No. 849,777. PATENTED APR. 9, 1907.

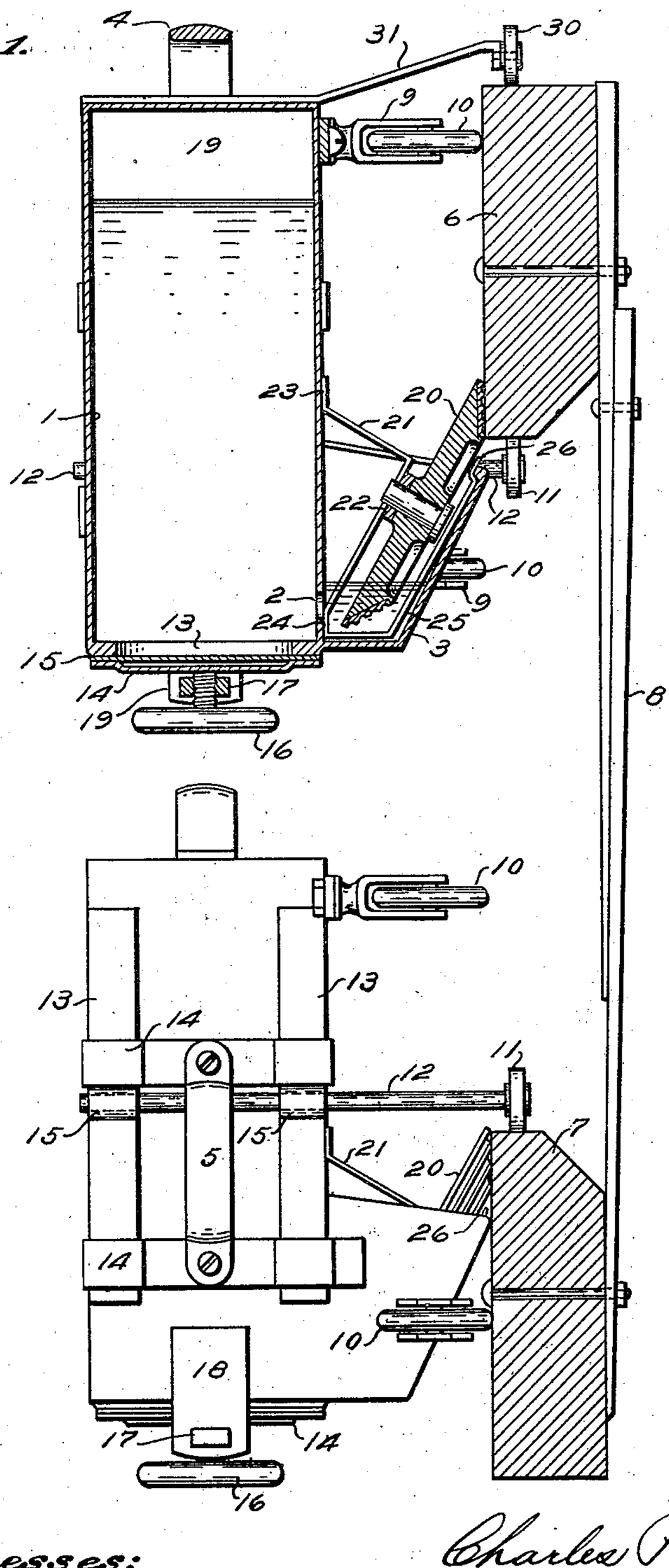
C. P. FREESTATE.

GLUING MACHINE.

