Nov. 14, 1933. G. G. PERKINS 1,935,060

MACHINE FOR COATING AND DISTRIBUTING CEMENT ON MATERIALS

Filed April 26, 1930 2 Sheets-Sheet 1

Fig. 1.

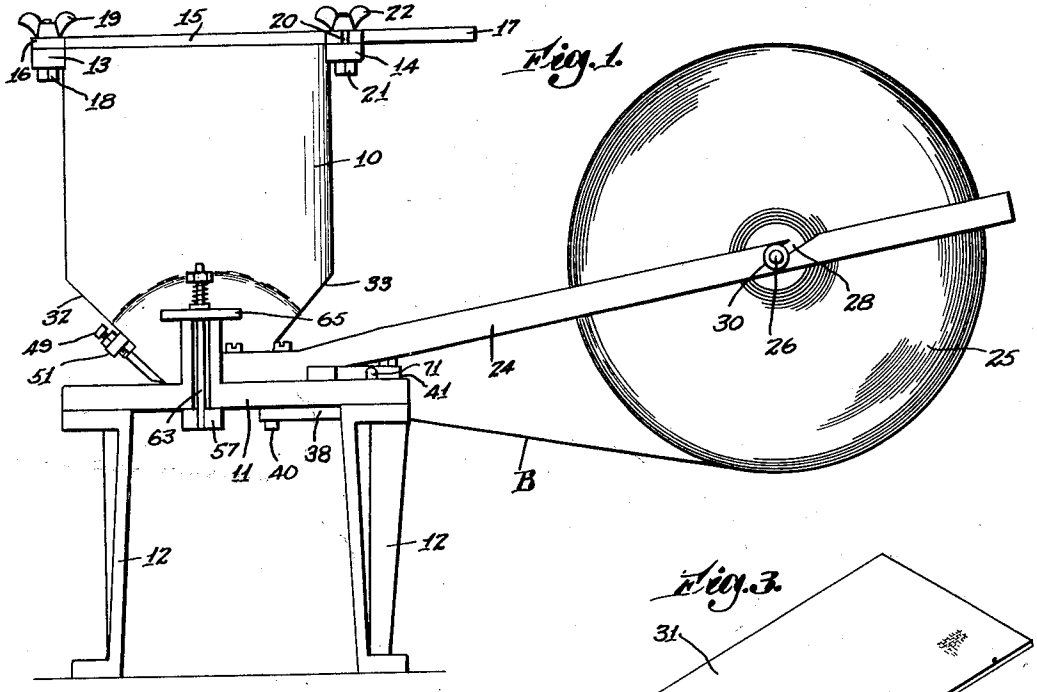


Fig. 3.

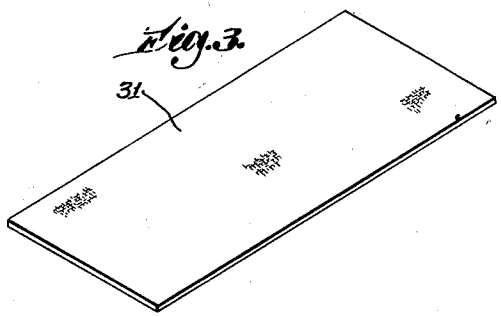
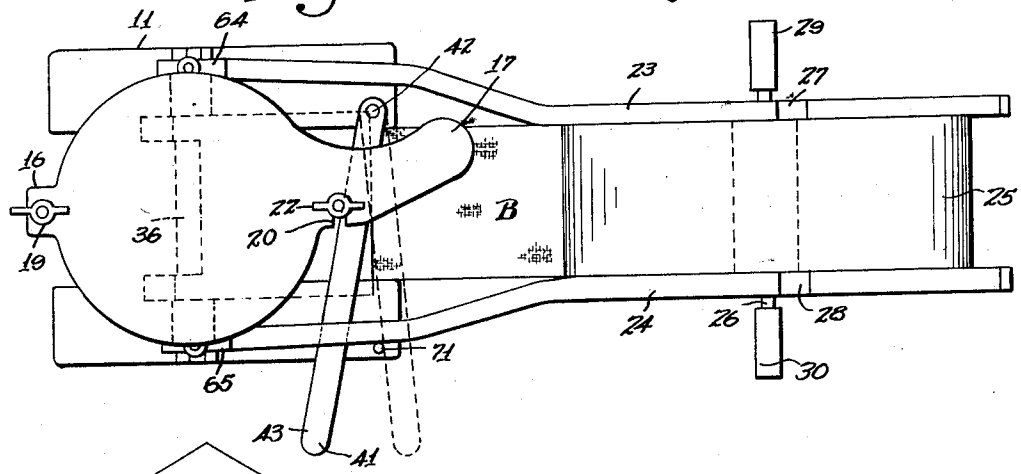


