April 5, 1932. J. M. CHRISTMAN 1,851,967

STRIPING INSTRUMENT

Filed Oct. 9, 1928

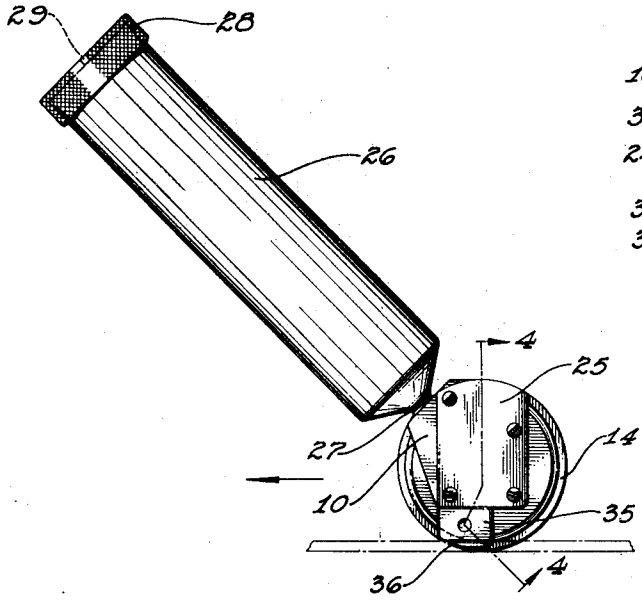

FIG. 1

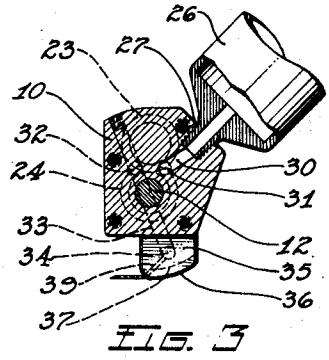

FIG. 3

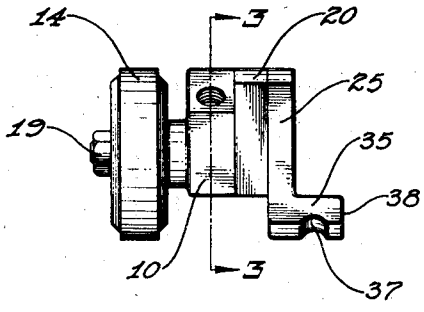

FIG. 2

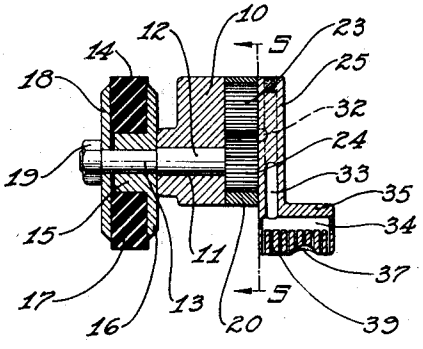

FIG. 4

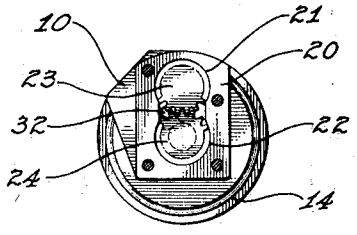

FIG. 5

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UNITED STATES PATENT OFFICE

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STRIPING INSTRUMENT

Application filed October 9, 1928. Serial No. 311,305.

This invention relates to striping instruments and is particularly adapted for use in applying cement.

An object of the invention is to provide an instrument for applying a uniform stripe.

Another object of the invention is to provide an instrument having means for feeding liquid cement or similar liquid material from a container through a nozzle in a uniform flow in direct proportion to the rate of movement of the instrument.

Another object of the invention is to provide an instrument for applying liquid having a roller arranged to support the instrument, to coact with the surface upon which it is desired to apply the liquid and to operate a mechanism for automatically feeding liquid in direct proportion to the rate of movement of the instrument.

A further object of the invention is to provide an instrument for applying liquid having a combined guide engaging member and nozzle.

A further object of the invention is to provide an instrument for applying liquid having a member arranged for coaction with a guiding bead or straight edge and provided with an arcuate face permitting an angular movement of the instrument without disengaging the guide engaging member.

A still further object of the invention is to provide an instrument for applying cement which is highly efficient in operation yet of marked simplicity as a whole and in respect to each of its component parts, so that its manufacture is economically facilitated both as to parts and their assembly.

Other objects of the invention will appear from the following description taken in connection with the drawings, which form a part of this specification, and in which:

Fig. 1 is a side elevation of an instrument embodying the invention;

Fig. 2 is a front elevation with the handle removed;

Fig. 3 is a sectional view substantially on line 3—3 of Fig. 2;

Fig. 4 is a sectional view on line 4—4 of Fig. 1, and

Fig. 5 is a sectional view on line 5—5 of Fig. 4.

Referring by numerals to the drawings, 10 represents the body of the instrument which, as shown, is substantially rectangular in general contour. The body is provided with a transverse bore 11 in which is positioned for rotation a shaft 12. The shaft 12 has a shouldered portion 13 on which is secured a roller 14. This roller comprises a hub 15 having a flange 16 and a disk 17, preferably rubber, secured on the hub by a plate 18 held in position by a nut 19 threaded on the shaft 12.

Mounted on the body portion 10 is a gear pump. As shown, the body portion supports a plate 20 having overlapping transverse bores 21 and 22 in which are positioned intermeshing gears 23 and 24, the gear 24 being formed, keyed or otherwise secured to the shaft 12. The plate 20 is covered by a plate 25 and these plates are secured in position by a plurality of screws which extend through the plates and are threaded into the body portion.