APPLICATION FILED MAY 25, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

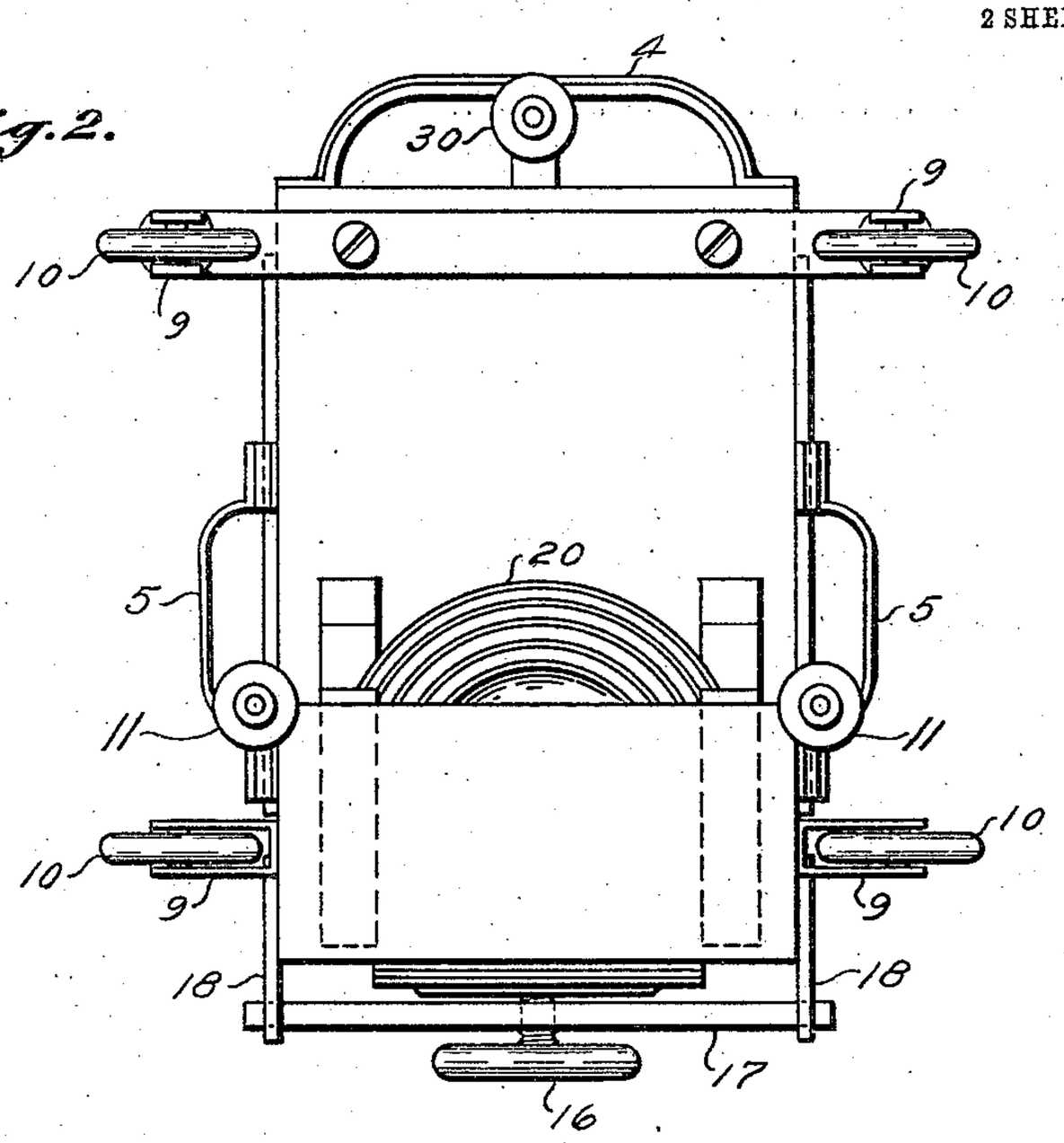


Fig. 3.

