

May 1, 1934.

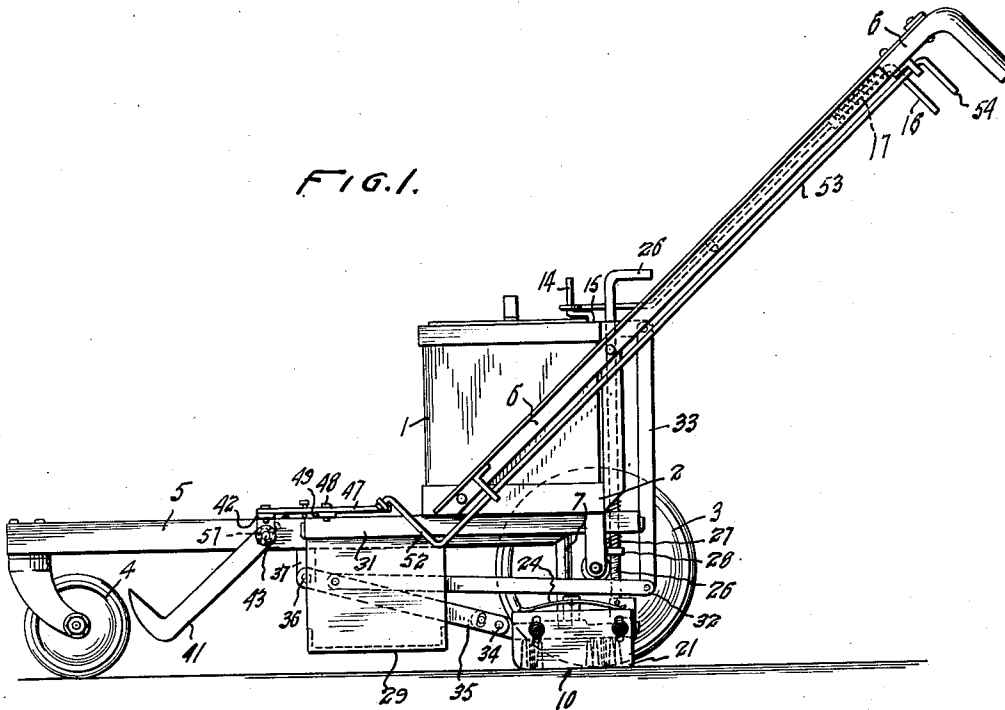
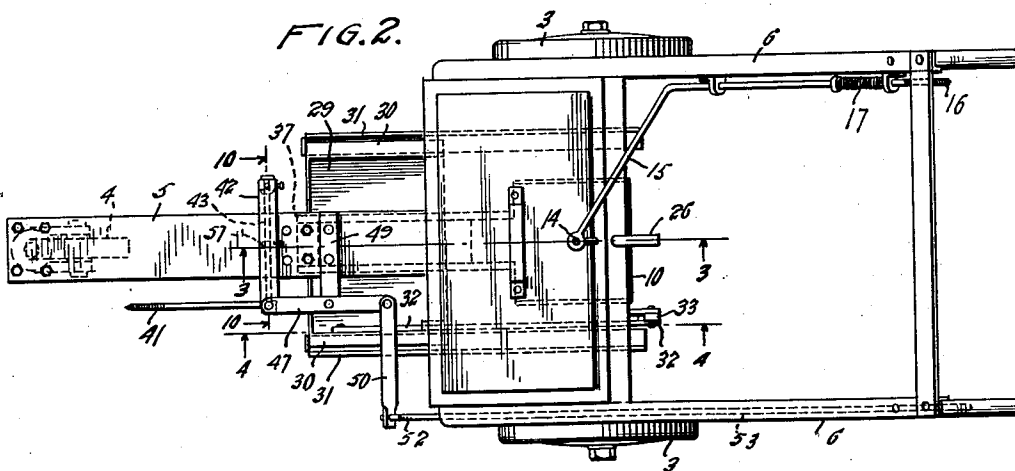
H. B. WENTZ ET AL

