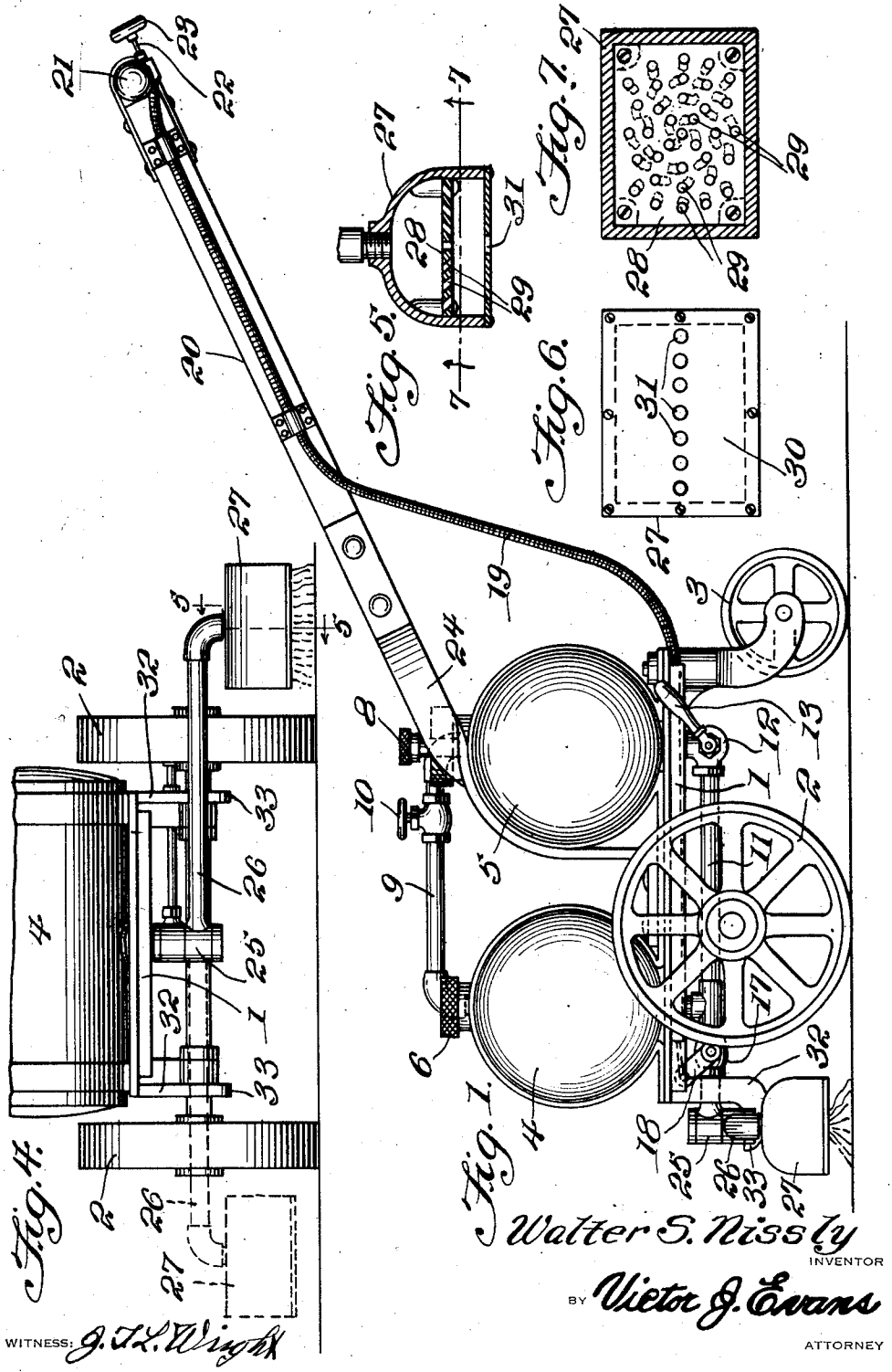
April 16, 1929. W. S. NISSLY 1,709,091

ROAD MARKING MACHINE

Filed Jan. 27, 1927 3 Sheets-Sheet 1



April 16, 1929. W. S. NISSLY 1,709,091

ROAD MARKING MACHINE

Filed Jan. 27, 1927 3 Sheets-Sheet 2

Fig. 3.

