

March 1, 1927.

A. OLGAY

1,619,214

MACHINE FOR PUNCHING AND REENFORCING BLANKS

Filed Feb. 5, 1923

8 Sheets-Sheet 1

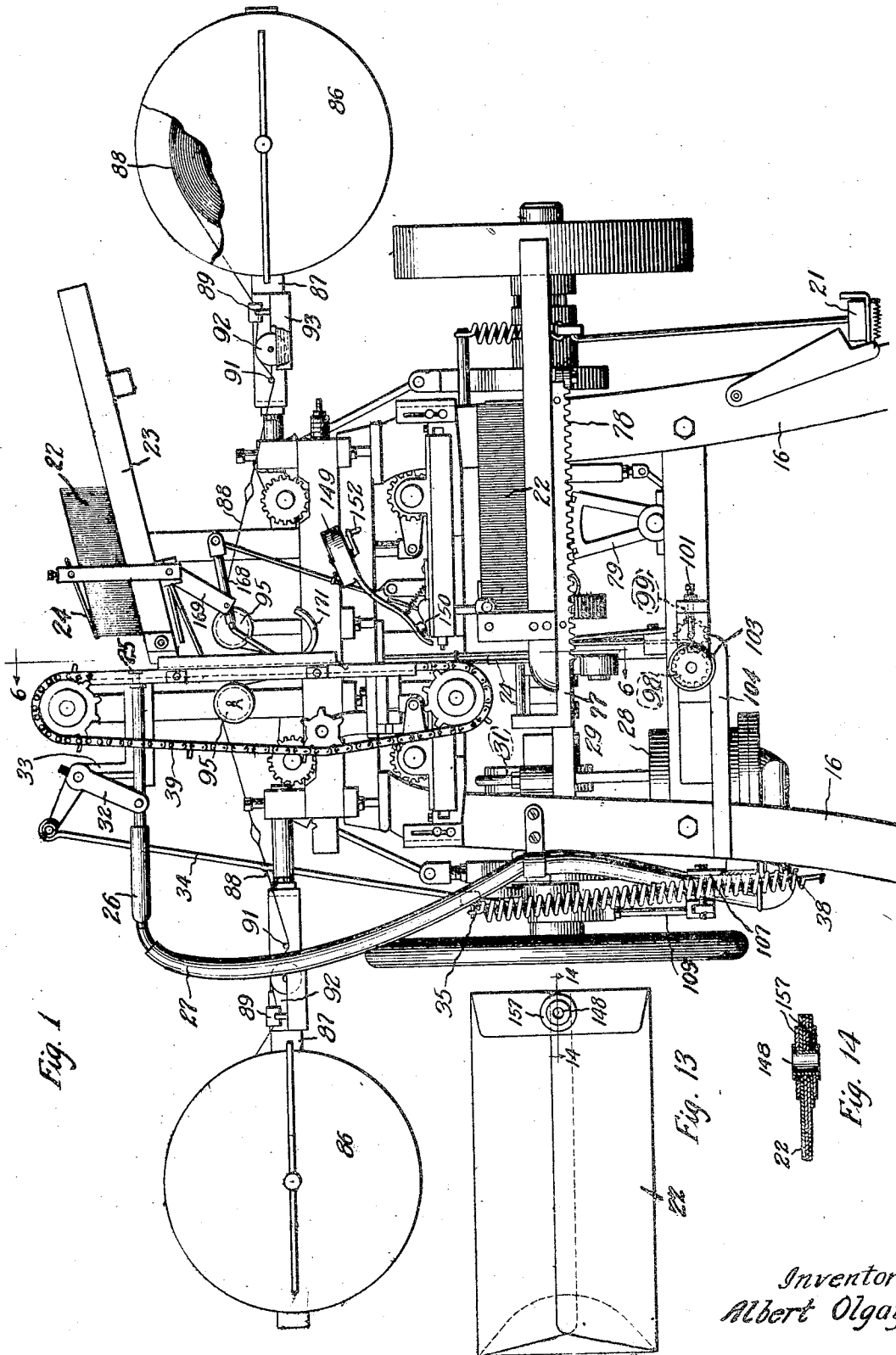


Fig. 1

Fig. 13

Fig. 14