1,956,602

TRAFFIC LINE PAINTING MACHINE

Filed June 10, 1931

4 Sheets-Sheet 1



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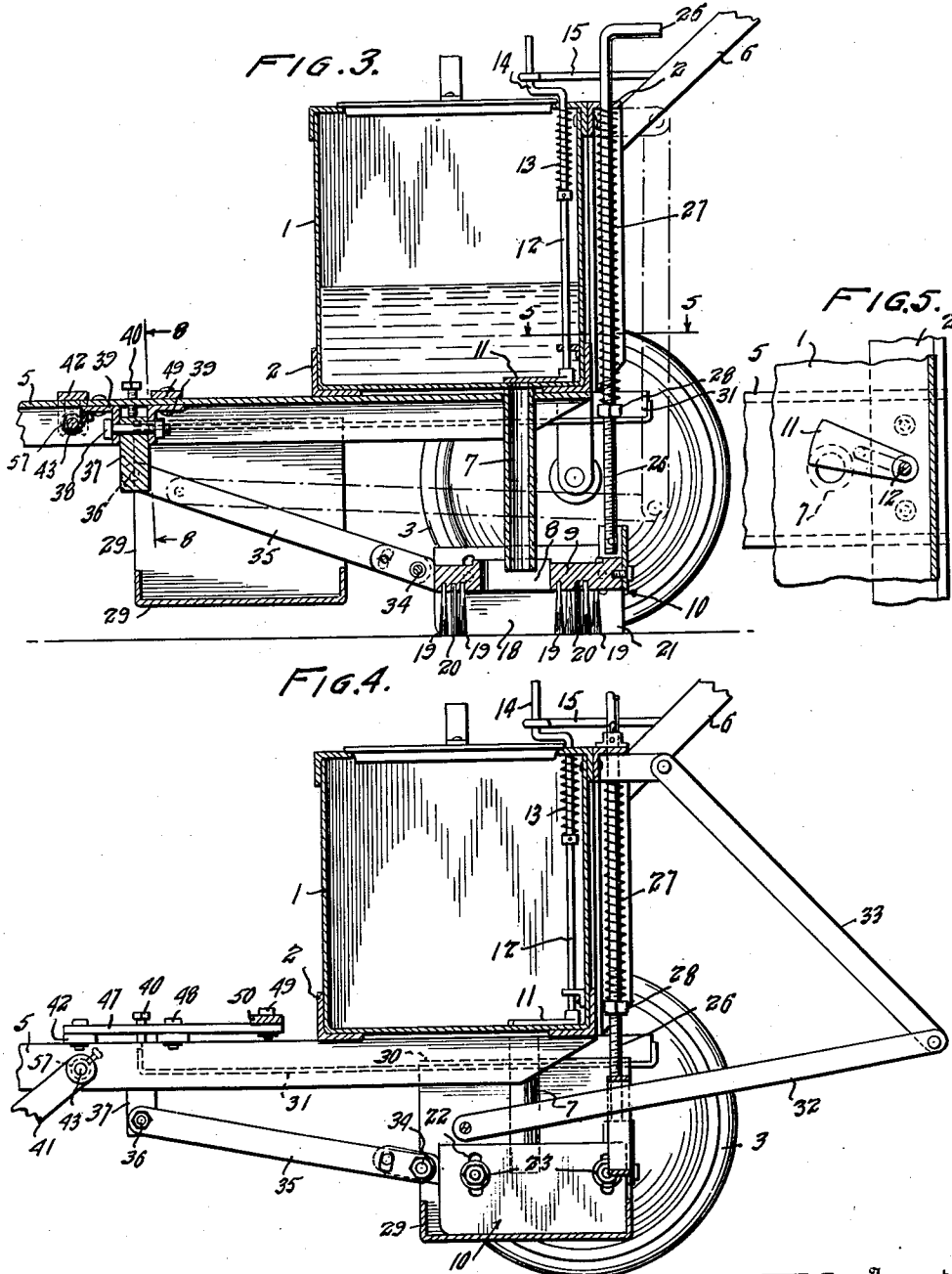
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TRAFFIC LINE PAINTING MACHINE

