March 21, 1933. F. J. RECTOR 1,902,264

GLUING MACHINE

Filed Nov. 3, 1930

FIG. 1

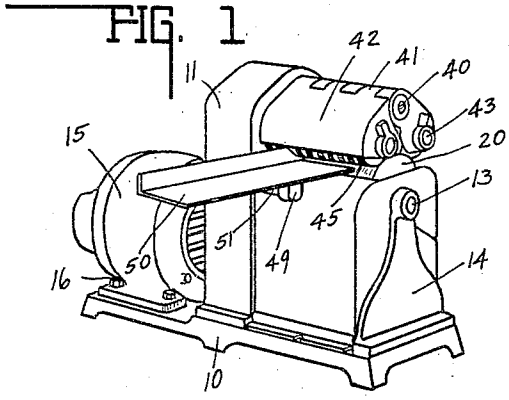


FIG. 4

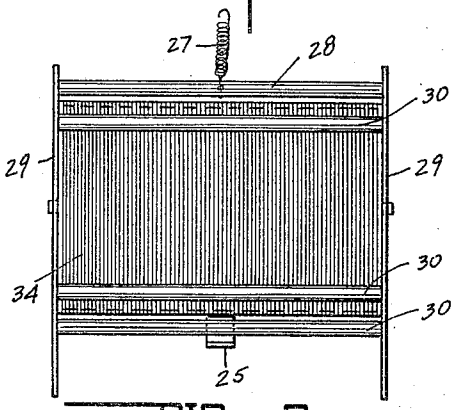


FIG. 2

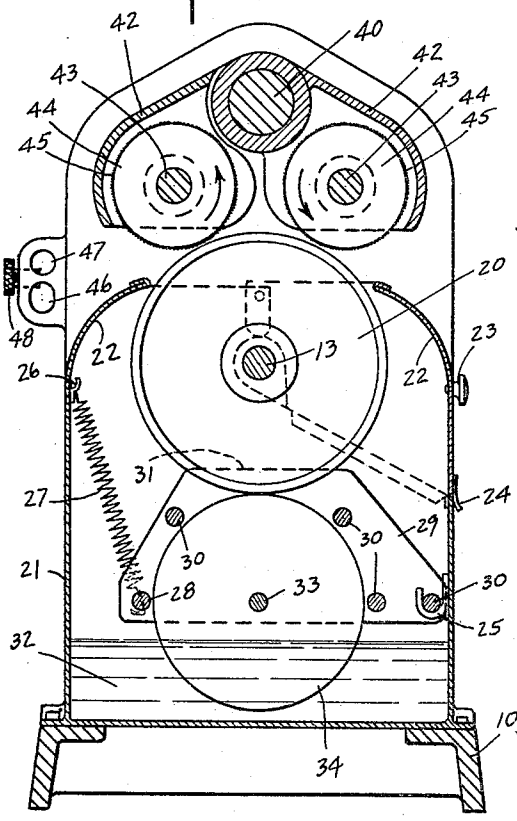
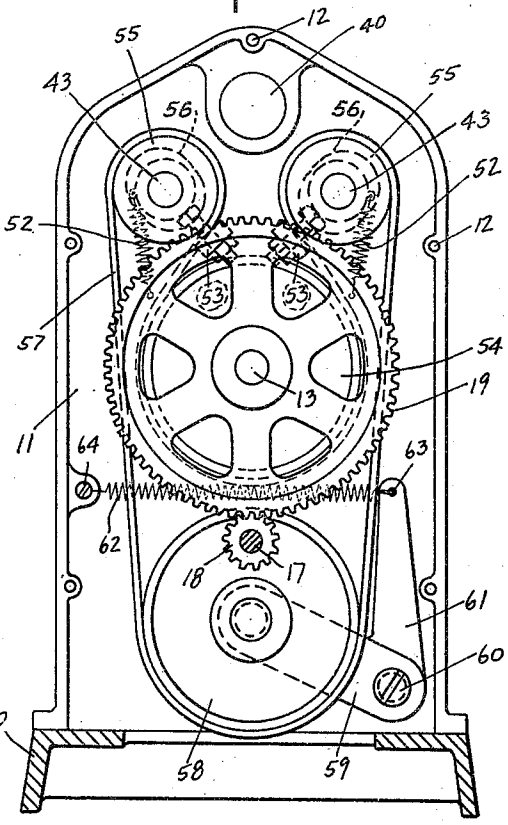


FIG. 3



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UNITED STATES PATENT OFFICE

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GLUING MACHINE

Application filed November 3, 1930. Serial No. 493,187.

