

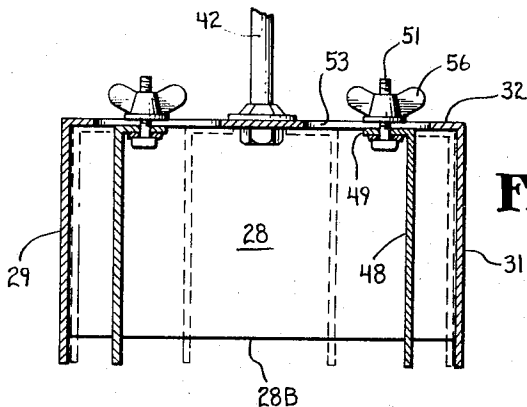
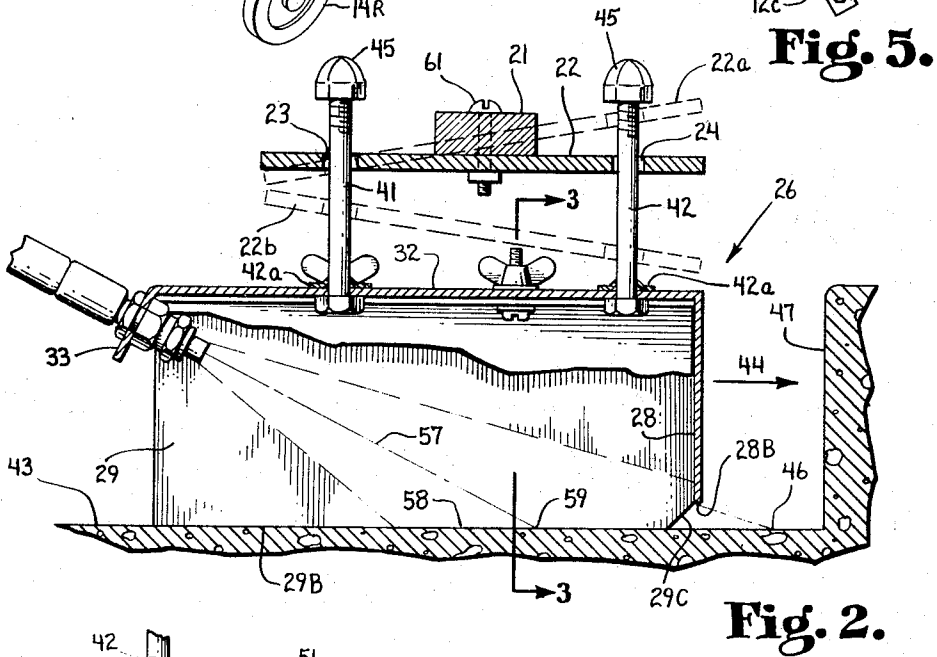
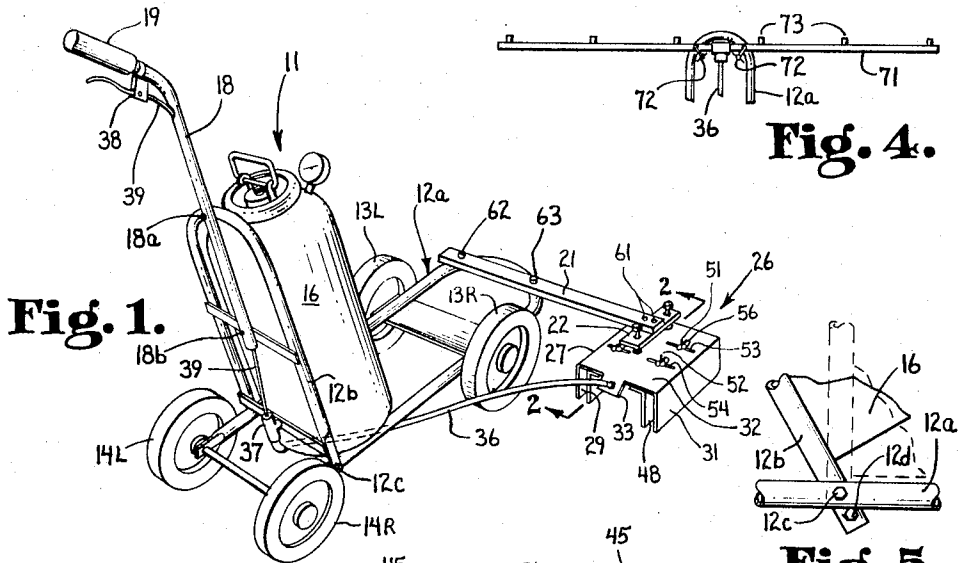
Nov. 14, 1967

