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STRIPING TOOL

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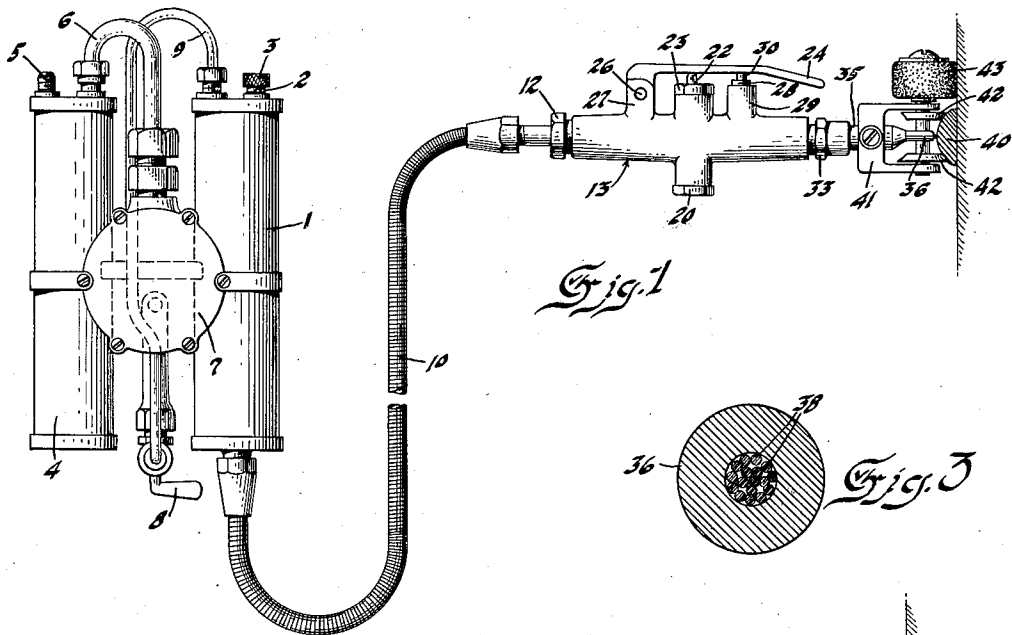