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4 Sheets-Sheet 2



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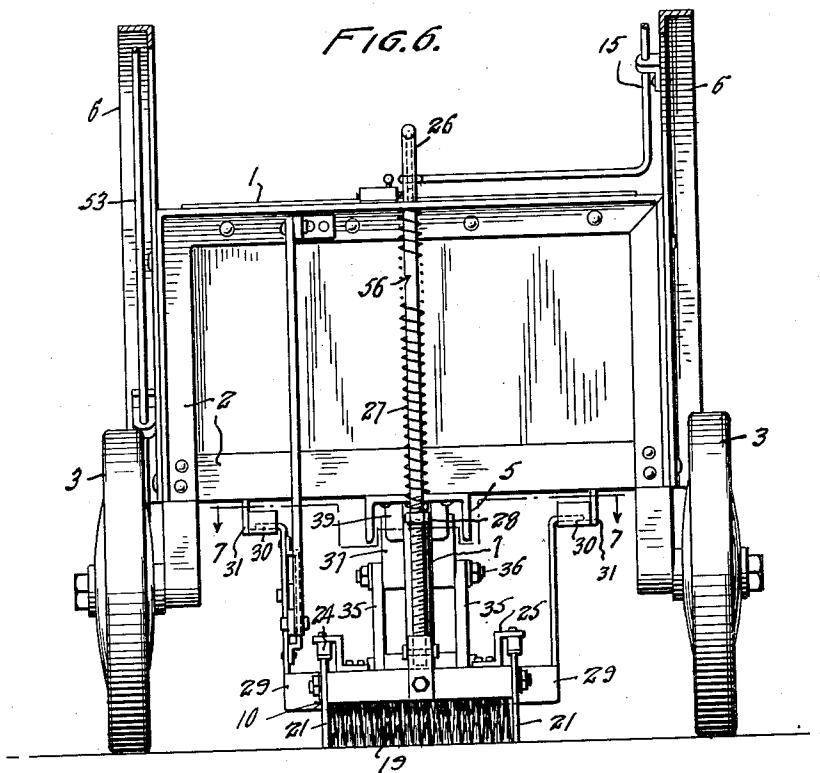
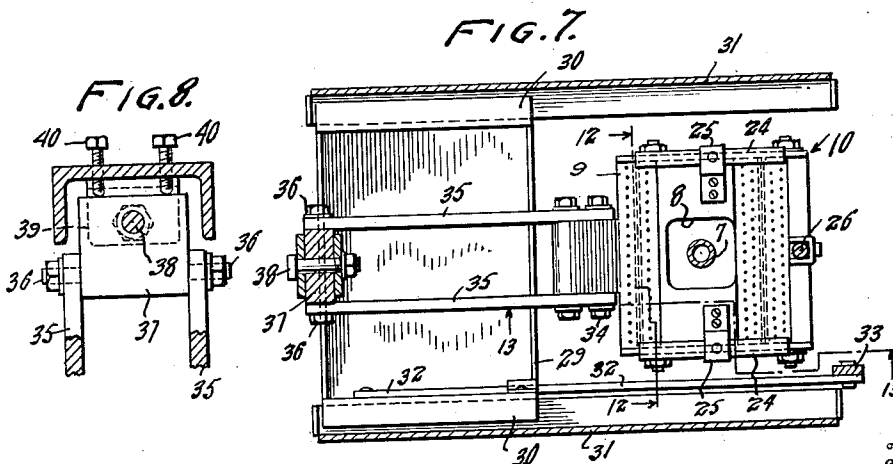
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TRAFFIC LINE PAINTING MACHINE

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4 Sheets-Sheet 3



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FIG. 9.