B. R. MAUS

3,352,283

STRIPING DEVICE

Filed Sept. 22, 1965



INVENTOR.
BURNS R. MAUS

BY *Lockwood, Woodland, Smith & Wickart*
Attorneys

1

3,352,283

STRIPING DEVICE

Burns R. Maus, Dallas, Tex., assignor, by mesne assignments, to Cooper-Stanley Company, Inc., Arlington, Tex., a corporation of Texas

Filed Sept. 22, 1965, Ser. No. 489,299

1 Claim. (Cl. 118—301)

ABSTRACT OF THE DISCLOSURE

A wheel mounted frame with pressurized paint supply tank thereon and cantilevered striping head with a triggered controlled spray nozzle in the striping head. Flexible mounting means connecting the striping head to the outrigger to accommodate tilting of the frame with respect to the striping head and permit the strip defining margins of the box to properly contact the sprayed surface at all times and avoid overspray.

Background and description

This invention relates generally to device for painting a stripe on ground surfaces such as driveways and parking lots, for example, and more particularly to a device capable of producing a sharp edged stripe in locations which were heretofore inaccessible to conventional strippers.

Many devices for painting stripes on surfaces of highways, parking lots and driveways, are already well known and widely used. Some employ brushes, and others spray the paint onto the surface. A typical disadvantage of some of the known devices is the fact that it is impossible to paint a stripe close to a curb, machine base, or other upstanding abutment or obstruction which may be present on the surface to be painted. Such devices are not satisfactory for painting stripes on floors in warehouses, factories, airport hangars, and other places where pallets, machine tools, or any other floor supported objects are likely to be found.

It is therefore a general object of the present invention to provide an improved striping device which can paint a stripe into a corner within one inch of each of two walls or other obstructions forming the corner, and can paint the stripe parallel to the wall or obstruction or can paint the stripe inwardly toward the obstruction at any angle.

A further object is to provide a device which can provide a sharp line on the painted surface and can readily tolerate some differences in elevation between the area where the paint is applied and the area on which the wheels of the device are supported.

A further object is to provide a device which is easily adjustable to paint stripes of various widths.

A further object is to provide a device which can easily paint a stripe at either side of the device.

Described briefly, in a typical embodiment of the present invention, a wheel supported frame is employed, with a pressurized paint container mounted thereon, and rearwardly extending handles at a level for the convenience of the operator walking along behind the device. An outrigger is mounted to the front of the frame, ahead of the wheels, and a spray box is mounted at the outer end of the outrigger. The spray box is mounted to the outrigger in such a manner that it is free to move vertically with respect to the outrigger, although it is restrained in the horizontal direction. In this manner it is properly confined to enable the operator to accurately control the location of the paint line, and yet it is free to float vertically on the surface being painted so as to produce a sharp edged line and avoid variations which might otherwise occur due to vertical movements or tilting movements of the frame as it rolls along the ground.

2

The spray box is arranged to be movable to either side of the frame and the outrigger can easily be extended to the opposite side of the frame if desired, so that the stripe line can be painted at either the left or the right hand side of the device. Also the spray nozzle sprays forwardly into the box so that the paint stripe can begin at a point in front of the forwardmost extremity of the whole striping device.

The full nature of the invention will be understood from the accompanying drawings and the following description and claim:

FIG. 1 is a perspective view of a typical embodiment of the striping device, as seen when viewed at an angle from the rear.

FIG. 2 is an enlarged fragmentary section through the striping head taken along the line 2—2 in FIG. 1 and viewed in the direction of the arrows, and showing the striping head approaching an abutment.

FIG. 3 is a section through the striping head taken along the line 3—3 in FIG. 2 and viewed in the direction of the arrows.

FIG. 4 is a fragmentary top plan view, on a reduced scale, illustrating a front frame and sprayer arrangement according to another embodiment of the invention.

FIG. 5 is an enlarged fragmentary elevational view illustrating the connection of the upper and lower frames.