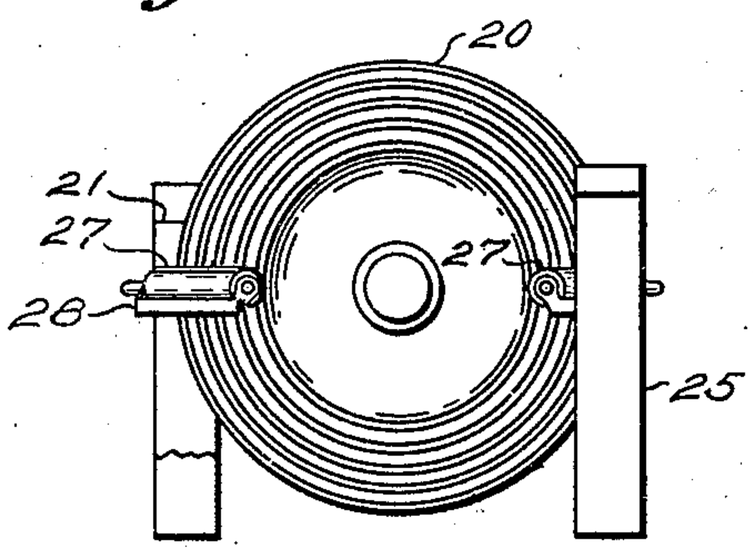
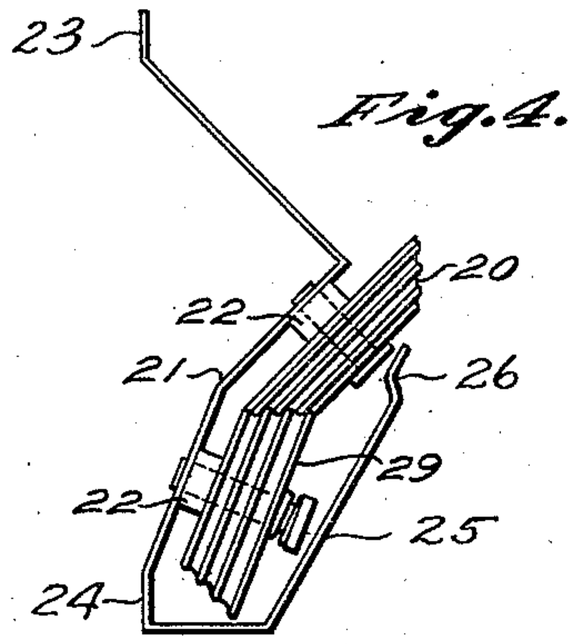


Fig. 4.



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UNITED STATES PATENT OFFICE.

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GLUING-MACHINE.

No. 849,777. Specification of Letters Patent. Patented April 9, 1907.

Application filed May 25, 1906. Serial No. 318,653.

To all whom it may concern:

Be it known that I, CHARLES P. FREESTATE, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gluing-Machines, of which the following is a specification.

In the manufacture of cloth for window-shades the cloth is glued at its edges to a stretcher-frame before being sized and painted and is then allowed to dry while so stretched.

This invention has particular reference to machines for applying glue to such stretcher-frames.

The main objects of this invention are to provide an improved form of portable machine for applying glue to the vertical face of a frame; to provide improved means for supplying a uniform rate of feed for the glue; to provide an improved system of guides which may be readily adjusted for guiding the machine along the upper or lower edge of a frame, and to provide a structure for supporting the gluing-wheel which will permit of the ready withdrawal of the wheel from the glue-receptacle for the purpose of cleaning the various parts. These objects are accomplished by the device shown in the accompanying drawings, in which—

Figure 1 represents a transverse section of a frame for stretching shade-cloth and showing a portable gluing-machine constructed according to this invention in two different positions with respect to the frame. The upper part of the view represents the gluing-machine in section, with its guide-rollers in position for guiding the machine along the upper bar of the frame. The lower part of the view shows a side elevation of the machine with its guide-rollers in position for guiding the machine along the lower bar. Fig. 2 is a front elevation of the gluing-machine. Fig. 3 is a front elevation of the gluing-wheel removed from the machine. Fig. 4 is a side elevation showing a modified arrangement of the gluing-wheel.

In the construction shown in the drawings the main body of the machine consists of a tank 1, which is hermetically closed at its upper part and communicates, through a small opening 2, with an open receptacle or trough 3, which is rigidly connected with the tank 1 and located on the front side thereof. The tank 1 is provided with handles 4 and 5, so that it may be readily carried from place to place.

The machine shown in the drawings is particularly designed for applying glue along the edges of the top bars 6 and bottom bars 7 of a shade-cloth stretcher such as is illustrated in Fig. 1. In the usual construction of these frames long horizontal bars 6 and 7 are connected by a plurality of adjustable cross-bars 8 and are suspended from a suitable trolley, which is not shown in the drawings, so as to hang in a vertical plane in the position illustrated. The tank has rigidly mounted thereon two pairs of arms 9, having horizontally-disposed guide-rollers 10 journaled at their ends. The upper pair of guide-rollers 10 are suitably located for engaging the front face of the upper bar 6 of the frame, and the lower pair of guide-rollers 10 are suitably located for engaging the front face of the lower bar 7 when the machine is in the two positions shown in Fig. 1. A second set of guide-rollers 11 are loosely journaled at the forward ends of a pair of horizontally-disposed shafts or arms 12. These arms 12 are mounted upon slides 13, which are vertically disposed and slidable in the guides 14. The guides 14 also serve as stops for engaging the bosses 15 on the slides 13 and limiting their movement to the two positions shown in Fig. 1. When the shafts 12 are in their uppermost position, the guide-rollers 11 will be in position for riding upon the upper edge of the lower bar 7 of the frame when applying glue to the front face of said bar. Similarly when the shafts 12 are in their lowest position the guide-rollers 11 will be in position for bearing on the lower edge of the upper bar 6.