Fig. 2.



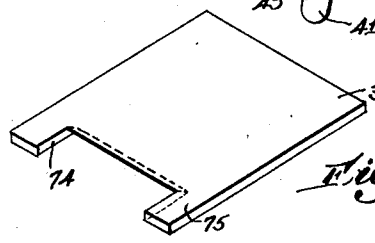


Fig. 4.

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MACHINE FOR COATING AND DISTRIBUTING CEMENT ON MATERIALS

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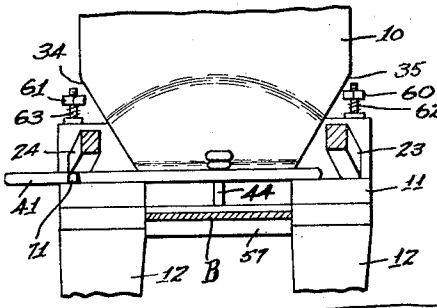


Fig. 5.

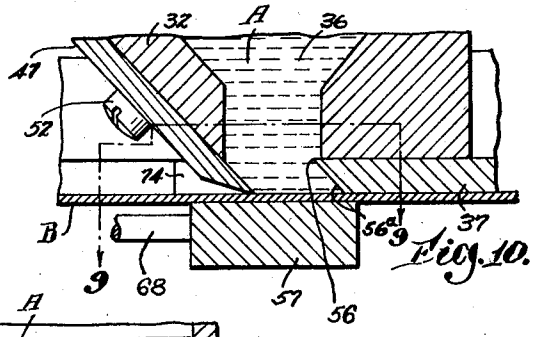


Fig. 10.

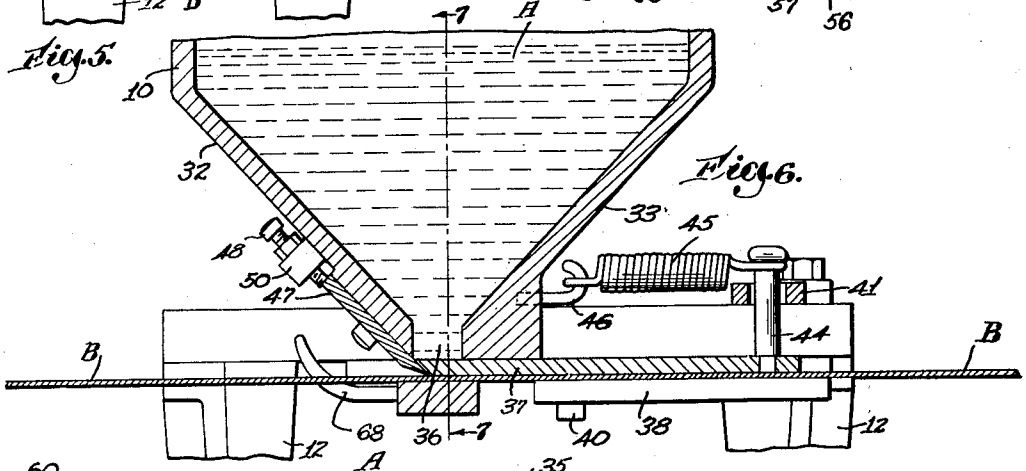


Fig. 6.

