

May 9, 1933.

J. M. CHRISTMAN

1,907,738

STRIPING INSTRUMENT

Filed Nov. 17, 1928

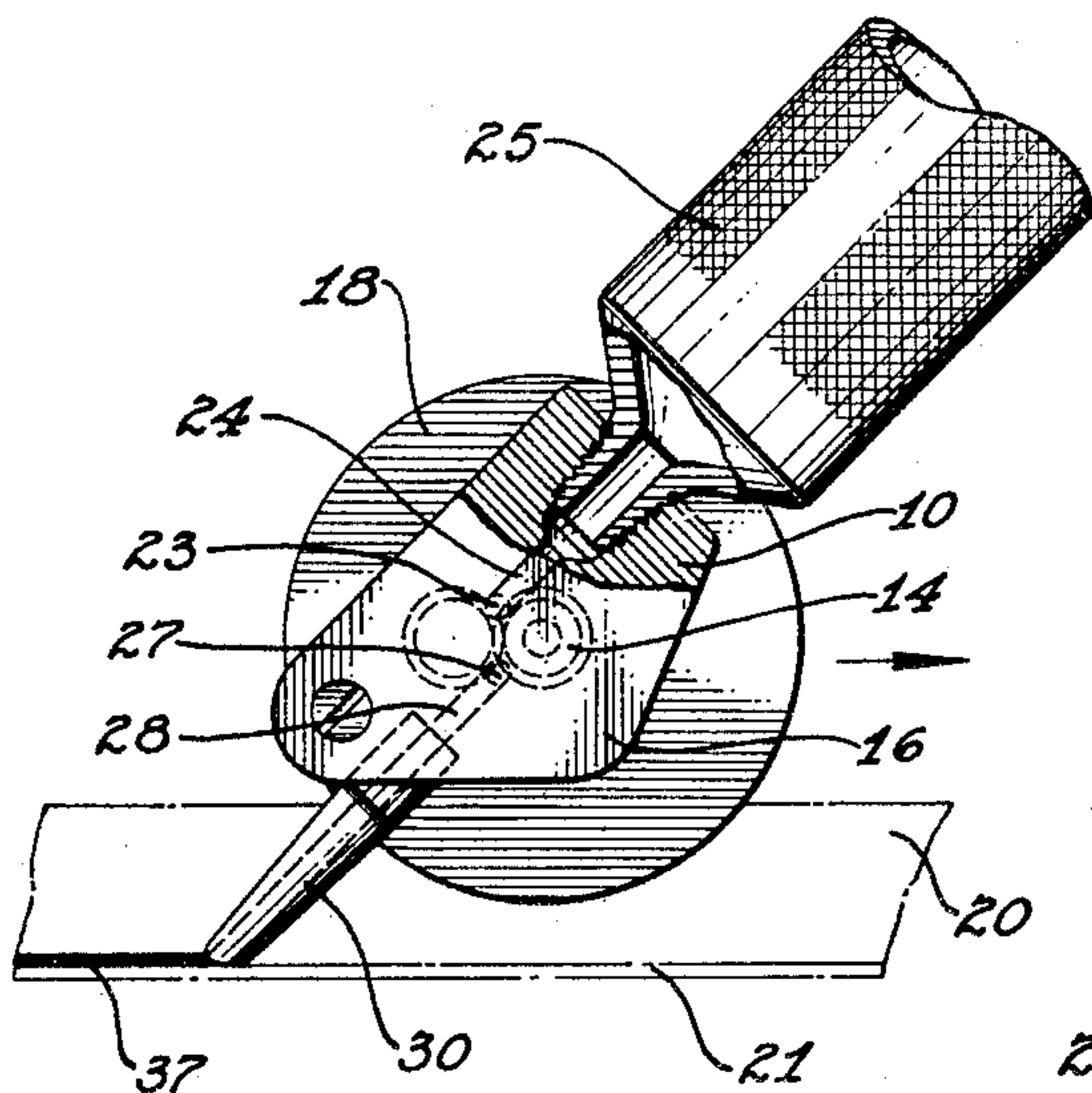


FIG. 1

