June 9, 1936. A. F. HULSE 2,043,377

STRIPING MACHINE

Filed Nov. 29, 1935

Fig. 1

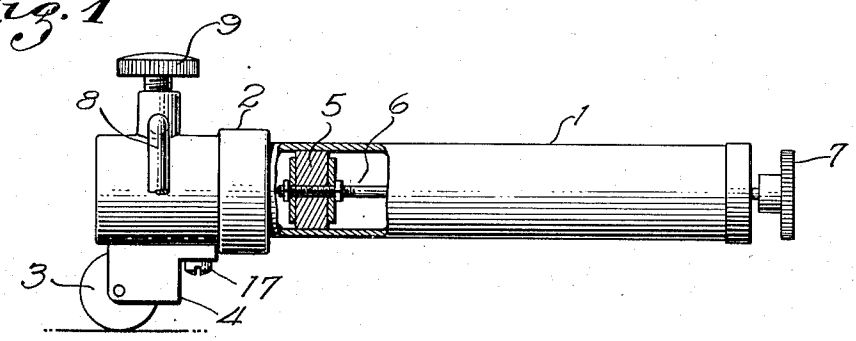


Fig. 2

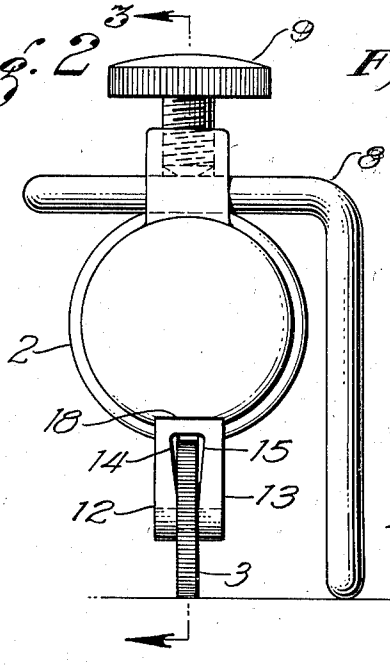


Fig. 3

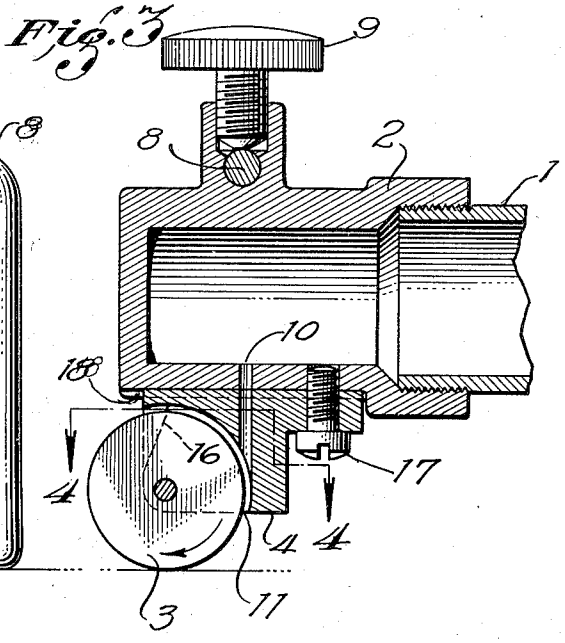
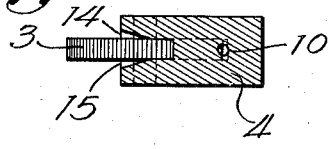


Fig. 4



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STRIPING MACHINE

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3 Claims. (Cl. 91—62.6)

This invention relates to devices used by painters for striping and has for its principal objects to provide, first, a device of that character which is not addicted to dripping; second, a device which will operate satisfactorily in either a horizontal or vertical position; and, third, one which is well constructed, yet simple in design and not excessively costly to manufacture.

The device of the present invention is of the type comprising a paint reservoir and a striping wheel—means being provided for feeding paint from the reservoir onto the periphery of the striping wheel as needed.

