Dec. 12, 1933. J. MASON 1,939,507

MACHINE FOR APPLYING BANDS OR STAMPS TO PACKETS

Filed July 5, 1932 2 Sheets-Sheet 1

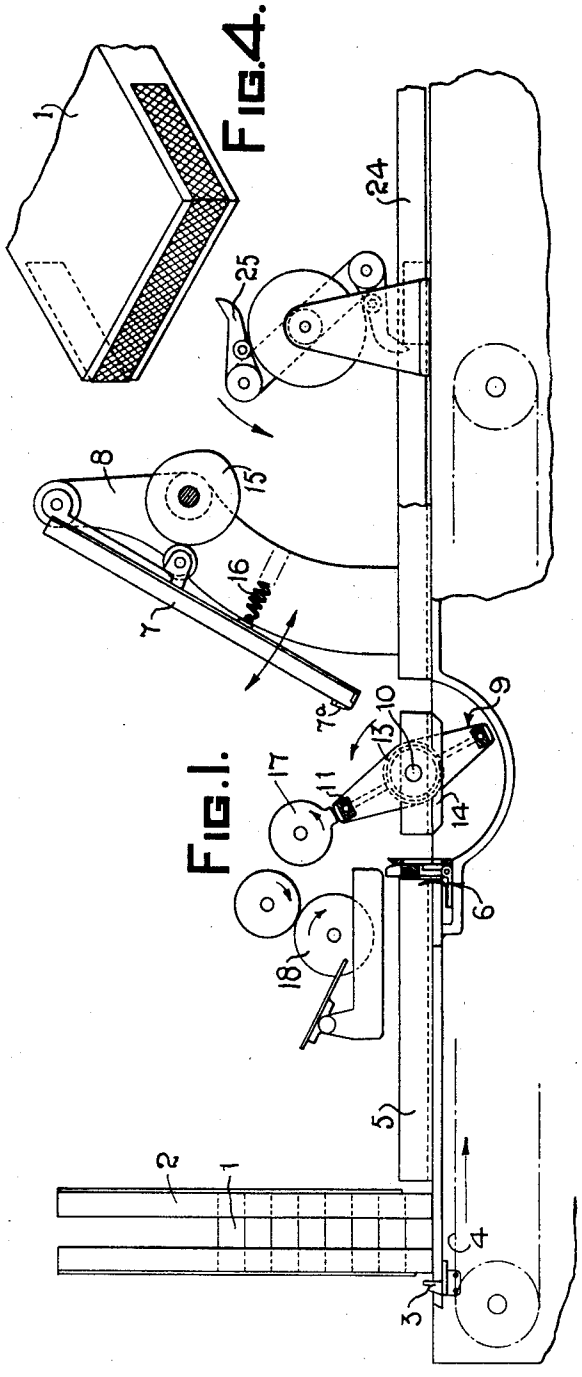


FIG. 1.

FIG. 4.

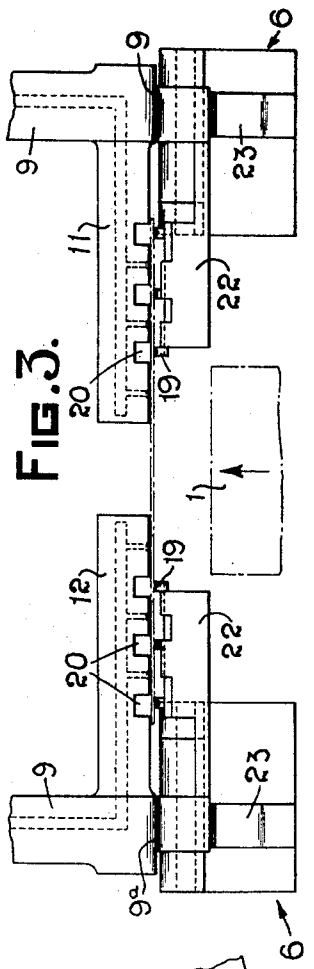


FIG. 3.