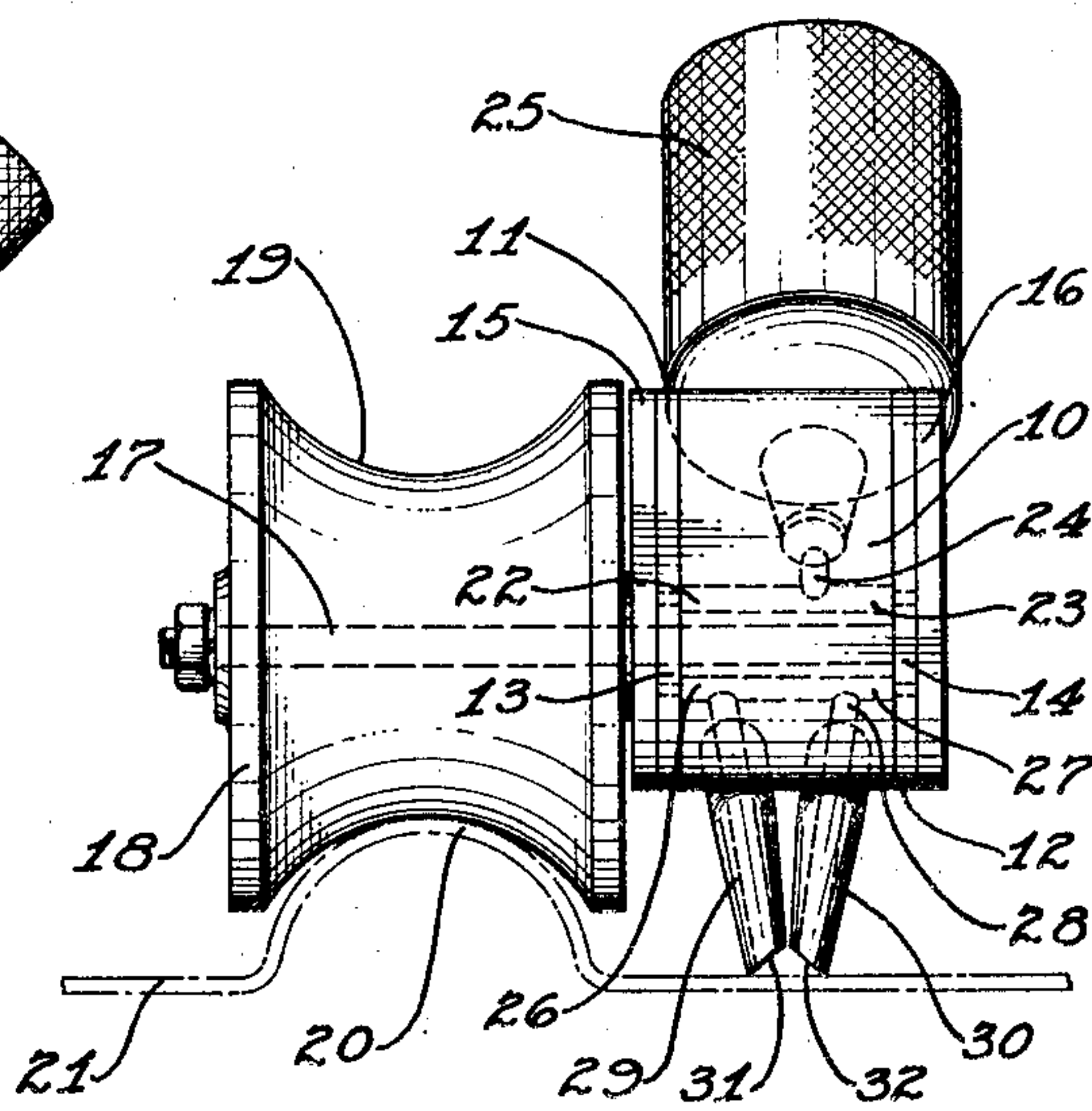


FIG. 2

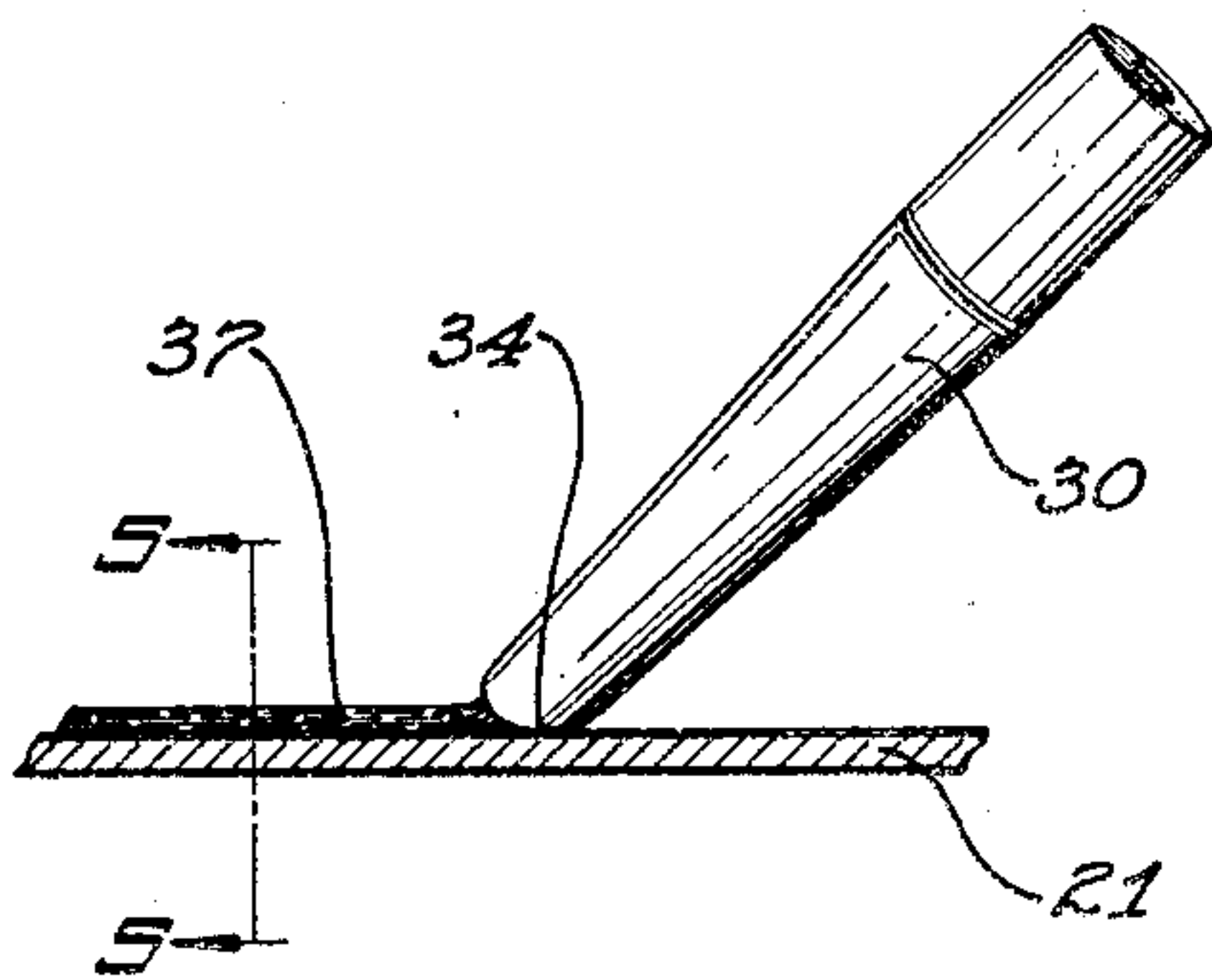


FIG. 3

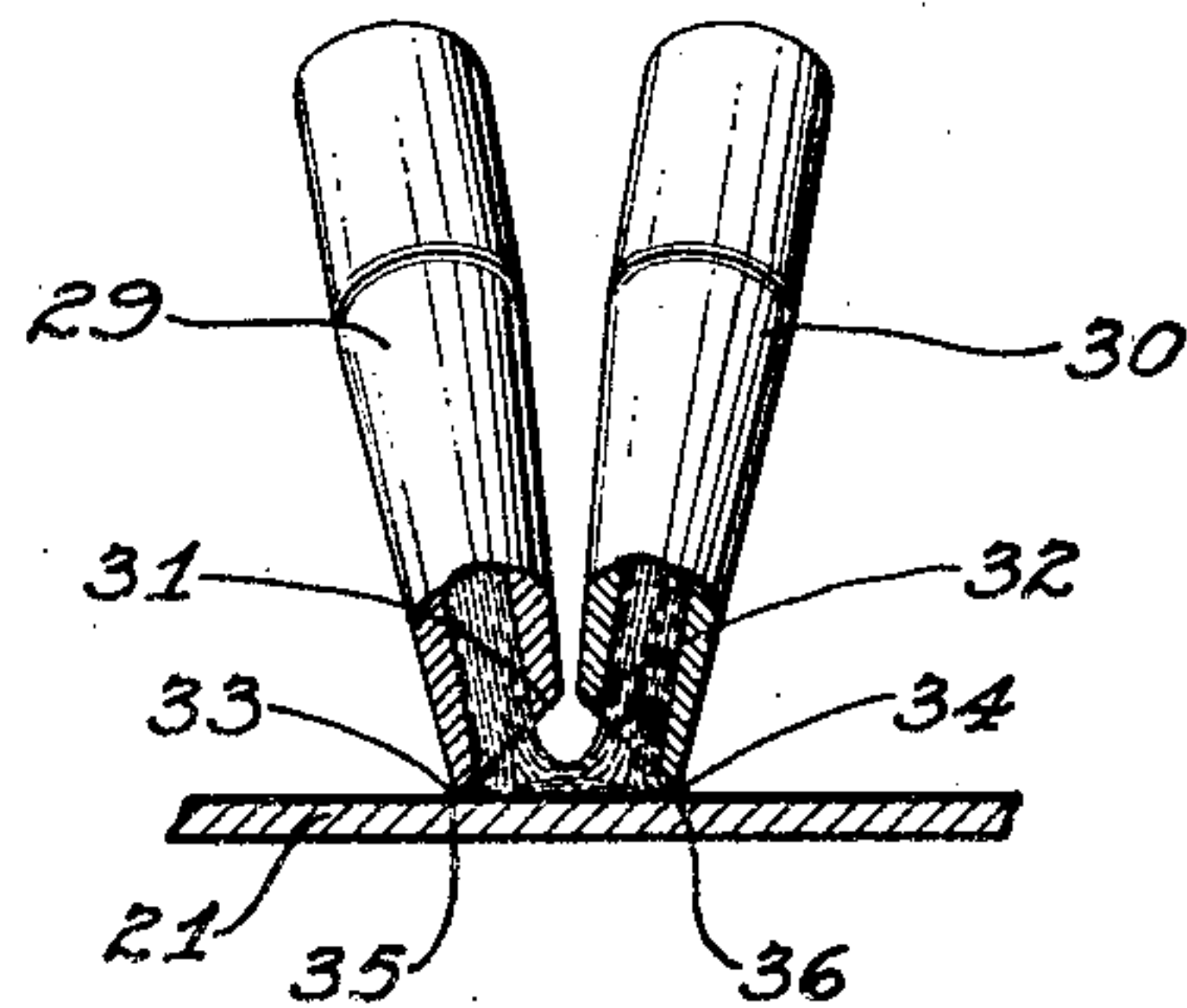


FIG. 4