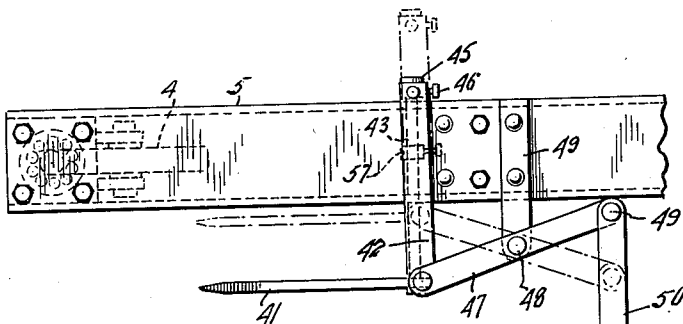
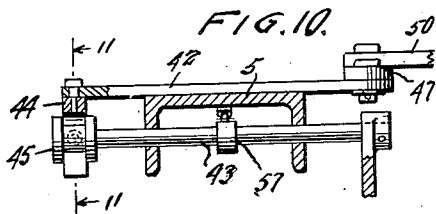
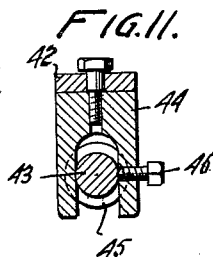


FIG. 12.

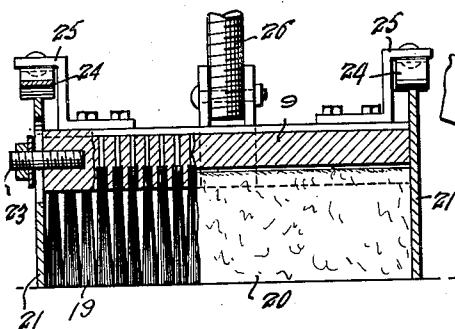


FIG. 13.

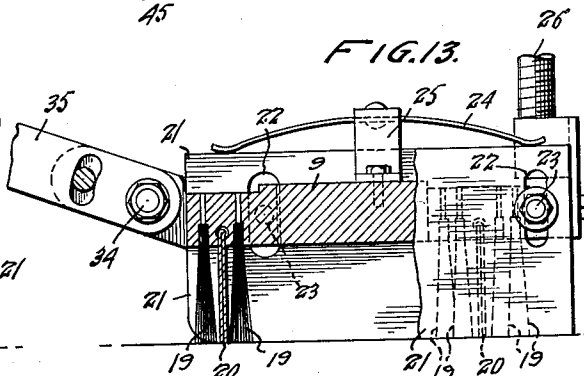
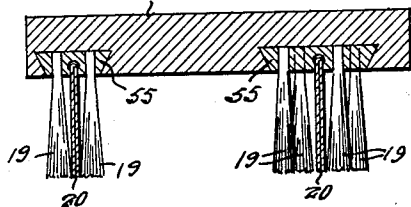


FIG. 14.



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UNITED STATES PATENT OFFICE

1,956,602

TRAFFIC LINE PAINTING MACHINE

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Application June 10, 1931, Serial No. 543,432

12 Claims. (Cl. 91—39)

The object of our invention is to provide an improved machine for painting a traffic line on streets and roadways as a guide to traffic; to provide novel means for manually controlling the discharge of paint; to provide an improved adjustably mounted brush for applying the paint; to provide novel means for aiding the operator in guiding the machine along a previously made line or curve or tangent; to provide means for preventing dropping of paint and for preserving brushes when the paint machine is not actually operating; to provide a machine of different shape and of relatively low height to permit of viewing a guide pointer over the paint containing body of the machine; and to provide the novel combination and arrangement of parts disclosed in the accompanying drawings and hereinafter described and claimed.