This invention relates to an edger type gluing machine.

The chief object of this invention is to provide a compact unitary machine capable of applying adhesive to the edge of a strip as it passes through the machine.

One feature of the invention consists in the relatively few number of parts required to comprise a machine of the aforesaid character.

Another feature of the invention consists in the compact association of the several parts.

The third feature of the invention consists in the mounting of the adhesive transfer roll in a frame and its yielding suspension, said frame including side guards which automatically align with the adhesive applying roll the transfer roll and which also act as cleaning scrapers to the edges of the applying roll.

Another feature of the invention consists in the particular type of yielding means of the frame supporting the transfer roll.

Another feature of the invention consists in the particular type of yielding and adjustable drive and tensioning device for the sheet feeding rolls.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

In the drawing, Fig. 1 is a perspective view of the device.

Fig. 2 is an enlarged vertical sectional view through the adhesive applying mechanism.

Fig. 3 is a side elevational view of the frame upright and roll supports.

Fig. 4 is a top plan view of the transfer roll and its supporting frame work.

In the drawing 10 indicates a base, intermediate the ends of which there is an upstanding housing 11 having portions 12 arranged to secure a plate for cover purposes. Extending outwardly from the housing and in one direction is a shaft 13. Shaft 13 is rotatably supported in the bracket or standard 14 at one end of the base. An electric motor 15 is detachably mounted at the opposite end of the base as at 16 and said electric motor includes a shaft 17 which mounts a pinion 18 which meshes with the gear 19 carried by shaft 13 and mounted within the housing 11. Shaft 13 supports an adhesive applying roll 20.

Detachably mounted upon the base 10 between the housing 11 and the bearing bracket 14, is a container 21. Said container has upwardly and inwardly flared sides 22 and a portion thereof is arranged for hinged mounting for serving as a door, knob 23 being engageable for lifting the portion which is normally associated with the receptacle or container 21 as at 24. When the door is opened, adhesive may be supplied to the container without removing the container from the base.

Centrally positioned upon one of the side walls is an open bearing 25 and upon the opposite wall is a hook 26. A coil spring 27 has one end anchored to said hook and the other end anchored to a cross member 28 of a frame or carriage. The frame or carriage includes a pair of spaced side plates 29 and said spacing is maintained by similar cross members 30. One of the cross members 30 is seatable in the open bearing 25. The spacing between the plates 29 is substantially that equal to the overall length of the roller 20 and, as indicated at 31, the side plate overlaps the edge of the applying roll so that the two plates in spaced relation straddle said roll and serve as scrapers and prevent the formation of an end skim, which would be transferred to the strip of paper, or similarly relatively rigid material, which passes over the applying roll. The adhesive supply is indicated by the numeral 32 in Fig. 2. The shaft 33 carried by the frame members 29, rotatably supports a grooved transfer roll 34. The grooved transfer roll 34 by means of the yieldingly mounting of the frame, is not only aligned with respect to the applying roll 20, but is yieldingly retained in contact therewith and serves to transfer the adhesive 32 from the container 21 to the applying roller 20.

Extending from the housing 11 and parallel to the shaft 13, is an overhanging arm

or pivot shaft 40. Shaft 40 pivotally supports by an offset hinge arrangement 41—see Fig. 1—a pair of combination covers and arms 42. These arms rotatably support shafts 43 and each of said shafts mounts a pressing and feeding roll 44 knurled as at 45. These rolls are positioned in spaced and parallel relation and the spacing therebetween may be varied, although in so varying the same, the rolls are varied relative to the spacing between them and the applying roll 20. The two rolls 44 rotate in the same direction.

An arm 46 is socketed as at 47 and a clamp 48 detachably mounts a bracket 49 supporting an aligning guard and guide 50. The bars 51 of the bracket 49 are slidable in the openings 47 and are locked therein by the clamp screw 48 to position the guard and guide 50, so that the predetermined width of adhesive is applied to the strip in its passage between the applying roll and the two pressing and feeding rolls.