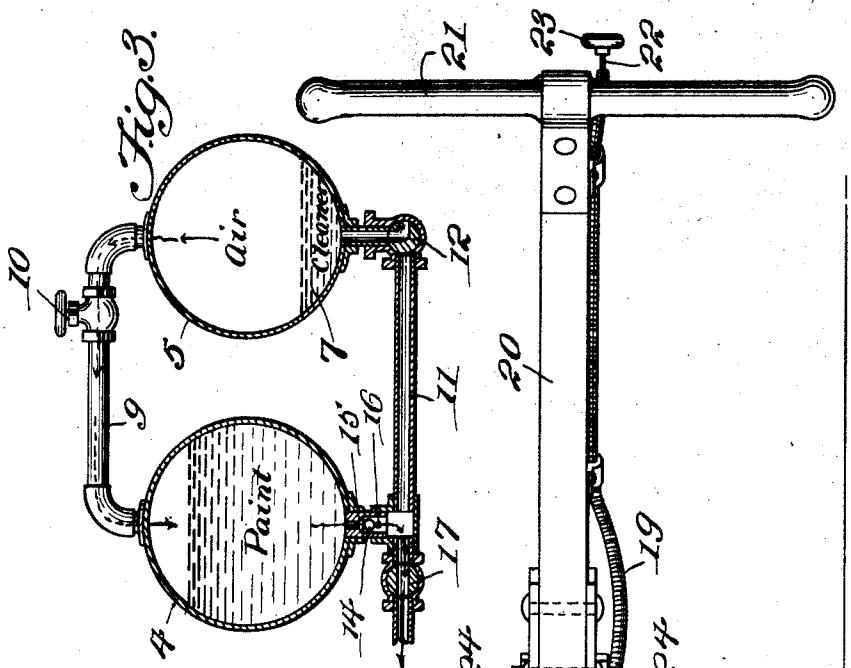


Fig. 2.

