

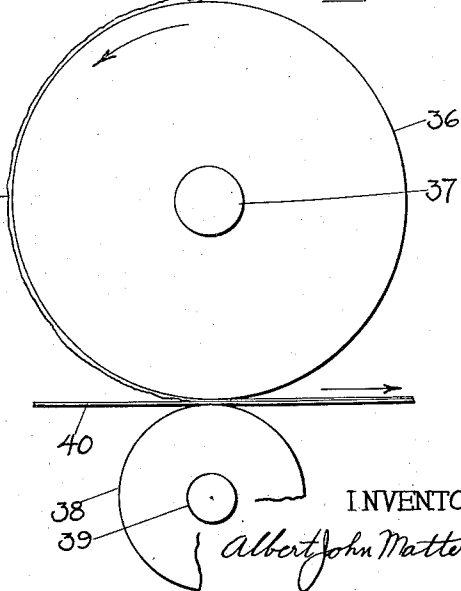
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GLUE APPLICATOR

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GLUE APPLICATOR

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This invention relates to devices for applying glue from a glue receptacle to the material to be glued and has for its object to provide means for dispensing and applying measured quantities of glue in such manner that it is spread evenly over the surface to be glued.

Another object is to remove the glue through the bottom or side of the receptacle below the surface of the glue and provide, on the upper surface of the glue, means for preventing evaporation of liquid mixed with the glue.

Another object is to provide a number of glue outlets in the receptacle which may be adjusted separately to provide various amounts of glue through the several outlets.

A further object is to provide means for quickly making inoperative one or more of a number of glue outlets without disturbing the setting regulating the amounts of glue dispensed.

I attain these objects by means of the mechanism shown in the attached drawings in which I provide a glue receptacle having flexible rubber nipples projecting through the bottom thereof, said nipples having small self closing slits through their bottoms and being recessed for the reception of oscillating plungers adapted to force measured quantities of glue from the receptacle through the nipple slits and onto wipers or rolls or directly onto the object to be glued.

A rocker shaft carrying adjustable screws provides adjustable operation of the plungers, and its operation on any plunger may be made ineffective by removing caps provided on the upper ends of the plungers.

Evaporation of contents of the glue receptacle is prevented by applying to the surface of the glue, a layer of liquid lighter than glue.

Details of construction are hereinafter more fully described and illustrated in the accompanying drawing in which—

Fig. 1 is a sectional elevation of a glue tank provided with nipples, plungers and operating mechanism, taken on line I—I Fig. 2.

Fig. 2 shows a sectional elevation of the tank and parts shown in Fig. 1, on line II—II, showing method of applying glue to wipers operating to spread glue on object to be glued.

Fig. 3 shows a sectional elevation through a tank provided with extension nozzles to which nipples are attached so as to increase the amount of glue ejected in one plunger stroke when applying glue by means of a transfer roll.

Fig. 4 shows a modified form of slitted rubber nozzle end usable in place of the nipples.

Fig. 5 illustrates the form of slit in the end of a nipple.

In the drawing, like reference numerals indicate similar parts throughout the several views.

Referring to Figs. 1 and 2, 1 indicates a glue tank having orificed guide strips 2 and 3 for the sliding reception of plungers 5. Below the plungers and in co-axial alignment therewith are provided orifices 6 in the bottom of tank 1 for the reception of nipples 7 having round bottomed cylindrical recesses 8 adapted to receive the ends of plungers 5 and provided with flanged heads 9 and annular ribs 10 for retaining the nipples in place when forced into orifices 6. 11 indicates a small slit provided in the bottom of each nipple to provide a self-closing opening through which glue may be forced by the plungers. 12 designates the glue and 13 indicates a layer of liquid lighter than glue and adapted to float thereon and prevent evaporation thereof, such as oil for instance.

Bearings 14 are shown attached to tank 1 but may be otherwise supported for the purpose of carrying a rocker shaft 15 having extension arm 16 provided with adjustable screws 17 and lock nuts 18 located so as to engage plunger caps 19 which are recessed to fit removably on the tops of the plungers.

Rocker shaft 15 is provided with an operating lever 20 which may be operated by a cam, eccentric or other mechanism or by hand.

