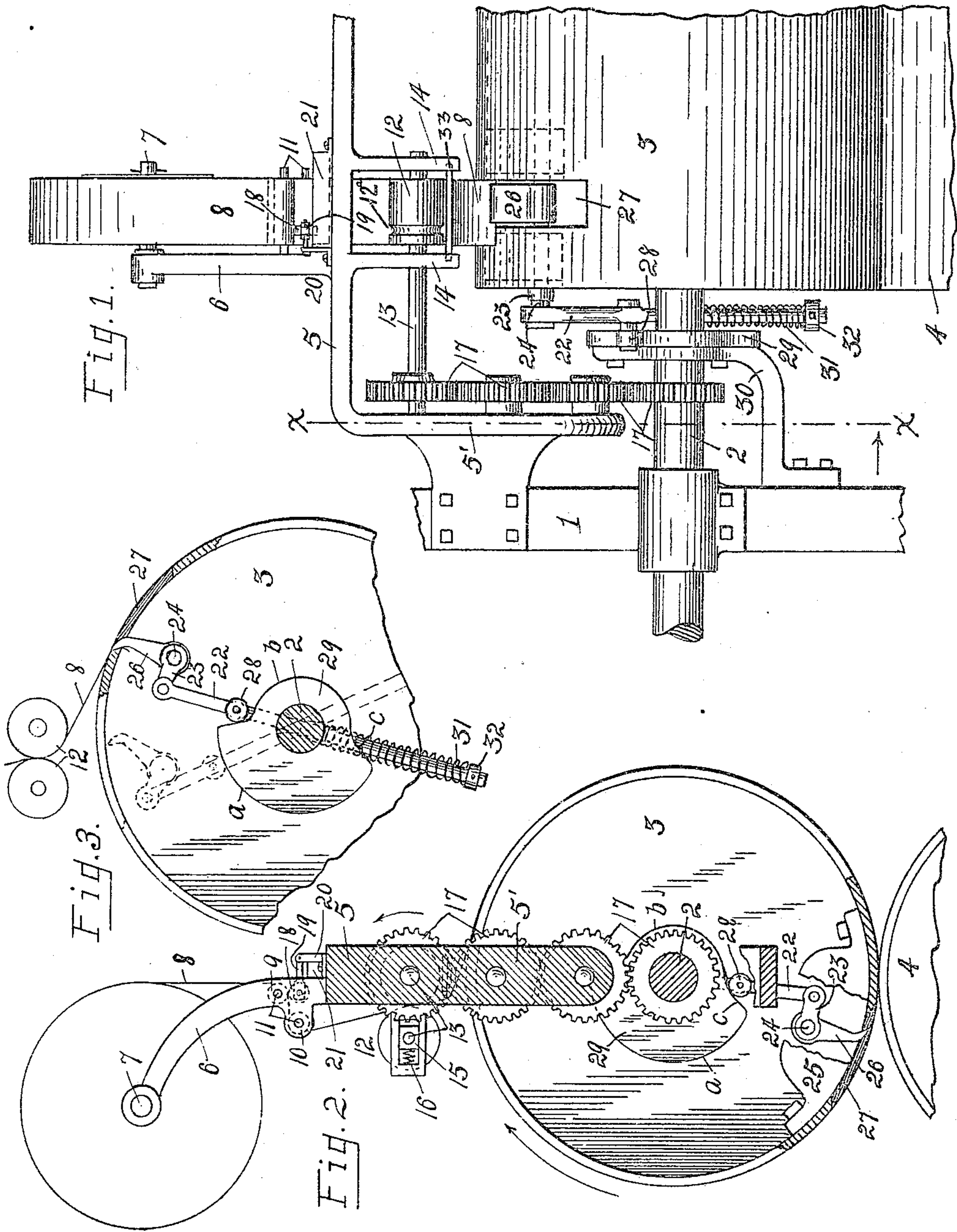


F. E. BEAM.
MEANS FOR ATTACHING VALVE STRIPS TO BAGS.
APPLICATION FILED FEB. 5, 1909.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK E. BEAM, OF TOLEDO, OHIO.

MEANS FOR ATTACHING VALVE-STRIPS TO BAGS.

952,782.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK E. BEAM, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Means for Attaching Valve-Strips to Bags; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to means for use in connection with bag-making or bottoming machines for securing valve extension strips to bags during the manufacture thereof, said strips being of paper, cloth or other material suitable for such purpose and preferably of a more sensitive nature than the material from which the bags are made.