Walter S. Nissly
INVENTOR

BY Victor J. Evans
ATTORNEY

WITNESS: J. L. Wright

April 16, 1929. W. S. NISSLY 1,709,091

ROAD MARKING MACHINE

Filed Jan. 27, 1927 3 Sheets-Sheet 3

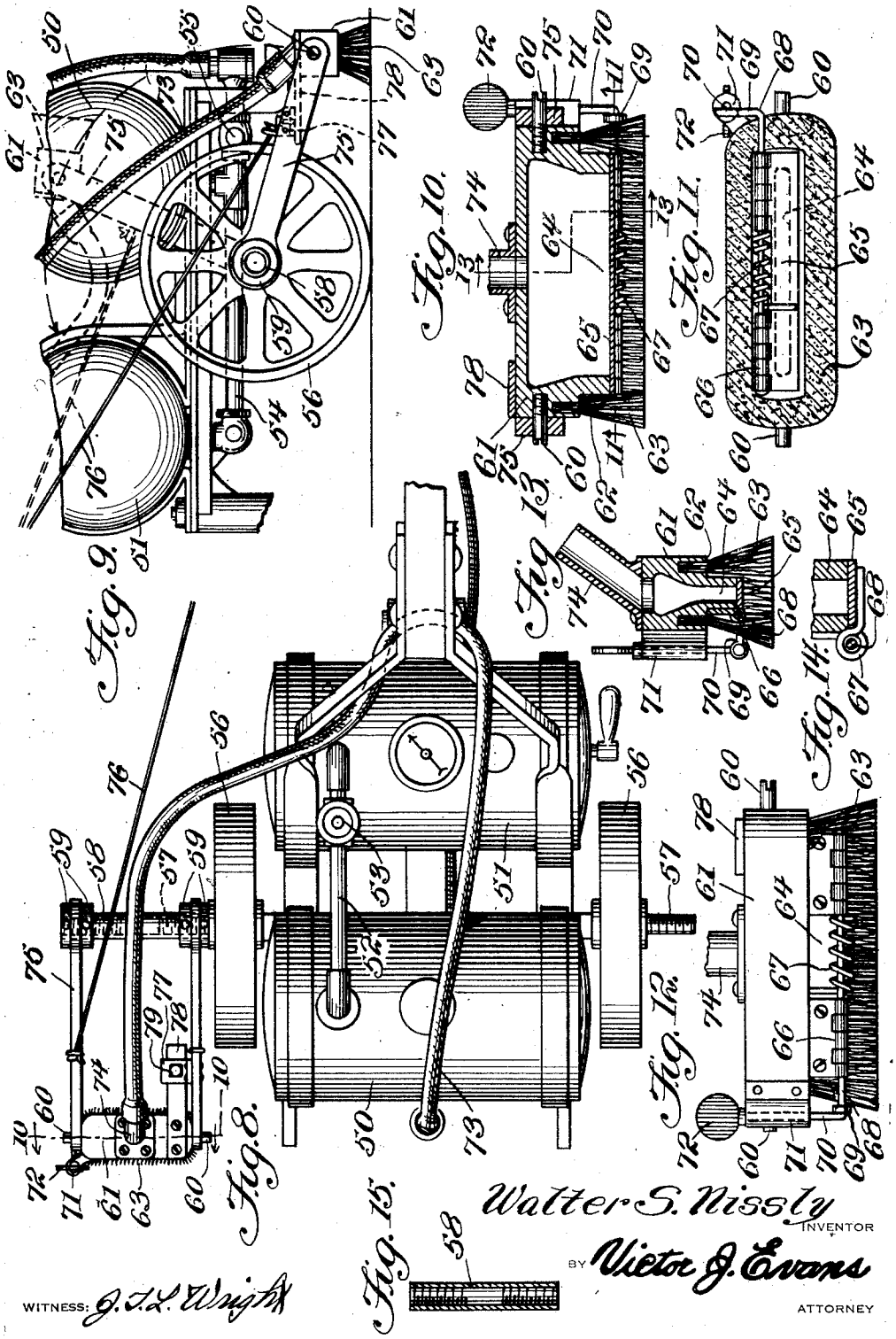


Fig. 9.

Fig. 10.

Fig. 11.

Fig. 13.

Fig. 14.

Fig. 8.

Fig. 12.

Fig. 15.

Walter S. Nissly INVENTOR

BY Victor J. Evans ATTORNEY

WITNESS: J. L. L. Wright

Patented Apr. 16, 1929. 1,709,091

UNITED STATES PATENT OFFICE.

WALTER S. NISSLY, OF FLORIN, PENNSYLVANIA.

ROAD-MARKING MACHINE.

Application filed January 27, 1927. Serial No. 164,036.

My present invention has reference to a machine for painting lines on road beds to warn traffic of city or county regulations.

A further object is the provision of an apparatus for this purpose which includes a handle operated wheeled truck that carries a tank for paint or like liquid, a second tank for compressed air and a cleansing fluid, a valve pipe establishing a communication between both tanks whereby air may be directed from the air tank into the paint tank, both of said tanks having valve controlled outlets piped to a single nozzle or brush of a novel construction, the arrangement of the valves being such as to forcibly eject the paint through the nozzle at either side of the truck to inscribe a comparatively wide painted surface on the road bed, or to prevent the passage of the paint through the nozzle and to also direct the cleaning fluid through the brush or nozzle should the same become clogged and thereby insure a perfect working of the device and the proper marking of the road surface.