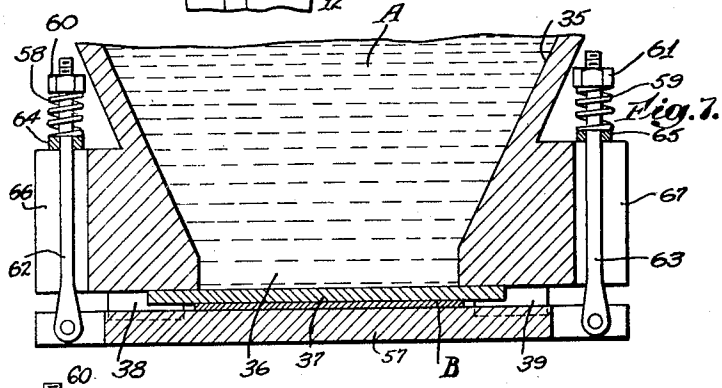


Fig. 7.

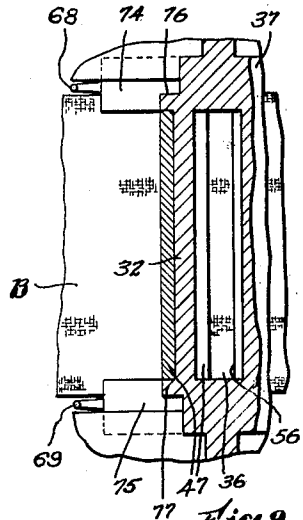


Fig. 9.

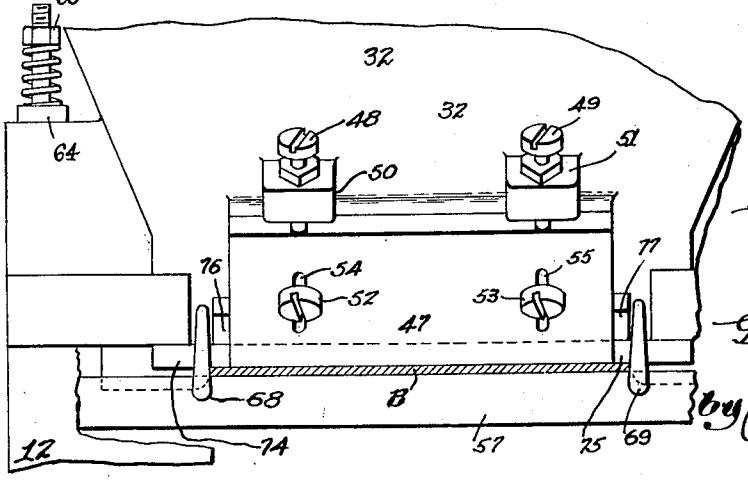


Fig. 8.

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Patented Nov. 14, 1933 1,935,060

UNITED STATES PATENT OFFICE

1,935,060

MACHINE FOR COATING AND DISTRIBUTING CEMENT ON MATERIALS

George G. Perkins, Lynn, Mass.

Application April 26, 1930. Serial No. 447,741

4 Claims. (Cl. 91—43)

My present invention relates to machines for distributing cement or other adhesives to cloth or similar material, such, for example, as used in reenforcing parts of shoes, and in other applications.

An important object of the present invention resides in the provision of a machine having a cement containing receptacle within which the cement or other adhesive utilized may be maintained in proper condition, uneffected by external atmospheric conditions.

Another object of the present invention resides in the provision of novel discharge and distributing means for the cement, this last named means being controlled at will by the operator, and, when no longer under the control of the operator, automatically sealing the discharge end of the receptacle, to thus prevent leakage and waste.

