

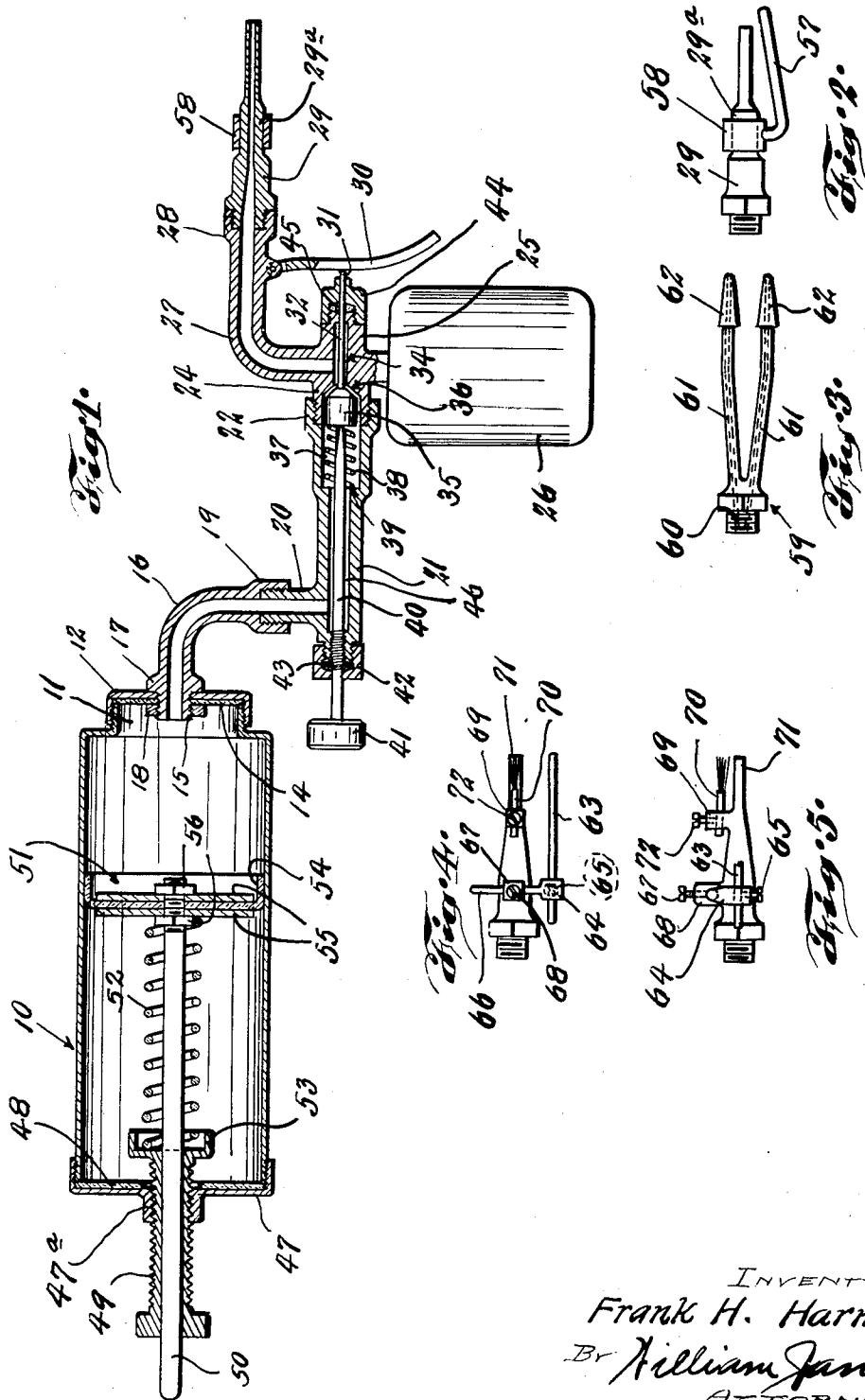
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AUTOMATIC STRIPING MACHINE

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AUTOMATIC STRIPING MACHINE

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This invention relates to new and useful improvements in devices for painting stripes on automobiles, furniture, and the like.

The primary objects of the invention are to provide a striping device which is light in weight and of compact size so that it may be easily manipulated and which is self-contained and does not require hose connections for supplying the paint and/or air and which is of large capacity and can be used continuously for several hours without refilling.

Other objects of the invention are to provide a striping device wherein the valve can be so adjusted as to regulate the flow of paint from the nozzle in larger or smaller quantities or in accordance with the viscosity of the paint or with the speed of the worker.

Further objects of the invention are to provide a striping device having a detachable nozzle whereby various nozzles can be used for different kinds of work.

Still further objects of the invention are to provide a striping device having a paint container provided with a spring-pressed plunger or piston which maintains the paint under constant pressure and causes it to issue from the nozzle upon the actuation of the valve.