A further object is the provision of a road marking machine in which the brush or nozzle applicator has its outlet passage controlled by a normally closed valve that prevents the free outflow of the paint or marking fluid through the applicator and which is opened only by a determined amount of fluid pressure, and in which an indicator gauge is actuated by the opening and closing of the valve.

A further object is the provision in a device for this purpose of a nozzle head of a novel construction that includes therein a mixing chamber whereby paint or like coloring fluid will be thoroughly mixed before being ejected through the nozzle.

A still further object is the provision of an apparatus for this purpose that is characterized by simplicity in construction, cheapness in manufacture and ease and efficiency in operation.

To the attainment of the foregoing objects and others which will appear as the nature of the invention is better understood, the improvement resides in certain novel features of construction, combination and operative association of parts, a satisfactory embodiment of which is disclosed by the accompanying drawings.

In the drawings:

Figure 1 is a side elevation of the improvement.

Figure 2 is a top plan view thereof.

Figure 3 is a detail longitudinal sectional view through the tanks and the pipes associated therewith.

Figure 4 is a fragmentary rear elevation.

Figure 5 is an approximately central transverse sectional view through the nozzle head.

Figure 6 is a bottom plan view of the nozzle head.

Figure 7 is a sectional view on the line 7—7 of Figure 5.

Figure 8 is a top plan view illustrating a slight modification.

Figure 9 is a side elevation thereof.

Figure 10 is an enlarged sectional view on the line 10—10 of Figure 8.

Figure 11 is a bottom plan view of the applicator illustrated in Figure 10.

Figure 12 is an end view thereof.

Figure 13 is a sectional view on the line 13—13 of Figure 12.

Figure 14 is a detail sectional view through the nozzle end of the applicator to more clearly illustrate the manner in which the mouth thereof is closed by the spring influenced valve.

Figure 15 is a central longitudinal sectional view through the shaft for the mount of the applicator.

As disclosed by the drawings I make use of a truck. The body 1 of the truck is supported on ground wheels 2 and the rear of the body may be provided with a swivel mount for a caster wheel 3. The body has fixed thereon by suitable straps a rear tank 4 and a forward tank 5. The tank 4 is designed for the reception of mixed paint or like coloring fluid, the said fluid being let into the tank through an opening that is normally closed by a removable cap 6. The tank 5 is adapted to receive therein a cleaning fluid 7, while air, under compression is forced into the tank through a normally closed valve that is covered by a cap 8. The valve is of a construction usually employed in connection with inflatable tires, so that a detail description thereof is not believed necessary. Establishing a communication between the top of the tanks 4 and 5 there is a pipe 9, and the passage through this pipe may be controlled by a hand operated value 10.

The bottom of each of the tanks is provided with an outlet nipple, and these nipples are coupled to a pipe 11. The passage between the tank 5 and the pipe 11 is controlled by a valve 12, and this valve has an oper-

ating handle connected with a stem. The handle, indicated by the numeral 13, is arranged at one side of the truck. In the outlet nipple for the tank 4 there is a ball valve 14, the said nipple being provided with a seat 15 for the said valve as well as a stop 16 for limiting the downward gravitory movement of the valve. The pipe 11, outward of the nipple has arranged therein a valve 17, and this valve has its stem provided with an offset handle 18. The handle 18 is connected to a flexible rod or shaft that is guided through a flexible casing 19 arranged along and supported on one side of the beam 20 for the operating or propelling handle 21, the flexible rod 22 being provided with an operating knob 23 located adjacent to the handle 21 and consequently being conveniently located with respect to the operator of the device. The handle beam 20 is supported upon a yoke member 24 that has its angle arms fixed to one of the supports for the tank 5.