The prior art is replete with devices of that general character, but, in so far as I have been able to ascertain, none of the prior devices is entirely satisfactory in all respects and under all conditions likely to be encountered in practice. Some are deficient in that they are apt to drip paint and others are incapable of entirely satisfactory performance when held in a vertical position, as for example, when working on ceilings. The device of the present invention is characterized by certain novel features, hereinafter set forth, which obviate the deficiencies above mentioned.

In the drawing which accompanies this specification,

Fig. 1 is a side elevational view of a striping device according to this invention—a portion being in section in order to show the plunger inside the paint reservoir;

Fig. 2 is an enlarged front end view of the device;

Fig. 3 is an enlarged longitudinal sectional view of the front portion of the device; and

Fig. 4 is a detail, in section, taken along the line 4—4 of Fig. 3.

The major components of the device illustrated are: a tubular, cylindrical paint reservoir or barrel 1, a cast metal cap 2 forming an extension of and closure for the front end of the reservoir 1, a striping wheel 3 in the form of a steel disc having a knurled periphery, a shoe 4 detachably secured to the cap 2 and functioning as a support for the striping wheel, a reciprocable plunger 5 inside the barrel 1, a plunger rod 6 connected at one end to the plunger 5 and provided at its outer end with a button 7 to facilitate manipulation of the plunger, a gauge or guide bar 8 and a clamping screw 9. The function of the guide bar is well known and requires no explanation here.

In operation, the device may be held by the operator in a horizontal position, as illustrated in Fig. 1, or it may be held vertically or in any intermediate position; and like all devices of its kind it operates by rolling the striping wheel along the surface to be striped—paint in the proper quantity being continuously fed to the peripheral surface of the wheel during its rotation.

The characteristic and novel features of the present device lie in the arrangement for feeding paint from the reservoir to the striping wheel whereby a sufficient but not excessive amount is fed to the wheel continuously, without regard to the position (horizontal or vertical) in which the device is held, for a sufficient period of operation to permit a very long stripe to be made by a single uninterrupted stroke and whereby the possibility of accumulations of superfluous paint gathering on the outside of the device on or adjacent the striping wheel and thence dripping off onto the object being striped is greatly reduced if not entirely eliminated.

The provision for feeding and at the same time restricting the flow of paint to a proper but sufficient quantity during rotation of the striping wheel and simultaneously preventing leakage of paint or flow thereof when the wheel is not in rotation consists, in part, in an elongated and rather narrowly restricted passageway 10, a narrow peripheral clearance 11 between the striping wheel and the shoe 4 at points adjacent and at either side of the discharge end of the passageway 10 and a very close running fit between the flat sides of the striping wheel and the lugs 12 and 13 to either side thereof—which lugs are integral parts of the shoe 4.

Ordinarily, the passageway 10 may be simply a drilled hole about one-sixteenth inch in diameter and the clearance 11 may be about one-thirty-secondth inch. The required diameter of the passageway 10 will, of course, be affected by its length and by the viscosity of the paint or other fluid employed, but the dimensions are not extremely critical. They must be such as to prevent flowing of the paint, due to its viscosity, when the wheel is at a standstill and yet not to unduly interfere with its flow when it is supposed to flow. No exact dimensions can be prescribed as to the diameter and length of the passageway 10 and the clearance 11 because these will vary somewhat with the viscosity of the fluid, but for ordinary paint the dimensions given above and the relative proportions shown in the drawing will suffice to enable anyone skilled in the art to

arrive at a suitable design without extensive experimentation.

It will be observed that the passageway **10** intersects the clearance space **11** approximately at a tangent. The striping wheel normally rotates in the direction indicated by an arrow on Fig. 3 and, due to the fact that its knurled periphery is tangential to the direction of flow of paint through the passageway and the further fact that the paint has considerable adhesiveness, it is continuously pulled through the passageway and fed to the wheel, always, in the right amount. Unless the paint is excessively thin it will not run out of its own volition but will be fed out only when the striping wheel is rotated. While it is preferable that the passageway **10** be tangential, or approximately so, to the periphery of the striping wheel, that is not absolutely essential because the device would still work, though not as well, even with the passageway intersecting the clearance space radially. In the latter case the feed would be dependent upon gravity together with force applied by the plunger and would, doubtless, require a rather continuous use of the plunger on long stripes unless the paint were quite thin.