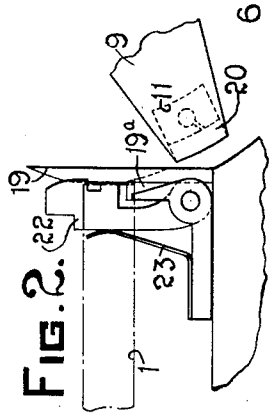


FIG. 2.

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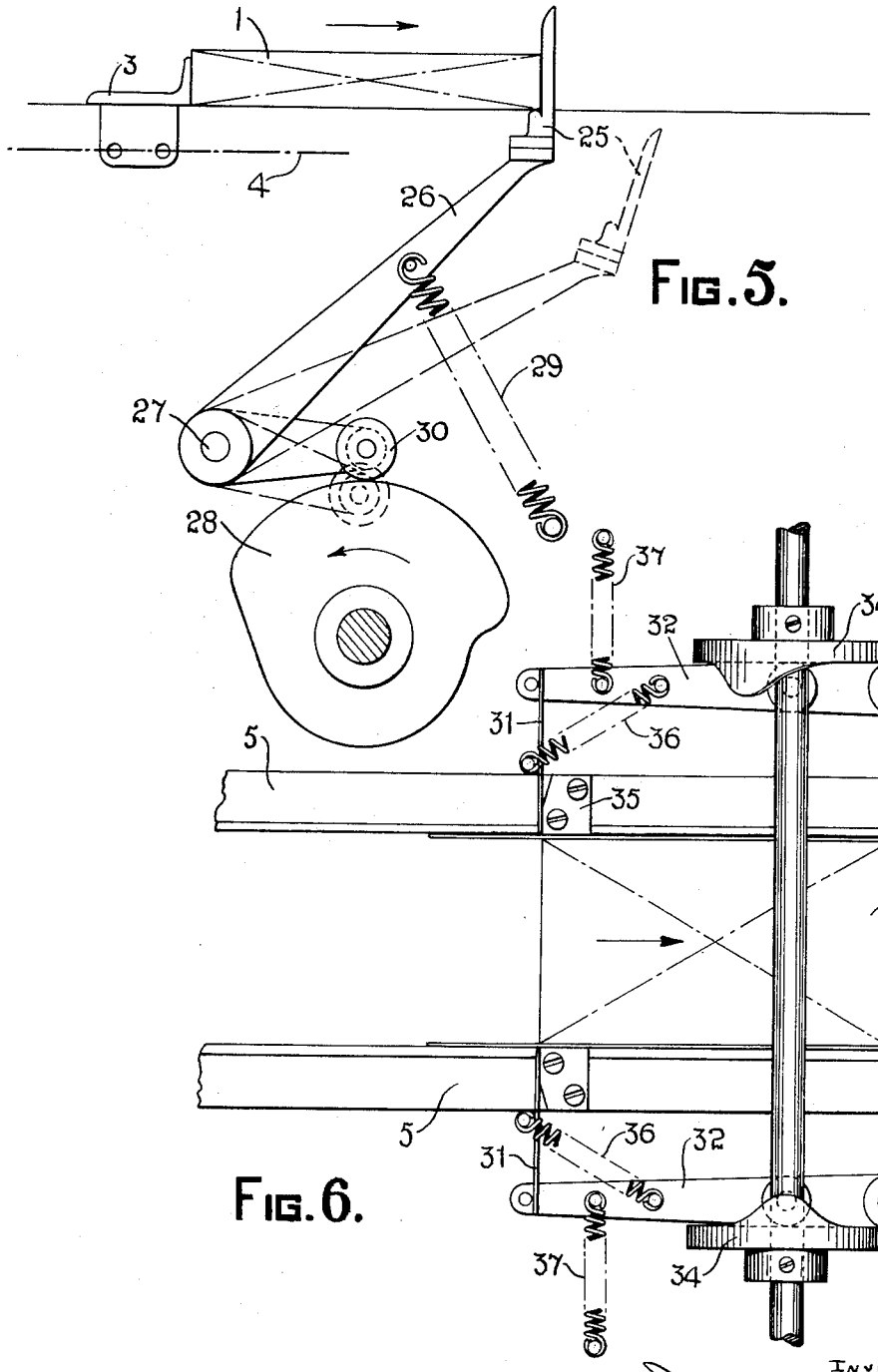


FIG. 5.