The tank 1 is provided with an opening 13 in its bottom, which is closed by a cover 14 and gasket 15. The cover is forced down upon its seat by means of the screw 16, which extends through a threaded aperture in the cross-bar 17. The ends of the cross-bar 17 are loosely seated in suitable holes in the lugs 18. When the device is to be filled, it is inverted and the cover 14 is removed, so as to permit the liquid to be poured into the opening 13. When the cover is fastened down, the device is returned to its upright position, and air will enter the orifice 2 until the upper edge of said orifice is submerged below the level of the liquid in the receptacle 3. The remaining liquid in the tank 1 will be supported by the vacuum in the space 19

at the top, and no further liquid will enter the receptacle 3 until the level of the liquid has been lowered so as to admit air at the orifice 2.

The gluing-wheel 20 is journaled on a spring clip or frame 21. This wheel is conical and so located that a portion of its periphery dips below the level of the liquid in the receptacle 3, while the upper portion thereof extends above the rim of the receptacle 3 into position for engaging a vertical surface above said rim.

The frame 21 preferably consists of two side members connected by a cross-bar 22, upon which the wheel 20 is mounted. The side members are of spring-steel and are bent so as to bear upon the face of the tank at the points 23 and 24 and then to extend forward and upward to form the spring-tongues 25 in front of the wheel 20. These tongues are offset at 26 at their upper ends to engage the bead at the rim of the receptacle 3, as shown in Fig. 1. When the frame 21 is pressed down into position in the tank 3, the offset ends of the tongues 25 spring under the bead and rigidly hold the wheel 20 in position, while permitting it to freely rotate on its axis. A pair of idle rollers 27 bear upon the periphery of the wheel 20 at each side and insure an even distribution of the glue upon the periphery of said wheel when the wheel is rotating in either direction. The rollers 27 are carried by arms 28, which are preferably flat and extend close to the periphery of said rollers, so as to act as scrapers for removing the glue from the surface of said rollers.

In the modified form shown in Fig. 4 the glue is taken up by a wheel 29, which dips below the surface of the liquid and carries liquid to the periphery of the gluing-wheel 20. In this case the frame 21 is provided with a cross-bar 22 for each wheel.

In cases where the bars 6 of the frames are of a standard size it is preferred to provide one or more additional guide-rollers 30, carried by a frame 31, extending forward from the top of the tank 1 to support the weight of the machine when applying glue to the upper bar 6.

The operation of the device shown is as follows: To apply glue to the upper bar 6 of the gluing-frame, the slides 13 are pushed down until stopped by the lower guide 14. The machine is then held in the position shown in the upper part of Fig. 1 while the operator walks along throughout the length of the bar 6. When the slides are in this position, the guiding-rollers 11 are in suitable position to engage the lower edge of the bar 6 and bring the rollers 20 into proper position for applying a strip of glue along the face of said bar near its lower edge. The upper guide-rollers 10 engage the face of the bar 6 and insure that the periphery of the wheel 20 lies flat against the face of the bar 6. While applying glue to the upper bar 6 the weight of the machine is carried by the idle roller 30. In applying glue to the lower bar 7 of the stretcher-frame the guide-rollers 11 are shifted to their upper position and then rest upon the top of the bar 7 and supporting the weight of the machine while the operator walks along. The lower guide-rollers 10 are in this case brought into service. To remove the roller 20 from the receptacle 3 for the purpose of cleaning said roller and receptacle, the operator presses inward on the ends of the spring-tongues 25, so as to release the offset 26 from engagement with the bead on the receptacle. The frame 21 may now be lifted upwardly out of said receptacle.