Fig. 1

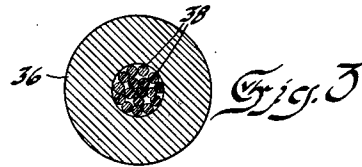


Fig. 3

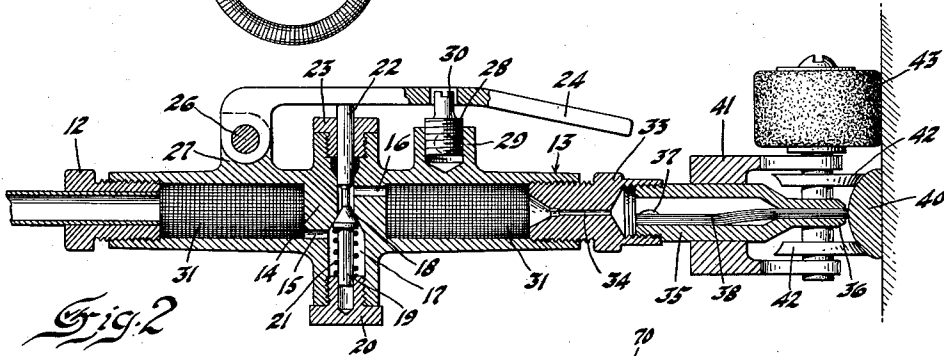


Fig. 2

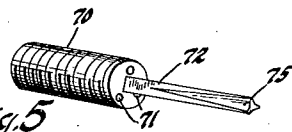


Fig. 5

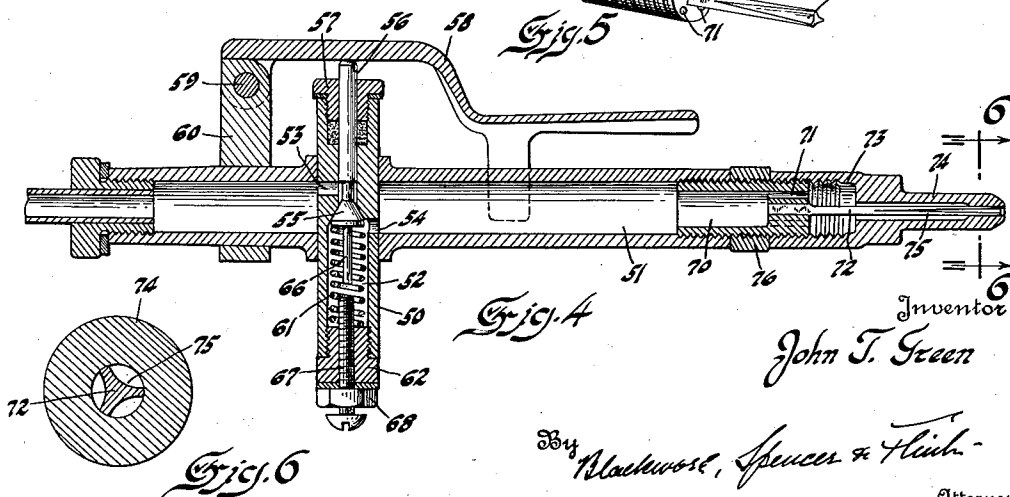


Fig. 4

Fig. 6

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STRIPING TOOL

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2 Claims. (Cl. 299—136)

This invention relates to a portable hand tool for applying ornamental stripes or lines on certain objects such as painted automobile bodies, and contemplates particularly a device for striping "Duco" on "Ducoed" surfaces.

After automobile bodies, articles of furniture and the like are painted, it is sometimes the custom to add thin stripes of a different color for the purpose of contrast and to enhance the decorative appearance of the job. For this work highly skilled artisans, who command high remuneration and who are difficult to control as workmen have been employed to apply striping with a hand brush.

It is one of the objects of the present invention to provide a simple and inexpensive tool which, in the hands of the average person using ordinary care may be manipulated to lay down a smooth and uniform line in less time than it takes to paint the line with a hand brush. Obviously the displacement of the hand brush and skilled labor effects a material saving in cost.

Another object of the invention is to provide a device in which the supply of striping fluid is placed under a constant pressure and is discharged under manual control of the operator at a uniform rate of flow.

A further object is to provide an interchangeable part having a restricted opening of predetermined size to definitely govern the rate of flow in accordance with the conditions of use and the peculiar properties of the particular type of striping fluid to be used, it being understood that the various colors and kinds of striping fluids have different characteristics in regard to density, consistency and the like.

As an additional and important object the invention aims to provide an improved type of applying nozzle for contact with the work to lay down a stripe and which has one or more feed wires or pins projecting through the bore thereof to multi-perforate the passageway or subdivide it into a number of small spaces through which the fluid passes to afford a more positive control of the material discharged through the nozzle, or in other words to insure equal distribution of the fluid in the passageway and prevent the material flowing too freely or gushing out of the nozzle, whereby a given amount of liquid for a given width of surface to be covered is properly spread over the surface so as to result in a flat smooth line. This improved type of nozzle possesses the additional advantage of being usable on all surfaces regardless of the plane in

which they lie or whether they are of flat or curved contour.

Various other objects and advantages will be apparent from the following specification taken in connection with the accompanying drawing in which—

Fig. 1 is a plan view of the apparatus constituting the present invention.

Fig. 2 is a longitudinal sectional view of the stripe applying instrument.

Fig. 3 is an enlarged transverse section of the nozzle tip.

Fig. 4 is a longitudinal sectional view of an alternate type of striping tool.

Fig. 5 is a detail perspective view of the feed device shown in Fig. 4.

Fig. 6 is an enlarged transverse sectional view taken on line 6—6 of Fig. 4.

Referring by reference characters to the accompanying drawing the paint supply unit consists of a paint container or tank 1, having a filler spout 2 closed by a cap 3, and a tank 4 for air or other suitable fluid under pressure, having a filler spout 5 for detachable connection with a pressure pump or other suitable source of the air under pressure. The two tanks are connected with each other through the conduit or pipe 6, pressure regulating device 7 having a manually controlled valve 8, and the conduit or pipe 9 to permit the air under pressure to act on the paint in the tank 1 to discharge the same. The pressure regulator may be of any suitable construction and if desired may be of the diaphragm type, in which a valve is automatically opened or closed when the pressure on the paint in tank 1 falls below or reaches a predetermined value. This arrangement, which is described more specifically in my pending application S. N. 310,869, results in the imposition of a constant pressure on the paint at all times.

The striping fluid discharged from the tank 1 under a constant pressure, flows through the flexible conduit 10 connected at its end by a fitting 12 with a barrel 13 of the stripe applying instrument. The barrel is provided intermediate its ends with a wall 14, having passageways 15 and 16 connected with a transverse passageway 17, in which is formed a conical seat for the valve head 18, having the oppositely projecting stems 19 and 22. The stem 19 has a bearing in the plug 20 and a coil spring 21 surrounding the stem bears at opposite ends against the plug 20 and valve head 18 to urge the valve against its seat. The valve stem 22 projects through the packing nut 23 and into contact with the hand lever 24 pivoted