The fluid conducting pipe 11 extends a slight distance beyond the rear of the truck body 1 and has connected therewith a depending revoluble hollow member 25 to which is connected the outlet pipe 26 that is coupled to the nozzle head 27. The nozzle head is of a desired width and length, the same preferably comprising a hollow member that has its corners rounded and its bottom open. The member 27 has its corners formed with interior lugs, and bolted or otherwise secured to these lugs there is a plate 28 provided with series of circumferentially arranged or staggered related angle ports 29. Bolted or otherwise secured on the open end of the nozzle head there is a plate 30 and this plate has a series of centrally arranged longitudinal apertures 31. The space between the plate 30 and the plate 28 provides a mixing chamber.

Secured to the opposite sides and extending from the outer corners of the truck body 1 there are depending plates 32 having outwardly extending hooked flanges 33. The pipe 26 is swingable to rest on either of the flanges 33 so that the nozzle head can be arranged at either side of the truck, as indicated by the full and by the dotted lines in Figure 4 of the drawings.

When the road surface is in a clean condition to receive thereon a painted line which indicates to automobiles and pedestrians traffic regulations, the valve 10 is opened and the operator pulls on the knob 23 to open the valve 17. The compressed air from the chamber 5 will flow through the pipe 9 to forcibly eject the paint or other coloring fluid from the tank 4 through the conductor pipe 11, the outlet pipe 26 and the nozzle head. The paint or like coloring liquid will contact with the plate 28 and will be further influenced by the air that passes through the mentioned pipes and into the nozzle head. The paint is caused to whirl through the angularly arranged comparatively small ports or openings 29 in the plate 28, so that the paint will thus be delivered in a whirling and thoroughly agitated condition to the mixing chamber 35 in the said head. Thus the paint or like coloring fluid will be ejected and will be sprayed through the outlet opening 31 so that an even line of paint or like coloring material will be imparted on the road surface. Should the nozzle applicator become clogged the valve 12 is opened. The compressed air from the chamber 5 will force itself through the applicator to effectively clean the same and the force of air in its passage through the pipe 11 will act on the valve 14 to automatically seat the same. Thus in the cleaning operation of the applicator no paint or like coloring fluid will be allowed to pass through the pipe 11 and through the nozzle head. Thereafter the valve 12 is closed and the valve 10 is opened, which causes the valve 14 to gravitate onto its seat and to allow the paint or like coloring fluid to freely pass through the pipes 11 and 26 and through the applicator or nozzle head.

In Figures 8 to 15 I have illustrated a slight modification. The fluid containing tank 50 and the compressed air tank 51 are mounted on a wheeled truck as heretofore described. The pipe 52 which establishes a communication between the tanks is controlled by a valve 53, and the outlet pipe 54 is similar to the pipe 11 and is positioned below the tanks. The outlet pipe 54 has its passage controlled by a valve 55.

The wheels 56 of the apparatus are journaled on the spindle ends of the axle, but in this instance the spindles are extended beyond the outer sides of the wheels and the said extensions 57, are threaded. Screwed on either one of the axle extensions 57 there is a pipe member 58 that provides a shaft for the mount of the applicator. In this manner it will be seen that the applicator may be arranged on either side of the device. The mount for the applicator includes a pair of spaced arms having suitable bosses which surround openings on the inner ends thereof and through these openings the shaft 58 is passed. Removable stop means 59 hold the arms of the mount from longitudinal movement on the shaft. Pivoted by removable pins 60 between the arms of the mount there is a nozzle head 61. The head 61 is substantially rectangular in plan having its corners rounded and the lower portion of the head, on its outer face, is provided with a continuous groove or depression that defines a horizontal shoulder 62. Let in this shoulder 62 there are bristles 63 that are, of course, arranged entirely around the mouth 64 of the nozzle. The mouth 64 is normally closed by a flat valve plate 65. The plate 65 has one of its edges hinged, as at

66, to one of the longitudinal outer edges of the nozzle, and the said valve plate 65 is normally influenced to closed position through the medium of a spring 67.

The pintle for the hinge is indicated by the numeral 68, the same having an offset end 69 to which is pivoted a rod 70 arranged for movement in a suitable guide 71, on one of the outer corners of the nozzle head, and the said rod having its upper or free end provided with a disc 72. The rod and disc are in the nature of an indicator or signal, and the said signal will be elevated when the valve 65 is opened.