Referring to the drawings in detail, the striping device 11 includes a tubular frame assembly employing two identical U-shaped frame members 12a and 12b, member 12b having bolts 12c through lower end portions thereof and pivotally mounting it to member 12a. The frame assembly is supported by four ground wheels 13R, 13L, and 14R and 14L. A paint container 16 is secured to the frame member 12b and has a pump handle 17 by which a satisfactory pressure can be applied and maintained in the container. The frame member 12b is provided with a handle 18 fastened by a screw and nut at 18a and 18b and extending upwardly and rearwardly to a grip 19 at a location convenient for the use of the operator who typically walks along behind the striping device.

According to the present invention, an outrigger 21 is fastened to the front end of the frame 12 and extends to the right hand side of the frame. An elongated plate 22 is affixed to the outer end of the outrigger and has a pair of apertures 23 and 24 therein.

A striping head 26 is employed and includes the striping box 27 which is somewhat in the form of a downwardly and rearwardly opening shell, having a front wall 28 joined at its lateral ends to parallel upstanding side walls 29 and 31. A roof 32 has its lateral and front margins joined respectively to the side walls and front wall of the box. The rear end of the box is open and the roof has an integral bracket 33 bent downwardly at the rear end of the roof of the box and which supports a spray nozzle 34 which is connected by the hose 36 to the tank discharge valve 37 controlled by the handle mounted lever 38 connected to the valve by a cable 39.

Upstanding bolts 41 and 42 are affixed to the roof of the spray box by the jam collars 42a and pass upwardly through the oversize apertures 23 and 24, respectively in the plate 22. They have "palnuts" 45 at the upper ends thereof. This arrangement permits relative vertical and pitching movement of the frame 12 and outrigger 21 with respect to the spray box, as the spray box is supported on the ground surface 43 being painted. Examples of such relative movement are indicated by the dotted outlines 22a and 22b illustrating different angles and locations of the plate with respect to the spray box.

The lower marginal edge 29B of the spray box side wall 29 has an upwardly inclined portion 29C near the front marginal edge of the wall. The side wall 31 is of identical construction, so that the lower marginal edges

3

of both walls lie in one horizontal plane, whereas the lower marginal edge 28B of the front wall 28 lies in another horizontal plane spaced thereabove. This arrangement permits the spray box to easily move over slight irregularities in the surface 43 as the device is moved forward in the direction of the arrow 44. It also enables the paint sprayed into the box from the nozzle 34 to extend to a line 46 just in front of the front wall of the spray box. This means that the paint stripe can be extended right up to an abutment 47, for example, if desired.

According to another feature of the invention, two adjustable baffles are provided in the spray box, each of these baffles being shaped exactly like the side walls 29 and 31 but having an inwardly turned flange at the upper margin. For example the baffle 48 has an inwardly turned flange 49 at the upper margin. Two upwardly extending studs 51 and 52 are provided on the flange 49 and project through the slots 53 and 54, respectively. Wing nuts 56 are received on the upper ends of the studs. Upon loosening the wing nuts, these baffles can be moved closer together or farther apart, as desired, to provide various widths of the line being sprayed.

Normally the spray nozzle 34 is mounted so as to spray a wide oval pattern, with the major axis of each oval at various cross sections lying in an inclined plane 57 intersecting the ground surface or plane 58 of the lower wall edges at a line 59 closer to the front than to the rear of the spray box. The width of the pattern is such that some spray impinges upon the inside faces of the baffles. In this manner the lower edges of the baffles, which are coplanar with the lower edges of the side walls 29 and 31, provide sharp edges to the paint stripe. The lower edge 28B of the front wall intercepts part of the spray entirely across its width as defined by the inner-faces of the baffles so that the spray which projects beyond the front wall to the line 46 will define a line and not be irregular. In other words, the front end of the strip will be straight across.

For different baffle spacings it may be desirable to change spray nozzles. The mounting of the nozzle on the bracket 33 to the rear of the spray box facilitates replacement of nozzles.

It has been mentioned that one feature of the invention is to enable spraying at either the right or left side of the device. This is facilitated by removing the palnuts 45 and removing the spray box from plate 22. The bolts 62 and 63 fixing the outrigger to the frame 12, are removed and the outrigger is then turned around to extend to the left of the frame. Then the bolts 62 and 63 are re-installed, the spray box is again mounted to plate 22 with the palnuts, and the device is ready to paint on the left hand side.