FIG. 6.

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MACHINE FOR APPLYING BANDS OR STAMPS TO PACKETS

James Mason, Deptford, London, England

Application July 5, 1932, Serial No. 620,929, and in Great Britain July 13, 1931

16 Claims. (Cl. 216—55)

This invention relates to a machine wherein bands, stamps or the like are automatically wrapped around packets, for example, packets of cigarettes, and has for its object the provision of a machine wherein stamps may be applied to the packets at a greater speed and more efficiently than has hitherto been possible.

The invention consists of an apparatus for applying bands, stamps or the like to packets which comprises a rotary suction device arranged to move past a magazine and remove a stamp therefrom and carry the same past a gumming device and thereafter deliver the stamp to a device which holds it across the path of a packet carried continuously along by a conveyor or the like.

The invention will be more particularly described with reference to the accompanying drawings, in which:—

Fig. 1 is a diagrammatic sectional elevation of a machine constructed according to the invention.

Fig. 2 is an enlarged view of a portion of Fig. 1.

Fig. 3 is a plan of Fig. 2.

Fig. 4 is a perspective view of a packet having a stamp applied thereto.

Fig. 5 is an end elevation of a movable stamp holder.

Fig. 6 is a plan of a tucking device for the trailing ends of a stamp.

Referring to the drawings, the packets 1 are placed in a magazine 2 and removed therefrom one at a time by pusher pieces 3 carried on a continuous conveyor 4. The pusher pieces carry the packets through guides 5 at the end of which a stamp holding mechanism 6 is arranged. The stamps are stacked in a pile in a magazine 7 which is pivoted on a bearing bracket 8 above the bed of the machine and they are removed from the bottom of the pile one at a time by a rotating suction apparatus 9.

The suction apparatus is mounted on pivots 10 and consists of two pairs of hollow members 11 and 12 mounted on a central hub 13, the pairs of suction members being disposed at diametrically opposite positions on the hub.

The members 11 and 12 each have a suction face of a width equal to the width of a stamp and the members are spaced apart as shown in Fig. 3 to permit a central rib 14 of the machine bed to support the packet as it is carried along by the conveyor.

As the suction member 9 rotates, the suction surfaces come into contact with the ends of the lowermost stamp in the magazine and remove it. In order to permit the suction members to securely take hold of the stamp, the magazine which is pivoted at its upper end to the bracket 8 is oscillated by a cam 15 and spring 16 so that the lowermost stamp in the magazine moves in contact with the suction members for a short distance before it is removed from the magazine. The outlet of the magazine is preferably provided with a spring guard or finger 7^a which prevents more than one stamp from being removed at a time.

The suction members carry the stamp past a gum roller 17 which may have a series of ribs to apply the gum in streaks, the roller receiving its gum from a gum feeding mechanism 18 in the usual manner.

The stamp holding mechanism consists of two parts 6 which are arranged on the machine bed at either side of the conveyor. The stamp is stripped from the suckers by prongs 19 and retained in position against stops 19^a until an oncoming packet contacts with it.

The suction members have grooves 20 formed in their faces to give clearance to the prongs 19 and preferably the gum is applied to the ends of the stamps so that ungummed portions are left where the prongs 19 will touch the stamp.

The stamp holders 6 have pivoted members 22 pressed by springs 23 and the stamp is lightly gripped between the members 22 and prongs 19 so that as the packet pulls the stamp from the stamp holders it is under a certain amount of tension and is pulled taut across the leading face of the packet and around the two side faces as shown in Fig. 4. In order to permit the stamp to enter the gripper formed by prongs 19 and member 22, the latter are pressed back against spring tension by projections 9^a striking the members 22 as shown in Fig. 3.

The packet is then carried between a pair of guides 24 which firmly press the side extensions of the stamp on to the side faces of the packet so that the stamp is neatly and securely attached to the packet, the guides being heated as usual if desired.

As shown in Fig. 1, the conveyor 4 finishes shortly after the stamp applying position and the packets are moved further along the guides by rotary pawls 25.