Further objects of the invention are to provide a nozzle attachment for the striping device which attachment includes a guide whereby the nozzle can be safely moved along the edge of the work and which attachment also includes a brush removably mounted adjacent to the tip of the nozzle for spreading the paint where comparatively wide stripes are required.

Additional objects of my invention are to provide an attachment for my device having a double nozzle for simultaneously painting two stripes, said nozzle comprising a pair of spaced tubes which are formed flexible so that they can be bent to form stripes closer or farther apart, the discharge ends of the nozzles being formed of steel tips polished to prevent scratching of the surface and hardened so as to maintain said tips in proper condition at all times.

With these and other objects in view, my invention consists in certain novel features of construction and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawing, in which—

Figure 1 is a vertical cross section taken longitudinally through my striping device.

Figure 2 is a top plan view of a detached nozzle designed to be used for edge work.

Figure 3 is a top plan view of an adjustable double nozzle.

Figure 4 is a top plan view of a nozzle equipped with a brush and a guide.

Figure 5 is a side elevational view of same.

Referring by numerals to the accompanying drawing, 10 indicates a paint container, the forward end of which has a tubular extension 11. This extension is threaded and screw-seated thereon is a cap 12. A gasket or washer 14 provides a suitable packing between said cap and said extension. Cap 12 has a central opening through which extends inwardly the threaded end 15 of a tubular connection 16. A shoulder 17 is formed on said connection and bears against the outer side of said cap 12 while a nut 18 is screw-seated on the threaded end 15 and bears against the washer 14 on the inner side of said cap.

This tubular connection 16 is preferably formed angular, the other end 19 being presented downwardly and being internally screw-threaded for receiving the upwardly presented threaded extension 20 of a horizontally disposed member 21. The forward end 22 of member 21 is enlarged and is internally screw-threaded for receiving the threaded end 24 of a valve housing 25. Extending downwardly from said housing and fixed thereto is a handle 26 by means of which the device can be held conveniently in one hand.

A tubular angular extension 27 leads upwardly and then horizontally and forwardly from valve housing 25 and terminates in a threaded end 28 which is adapted detachably to receive a nozzle 29.

A trigger 30 is pivotally mounted on extension 27 and extends downwardly therefrom and forwardly of valve housing 25 and bears against the projecting end 31 of a valve stem 32. The latter is longitudinally disposed in bore 34 of housing 25 and its rear end has fixed thereto a valve 35 which is adapted to be seated against the valve seat 36, formed in said housing 25 and connecting the bore 34 with the enlarged valve chamber 37. A coiled spring 38 has one end bearing against said valve and has its other end bearing against a shoulder 39 formed in member 21. This spring serves to hold said valve to its seat, thereby closing the communication between bore 34 and said valve chamber.

The rear end of member 21 is internally threaded to receive the threaded portion of adjustable stop member 40. The forward end of this member terminates adjacent to the rear end of valve 35 and limits the rearward movement of said

valve. Thus by adjusting said member the extent of unseating movement of the valve and the flow of paint through the device is controlled by the adjustment of said member 40. The rear end of said member extends outwardly and is provided with a knurled knob 41 by means of which said member can be manually operated. The rear end of member 21 is provided with a packing gland 42 and packing 43 which prevents the escape of paint outwardly along member 40. A similar packing gland 44 and packing 45 is provided for the forward end of valve housing 25 to seal the projecting end 31 of the valve stem. The bore 46 in member 21 is of considerably larger diameter than the diameter of member 40 so that the paint can flow freely therethrough toward the valve housing. Normally the valve 35 is seated against seat 36, thereby shutting off the supply of paint. When trigger 30 is pressed inwardly against the valve stem 32, valve 35 is unseated (as shown in Figure 1) so that the paint can flow from the paint container toward the nozzle 29 and as the tip of the nozzle is moved over the surface which is to receive the stripe, said paint is discharged from said nozzle. As soon as the pressure against trigger 30 is removed, spring 38 seats valve 35 and shuts off the flow of paint.

The paint container 10 consists of a cylinder of suitable length and diameter and having its rear end exteriorly threaded to receive a cap 47. A washer 48 is arranged on the inside of said cap and provides a seal for the container when said cap is screwed in position. This cap is provided with a centrally disposed extension 47a which is internally threaded to receive a screw 49. This screw is formed with a longitudinal bore in which slidably operates a piston rod 50. On the inner end of this rod is mounted a piston 51 while the outer end of said rod extends outwardly beyond screw 49. A coiled spring 52 is arranged in container 10 and one end of said spring bears against the piston 51 while the other end bears against a seat 53 formed on the inner end of screw 49. This spring is under tension and its tendency is to press the piston 51 toward the forward end of the container and thereby force the paint outwardly therefrom. The tension of this spring can be regulated by adjusting screw 49 in the cap 47. Thus as the amount of paint in the container is decreased, the tension of the spring can be increased so as to maintain the paint under substantially the same pressure.