From the foregoing description it is apparent that the striping head is mounted to define the outermost forward and side extremities of the device. In other words, no part of the device extends a greater distance sideward or forward than does the striping head. Therefore a paint stripe can be extended right into a corner of a room and within 1 inch of both walls defining the corner, and on either side of the machine, if desired.

With the upper frame 12b pivotally mounted to the lower frame 12a at bolts 12c between the front and rear axles, the device is well balanced, and the upper frame can be inclined rearwardly as shown to enable the operator to walk along comfortably behind the unit. Stops are provided in the form of bolts 12d projecting through the member 12b to limit the amount of rearward inclination of the handle and tank frame. This prevents upset and enables the operator to lift the front wheels and spray box by bearing down on the handle. When the striper is not in use, the handle can be moved to vertical position

4

whereupon the tank 16 will rest on the lower frame 12a as indicated by the dotted outline in FIG. 5.

In addition to its excellent performance, this striping device is easily manufactured at low cost. It can be packaged compactly, by simply removing the four bolts at 62, 63, and 12c, and the two nuts at 18a and 18b.

In the embodiment of FIG. 4, a tube 71 closed at both ends is mounted at the front end of the lower frame 12a, instead of an outrigger 21. It is secured to the frame by the C-clamps 72. The paint hose 36 is connected to a fitting at the center of the tube, and spray nozzles 73 are spaced along the tube at twelve inch intervals, for example. They may be directed generally forward and downwardly and are useful for such purposes as spraying fertilizer and insecticides on lawns and golf greens.

While the invention has been disclosed and described in some detail in the drawings and foregoing description, they are to be considered as illustrative and not restrictive in character, as other modifications may readily suggest themselves to persons skilled in this art and within the broad scope of the invention, reference being had to the appended claim.

I claim:

A striping device comprising:

- a frame;
- groundwheels supporting said frame and rotating on fixed parallel axes;
- a paint supply;
- a striping head coupled to said supply and mounted to said frame, said striping head being outboard of said wheels and extending in front of a vertical plane tangent the forwardmost point of the most forward one of said wheels,
- said striping head including a downwardly opening shell having horizontally spaced parallel vertical side walls in planes perpendicular to said axes, said shell having a front wall joined at its ends to said side walls, and said shell having a roof with lateral and front margins joined to said side and front walls, respectively, the lower marginal edges of said side walls having upwardly inclined portions near the front margins of said shell and meeting the lower marginal edge of said front wall lying in a first horizontal plane above a second horizontal plane containing the principal portions of the lower marginal edges of said side walls, said shell opening rearwardly;
- a handle connected to said frame and extending upwardly and rearwardly therefrom;
- a control lever on said handle;
- a spray nozzle in said striping head, said spray nozzle being mounted to a bracket to the said roof of said shell, said spray nozzle being disposed outside of said shell, thereby facilitating adjustment and replacement of said spray nozzle, said spray nozzle discharging paint into said shell in a wide oval pattern directed principally along a plane inclined downwardly and forwardly and intersecting said second plane along a line located closer to the front marginal edges of said side walls than to the rear marginal edges of said side walls;
- a supply line between said supply and said nozzle;
- a control valve in said line;
- a cable connecting said valve to said lever;
- means pressurizing said supply;
- and baffles, each having a pair of horizontally spaced upstanding fasteners projecting upwardly through slots in said roof of said shell, said slots extending parallel to said axes, whereby said baffles are movable inwardly from positions meeting said side walls, to facilitate precise location of the painted stripe and precise establishment of the width thereof, one side wall of said head being the outermost point on

5

the striping device to enable painting a stripe parallel to vertical abutments as close thereto as desired; and an arm affixed to said frame and extending laterally therefrom and having guide apertures therein slidably receiving a pair of upstanding guide bars affixed to said striping head and mounting said striping head to said frame permitting relative vertical movement and tilting of said striping head with respect to said frame whereby said striping head rests on the surface being painted and is vertically supported thereby independently of said frame to produce a sharp edged painted line.

5

10

6

References Cited

UNITED STATES PATENTS

1,720,273	7/1929	Henry	-----	118—301
2,015,695	10/1935	Sapp	-----	94—44
2,367,594	1/1945	Madison	-----	118—301 X
2,424,202	7/1947	Woolery	-----	118—305
2,842,093	7/1958	O'Neill	-----	118—301
3,239,147	3/1966	Sweet	-----	239—150

10 CHARLES A. WILLMUTH, *Primary Examiner*.

R. I. SMITH, *Assistant Examiner*.