We attain these and other objects of our invention by the mechanism illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of the invention;
Figure 2 is a top plan view of same;

Figure 3 is a longitudinal vertical section on line 3—3 of Figure 2;

Figure 4 is a longitudinal vertical section on line 4—4 of Figure 2;

Fig. 5 is a detail horizontal section on line 5—5 of Fig. 3;

Fig. 6 is a rear elevation of the machine, a portion of the handle bars being broken away for lack of room to illustrate them;

Fig. 7 is a horizontal section on line 7—7 of Fig. 6;

Fig. 8 is a detail vertical sectional view on line 8—8 of Fig. 3;

Fig. 9 is a fragmental plan view of the pointer mechanism, one extreme operative position being shown in full lines and the other extreme operative position being shown in dotted lines;

Fig. 10 is a detail vertical section of a portion of the pointer operating mechanism on line 10—10 of Fig. 2;

Fig. 11 is a detail sectional view on line 11—11 of Fig. 10;

Fig. 12 is a detail transverse section of the brush mechanism on line 12—12 of Fig. 7;

Fig. 13 is a detail longitudinal sectional view of the brush mechanism on line 13—13 of Fig. 7; and

Fig. 14 is a detail sectional view of a modified type of brush so constructed that the bristle carrying portions can be readily replaced.

Like numerals designate like parts in each of the several views.

Referring to the accompanying drawings we provide a paint containing body 1 mounted in a suitable frame 2 and supported on rear wheels 3 and a front wheel 4. The front wheel 4 is swivelly mounted in the forward end of a tongue 5 which is affixed to the under side of the paint containing body 1 and which extends well in advance of the paint containing body or box 1, as shown in Figure 1. Attached to the frame 2 and body of the machine are two handle bars 6 by means of which an operator manually pushes the machine. Near the rear center of the bottom of the paint box is a paint discharge pipe 7 through which paint is discharged to the opening 8 in the back 9 of the paint brush mechanism 10, the paint discharge pipe 7 extending through the opening 8 so that the paint will not be scattered over the machine when the wind is blowing. At the top of the discharge pipe 7 is a valve 11 which is pivotally mounted at the rear to swing to a position to either open the upper end of the pipe or close it. This valve 11 is controlled by a vertical rod 12 and the valve is normally held in a closed position by the spring 13, as shown in Fig. 3. The rod 12 has an L-shaped upper end 14 extending forward and to which is connected a rod 15 attached to the right handle of the machine and terminating in a handle bar 16 and controlled by a spring 17 which with spring 13 tends to hold the valve in a normally closed position.

The paint spreader 10 is of novel construction and consists of the apertured back 9 which has two sets of brushes extending transversely across the front and transversely across the back of the spreader in substantially spaced relation so that the paint may flow into the chamber 18 between the sets of brush elements. Each set of brush elements comprises spaced rows of bristles 19 and an intervening strip of folded asbestos sheet or other material 20 which is folded into a close U-shape, as shown in Fig. 3. Mounted on each of the sides of the brush back are two metal strips 21, as shown in Figs. 6, 12 and 13. These strips are provided with vertical slots 22 through which the bolts 23 extend to loosely attach the strips to the backing member 9 and to permit of a free vertical movement of the strips as the machine moves along the roadway. We provide leaf springs 24 mounted by means of a bracket 25 on the brush back 9 and having the free ends of the leaf spring resiliently engaging the upper edge of the metal strips 21, as shown in Figs. 12 and 13. Thus there is provided the enclosed spaces 18 within which the paint

flows onto the roadway to paint the desired traffic line.

