March 6, 1945. B. S. DAVIS 2,371,031

GLUE-APPLYING MACHINE

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FIG. 1.

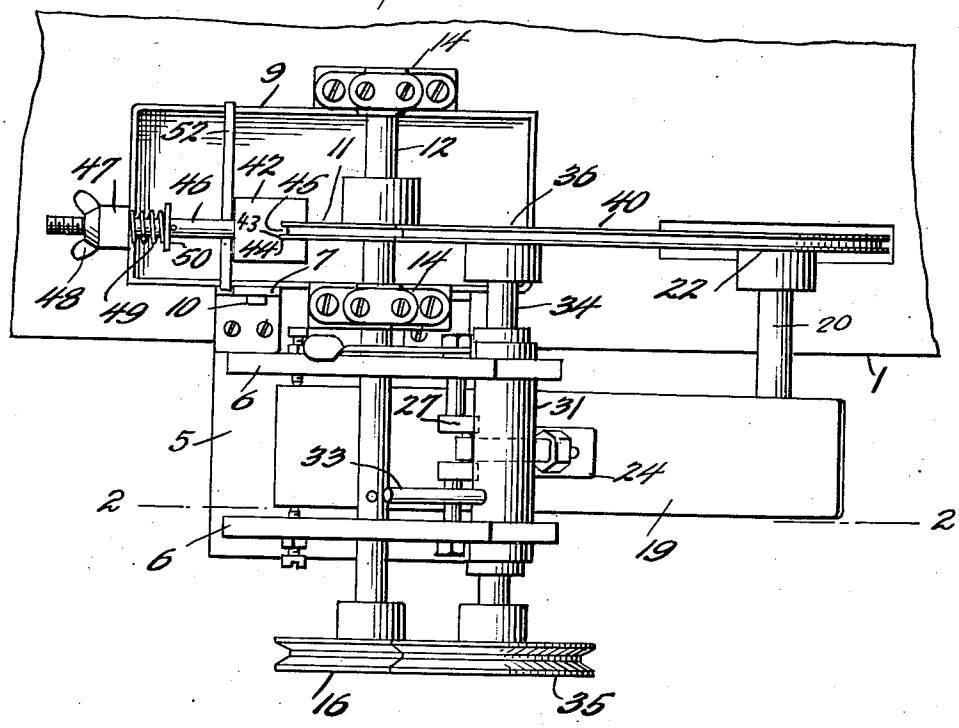
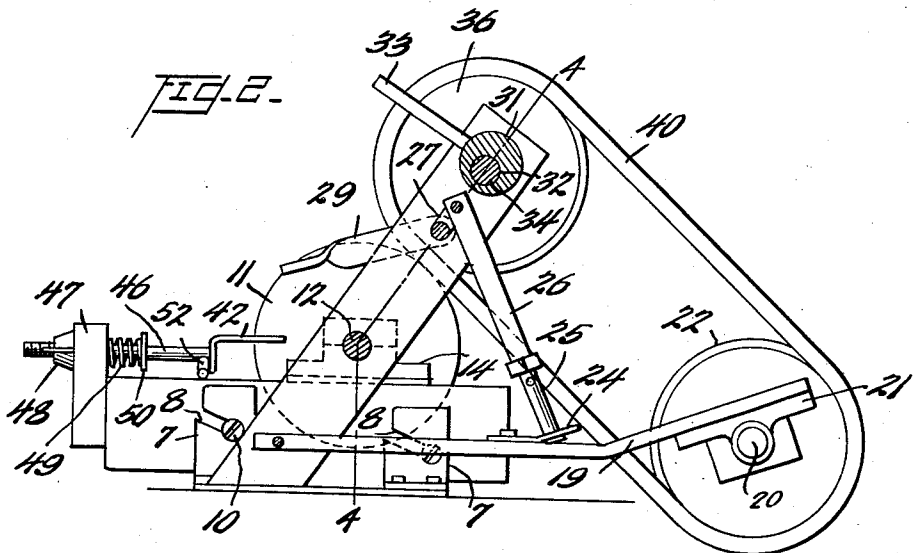


FIG. 2.



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FIG. 3.