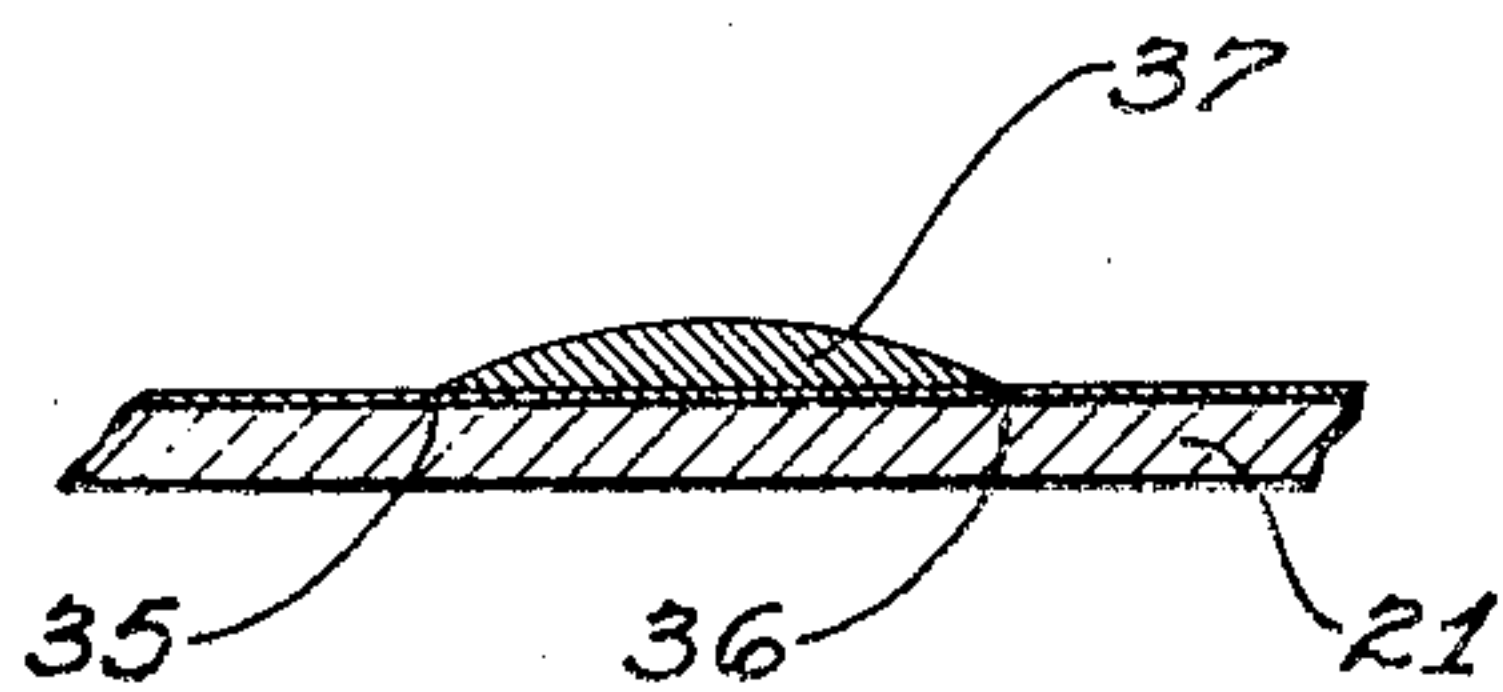


FIG. 5

Inventor

JOHN M. CHRISTMAN.

By *Mullen Tilton*

Attorney



# UNITED STATES PATENT OFFICE

JOHN M. CHRISTMAN, OF DETROIT, MICHIGAN, ASSIGNOR TO PACKARD MOTOR CAR COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN

## STRIPING INSTRUMENT

Application filed November 17, 1928. Serial No. 320,014.

This invention relates to striping instruments and more particularly to nozzles therefor.