The paint spreader 10 as a whole can be raised or lowered by the handle bar 26 which extends upward at the back of the paint box 1, as shown in Fig. 3, and which is provided with a coil spring 27 contacting at its upper end with the frame member 2 and at its lower end with a nut 28 adjustably mounted on the screw-threaded lower end of the handle bar 26 to permit of adjustment of the tension of the spring. The lower end of handle bar 26 is suitably fastened to the rear portion of the back 9 of the paint spreader mechanism 10 for raising and lowering same. The purpose of raising the paint spreader as a whole by the handle 26 is to permit of sliding under the brush a metal pan 29 which is provided with laterally flanged sides, the flanges 30 of which, as shown in Figs. 6 and 7, are slidably mounted on the angle bar tracks 31. This pan prevents dripping of the paint and preserves brushes when the machine is not in actual operation or is being moved from one place to another. The pan 29 is operated by means of the pivoted bars 32 and 33, the bar 33 extending vertically within convenient grasp of the operator, as indicated in dotted lines in Fig. 3, and shown in full lines in Fig. 4.

The forward edge of the brush back 9 is pivotally connected at 34 to the bars 35, as shown in Figs. 7 and 13, which bars slant upwardly toward the tongue of the machine and are pivotally attached at 36 to a block 37, the block 37 in turn being pivotally connected by a bolt 38 to depending members 39 which are affixed to the under side of the tongue 5 of the machine, as shown in Fig. 3. The block 37 is adjustably regulated by the spaced set screws 40, as shown in Figs. 3 and 8. The purpose of this mechanism is to permit of adjusting the relative position of the bars 35 and consequently the brush back 9, so that as either side of the brushes becomes more worn than the rest of the brush the brush may be tiltably adjusted to compensate for the wear of the brush, thereby increasing the life and usefulness of the brush by the simple expedient of adjusting it to keep it in contact with the surface of the roadway.

An important new feature of the machine is the hook like guide pointer 41 positioned in front of the machine at a point where it is visible to the operator from his normal position at the handle bars looking over the top of paint box 1. This guide pointer 41 extends slantingly forward at an angle of 45 degrees or less from the horizontal, and the operator watches it to guide the machine the machine being operated so that the pointer will follow a chalk line which has been made along the center of the roadway by a separate machine to guide the operator who does the painting of the large painted traffic line with this machine. This guide pointer 41 is laterally movable at the will of the operator, this movement being for the purpose of accurately guiding the machine in following a curve in the direction of travel to be taken by the machine where the roadway curves or winds. The pointer is spaced substantially above the roadbed itself and is suspended at its upper end by the bars 42 and 43, these bars being connected at their ends by the end member 44 which is bifurcated and which engages a grooved collar 45 on bar 43, being fastened thereto by a suitable set screw 46. I also provide a suitable adjustable collar 57 on bar 43, as shown in Fig. 10. The end member

44 may be integral with member 42 (in which case a loose connection will be necessary) or may be a separate element pivoted thereto, as shown in Fig. 11. The bar 42 is pivotally attached to a bar 47 which is pivotally mounted at 48 to a bar 49 attached to the top of the tongue 5 of the machine, as shown in Fig. 9. Bar 47 in turn is pivotally attached at 49 to a laterally extending bar 50 which has its outer end 51 twisted to about a 45 degree angle and is apertured to be engaged by the L-shaped end 52 of rod 53 which terminates at handle 54. In Fig. 9 the extreme outer position of the pointer and the relative position of the operatively connected parts are shown in full lines; while the innermost position of the pointer 41 and the relative position of the operatively connected parts when the pointer is in that position are shown in dotted lines.

Referring to Fig. 14 there is illustrated a modified form of brush having a backing 9 provided with transverse dovetail recesses in which are removably mounted the dovetail inner brush and box 55 in which the rows of bristles and asbestos strip are mounted, the object of this construction being to permit of convenience in replacement of the bristles and fabric when worn without having to have the entire paint spreader removed.