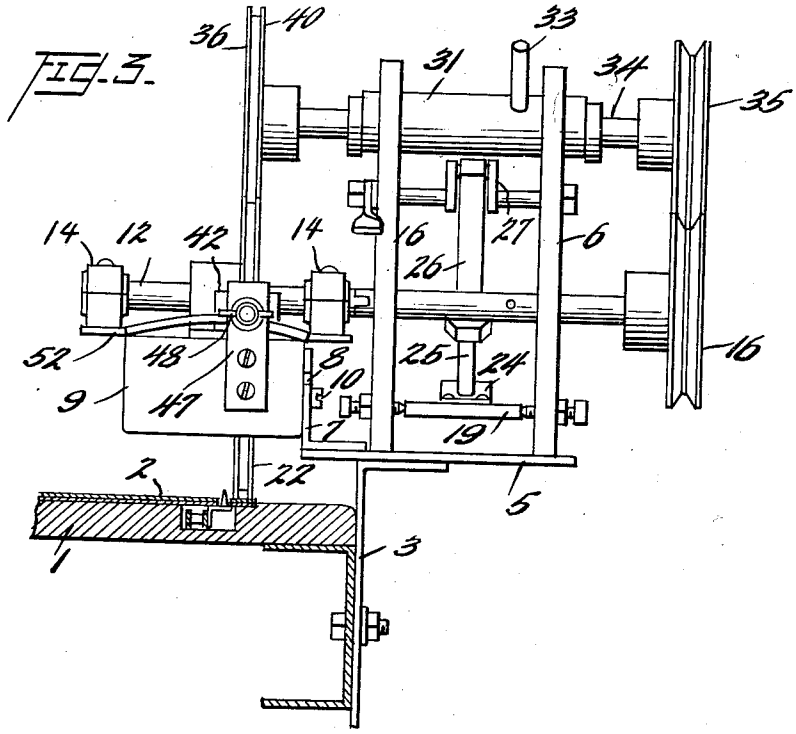


FIG. 4.

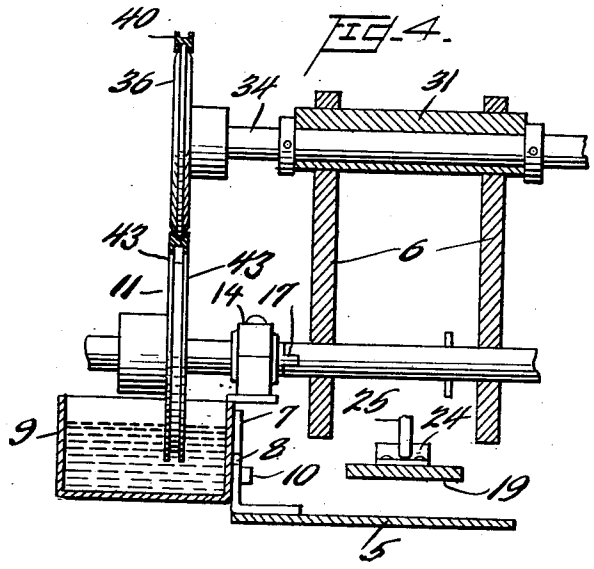
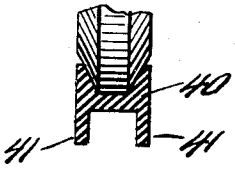


FIG. 5.



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UNITED STATES PATENT OFFICE

2,371,031

GLUE-APPLYING MACHINE

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Application June 2, 1944, Serial No. 538,441

3 Claims. (Cl. 91—12)

This invention relates to machines for applying fluid coatings, such as glue, to sheet or strip material. The present invention comprises a number of improvements over the glue-applying mechanism disclosed in my Patent No. 2,266,171, dated December 16, 1941.

An object of this invention is to provide a glue-applying machine which is capable of being adjusted to meet all requirements of use.

A further object of the invention is to provide a mechanism for simultaneously applying two strips of glue to a passing strip or sheet and which will not become fouled by accumulations of excess glue.

An embodiment of the glue-applying machine is shown by way of illustration in the accompanying drawings, in which:

Fig. 1 is a plan view of the glue-applying machine;

Fig. 2 is a vertical sectional view on line 2—2 of Fig. 1;

Fig. 3 is an end elevation, viewed as from the left in Fig. 1, part of the table on which the machine is mounted being shown in section;

Fig. 4 is a vertical sectional view on line 4—4 of Fig. 2 illustrating a detail; and

Fig. 5 is an enlarged sectional view of a glue-applying belt.

In the drawings, reference numeral 1 designates a portion of a table of a type similar to that illustrated in my Patent No. 2,266,171 and along which sheets or strips of material, such as paper, are passed by a conveying mechanism 2 which may include a belt and pin members. The glue-applying mechanism may be mounted on the edge of the table 1 by means of bracket members 3 in a position slightly elevated above the table surface. The frame of the machine comprises a base plate 5 to which is secured a pair of posts 6 extending upwardly and forwardly at an incline. At one edge of base plate 5 is secured a pair of brackets 7 which have upstanding plates provided with inclined slots 8. The glue pot 9 is secured to these upstanding plates by means of headed studs 10 which engage in the slots 8.

The means for feeding glue from the glue pot 9 comprises a dipping wheel 11 mounted on a shaft 12 which is mounted in bearings 14 secured to the edges of the glue pot by means of brackets. The shaft 12 extends transversely through posts 6 and on its end opposite wheel 11 is provided with a drive wheel 16 adapted to be driven by a V belt (not shown). In order that the glue pot can be removed from the machine expeditiously for cleaning, the shaft 12 is provided with a disconnectible joint including a transversely extending tongue and groove arrangement 17.