Generally, in the art of painting and analogous arts, striping, ruling and similar operations have been performed by the use of various instrumentalities with which the fluid or liquid employed is applied to the surface to be striped or ruled or otherwise marked or ornamented and permitted to spread according to the quantity deposited and the consistency of the material employed. Thus, the boundary or marginal lines of the stripes, markings or other ornamentations are not regularly defined but are dependent to a greater or less extent on the skill of the artist or operator of the particular instrumentality with which the fluid or liquid is applied. Accordingly, the marginal lines are not uniformly straight and evenly spaced but are in many instances slightly wavy and are varying distances apart. It is the aim of the present invention to overcome these objections.

25 An object of the invention is to provide means for defining the marginal lines of a stripe.

Another object of the invention is to provide means for restricting the spread of liquid when applied to a surface.

Another object of the invention is to provide means for applying a relatively thick stripe and restricting the spread thereof.

Another object of the invention is to provide means for applying a stripe of liquid paint or lacquer to a plain, painted or lacquered surface and to provide means for binding the stripe to the surface operated upon.

40 Another object of the invention is to provide means for applying stripes of liquid paint to a surface and controlling the spread thereof within certain predetermined marginal lines.

45 Another object of the invention is to provide cooperative nozzles arranged to distribute or deposit liquid on a surface in a relatively wide stripe and to define and restrict the spread of the liquid.

50 A further object of the invention is to

provide a plurality of cooperative nozzles arranged to deposit a liquid on a surface in the form of a stripe, to mark or define the marginal lines of the stripe and to so deposit the liquid that it will be restricted within the marginal lines. 55

Other objects of the invention will appear from the following description taken in connection with the drawing, which forms a part of this specification, and in which: 60

Fig. 1 is a side elevation of a striping instrument embodying the invention, the handle, which is also the container, being broken away;

Fig. 2 is a rear elevation of the instrument shown in Fig. 1 illustrating the relative position of the nozzles 65

Fig. 3 is an enlarged elevation of one of the nozzles discharging liquid therefrom;

Fig. 4 is a rear elevation of the nozzles partially in section, and 70

Fig. 5 is a cross sectional view substantially on line 5—5 of Fig. 3.

Referring to the drawing for more specific details of the invention, 10 represents the body of the instrument which may be made in any desirable form suitable for supporting pump mechanisms. As shown, the body portion comprises a block having positioned on the respective sides thereof plates 11 and 12 in which are mounted corresponding pump mechanisms 13 and 14 over which are secured cover plates 15 and 16. 80

Positioned for rotation transversely in the body and the plates on one side of the body is a shaft 17 operatively connected to one of the gears in each of the pump mechanisms. This shaft 17 extends outwardly from one side of the body and has keyed or otherwise secured thereon a driving roller 18. As shown, the driving roller has a circumferential groove 19 adapted to engage a bead 20 formed on a panel 21. This provides an adequate guide for the instrument, though other guide means such as a straight edge may be employed with equal effect. 95

The intakes 22 and 23 of the pumps 13 and 14 are connected by a passage 24 to a container 25 threaded in the body portion 10. The container is also the handle of the in- 100



strument. The outlets 26 and 27 of the pump are connected by a passage 28 to corresponding nozzles 29 and 30. As shown, the nozzles are mounted in the body of the instrument and extend downwardly and rearwardly therefrom. They are arranged side by side with their discharge ends inclined toward each other.

The discharge ends of the nozzles are cut or formed obliquely to the axes thereof as indicated at 31 and 32. These oblique or beveled ends of the nozzles extend substantially normal relatively and form with the surface to be striped when engaged therewith a discharge opening in the form of an isosceles triangle slightly open at the apex. The altitude of the angle is dependent entirely upon the degree of the oblique cut or bevel on the ends of the nozzles. These cuts or bevels may be varied to a greater or less degree to properly control the flow of liquid through the passages in the nozzles, the variation being made in accordance with the consistency of the liquid employed.