In an alternative form the stamp may be applied only to one face of the packet, in which case the stamp is received by a holder 25 carried on a lever 26 pivoted at 27 in such a manner that as the packet contacts with the stamp the holder swings on its pivot 27 and moves out of the way as the packet continues its movement.

The pivoted holder is operated by a cam 28 and spring 29, the lever 26 being furnished with a cam roller 30.

It will be understood that instead of having the cam, the lever 26 may be held in the position shown in full lines by a spring of such strength that the pressure of the packet when moved by the conveyor will cause the holder 25 to be pushed out of the way without injury to the packet.

This form of the invention is particularly useful where a small stamp is to be placed on a packet, in which case only half of the suction apparatus is required, the particular suction case being made approximately the same size as the stamp.

Further, the stamp may be wrapped around the four sides of the packet with the ends overlapping by mechanism such as is shown in Figure 6.

Referring to that figure, two folders or tuckers 31 are provided pivoted to the ends of levers 32 which are in turn pivoted to the bed at 33.

Cams 34 operate on the levers 32 and the folders 31 move inwards towards the center of the bed, after the packet 1 has reached the position shown in chain lines.

The packet during this folding operation is stationary, having been brought to the required position by the rotary pawls 25, Figure 1.

The folders 31 are given a straight line movement by means of guide blocks 35 and springs 36, the tuckers working one after the other by suitably displacing the two cams 34. The springs 37 return to folders when the operation is completed.

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

1. In apparatus for applying stamps, bands, or the like to packets, the combination with a magazine for stamps, of a suction device supported for rotation adjacent said magazine for removing stamps, one at a time, from the magazine, means located adjacent the path of movement of said device for applying adhesive to stamps carried thereby, means for moving a series of packets through a predetermined path, and means for receiving the adhesive coated stamps from said suction device and supporting the same transversely across the predetermined path of movement of said packets.

2. In apparatus for applying stamps, bands, or the like to packets, the combination with a magazine for stamps, of a suction device supported for rotation adjacent said magazine for removing stamps, one at a time, from the magazine, means located adjacent the path of movement of said device for applying adhesive to stamps carried thereby, means for moving a series of packets through a predetermined path, means for receiving stamps from said suction device and supporting the same transversely across the predetermined path of movement of said packets, and mechanism operable in timed relation with said suction device for moving said magazine substantially in the direction of movement of said suction device as each stamp is removed from the magazine.

3. In apparatus for applying stamps, bands, or the like to packets, the combination with a magazine for stamps, of a suction device supported for rotation adjacent said magazine for removing stamps, one at a time, from the magazine, means located adjacent the path of movement of said device for applying adhesive to stamps carried thereby, means for moving a series of packets through a predetermined path, and means for receiving stamps from said suction device and supporting the same transversely across the predetermined path of movement of said packets, said last named means being provided with a plurality of prongs for stripping the stamp from said suction device, said suction device being grooved to permit passage thereof past said prongs.

4. In apparatus for applying stamps, bands, or the like to packets, the combination with a magazine for stamps, of a suction device supported for rotation adjacent said magazine for removing stamps, one at a time, from the magazine, means located adjacent the path of movement of said device for applying adhesive to stamps carried thereby, means for moving a series of packets through a predetermined path, and means for receiving stamps from said suction device and supporting the same transversely across the predetermined path of movement of said packets, said last named means including spring pressed stamp gripping elements disposed on either side of the path of movement of the packets to permit movement of the packets therebetween.

5. In apparatus for applying stamps, bands, or the like to packets, the combination with a magazine for stamps, of a suction device supported for rotation adjacent said magazine for removing stamps, one at a time, from the magazine, means located adjacent the path of movement of said device for applying adhesive to stamps carried thereby, means for moving a series of packets through a predetermined path, and means for receiving stamps from said suction device and supporting the same transversely across the predetermined path of movement of said packets, said last named means being supported for movement into and out of the path of movement of said packets.