The object of my invention is the provision in combination with a feed drum of simple and efficient mechanism for intermittently drawing predetermined lengths of material from a roll or other source of supply located exteriorly of the drum, applying paste thereto, severing such lengths and finally securing them to bags in proper position to provide valve-extension strips therefor.

The operation, construction and arrangement of the parts of the invention are fully described in the following specification, and while in its broader aspect it may be embodied in different forms of mechanism and its parts differently arranged and constructed a preferred form thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is a rear elevation of a mechanism embodying my invention with portions of the frame and feed drums broken away and the drum turned into position for the gripping-finger to grip the strip of material. Fig. 2 is a vertical section on the line $x-x$ in Fig. 1, with portions of the parts broken away and the drum in the position at which the gripping-finger moves to release the strip, and Fig. 3 is a side elevation of a portion of the upper drum with the gripping mechanism associated therewith.

Referring to the drawings, 1 designates a portion of one side of the frame of a machine with which any valve-strip attaching mechanism is associated, 2 a shaft which has

one end portion journaled in a suitable bearing in the frame part and is driven in any suitable manner, 3 a drum or roll, carried by said shaft, and 4 a companion feed drum or roll, which is suitably mounted below the drum 3.

Rising from a frame 5, which is shown as being disposed above the drum 3 and secured at one side to the frame 1 is an arm 6, which has a spindle 7 projecting horizontally from its free end. A roll of paper, cloth or other material 8 suitable for the valve strips is intended to be carried by the spindle 7 and has its free end passed under and over a pair of idler rolls 9 and 10, respectively, which are carried in horizontally offset relation by spindles 11, 11 projecting from the lower portion of the arm 6, and thence passes down between a set of small feed-rolls 12, 12, which are disposed in contiguous position to the top of the drum 3 and are carried by shafts 13, 13, which are journaled in pendent bearing-arms 14, 14 of the frame 5. The feed-rolls 12 are held in yielding contact due to the shaft of one being mounted in sliding bearing-blocks 15, (see Fig. 2) each of which is acted on by a spring 16.

One of the shafts 13 is prolonged and has an end journaled in the vertically disposed part 5' of the frame 5 and has rotation communicated thereto from the shaft 2 through a train of gears 17, the idlers of which are shown as being carried by spindles projecting from the frame part 5'. The size of the drive-roll 12 and its speed of rotation are so proportioned that a predetermined length of material 8 is fed out at each revolution of the drum 3.

Paste, glue or the like is applied in proper position to one side of the material or tape 8 as it is drawn from its roll due to a narrow paste roll 18 bearing against the material in opposition to the roll 9 as it passes thereunder. This paste roll is carried by a forked arm 19, which projects from a standard 20 rising from the frame part 5, and has its lower portion projecting down into a paste-pan 21 from which it receives its paste supply. The feed-roll 12 with which the pasted side of the material has contact is peripherally grooved, as at 12^a, to prevent the pasted portion of the material from having contact therewith, thus leaving the paste intact on the material until a severed strip has been pressed to a bag which is fed between the two drums 3, 4.

Projecting through a transverse opening in the shaft 2 at the end of the drum 3 contiguous to the frame 1 is a rod or bar 22, which attaches at one end to a rocker-arm 23 projecting from a shaft 24, that is mounted within the drum in suitable bearings 25 secured to the inner side of the drum rim or shell. The shaft 24 carries a gripping-finger 26 the outer end of which is adapted to move into a contiguous opening 27 in the drum rim and to cooperate with the rear beveled end edge of such opening to grip the free end of the material strip or tape, as hereinafter described. The rod or bar 22 carries a roll 28 intermediate the rocker-arm 23 and shaft 2, which roll travels around the periphery of a stationary cam 29.

The cam 29 loosely encircles the shaft 2 and is prevented from turning therewith by being attached to a bracket arm 30 projecting from the frame 1. The roll 28 is yieldingly held to the periphery of the cam 29 by means of a coiled compression spring 31, which encircles the rod or bar 22 at the opposite side of the shaft 2 to the roll 28 and has its ends thrust against said shaft and a collar 32 on the rod or bar.

The formation of the cam 29 is such that the gripping-finger 26 is rocked to grip the feeding end of the material 8 as the rear end of the opening 27 in the drum 3 passes the end of such material, and is rocked to release the material as its outer end passes the point of bite of the companion drums 3—4, thus leaving the material free to adhere to a bag, which is passing between the drums simultaneous therewith. When the finger 26 grips the end of the material 8 a sudden jerk is imparted to the material, due to the drum moving at a greater speed than the feed of the material, thus causing the fed end of the material to be severed from the roll strip at its point of contact with the serrated edge of a knife 33, which knife is disposed beneath the grooved roll 12.