In forming the beveled or oblique ends on the nozzles, the extreme edges are finished relatively sharp as indicated at 33 and 34, so that on moving the instrument in the direction indicated by the arrow, Fig. 1, the surface operated on will be scratched, cut or scored as indicated at 35 and 36. By reason of the relative position of the nozzles, these scratches, cuts or scores will be made parallel with respect to each other and suitably spaced, so that the spread of the stripe will be restricted substantially as shown in Fig. 5 as the liquid is laid or deposited by the nozzles on the surface to be striped.

Owing to the particular arrangement of the nozzles, the fluid or liquid is deposited with the flow directed to a central point with respect to the cutting edges 33 and 34 of the nozzle, hence, the greatest thickness of the material so deposited is substantially central with respect to the scores 35 and 36 and since it is well known that a scratch, cut or score in a polished or painted surface has the tendency to check the spread or flow of the liquid deposited on the surface, the liquid deposited, as shown in Fig. 4, will upon spreading to the marginal lines or scores 35 and 36 take substantially a semi-elliptic form.

Because of the scored marginal lines a relatively thick stripe may be applied in a comparatively narrow space. The width and thickness of a given stripe is of course, dependent upon the spacing of the scoring and the quantity of paint or lacquer applied between the scorings. Then too, the consistency of the paint or lacquer or the material employed is a factor to be reckoned with.

Another important factor to be found in the application of a stripe of liquid paint or lacquer to a surface scored as herein de-

scribed or otherwise provided, is that the scoring furnishes a very satisfactory binder between the stripe and the surface operated upon. The binding of the stripe to the surface or the coated surface, as the case may be, is effected by the liquid or lacquer employed to produce the stripe entering into the scoring.

Restricting the width of the stripe is of great importance, because of the uniformity attained. This is true not only in applying a stripe in a straight line, but in applying a stripe in curved lines as well. It is of course perfectly intelligible that where a pump mechanism is operated by a driving wheel which is also the guiding means, a greater or less quantity of paint or lacquer is discharged through the nozzle when turning a curve, according to the relative position of the nozzle to the curve. If the nozzle or nozzles, as the case may be, are travelling on the outside of the curve naturally a less quantity of paint will be applied than when the nozzles are travelling on the inside of the curve, thus the necessity of restricting the spread of the stripe and providing means whereby a relatively heavy stripe may be restricted when applied with lacquer or paint in varying quantities is apparent.

Although this invention has been described in combination with certain specific embodiments, the principles involved are susceptible of numerous other applications that 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. In a striping instrument, a pair of converging nozzles having their discharge ends beveled and extending normal relatively, said nozzle ends being associated in an adjacent relation to exude fluid in a single wide stripe upon the surface traversed by the instrument, and a pump mechanism associated with each nozzle and driven at the same speed for forcing a uniform flow of fluid through each nozzle outlet end.

2. In a striping instrument, a pair of adjacent nozzles for discharging fluid in a single stripe upon a surface traversed thereby, the adjacent sides of the discharge ends of the nozzles being cut obliquely to their axes and extending normal relatively, said outlet ends forming between their surface engaging portions an unrestricted outlet duct, and individual pump mechanisms for each nozzle, said pump mechanisms being driven at the same speed.

3. In a striping instrument, a body having a paint reservoir associated therewith, a pair of separate nozzles extending from



the body and having their outlet ends in adjacent relation to form a single wide stripe, means in the body including individual pumps for feeding paint from the  
5 reservoir through each nozzle, and a roller associated with the body guiding the instrument and driving the pumps, the remote portions of the outlet ends of said nozzles being formed to provide a pair of scoring  
10 edges for engagement with the surface to be striped.

4. In a striping instrument, a body having a paint reservoir associated therewith, a pair of separate nozzles extending from  
15 the body and having their outlet ends in adjacent relation to form a single wide stripe, means in the body including individual pumps for feeding paint from the reservoir through each nozzle, and a roller  
20 associated with the body guiding the instrument and driving the pumps, the outlet ends of said nozzles being beveled to provide a pair of scoring edges between which the paint from both nozzles is discharged.

25 In testimony whereof I affix my signature.

JOHN M. CHRISTMAN.

30

35

40

45

50

55

60

65