The piston 51 is in the form of a leather cup 54, the annular flange of which is presented into the paint chamber. This leather cup is held in position on the rod by washers 55 and nuts 56, the latter being screw-seated on the threaded end of said rod and serve to clamp the leather cup between said metallic washers.

In using the device, the container 10 is first filled with paint. To do this, cap 57 is unscrewed from the container and piston 51 removed therefrom. The container is then filled about three-fourths full with suitable paint and the piston placed in position. The spring 52 is then pressed so as to permit the cap 47 to be screwed in position on said container. Thus the paint in the container is placed under pressure by the compressed spring and this pressure is sufficient to force the paint outwardly through the nozzle 29 when valve 35 is opened by the actuation of trigger 30. As the piston 51 moves forwardly, due to the diminution of the paint in the container, screw 49 can be adjusted to move seat 53 in-

wardly and thereby maintain the spring under the desired compression.

In Figure 2 the nozzle 29 is shown in plan view and is shown as being provided with a guide 57 which is arranged adjacent to one side of nozzle 29 and projects forwardly a suitable distance beyond the same. The rear end of this guide is provided with a sleeve 58 which is non-circular in cross section and is slipped over a similarly shaped portion 29a of said nozzle.

In Figure 3 is shown a nozzle 59 which is designed to be used for forming double stripes. As shown, this nozzle consists of a threaded portion 60 from which extend forwardly two tubular members 61 which are spaced from each other. These members are preferably formed of copper and can be bent toward or away from each other so as to form stripes closer or farther apart. The ends of these tubular members are provided with steel tips 62 having rounded discharge ends. The purpose of these tips is to provide smooth tips to operate over the surface on which the stripes are to be formed, thereby eliminating all danger of scratching the surface. Also the tips being formed of steel they are not subject to wear or distortion and consequently the discharge ends are not burred or bent out of shape as would happen in cases where copper tips were used.

The nozzle shown in Figures 4 and 5 is provided with a guide 63 which is adjustably mounted in a carrying member 64 so that said guide can be adjusted longitudinally of the nozzle. A set screw 65 is used to secure the guide in adjusted position. This carrying member is provided with a lateral portion 66 which is slidably arranged in an extension 67 formed integral with and projecting outwardly from said nozzle. By adjusting shank portion 66 in block 67, guide 63 can be adjusted laterally of said nozzle. A set screw 68 is used to retain the shank 66 in adjusted position. The forward end of the nozzle is provided with an outward extension 69 in which is adjustably mounted a brush 70. This brush is disposed above the tip 71 and when the device is in operation said brush is disposed rearwardly of said tip and bears against the surface, thereby spreading the paint thereover. This brush is adjustable longitudinally of the tip so that greater or lesser spread of the paint can be obtained. A set screw 72 is used to secure the brush in adjusted position.

The paint container 10 has both heads 12 and 47 removable so that said container can be readily cleaned out. The leather cup 51 is presented toward the forward end of the container, thereby causing the annular flange of said cup to expand and form a seat with the cylinder or container 10 so that the paint cannot escape to the rear of the piston.

My striping machine is self-contained and does not require separate paint container and/or compressed air tank. It has simple and accurate control and can be adjusted to regulate the flow of paint to suit the conditions.

I claim:

1. A striping machine comprising in combination, a paint container, a tubular connection secured to and leading from the forward end thereof and supporting said container, a nozzle detachably secured to the outer end of said tubular connection, a valve in said tubular connection, a valve stem extending from said valve and projecting outwardly from said tubular connection, a trigger engaging the projecting end of said stem

and manually operable to unseat said valve and permit flow of paint through said nozzle, an adjusting member in said tubular connection for regulating the extent of the opening movement of said valve, and a spring-pressed piston in said container for forcing the paint toward the forward end thereof.

2. A striping machine comprising in combination, a portable paint container, a rigid tubular connection leading from the forward end thereof, a nozzle secured to the outer end of said tubular connection, a valve in said tubular connection, a coiled spring in said tubular connection for holding said valve in closed position, a stem fixed to said valve and extending therefrom outwardly from said tubular connection, a manually operable trigger engaging the projecting end of said stem and operable to open said valve, an adjusting member in said tubular connection forming a stop for said valve, said member being adjustable to regulate the extent of opening movement thereof, and a spring-pressed piston arranged in said container for placing the paint contained therein under pressure.

3. In a striping device of the class described, a discharge nozzle for the purpose set forth having one end adapted to be detachably secured to a paint delivery connection and having its opposite end terminating in two tubular extensions, and a discharge tip of steel secured to the outer end of each tubular extension, said tubular extensions being formed of ductile material bendable to bring said discharge tips closer or farther apart and space the stripes accordingly.

4. In a striping device, the combination with a paint delivery connection, of a discharge nozzle secured thereto and terminating in two tubular extensions of ductile metal whereby said extensions can be adjusted laterally relatively to each other to space the stripes accordingly, and a tip of hard material secured to the outer end of each extension member to provide rounded smooth discharge ends for operating upon the surface to be painted.

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