6. In apparatus for applying stamps, bands, or the like to packets, the combination with a magazine for stamps, of a suction device supported for rotation adjacent said magazine for removing stamps, one at a time, from the magazine, means located adjacent the path of movement of said device for applying adhesive to stamps carried thereby, means for moving a series of packets through a predetermined path, means for receiving stamps from said suction device and supporting the same transversely across the predetermined path of movement of said packets, and a folding device arranged adjacent the path of movement of said packets for folding the stamps about the rear face of the packets.

7. In apparatus for applying bands to packets, the combination with a conveyor for moving successive packets through a predetermined path, of suction means operable in timed relation with said conveyor for introducing a band having an adhesive coated face in the path of movement of the packets and in advance of each packet, with the adhesive coated face of the band toward the oncoming packet.

8. In apparatus for applying bands to packets, the combination with a conveyor for moving successive packets through a predetermined path, of means operable in timed relation with said conveyor for introducing a band having an adhesive coated face in the path of movement of the packets and in advance of each packet, with the adhesive coated face of the band toward the oncoming packet, said last named means com-

prising a suction device and band retaining elements disposed on either side of the path of movement of the packets and spaced to an extent sufficient to permit movement of the packets therebetween.

9. In apparatus for applying bands to packets, the combination with a conveyor for moving successive packets through a predetermined path, of means operable in timed relation with said conveyor for introducing a band having an adhesive coated face in the path of movement of the packets and in advance of each packet, with the adhesive coated face of the band toward the oncoming packet, said last named means including band supporting suction means movable into and out of the path of movement of the packets.

10. In apparatus for applying bands to packets, the combination with means for conveying packets through a predetermined path, of means for supporting a band transversely across the path of movement of the packets and in advance of each packet, adhesive applying means, and a suction device for moving a band past said adhesive applying means and in contact therewith and delivering the band to the said supporting means.

11. In apparatus for applying bands to packets, the combination with means for conveying packets through a predetermined path, of means for supporting a band transversely across the path of movement of the packets, a rotatable suction device for delivering adhesive coated bands to said last named means, and means for continuously rotating said suction device in timed relation with the movement of said conveying means.

12. In apparatus for applying bands to packets, the combination with means for conveying packets through a predetermined path, of means for supporting a band transversely across the path of movement of the packets, and a suction device for delivering adhesive coated stamps to said last named means, said suction device being supported for rotation adjacent the path of movement of said packets and having a band receiving surface to which the suction is applied, a magazine for bands having a discharge opening positioned adjacent the arcuate path described by said band receiving surface, an adhesive supplying device located adjacent the said arcuate path, and means associated with said band receiving means and extending into the said arcuate path for removing bands from said suction surface.

13. In apparatus for applying bands to packets, the combination with means for conveying packets through a predetermined path, of means for supporting a band transversely across the path of movement of the packets, and a suction device for delivering adhesive coated stamps to said last named means, said suction device being supported for rotation adjacent the path of movement of said packets and having a band receiving surface to which the suction is applied, a magazine for bands having a discharge opening positioned adjacent the arcuate path described by said band receiving surface, an adhesive supplying device located adjacent the said arcuate path, and means associated with said band receiving means and extending into the said arcuate path for removing bands from said suction surface, said suction surface being grooved to permit passage of said last named means therethrough.

14. In apparatus for applying bands, stamps, or the like to packets, the combination with means for moving a series of packets in a predetermined path, of a rotary suction device for delivering stamps to a position intersecting the path of movement of the packets, said device comprising stamp engaging suction means, and supporting arms for said suction means, said arms being spaced to a sufficient extent to permit movement of packets therebetween.

15. In apparatus for applying bands, stamps, or the like to packets, the combination with means for moving a series of packets in a predetermined path, of a continuously rotating suction device for engaging and delivering stamps to a position intersecting the path of movement of the packets, said device being supported for rotation about an axis transverse to the path of movement of the packets and having portions passing on either side of said path of movement to permit movement of the packets therebetween.

16. In apparatus for applying bands, stamps, or the like to packets, the combination with means for moving a series of packets in a predetermined path, of a continuously rotating suction device for engaging and delivering stamps to a position intersecting the path of movement of the packets, said device being rotatable about an axis extending transversely of and located closely adjacent to said path of movement.

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