In operating the machine the operator pushes the machine along by means of the handle bars 6, at the same time watching the guide pointer 41 and following the line which has previously been made along the center of the roadway. When a curve in the roadway is encountered the guide pointer is shifted laterally toward or away from the tongue 5, the pointer normally keeping a position very close to tongue 5. By operating the handle member 54, the mechanism controlling the guide pointer operates in the manner illustrated in Fig. 9 of the drawings and as heretofore described. The discharge of paint from the paint box 1 is controlled by operating the handle 16 to open valve 11 and release the paint through discharge pipe 7 to the chamber 18 within the paint spreader mechanism 10, the paint being kept from flowing laterally by the resiliently pressed vertically slidable side members 21. The paint discharge pipe 7 is preferable swingably suspended as by a suitable or conventional ball and socket so that when the machine is traveling around an incline the paint pipe can be thrown to the upper side to prevent the paint from all flowing to the lowest side. If discharged at the upper side of the chamber in the paint brush assembly, it will naturally flow to the lower and the brushes will spread it to better advantage. The paint spreader mechanism as a whole may be raised by the handle 26 which is provided with suitable notches 56 to hold it in a desired raised position in which position the pan 29 may be slid under it by grasping the bar 33 and pulling it rearward, thus causing the pan to slide on tracks 31 to a position under the brush to prevent paint from flowing onto the ground or roadway when it is not desired.

If the brush itself becomes worn it may be adjusted by the adjustment of the block 37 by means of the two set screws 40 as heretofore described to keep the ends of the bristles in contact with the roadway if one side of the brush becomes more worn than the other side. The life of the brush is thus increased. It may be observed that the paint spreader or brush assembly has two means of adjustment, namely by screws 40 as above described to adjust the brushes when one side becomes worn; and a second adjustment

which is made by the bolt inserted in the elongated hole located between members 35 and 34 in Fig. 13. This adjustment enables the operator to adjust the front or rear of the brush assembly.

5 Screws 40 adjust only the brushes themselves while the other means of adjustment permits of adjusting the entire paint spreader or brush assembly.

10 It will be noted that the top of the paint box is sufficiently low so that the operator can look over it and see the end of the pointer clearly while he is pushing the machine along the roadway, as this guide pointer 41 is used to guide him in directing the course of the machine, the pointer being kept in line with the chalk line previously made and which the line of painting is to follow.

We prefer to provide paint brushes made of wire. With such brushes hot paint may be used in the machine. When the paint is very cold in the winter it becomes thick. If heated it flows more evenly and puts a thinner coat on the road, making it more lasting and less expensive. By heating tar or asphalt a very cheap paint can be made which can be used with this machine with wire brushes. The hot paint would immediately destroy a bristle brush.

What we claim is:—

1. In a traffic line painting machine, the combination of a paint box, rear wheels, a valve controlled discharge pipe opening out of the paint box, paint spreader mechanism suspended beneath the paint box and into which the paint is delivered, said paint spreader mechanism comprising a brush back, a plurality of transversely arranged rows of bristles at the back and front of the brush and intervening strips of suitable material such as asbestos mounted in the back between the respective rows of bristles, and vertically movable side plates mounted on the sides of the paint spreader to prevent the paint from flowing out laterally.

2. In a traffic line painting machine, the combination of a paint box, a wheeled frame supporting the paint box, handle bars for manually operating the same, manually operated valve mechanism for controlling the discharge of paint, a paint spreader mechanism comprising a plurality of brush elements spaced one forward of the other into which the paint is discharged, means connected with the front portion of the paint spreader mechanism for adjusting the operating level of the brush elements to compensate for wear on the brushes by tilting and spreader mechanism as a whole.

3. In a traffic line painting machine, the combination of a paint containing body, a wheeled frame on which the body is mounted, a spreader suspended beneath the body, means for delivering paint to said paint spreader mechanism, manually operated valve mechanism for controlling the delivery of paint to said spreader mechanism, manually controlled means for elevating the paint spreader mechanism, means pivotally connected with the front portion of the spreader mechanism and with the frame work of the vehicle for adjustably securing the spreader mechanism in a tilted position toward either side of the machine to compensate for wear on one end of the brush.