A flexible hose 73 leads from the outlet end of the pipe 54 and is of a length so that the same is arranged over the top of the tanks and trained below the handle for the truck portion of the improvement and thereafter directed toward and connected to a short pipe or coupling 74 that is secured on the top of the nozzle head 61, and communicates with an opening therethrough. By this arrangement the applicator when detached from its mount may be employed for applying paint or like coloring matter to any part of the road bed and as a matter-of-fact to other places.

The applicator is of a sufficient weight to influence the pivotally connected mount to permit the brush of said applicator to swing to ground contact and to bring the same out of such contact I attach to one of the arms of the mount 75 a flexible element 76 directed toward the operating handle for the truck. The free end of the element 76 may be wound around the handle or any other part of the truck when the applicator is not in operation.

On the inner face of the second arm of the mount 75 I secure an offset bracket 77. On the head 61 there is fixed a rearwardly extending plate 78. Screwed through the bracket there is a bolt member 79 that contacts with the plate 78 and by adjusting the bolt the applicator may be sustained at desired angles on the mount.

The fluid from the tank 50 is directed into the nozzle end in the same manner as previously described. The spring 67 for the valve 65 is of sufficient strength to normally close the said valve so that paint cannot pass through the nozzle head until the compressed air or like fluid is directed into the said head. This pressure will overcome the resistance of the spring and will direct the paint at a downward angle toward the rear bristles 63. The opening of the valve, as previously stated, will operate the gauge or indicator so that the operator of the device will have knowledge that the valve is open and that coloring fluid is being directed therethrough.

It is thought that the foregoing description when carefully read in connection with the accompanying drawings will fully set forth the construction, operation and many advantages of my device, but obviously I do not wish to be restricted to the precise details herein set forth and, therefore, hold myself entitled to such changes therefrom as fairly fall within the scope of what I claim.

Having described the invention, I claim:—

1. In a road marking machine, a wheeled truck, a paint containing tank and a tank containing air under pressure on the truck, a valve controlled pipe establishing a communication between the tanks, a valve controlled outlet pipe for the paint tank, a nozzle applicator, a flexible pipe connection between the outlet pipe and the nozzle, a mount for the nozzle, means for supporting the mount on either side of the truck, means between the truck and mount for regulating the position of the nozzle with respect to a road surface, means for sustaining the nozzle angularly with respect to its mount, a spring influenced valve for normally closing the outlet of the nozzle, and a gauge operated by the movement of the valve.

2. In a road marking machine, a wheeled truck, a paint containing tank and a tank containing air under pressure on the tank, a valve controlled pipe establishing a communication between the tanks, an applicator comprising a nozzle head and bristles arranged around the outlet of said head and extending therebeyond, a pivotally supported spring influenced valve plate normally closing the mouth of the nozzle, a mount for the applicator adapted to be swingably supported at either side of the truck, removable pivots connecting the applicator to the mount, a vertically movable gauge indicator on the applicator and actuated by the opening and closing of the valve, means between the mount and truck for regulating the swinging of the mount, means between the mount and applicator for holding the latter angularly adjusted on the mount, and a flexible pipe connection between the outlet pipe and the top of the applicator.

3. In a road marking machine, a truck, a tank containing a coloring fluid and a tank containing a cleaning fluid and air under pressure supported on the truck, a valve controlled pipe establishing a communication between the tanks, an outlet pipe connected to the paint tank and communicating with the cleansing fluid in the air tank, a valve for closing the communication between the outlet pipe and the cleansing fluid, a second valve controlling the outlet through the pipe, and a ball valve between the outlet of the paint tank and the outlet pipe and said outlet pipe designed to be connected with a nozzle applicator, as and for the purpose set forth.

In testimony whereof I affix my signature

WALTER S. NISSLY.