In the modified form the lower roller feeds the glue to the gluing-roller, and the wiping action due to the conical form of the rollers insures a uniform distribution of the glue.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a gluing-machine, the combination of a portable receptacle for liquid glue, a fountain-feed for maintaining a uniform depth of glue in said receptacle, a conical wheel journaled on an inclined axis, having the lower portion of its periphery dipping below the suface of liquid in said receptacle and having the upper portion extending outwardly beyond one side of the receptacle for applying glue to an adjacent vertical surface, and means on said receptacle for guiding the gluing-wheel when the receptacle is moved along said surface.

2. A gluing-machine comprising a receptacle for liquid glue, a conical roller journaled therein on an inclined axis, having a portion of its periphery dipping into the glue in said receptacle and having another portion extending outward of the receptacle into position for applying glue to a vertical surface, a guide-roller journaled on a vertically-disposed axis on said receptacle and adapted to bear on such vertical surface when the gluing-roller is in contact therewith, and a second guide extending beyond the gluing-roller and adapted to engage a horizontal edge of such vertical surface.

3. A gluing-machine comprising a receptacle for liquid glue, a conical roller journaled therein on an inclined axis, having a portion of its periphery dipping into the glue in said receptacle and having another portion extending outward of the receptacle into position for applying glue to a vertical surface, a guide-roller journaled on a vertically-disposed axis on said receptacle and adapted to bear on such vertical surface when the gluing-roller is in contact therewith, and a second guide extending beyond the gluing-roller and adapted to engage a horizontal edge of such

vertical surface, said second guide being readily movable to positions above and below said outwardly-extending part of the gluing-wheel for guiding the same along the upper or lower edges of such vertical surface.

4. The combination of a frame, a gluing-wheel journaled thereon and adapted to apply glue to one face of a bar, a guide mounted on said frame and extending beyond said wheel so as to engage either of the edges of said bar adjacent to said one face, said guide being adapted to shift on said frame, from one side of said gluing-wheel to the other, and stops limiting the shifting of said guide.

5. The combination of a frame, a glue-distributing member thereon, and a guide having limited movement on the frame to different sides of said member.

6. The combination of an open receptacle, a closed tank for liquid having an outlet communicating with said receptacle, said tank being adapted to be closed against the admission of air except at said outlet for maintaining a uniform depth of liquid in said receptacle, a frame removably seated in said receptacle and having journaled thereon a wheel dipping below the level of liquid in the receptacle and adapted to take up liquid from the receptacle and apply the same to a surface in contact with the periphery of said wheel, and guides mounted on said tank and adapted to hold the wheel in proper relation to such surface for applying a band of liquid thereto.

7. The combination of an open receptacle, a closed tank for liquid having an outlet communicating with said receptacle, said tank being adapted to be closed against the admission of air except at said outlet for maintaining a uniform depth of liquid in said receptacle, a frame removably seated in said receptacle and adapted to be sprung into and out of interlocking engagement therewith, a wheel dipping below the level of liquid in the receptacle and adapted to take up liquid therefrom and apply the same to a surface in contact with the periphery of said wheel, and guides mounted on said tank and adapted to hold the wheel in proper relation to such surface for applying a band of liquid thereto.

8. The combination of a frame, a gluing-wheel journaled thereon and adapted to roll along a vertical surface for applying glue thereto, means for uniformly feeding liquid glue to the periphery of said wheel, one or more guide-rollers adapted to bear on said surface, an additional guide-roller extending forward of said gluing-wheel and adapted to bear upon a horizontal surface for guiding the gluing-wheel in a horizontal direction, said additional guide-roller being movable on said frame between positions above and below said gluing-wheel, and stops limiting the movement of said guide-roller with respect to the gluing-wheel, for the purpose specified.

9. A gluing-machine comprising a receptacle for liquid glue, a conical roller journaled therein on an inclined axis, having a portion of its periphery dipping into the glue in said receptacle and having another portion extending outward of the receptacle into position for applying glue to a vertical surface, and means for guiding said roller along such surface.

10. The combination of a frame, a glue-distributing member thereon adapted to apply glue to one face of a bar, and a shifting guide member on said frame adapted to be moved into a guiding position on either side of the distributing member, through contact with the edge of said bar.

Signed at Chicago this 23d day of May, 1906.

CHARLES P. FREESTATE.

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