4. In a spreader mechanism for a painting machine of the type described, the combination of a brush back, spaced transversely arranged depending rows of bristles extending across the front portion of the back, spaced transversely

arranged depending rows of bristles extending across the back portion of the brush, an intervening sheet of asbestos, metal side members loosely mounted on the sides of the spreader to permit of vertical movement, springs engaging the top of said metal plates to resiliently hold same to the road-bed, and means for delivering paint to the desired portion of the spreader.

5. In a paint spreader mechanism for a traffic line painting machine, the combination of a paint spreader mechanism having spaced dovetail recesses extending transversely of the front and of the rear portion of the spreader and dovetail shaped smaller bristle holding members slidably mounted in the back of the spreader, said bristle holding members carrying spaced rows of bristles and an intervening sheet of asbestos or other suitable material.

6. A pavement striper including a wheeled frame, a paint tank supported on the forward end of said frame and having a delivery nozzle, a brush mounted on said frame for movement into and out of pavement engaging position, and a drip pan movable into and out of position beneath the brush upon the latter being out of pavement engaging position.

7. A pavement striper including a wheeled frame, a paint tank supported on the forward end of said frame and having a delivery nozzle, a brush mounted on said frame for movement into and out of pavement engaging position, a drip pan supported from the main frame for horizontal movement into and out of position beneath the brush when raised, and means to move said drip pan.

8. A pavement striper including a wheeled frame, a paint tank supported on the forward end of said frame and having a delivery nozzle, a brush mounted on said frame for movement into and out of pavement engaging position, longitudinally extending drip pan guides suspended from the main frame to the rear of said brush, a drip pan mounted on the guides, and means to reciprocate the drip pan on said guides.

9. In a traffic line painting machine, the combination of a paint box, a frame for same, wheels supporting the paint box, a tongue attached to the under side of the paint box and having a front wheel swivelly mounted to the tongue, a paint spreader mechanism suspended beneath the paint box, means for controlling the discharge of paint to the paint spreader mechanism, manually controlled means for raising the paint spreader mechanism, and a pan slidably mounted under the paint box and adapted to be slid under the paint spreader mechanism when not in use.

10. In a traffic line painting machine, the combination of a paint box, a frame for same, wheels supporting the paint box, a tongue attached to the underside of the paint box and having a front wheel swivelly mounted to the tongue, a paint spreader mechanism suspended beneath the paint box, means for controlling the discharge of paint to the paint spreader mechanism, manually controlled means for raising the paint spreader mechanism, a pan slidably mounted under the paint box and adapted to be slid under the paint spreader mechanism when not in use, and manually operated means for sliding the pan under the spreader mechanism.

11. In a traffic line painting machine, the combination of a paint containing body, a wheeled frame on which the body is mounted, a spreader mechanism suspended beneath the

body, means for delivering paint to said paint spreader mechanism, manually operated valve mechanism for controlling the delivery of paint to said spreader mechanism, manually controlled means for elevating the paint spreader mechanism, a pan slidably mounted on the under side of the body, and manually operated means for sliding the pan under the spreader when the spreader mechanism is in an elevated position. 30

12. In a traffic line painting machine, the combination of a paint containing body, a wheeled frame on which the body is mounted, a spreader suspended beneath the body, means for delivering paint to said spreader mechanism, manually operated valve mechanism for controlling the delivery of paint to said spreader mechanism, manually controlled means for elevating the paint spreader mechanism, a pan slidably mounted on the under side of the body, manually operated means for sliding the pan under the spreader when the spreader mechanism is in an elevated position, means pivotally connected with the front portion of the spreader mechanism and with the frame work of the vehicle for adjustably securing the spreader in a tilted position toward either side of the machine to compensate for wear on one side of the brush. 85

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