The depth of paint adhering to the periphery of the wheel is, manifestly, determined by the clearance **11** and the size of that clearance is, accordingly, important, not only from the standpoint of preventing leakage of paint, but in limiting the amount of paint applied to the wheel.

Too much paint would likely cause the stripe to be smeared and too little would not make a satisfactory stripe.

Contact pressure between the paint on the peripheral surface of the striping wheel and the object being striped will cause a small amount of paint to flow over onto the sides of the striping wheel at points adjacent the periphery, and since the wheel fits snugly between lugs **12** and **13** this superfluous paint is scraped off by the contacting edges of the lugs and would, in time, accumulate into a drop large enough to drip onto the work, if a suitable counter provision were not made. The counter provision consists in relieving, by chamfering, the edge portions of the lugs adjacent the wheel, as indicated at **14** and **15** in Figs. 2 and 4. By so doing, pockets are formed at either side of the striping wheel serving to retain a considerable accumulation of scraped-off paint, if it should accumulate, and at the same time scraping edges are formed as indicated by the dotted line **16**, in Fig. 3, at such an angle to the circumference of the wheel that a radially acting resultant force is applied to the accumulated scraped-off paint, causing the same to be moved to the peripheral edge where it is drawn into the clearance space **11** and thus back onto the peripheral surface of the wheel.

With a view to facilitating the use of the herein described device on over-head surfaces such as ceilings, where it is most convenient to hold the device in a vertical position, the interior cavity of the cap **2** is made to extend a considerable distance forward of the intake end of passageway **10**. This creates a space above said intake point (it being remembered that the device is being held vertically with the striping wheel upward) sufficient to store enough paint to enable the making of a very long stripe at a single stroke and without moving the plunger upwardly during the operation.

The function of plunger **5**, as will be self-evident, is to force the paint in the reservoir toward the forward end as the charge diminishes and also to forcibly clear the passageway **10** in case it becomes obstructed by congealed paint and to stimulate its flow in event it may not run freely enough because of excessive viscosity. In addition, the plunger is useful for forcing cleaning fluid through the passageway **10**, thus ensuring against accumulations therein of hardened paint which would have to be scraped out.

The shoe **4** may be an integral part of cap **2** but is preferably a separate detachable part—especially where it is desirable to use striping wheels of various widths. In the structure illustrated the cap **2** is slotted longitudinally at **16** to receive the shoe and hold it in alignment and the shoe is secured in place by a single screw **17**.

What is claimed is:

1. A striping device comprising a barrel having an elongated paint-holding reservoir therein, a striping wheel offset from the barrel forming an integral part of said device and mounted near one end of said barrel, and means defining a restricted passageway for paint between said reservoir and the periphery of said wheel, said passageway connecting with said reservoir at a point remote from the end thereof so that there is a very considerable storage space for paint in the reservoir above the inlet to said passageway when said device is held in a vertical position with the striping wheel upward.

2. A striping device comprising a barrel having an elongated paint-holding reservoir, a shoe detachably secured to said barrel at one end thereof and having a pair of lugs, a disc-like striping wheel disposed between said lugs and rotatably supported thereby, there being a close running fit between the sides of said wheel and respectively adjacent sides of said lugs, and a small peripheral clearance between said wheel and said shoe, said reservoir being in communication with the periphery of said wheel through a narrowly restricted passageway connected with said reservoir at a point remote from the end thereof so that there is a very considerable storage space for paint in the reservoir above the inlet to said passageway when said device is held in a vertical position with the striping wheel upward.

3. A striping device comprising a barrel having an elongated paint-holding reservoir therein, a striping wheel forming an integral part of said device and mounted near one end of and at one side of said barrel, said striping wheel projecting beyond the end of said barrel, and means defining a restricted passageway for paint between said reservoir and the periphery of said wheel, said passageway connecting with said reservoir at a point remote from the end thereof so that there is a very considerable storage space for paint in the reservoir above the inlet to said passageway when said device is held in a vertical position with the striping wheel upward.

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