Other objects and features of the present invention reside in the particular construction and arrangement of my novel machine and the parts thereof, and all of the above, together with other objects and features of the invention, details of construction, combinations of parts, and advantages, will be hereinafter more fully pointed out, described and claimed.

Referring to the drawings, illustrating a preferred embodiment of the present invention,

Fig. 1 is a side elevation of my novel machine;

Fig. 2 is a plan view of said machine;

Fig. 3 is a perspective view of a piece of cloth or other stock after being coated and cut;

Fig. 4 is a perspective view of the gate valve plate;

Fig. 5 is a fragmentary sectional end elevation of the machine;

Fig. 6 is a fragmentary longitudinal sectional view of the machine;

Fig. 7 is a vertical sectional view on the line 7—7 of Fig. 6;

Fig. 8 is a fragmentary end elevation;

Fig. 9 is a plan sectional view on the line 9—9 of Fig. 10; and

Fig. 10 is an enlarged fragmentary longitudinal sectional view illustrating the gate valve plate in open or cement discharging position.

Referring now to the drawings, for a particular description of the invention, its construction and operation, 10 designates a receptacle for holding the cement or other adhesive fluid A. The cloth or other material to be coated is provided in strip formation, as indicated at B, formed in rolls and mounted for feeding through the machine to receive a suitable adhesive coating.

The receptacle 10 is mounted on a frame or base 11 which in turn is supported by the legs 12. The top or upper end of the receptacle is open to permit filling thereof with a suitable adhesive, as well as for cleaning or other purposes.

Formed on the exterior of the receptacle, at the open end thereof, are two lugs 13 and 14, and a cover 15 is seated on the open end of said receptacle. The cover 15 is provided with a projection 16 and with a handle 17. Projecting upwardly through the lug 13 is a bolt 18, to the upper end of which is attached a wing nut 19. Projecting upwardly through the lug 14 is a bolt 21, and attached to the upper end of this bolt is a wing nut 22. The handle 17 is provided with a slot 20, and, on loosening the wing nut 22, the cover may be swung about the bolt 18 as a pivot, the slot 20 sliding over the bolt 21 when removing or replacing said cover.

When the machine is in operation, this cover will be swung open to permit discharge of the adhesive from the receptacle. When the cover is in closed position and the wing nuts 19 and 22 are tightened, the receptacle will be effectively sealed from dirt or other foreign substances, and will also preserve the adhesive and prevent the same from hardening when not in use.

Supported on the frame 11 are two arms 23 and 24 adapted to support a roll of strip stock B such as cloth or any flexible material adapted or intended to be coated with adhesive. The material B is wound in a roll 25, and has therethrough a shaft 26, which shaft is supported in the inclined slots 27 and 28 in the arms 23 and 24 respectively. It will thus be readily apparent that the shaft 26 and its roll may be readily removed and replaced, said shaft 26 being provided with handles 29 and 30 to facilitate the handling of said shaft and its accompanying roll.

After the material B has been fed through the machine and suitably coated, it is cut off, in any desired manner, to predetermined or desired lengths, such as illustrated by the piece 31 in Fig. 3.

The lower portion of the receptacle 10 is formed with the four converging sides 32, 33, 34 and 35, as clearly illustrated in the drawings, these sides converging toward a rectangular discharge orifice 36 through which the adhesive A is dispensed to the cloth strip B as said strip passes through the machine.