The feeding and pressing rolls are yieldingly mounted and normally constrained toward contact with the applying roll and by means of springs 52. The same, however, are prevented from such contact by adjustable stops 53. The feeding rolls, therefore, are free from adhesive.

The power for driving the pressing and feeding rolls is derived from the applying roll so that the same are operable in timed relation. The shaft 13 mounts a pulley 54 which lies in the same plane as pulleys 55 carried by the shafts 43. The housing is provided with elongated slots 56, through which the shafts extend and into the housing 11. The housing enclosed ends mount the pulleys 55. Each of said pulleys has more than 180 degrees of contact with the belt. The endless belt 57 runs upon an idler pulley 58, pivotally supported on arm 59 pivoted at 60. Associated with the shaft 60 is an arm 61 and a coil spring 62 is connected to the free end thereof as at 63 and anchored to the housing as at 64. The spring 62 normally tends to rock the arm 61 counterclockwise—see Fig. 3—for lowering the tensioning pulley 58 for obtaining the desired driving tension in the belt. The motor 15, therefore, not only rotates shaft 13 for rotating the applying roll, which in turn by frictional contact rotates the transfer roll, but also through the pulley 54 frictionally drives the feeding and pressing rolls 44.

The invention claimed is:—

1. A gluing machine including an adhesive applying roll arranged to support an end and edgewise presented sheet of material while passing thereover and adhesive is applied to the underface thereof, a pair of spaced sheet engaging and sheet conveying pressing rolls positioned thereover and each normally and individually constrained toward the applying roll, means limiting the constrained movement short of roll to roll contact, and a frame structure supporting said rolls comprising a pair of vertically spaced supports providing a gap between the pressing rolls and the adhesive applying rolls and supporting the outer ends thereof and means supporting the opposite ends of said rolls and said supports.

2. A device of the character described, comprising a base, a housing extending upwardly thereof and intermediate the ends, a stationary overhanging arm extending therefrom, a pair of feeding rolls rotatably mounted, means associated with the arm and housing and pivotally supporting the rolls and permitting roll movement toward and away from each other, an applying roll therebeneath and in juxtaposition thereto, a standard for one end of the applying roll, said standard and arm supporting said rolls to permit end and edgewise presentation of a sheet, an adhesive container positioned therebeneath, a transfer roll mounted therein and normally constrained toward applying roll engagement and rotatable thereby, an electric motor mounted on the base opposite from the container and balancing said overhanging arm, and power means operable by the motor for rotating the applying roll and rotating the feeding rolls.

3. In a marginal adhesive applying machine, the combination of a base, a housing extending upwardly thereof, an overhanging arm supported by the housing parallel to the base, a power shaft supported at one end by the housing, a standard terminating below the level of the arm and supporting the other end of the shaft, an applying roll supported by the power shaft, a pair of parallel and spaced feeding rolls supported by the housing and arm, means normally constraining said rolls toward each other and toward the applying roll, means pivotally supporting said feeding rolls upon an axis lying in a plane intermediate said rolls and including the axis of the applying roll, adjustable stop means limiting the pivotal movement of said feeding rolls toward each other and preventing applying roll contact, a pulley coaxial with each of said rolls, an endless belt operatively associated with not less than 180 degrees of contact with each of said pulleys, and means normally tensioning said belt.

4. In a marginal adhesive applying device of the character described, the combination of an overhanging arm, pressure applying means supported thereby, a container detachably mounted beneath the arm and means including a hinged cover for access, an applying roll rotatably supported in fixed relation to the arm, said container having an opening in its upper portion through

which the applying roll projects, and a transfer roll yieldingly mounted in said container and normally constrained into applying roll engagement.

5. In a marginal adhesive applying device of the character described, the combination of an overhanging arm, pressure applying means supported thereby, a container detachably mounted beneath the arm and means including a hinged cover for access, an applying roll rotatably supported in fixed relation to the arm, said container having an opening in its upper portion through which the applying roll projects, a transfer roll yieldingly mounted in said container and normally constrained into applying roll engagement, and means operatively associated with said transfer roll and arranged for overlapping the applying roll for scraping the same at the sides thereof and aligning the transfer roll therewith.

In witness whereof, I have hereunto affixed my signature.

FRANK J. RECTOR.