The operation of the mechanism is as follows:—At each revolution of the drum 3 a predetermined length of material 8 is fed down onto the upper surface of the drum and carried by the frictional contact of the drum therewith in the direction of rotation of such drum, and a corresponding length has paste applied in proper position to one surface thereof as it is drawn between the paste-roll 18 and the roll 9. As the end of the opening 27 in the drum rim passes the free end of the material strip the roll carried by the rod or bar 22 suddenly drops from the neutral zone *a* to the neutral zone *b* of the cam 29, thus effecting a quick movement of the finger 26 to grip the end of the material against the beveled rear edge of the opening 27. On the continued movement of the drum the fed length of material is severed from the roll strip at its point of con-

tact with the knife, due to the more rapid movement of the drum than the feeding of the material, and is carried around by the drum and pressed thereby in proper position on a bag to form a valve extension strip thereon. As the outer end of the gripping finger passes the point of bite of the drums 3—4 the roll 28 on the rod or bar 22 moves into contact with the cam portion *c* of the cam 29 and is suddenly forced outwardly from the zone *b* to the zone *a* of the cam, thus rocking the finger 26 to release the forward edge of the severed material strip to permit such strip to remain attached to the bag. It is, of course, apparent that the feeding of the bags to the drum 3—4 is so timed that the valve-strips are placed in proper position thereon.

I wish it to be understood that my invention is not limited to any specific construction or arrangement of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. In an apparatus of the class described, the combination of a movable member, means associated therewith for carrying a quantity of valve strip material, means for applying a pasty substance to the material as it is fed out, material gripping means carried by said member and actuated at predetermined points in a revolution thereof to grip and release the fed end of the material, and means for severing the fed section of the material.

2. In an apparatus of the class described, the combination of a rotatable member, mechanism for feeding, applying paste to, and severing lengths of material, gripping means carried by said member, and mechanism for actuating said means to grip and release the fed lengths of material at predetermined points in a revolution of said member.

3. In an apparatus of the class described, the combination of a feed drum, means for feeding valve strip material upon the drum surface, means revoluble with the drum and actuated at predetermined points in a revolution thereof to grip and release the fed end of such material, and means for severing the fed lengths of material when engaged by the gripping means.

4. In combination, a movable member, a part cooperating with said member to grip an article therebetween, mechanism for feeding tape and applying paste thereto, tape gripping means revoluble with said member, means cooperating with said gripping means for actuating it to grip the fed tape at a predetermined point in a revolution of said gripping means and to release the tape after the tape has been engaged by said member.

and part, and means, for severing the end portion of the tape from its strip when engaged by the gripping means.

5. In combination, a rotatable member, means for feeding predetermined lengths of tape in contiguous position to the periphery of said member at each revolution thereof, means for severing said fed lengths, means carried by said member for gripping the ends of the fed lengths of tape, and mechanism for actuating said gripping means to grip and release such lengths at predetermined points in each revolution of the drum.

6. In an apparatus of the class described, the combination of cooperating feed members, means for feeding tape in contiguous position to the periphery of one of said members, means carried by said latter member for gripping the fed lengths of tape, cam means for actuating movements of said gripping means to grip and release the fed lengths of tape at predetermined points in a revolution of said gripping means, a knife for severing the fed lengths of tape, and means for applying a pasty substance to one side of the tape.

7. In an apparatus of the class described, the combination of a feed-drum, means for feeding lengths of tape to the drum surface, means for applying paste to the tape lengths,

a gripping finger carried by the drum, cam actuated mechanism for rocking said finger to grip fed lengths of tape at one point in its revolution, and means for severing the fed lengths when engaged by said finger. 35

8. In an apparatus of the class described, a feed-drum, means for feeding tape to the drum periphery, means disposed intermediate said roll and feeding means for applying paste to the tape as it is fed out, a knife for severing the fed lengths, a rock-shaft carried by the drum, a gripping finger and an arm carried by said shaft, a rod attached to said arm and capable of revolving with the drum, a roll carried by said rod, a stationary cam coacting with said roll to rock said shaft to cause said finger to grip the fed tape at one point in a revolution of the finger and to release the tape at another point in a revolution of such finger, and means acting to yieldingly hold said roll to the cam. 40 45 50

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

FRANK E. BEAM.

Witnesses:

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