Slidable in the guideways 38 and 39 is a gate

valve plate 37, said ways being fixed to the frame 11 by screws 40, or in any other desired manner. The gate valve plate 37 is manually controlled by the lever 41, which is pivoted at one end to the frame 11 by the pin 42, the opposite end 43 serving as a hand grip for the operator. The lever 41 is connected to the gate valve plate 37 by the pin 44 which projects upwardly through said lever and serves as an anchor for one end of the spring 45, the opposite end of said spring being attached to the hook 46 threaded into the receptacle 10. The gate valve plate 37 is normalcly held in closed position with relation to the orifice 36 by the spring 45, and when in this closed position abuts against the lower end of a gage or stripper plate 47. This gage plate 47 is adjustable on the receptacle 10 relatively to the strip B and the gate valve plate 37. The adjustment of the gage plate 47 is permitted by the screws 48 and 49 which are threaded through lugs 50 and 51 and abut the upper edge of the plate 47, these screws also serving as stops to limit the movement of the plate 47 upwardly. Lock nuts are provided to hold the screws 48 and 49 in adjustable position.

The plate 47 is held in adjustable position by the screws 52 and 53, which extend through slots 54 and 55 in the plate 47, said screws 52 and 53, of course, being loosened before adjustment of the plate 47 and tightened after adjustment. This feature of adjustability of the plate 47 enables said plate to prevent the leakage of cement when the plate is in lowermost position, and to serve as a smoothing element to even and smooth the cement on the strip B during the coating operation, thus functioning as a stripper element. Guides 76 and 77 are provided for the stripper plate 47, as clearly illustrated in Fig. 8.

The gate valve plate 37 on its forward or operating end is provided with a knife edge 56 which facilitates the passage of the operating end of said roll through the adhesive. Beneath the knife edge 56 the plate 37 is provided with a beveled edge 56*a* which rests against the inclined gage or stripper plate 47, said plate being set at the same angle as the bevel 56*a*. When the spring 45 has returned the plate 37 to normal position and the said inclined surfaces are in engagement, they constitute an efficient shut-off seal at the discharge end of the orifice 36.

The strip B and the gate valve plate 37 are pressed upwardly by means of the presser bar 57 which is constantly pulled upwardly by the springs 58 and 59. Said springs are held under constant compression between the nuts 60 and 61 threaded on the supporting rods 62 and 63 respectively, and the plates 64 and 65. The lower ends of the rods 62 and 63 are pivotally attached to the cross bar 57, as clearly illustrated in Fig. 7. Slots 66 and 67 are formed in the projecting sides of the receptacle 10, and the rods 62 and 63 project vertically through said slots, the plates 64 and 65 resting on the slotted projections and spanning the slots 66 and 67 to support the strain and weight of the presser bar 57.

The slots 66 and 67 being open at the sides, as clearly illustrated in Fig. 7, the rods 62 and 63 may be swung on their pivots out of said slots, allowing the presser bar 57 to be removed and replaced as desired.

As the coated strip B leaves the machine, lateral displacement thereof is perfected by means of the hooks 68 and 69 which are secured to the presser bar 57. In order to insure evenness of the strip B when the plate 37 is in open position, as illustrated in Fig. 10, said plate is provided with forwardly extending projections 74 and 75, at each side of the knife edge 56, the presser bar 57 holding the cloth B firmly against both the plate 37 and its projections 74 and 75. Said projections 74 and 75 also assist in preventing leakage of the adhesive A from the sides of the orifice 36.

When it is desired to feed a new strip B through the machine, the presser bar 57 is removed, in the manner above described, to allow the strip B to be inserted between the gate valve plate 37 and the said bar. Thereafter the rods 62 and 63 are replaced in position, again placing the presser bar under desired tension during the feeding of the strip B through the machine. When the strip B has been inserted, the stripper plate 47 is adjusted relative to the surface of said strip, such adjustment being determined by the thickness of the coat desired to be applied over the material. When in this adjusted position, said plate is fixed by means of the screws 52 and 53. Thereupon the operator manipulates the gate valve plate 37 by means of the lever 41, opening the discharge orifice 36 to the desired extent, which will be determined to a large degree by the viscosity of the adhesive being utilized.

Outward movement of the lever 41, to open the gate, is limited by a stop pin 71 fixed on one side of the frame 11.

The cloth or strip B may be pulled through the machine beneath said orifice by any desired means, as will be readily understood and appreciated.