In order to permit a charge of glue to enter nipple recesses 8 it is necessary to raise the bottoms of the plungers above the nipple as shown in Fig. 2. This is preferably accomplished by means of springs as at 21 surrounding plungers 5 and seated on guide strip 2 so as to apply upward pressure against washers 22 and cross pin 23 carried by plungers 5.

Other means for operating the plungers may be employed.

In operation rocker shaft 15 with extension arm 16 is slightly rotated in bearings 14 so that screws 17 press against plunger caps 19 and force plungers 5 down into recess 8 of nipples 7 enclosing therein a measured quantity of glue.

Further downward movement of the plungers will force this enclosed glue through slits 11 until downward progress of the plungers is halted.

The stroke of all the plungers as a unit may be changed by adjusting the movement of lever 20 in any usual method.

To provide different length of stroke of the various plungers screws 17 may be adjusted to suit.

In this manner every action of rocker shaft 15

will dispense the desired quantity of glue as adjusted and may provide a line of glue drops varying at each nipple as desired.

Removal of caps 19 from several of the plungers, will cause these plungers to be inactive, thus providing means for quickly shortening the line of glue drops to accommodate a narrower object on which the glue is applied.

This type of dispenser and short stroke plungers is desirable when applying glue in drops directly onto the object to be glued or through the medium of wipers as shown at 24 Figs. 1 and 2. Wipers 24 are pivotally attached at 25 to wiper brackets 26 which in turn are attached to wiper shaft 27 by screws 28. Shaft 27 is rotatably mounted in bearings 29 and provided with a pulley 30 or other driving connection geared in time with the movements of rocker shaft 15. Springs 31 mounted between wipers 24 and brackets 26 in conjunction with hook 32 carried by wiper 24 provide limited resilient movement of the wipers across the face of the object to which the glue is applied as at 33. If desired the spring tension may be made adjustable or applied in any other manner.

12A indicates a drop of glue which has been deposited on wiper 24. Rotary movement of the wipers is preferably intermittent allowing the wipers to stand still in the position shown in Fig. 2 when the plungers are forcing the glue on them.

The wipers may act to wipe the glue onto objects indicated at 33 while such object is standing still or rotating in either direction at any speed, slower, faster or the same as the wipers, depending on the kind of wipe desired. 33 may also represent a transfer roller for transmitting glue to the object to be glued.

The use of a series of individual wipers for each nipple is desirable as it permits removal of those under idle plungers and also allows for irregularities on the surface of the object to be glued.

When it is desired to apply the glue in a continuous strip this is best accomplished with a transfer roller and continuous feeding of glue sufficient for the full strip as shown in Fig. 3 in which 1A represents a glue tank having an extension nozzle 34, plunger 5, nipple 7 and a nipple connector 35 which is shown threaded to engage threads provided on nozzle 34. This allows a longer continuous stroke of plunger 5 which may be operated in the same manner as shown in Figs. 1 and 2 or the plunger may be operated by means of a cam or crank to provide a longer stroke. 36 indicates a transfer roller mounted on a rotatable shaft 37. 38 is an idler roller mounted on rotatable shaft 39 and held against roller 36 with sufficient pressure to spread the glue 12b on roller 36 onto a sheet of paper or other material 40 passing between the rollers.

It will be noted that when glue is forced out through slit 11 in nipple 7 the edges of the slit open outwardly, but as soon as the plunger stops the resilient rubber closes the slit and pinches off the glue as at 12c. This is accentuated by the return action of a close fitting plunger tending to create a vacuum inside of the nipple. In place of the nipples in some cases, it may be desirable to provide a disc of rubber or other similar material as shown in Fig. 4 in which 41 indicates the disc provided with a slit 42.

It is understood that modifications may be made in the specific construction shown with-

out departing from the spirit of the invention. What is claimed is:

1. A glue applicator comprising a glue receptacle, a cup shaped nipple of rubber or like material attached thereto and having a slit in the bottom and a plunger associated therewith for squeezing glue or like material through said slit.

2. A glue applicator comprising a glue receptacle, a cup shaped nipple of elastic material attached thereto and having a self-closing slit therein and a plunger associated therewith so as to enter said nipple, close off a measured quantity of glue therein and squeeze said glue through said slit.

3. A glue applicator comprising a glue receptacle having a nozzle, elastic material closing one end of said nozzle and having a self-closing slit therein and a plunger fitting in the other end of said nozzle adapted to squeeze glue or like material in said nozzle through said slit.