The body portion has mounted thereon a container 26 which, as shown, comprises a hollow cylindrical member threaded into the body portion as indicated at 27 and provided upon its free end with a cap 28 in which is positioned a suitable vent 29. This container serves a twofold function in that it also provides a handle for the instrument. Leading from the lower end of the container is a passage 30 which extends through the body to the intake port 31 of the pump.

The plate 25 covering the plate 20 and the gears positioned therein, has a port 32 forming the outlet port of the pump and a passage 33 leading therefrom to a passage 34 positioned normal thereto in a nozzle 35 shown as formed integral with the plate 25. The nozzle 35 has a curved or arcuate face 36 preferably coinciding substantially with the circumference of the roller 14 and arranged substantially centrally in the face 36 is a groove 37 adaptable for engagement with a bead as shown in Fig. 1, for guiding the instrument, or the side 38 of the nozzle may be engaged with a straight edge for this purpose. Extending from the passage 34 to the rear end

of the nozzle is a plurality of discharge orifices 39 equally spaced with respect to each other and substantially in alinement crosswise of the line of travel of the instrument.

The orifices 39 are of suitable size to deliver liquid in fine streams and are so spaced with respect to each other that the liquid so discharged will, when applied to the work, spread and unite to form a layer of substantial width and uniform thickness. This is particularly desirable where it is the aim to cement one member to another and avoid the use of an excessive quantity of cement and also where it is desired to attain a uniformity in the application of liquids.

The nozzle is an important feature of the invention. Because of the curved or arcuate face 36, the instrument may be rocked slightly as it is moved over the surface without liability of disengaging the nozzle from the guide with which it coacts or without materially changing the relation of the discharge orifices to the work. Thus slight movements of an operator's wrist while manipulating the instrument will not disengage the instrument from the work nor affect the discharge of liquid thereon.

The mode of operation is as follows: Cement is placed in the container 26 and the roller 14 revolved until the gear pump delivers the cement to the nozzle whereupon the instrument is engaged with and moved along the work by engaging the groove 37 with a bead or the side 38 with a straight edge.

With the instrument in this position it is drawn forwardly in the direction indicated by the arrow, shown in Fig. 1, and as it is drawn over the surface the roller 14 revolves and operates the gear pump to withdraw the cement or other liquid from the container 26 through the port 31 and deliver it through the port 32 and passages 33 and 34 to the nozzle 35 from which it is ejected through the orifices 39 at one end of the curved or arcuate face 36 in a uniform flow in direct proportion to the rate of movement of the instrument.

Although this invention has been described in connection with certain specific embodiments, the principles involved are susceptible of numerous other applications which will readily occur to persons skilled in the art. The invention is, therefore, to be limited only as indicated by the scope of the appended claims.

Having thus described the various features of my invention, what I claim as new and desire to secure by Letters Patent is:

1. An instrument comprising a body, a pump mechanism in the body, a roller for operating the pump, a nozzle for the pump having an arcuate work engaging face and a plurality of discharge orifices at one end of the arcuate face, the arcuate face being in a circle, the center of which is in the axis of the roller.

2. An instrument comprising a body, a pump mechanism positioned in the body, a roller for actuating the pump mechanism, a nozzle for the pump, an arcuate work engaging face on the nozzle and a plurality of discharge orifices arranged in spaced relation with respect to each other at one end of the arcuate work engaging face and a circumferential groove in the arcuate work engaging face parallel to the operating roller.

3. A pump mechanism comprising a body portion, a container on the body portion, a pump positioned in the body portion and connected to the container, a roller for operating the pump mechanism, a nozzle for the pump having an arcuate work engaging face and a plurality of discharge orifices, the arcuate work engaging face being positioned in a circle, the center of which is in the axis of the roller, and a circumferential groove in the arcuate face parallel to the roller.

4. An instrument for applying liquid comprising a container, a nozzle adapted to contact the work having unrestricted discharge orifices in the work contacting face thereof equally spaced and substantially in alinement crosswise of the line of travel of the instrument, a gear feeding means for delivering liquid from the container to the orifices of the nozzle, means for operating the gear feeding means and means directly connecting the operating means to the feeding means.

5. An instrument for applying liquid comprising a nozzle having a plurality of unrestricted discharge orifices equally spaced and substantially in alinement, the nozzle being adaptable for movement over and in contact with the work and the orifices being in the work contacting face of the nozzle crosswise of the line of movement of the nozzle and means controlled by movement of the nozzle for delivering liquid through the orifices in accordance with the rate of movement of the nozzle.

6. An instrument for applying liquid comprising a container, a pump mechanism for withdrawing liquid from the container and a discharge nozzle for the pump, an arcuate work engaging face for the nozzle provided with a groove for engaging a guide and a plurality of discharge orifices equally spaced crosswise of the line of movement of the instrument.

7. An instrument for applying liquid comprising a container, a pump mechanism for withdrawing liquid from the container, a roller for operating the pump, a nozzle for the pump and an arcuate work engaging face for the nozzle, the circumference of which is parallel to the periphery of the roller.

8. An instrument for applying liquid comprising a body portion, a pump in the body portion, a liquid container connected to the pump, a roller for operating the pump, a nozzle for the pump having a plurality of discharge orifices arranged substantially in alinement crosswise of the line of movement of the instrument, an arcuate work engaging face on the nozzle, the circumference of the work engaging face being parallel to the periphery of the roller and a groove in the work engaging face adapted to engage a guide.

9. In a liquid dispensing instrument, a body, a pump mechanism in the body, an operating roller for the pump, a nozzle for the pump and an arcuate work engaging face on the nozzle coinciding with the roller circumference and having a plurality of discharge orifices at one end thereof.

In testimony whereof I affix my signature.

JOHN M. CHRISTMAN.