on the pin 26 between a pair of ears or lugs 27 formed integral with the barrel. A set screw 28 adjustably threaded in the boss 29, integral with the barrel, has a stem or reduced portion 30 projecting through an opening in the lever 24 to provide a stop shoulder for the lever, the end of the stem having a transverse groove to facilitate adjustment of the screw by engagement therewith of a suitable tool. In each end of the passageway through the barrel and on opposite sides of the intermediate wall is positioned a perforate cylinder or roll 31, preferably formed by rolling upon itself a sheet of fine mesh screen, which is intended to break up or check the velocity of the fluid flow through the barrel. In the forward end of the barrel is screw-threaded a replaceable fitting 33, having a restricted passageway or bore 34 of predetermined diameter. This coupling controls the amount of fluid allowed to pass through the tool and the size of the restriction is predetermined in accordance with the character of striping fluid employed and the width of the line to be laid down. By providing a number of interchangeable fittings, each with a different size bore, the requisites and conditions of use for any particular job can be met. Threaded on the end of the fitting 33 is a nozzle 35 having a tip 36 of reduced diameter, and fastened in the nozzle, as by means of solder, as indicated at 37, are a series of fine steel wires 38, which project through the reduced tip portion 36 and preferably though not necessarily to a point slightly beyond the end thereof. These wires 38 serve to divide the bore of the passageway into a number of small spaces to equally distribute the fluid flow throughout the bore of the nozzle tip and insure the marking of a uniform flat line. The fluid feeds along and between the wires and the frictional resistance offered to the flow serves in a measure to prevent the fluid gushing out of the discharge nozzle and forming blotches or smears.

In order to accurately guide the nozzle along the work which, in the present instance, is shown as a curved molding strip 40, positioned in a vertical plane, there may be provided a carrier or fixture 41 adjustably secured on the nozzle and carrying a shaft on which are mounted guide wheels 42 for contact with the molding strip and a roller 43 for contact with the body adjacent the molding strip. Other forms of guiding means may be employed depending on the character and nature of the work to be striped.

In the alternate form illustrated in Fig. 4 a valve housing 50 projects through openings in opposite sides of the barrel 51 and is provided with a vertical bore 52 connected by the lateral ports 53 and 54 opening into the passageway in the barrel 51 on opposite sides of the casing 50. A valve head 55 having a seat in the bore 52 intermediate the ports 53 and 54, controls fluid flow through the barrel and is provided with a stem 56 extending to the outside of the casing through the packing nut 57 for engagement by the hand

lever 58, pivoted at 59 to the lug 60. A coil spring 61 interposed between the valve head 55 and the plug 62 tends to hold the valve on its seat and the stem 66 depending from the valve head is adapted for contact with the set screw 67, adjustably threaded in the plug 62 and held in adjusted position by the lock nut 68 to control the extent of valve opening. Screw threaded in the front end of the barrel 51 is a replaceable member 70 counterbored in one end, and having one or more restricted openings 71 of a given size through the end wall thereof, for definitely controlling, according to a predetermined schedule, the amount or volume of fluid allowed to pass through the barrel. A forwardly projecting feed pin 72 is carried by and has a pressed fit in the end wall of the member 70 and extends through the nozzle 73, adjustably screw threaded on the member 70, to a point adjacent the end of the tip 74. The opening in the end of the tip is of reduced diameter and the pin 72 has a close fit therein, but is provided with a series of axial grooves 75 which extend into the portion of the bore that is of larger diameter, and in this fashion divide the bore at the tip into a series of small passages to prevent gushing, and to evenly distribute the striping fluid. Adjustment of the nozzle 73 relative to the member 70 moves the pin into or out of the bore to permit these parts to be brought to proper position for the discharge of the fluid onto the surface to be covered and after adjustment is made, the parts are held in proper position by means of the lock nut 76.

In using the apparatus, the operator carries the supply unit in one hand and the barrel in the other hand, holding the nozzle firmly against the work and drawing it along the surface to be covered, at the same time depressing with his finger, the valve lever to open the valve and permit discharge of the striping fluid.

I claim:

1. A nozzle tip for ornamental stripe applying tools adapted for contact with a working surface and provided with a bore therethrough for the passage of striping fluid, and a pin fitting the bore and extending to adjacent the end of the tip, and having adjacent the tip a series of axially extending peripheral grooves that divide the bore at the work contacting end of the tip into a series of fluid passages.

2. A nozzle for ornamental stripe applying tools adapted for contact with the work and provided with a bore therethrough, which is of reduced diameter at the tip of the nozzle, and a pin extending axially through the bore to a point adjacent its end and closely fitting in the reduced portion of the bore and having peripheral grooves therein extending axially from its end within the reduced portion of the bore into the portion of the bore of larger diameter to provide a series of fluid passages in the work contacting tip of the nozzle.

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