4. A glue applicator comprising a glue receptacle having a nozzle, a cup shaped nipple attached to the outer end of said nozzle and having a self-closing slit and a plunger adapted to enter the inner end of said nozzle, close-off glue therein and force it through said slit and then retract so as to permit the slit to close.

5. A glue applicator comprising a glue receptacle having an elastic section containing a self-closing slit and means for forcing glue under pressure through said slit, said means comprising a cylindrical portion with a plunger therein.

6. A glue applicator comprising a glue receptacle, an elastic cup-shaped nipple having a hemispherical end connected therewith and having a self-closing slit in said hemispherical end and means for forcing glue or like material through said slit.

7. A glue applicator comprising a glue receptacle, a plurality of cup shaped elastic nipples having slits in their bottoms and connected with said receptacle, plungers adapted to reciprocate into and out of said nipples, actuating means for pressing said plungers into said nipples and spacers removably held between said plungers and plunger actuating means.

8. A glue applicator comprising a glue receptacle having flexible self closing slits therein, means for ejecting glue through said slits in said receptacle, and separate wipers adapted to receive the glue ejected through said slits and wipe it onto the article to be glued.

9. A glue applicator comprising a glue receptacle, a cup shaped nipple of rubber or like material attached thereto and having a slit in the bottom and a plunger associated therewith for squeezing glue or like material through said slit, and wipers adapted to receive the glue ejected through said slits and wipe it onto the article to be glued.

10. A glue applicator comprising a glue receptacle, a cup shaped nipple of elastic material attached thereto and having a self-closing slit therein and a plunger associated therewith so as to enter said nipple, close off a measured quantity of glue therein and squeeze said glue through said slit, and wipers adapted to receive the glue ejected through said slits and wipe it onto the article to be glued.

11. A glue applicator comprising a glue receptacle having a nozzle, elastic material closing one end of said nozzle and having a self-closing slit therein and a plunger fitting in the other end of said nozzle adapted to squeeze glue or like material in said nozzle through said slit, and wipers

adapted to receive the glue ejected through said slits and wipe it onto the article to be glued.

12. A glue applicator comprising a glue receptacle having an elastic section containing a self-closing slit and means for forcing glue under pressure through said slit, and wipers adapted to receive the glue ejected through said slits and wipe it onto the article to be glued.

13. A glue applicator comprising a glue receptacle, an elastic nipple connected therewith and having a self-closing slit and means for forcing glue or like material through said slit, and wipers adapted to receive the glue ejected through said slits and wipe it onto the article to be glued.

14. A glue applicator comprising a glue receptacle, a plurality of cup shaped elastic nipples having slits in their bottoms and connected with said receptacle, plungers adapted to reciprocate into and out of said nipples, actuating means for pressing said plungers into said nipples and spacers removably held between said plungers and plunger actuating means, and wipers adapted to receive the glue ejected through said slits and wipe it onto the article to be glued.

15. A glue applicator comprising a glue receptacle, a cup shaped nipple of elastic material attached thereto and having a self-closing slit therein and a plunger associated therewith so as to enter said nipple, close off a measured quantity of glue therein and squeeze said glue through said slit, and a transfer roller adapted to receive

the glue ejected through said slits and transfer it to the object to be glued.

16. A glue applicator comprising a glue receptacle having a nozzle, elastic material closing one end of said nozzle and having a self-closing slit therein and a plunger fitting in the other end of said nozzle adapted to squeeze glue or like material in said nozzle through said slit, and a transfer roller adapted to receive the glue ejected through said slits and transfer it to the object to be glued.

17. A glue applicator comprising a glue receptacle having an elastic section containing a self-closing slit and means for forcing glue under pressure through said slit, and a transfer roller adapted to receive the glue ejected through said slits and transfer it to the object to be glued.

18. A glue applicator comprising a glue receptacle, means for ejecting glue therefrom and wipers resiliently mounted so as to receive said ejected glue and apply it to the object to be glued.

19. A glue applicator comprising a glue source and wipers connected therewith, said wipers being resiliently mounted on a rotatable shaft and adapted to receive glue from the glue source and wipe it onto an object to be glued.

20. A glue applicator comprising a glue tank, means for ejecting glue through the bottom of the tank and a liquid lighter than glue adapted to float on said glue and prevent its evaporation.

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