Between the lower portions of posts 6 is pivotally mounted a forwardly extending beam member 19 adapted to be pivoted upwardly and downwardly, and toward the forward end of said beam member is mounted a transversely extending shaft 20 secured in bearing 21. On the free end portion of said shaft 20 is mounted a belt wheel 22 in a position substantially in alignment with glue-feeding wheel 11 previously mentioned. The pivot of beam 19 may comprise a pair of screw-threaded, pointed pins extending inwardly through screw-threaded openings in posts 6 and having their points engaging in recesses in the edges of beam 19. The beam member 19 is adjustably mounted in such manner as to be capable of two adjustments. On the top of beam 19 is secured a leaf 24 to which is rotatably attached a rod 25. The rod 25 is provided with screw threads towards its upper end and is screwed into a tube-like member 26. The upper end of tlube 26 is connected with a crank member 27, the straight portions of which extend through upper portions of posts 6. The crank member is operable by arm 29 extending from one end thereof in convenient position for manipulation. It will be clear that by manipulation of arm 29 the position of wheel 22 can be readily and quickly moved from a lower to higher position and vice versa. Also, by relative turning of rod 25 and tube 26 a finer adjustment of the position to be assumed by wheel 22 will be attained.

In the upper end portions of posts 6 is rotatably mounted a transversely extending journal 31. This journal is provided with an eccentrically located bore 32 through which extends a shaft 34. On one end of shaft 34 is mounted a drive wheel 35 substantially in alignment with drive wheel 16 previously mentioned, and on the other end of said shaft is mounted a belt wheel 36.

The belt wheels 22 and 36 are formed at their edges so as to engage within a V-shaped groove formed on the inner periphery of a rubber belt 40, Fig. 5. This belt 40 is provided with a pair of flanges 41 extending outwardly around its edges, and the size and shape of these flanges corresponds to the size and shape of flanges 43 formed on the periphery of glue-feeding wheel 11. In operation the flanges 41 of belt 40 are adapted to contact the glue picked up from the glue pot by the flanges of wheel 11 so as to have some of the glue transferred to the flanges of the rubber belt. For adjusting the relative posi-

tions of the wheel 11 and belt 40, the eccentric journal 31 can be rotated by means of a handle 33, which, it will be plain, will adjust the position of shaft 34 on which wheel 36 is mounted. This will serve to adjust the amount of glue transferred from wheel 11 to belt 40.

Belt 40 can be loosened or tightened for mounting on and dismounting from wheels 22 and 36 by manipulation of the arm 29.

It will be noted that, in lowered position of adjustment, wheel 22 and belt 40 extend below the level of base plate 5 and the belt will lightly engage with and transfer glue to a sheet or strip passing on conveyor 2. It is important that the position of belt 40 be very accurately adjusted in order not to transfer glue to the conveyor when no sheet or strip is passing, and this finer adjustment is accomplished by relative turning of rod 25 and tube 26.

For the purpose of adjusting the amount of glue which will be carried by wheel 11, an adjustable scraper device 42 is provided. The scraper is in the form of a plate provided with a recess 44 substantially conforming in shape to the edge portion of wheel 11; that is, the recess is provided with a tongue 45 which extends between the flanges of wheel 11 and removes excess glue from the slot between the flanges of the wheel. Plate 42 is connected with a rod 46 which extends through an opening in a lug 47 at the rear end of the glue pot, and the outer end of rod 46 is screw-threaded and is fitted with a wing nut 48. On the opposite side of the lug is arranged a coil spring 49 encircling the rod and bearing against a pin 50 extending transversely through rod 46. The spring 49 being compressed between lug 47 and pin 50 presses the scraper as far to the right, Fig. 1, as will be permitted by the position of wing nut 48. Adjacent the scraper 42, the rod 46 is loosely supported by a beam 52 which rests on the edges of the glue pot.

By the arrangements herein described, it is possible to make all necessary adjustments of the various parts of the machine for proper application of the glue and also for maintenance of the machine.

I claim:

1. In a glue-applying machine, a pair of belt wheels, a flexible belt on said wheels, means for supplying to said belt a regulated quantity of glue, a pivoted beam supporting one of said wheels, a crank, a rod connecting said crank with said beam means for actuating said crank to move the beam and its wheel through a major adjustment, means for adjusting the length of said rod to effect minor adjustments of the beam and its wheel, and means for driving said belt.

2. In a glue-applying machine, a pair of belt wheels, a flexible belt on said wheels, a glue pot, a wheel dipping into said pot and adapted to be contacted by the belt, means for adjusting the position of one of the pair of wheels to regulate the contact of the belt with the glue on the dipping wheel and thus the amount of glue transferred to the belt, means for adjusting the position of the other belt wheel to regulate the transfer of glue from the belt to the surface to be glued, and means for driving the dipping wheel and one of the belt wheels.

3. In a glue-applying machine, a frame including a post, a glue pot, a glue-dipping wheel having its shaft rotatably mounted on said frame, a journal in said post, said journal having an eccentrically located axially extending bore, a shaft in said bore, a belt wheel on said shaft in substantial alignment with the glue-dipping wheel, a belt on said belt wheel, and means for rotatably adjusting the position of said journal to adjust the position of said belt wheel and belt relative to the dipping wheel.

BENJAMIN S. DAVIS.