When the desired length of the strip B has been coated, the operator releases the lever 41, whereupon the spring 45 will automatically return the gate valve plate 37 to normal position with its bevel 56*a* abutting against the inclined stripper plate 47 in sealing position.

While I have necessarily described my present invention somewhat in detail, it will be appreciated that I may vary the size, shape, and arrangement of parts within reasonably wide limits without departing from the spirit of the invention.

I claim:

1. A machine for coating and distributing adhesive on cloth or the like, comprising an adhesive container having an opening at the top thereof, a cover for the top of the container, the walls of said container converging toward a discharge orifice in the bottom of the container, a stripper plate mounted on the exterior of said container and adjustable relatively to said orifice, a frame for supporting the container, guideways on said frame, a gate valve plate slidable in said guideways for controlling the discharge of said adhesive while said machine is in operation, manually operable means to control said gate valve plate, and automatically actuated resilient means to retain said plate in orifice-sealing position when said machine is not in use, said gate valve plate having a knife-edge at its operating end to facilitate the passage of said plate through said adhesive, said stripper plate being inclined along said container, the beveled edge of said gate valve plate beneath said knife-edge cooperating with said inclined stripper plate to seal said orifice.

2. A machine for coating and distributing adhesive on cloth or the like, comprising an adhesive container having an opening at the top thereof, a cover for the top of the container, the walls of said container converging toward a discharge

orifice in the bottom of the container, a stripper plate mounted on the exterior of said container and adjustable relatively to said orifice, a frame for supporting the container, guideways on said frame, a gate valve plate slidable in said guideways for controlling the discharge of said adhesive while said machine is in operation, manually operable means to control said gate valve plate, automatically actuated resilient means to retain said plate in orifice-sealing position when said machine is not in use, a presser bar located beneath said orifice and over which said cloth is passed during the coating operation, vertically projecting supports pivoted to the ends of said presser bar, and resilient means associated with each of said supports to normally force said presser bar upwardly to exert an upward pressure on said cloth.

3. A machine for coating and distributing adhesive on cloth or the like, comprising an adhesive container having an opening at the top thereof, a cover for the top of the container, the walls of said container converging toward a discharge orifice in the bottom of the container, a stripper plate mounted on the exterior of said container and adjustable relatively to said orifice, a frame for supporting the container, guideways on said frame, a gate valve plate slidable in said guideways for controlling the discharge of said adhesive while said machine is in operation, manually operable means to control said gate valve plate, automatically actuated resilient means to retain said plate in orifice-sealing position when said machine is not in use, a presser bar located beneath said orifice and over which said cloth is passed during the coating operation, slotted projections on said container, vertically projecting supports pivoted to the ends of said presser bar and extending through said slotted projections, and resilient means associated with each of said supports and said projections to normally force said presser bar upwardly to exert an upward pressure on said cloth, said supports being removable out of said slots, whereby said presser bar may be removed for insertion of cloth thereover.

4. A machine for coating and distributing adhesive on cloth or the like, comprising an adhesive container having an opening at the top thereof, a cover for the top of the container, the walls of said container converging toward a discharge orifice in the bottom of the container, a stripper plate mounted on the exterior of said container and adjustable relatively to said orifice, a frame for supporting the container, guideways on said frame, a gate valve plate slidable in said guideways for controlling the discharge of said adhesive while said machine is in operation, manually operable means to control said gate valve plate, automatically actuated resilient means to retain said plate in orifice-sealing position when said machine is not in use, said gate valve plate having a knife-edge at its operating end to facilitate the passage of said plate through said adhesive, said stripper plate being inclined along said container, the beveled edge of said gate valve plate beneath said knife-edge cooperating with said inclined stripper plate to seal said orifice, and a projection on said gate valve at each side of said knife-edge projecting forwardly thereof and past said stripper plate.

GEORGE G. PERKINS.