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8 Sheets-Sheet 2

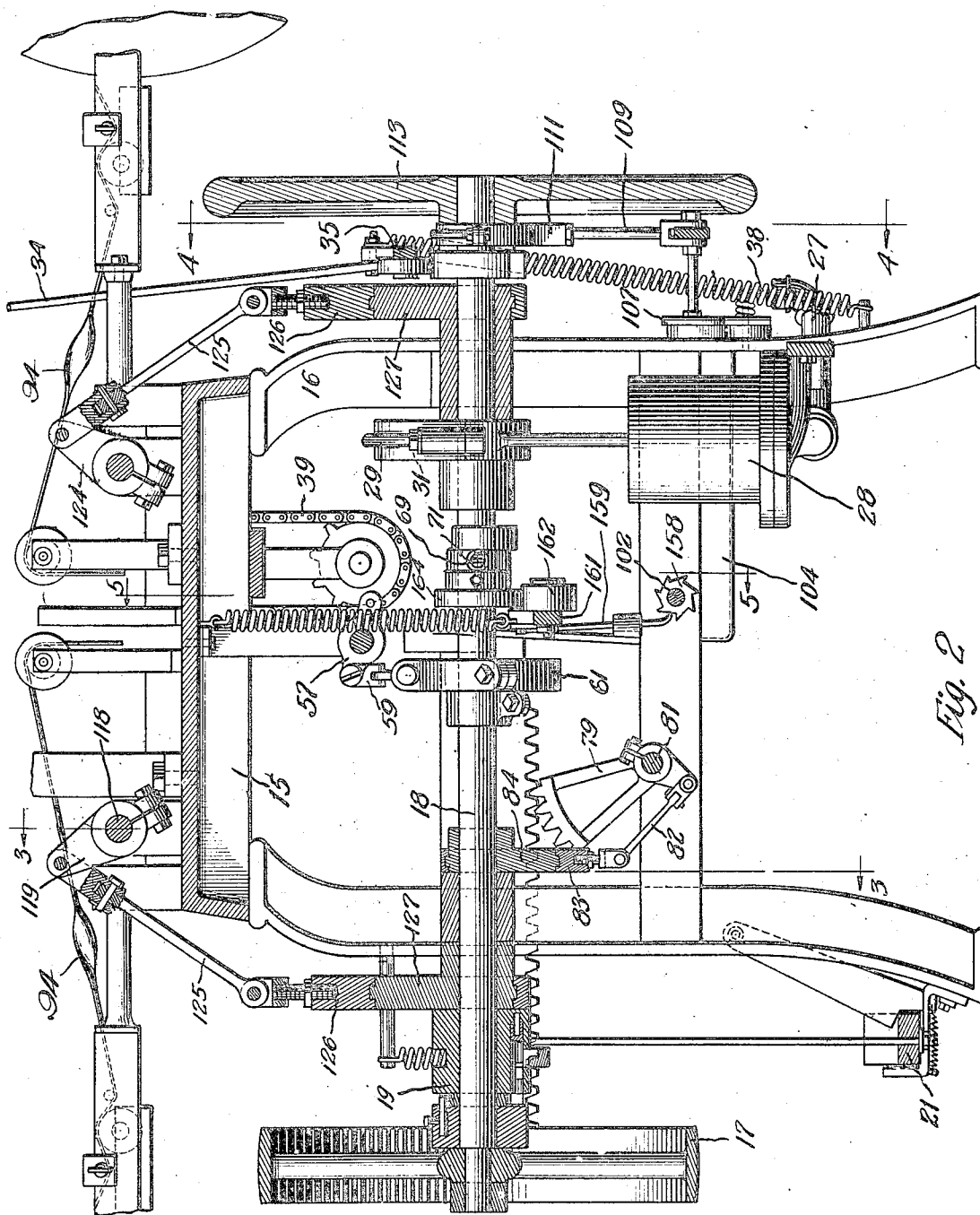


Fig. 2

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1,619,214

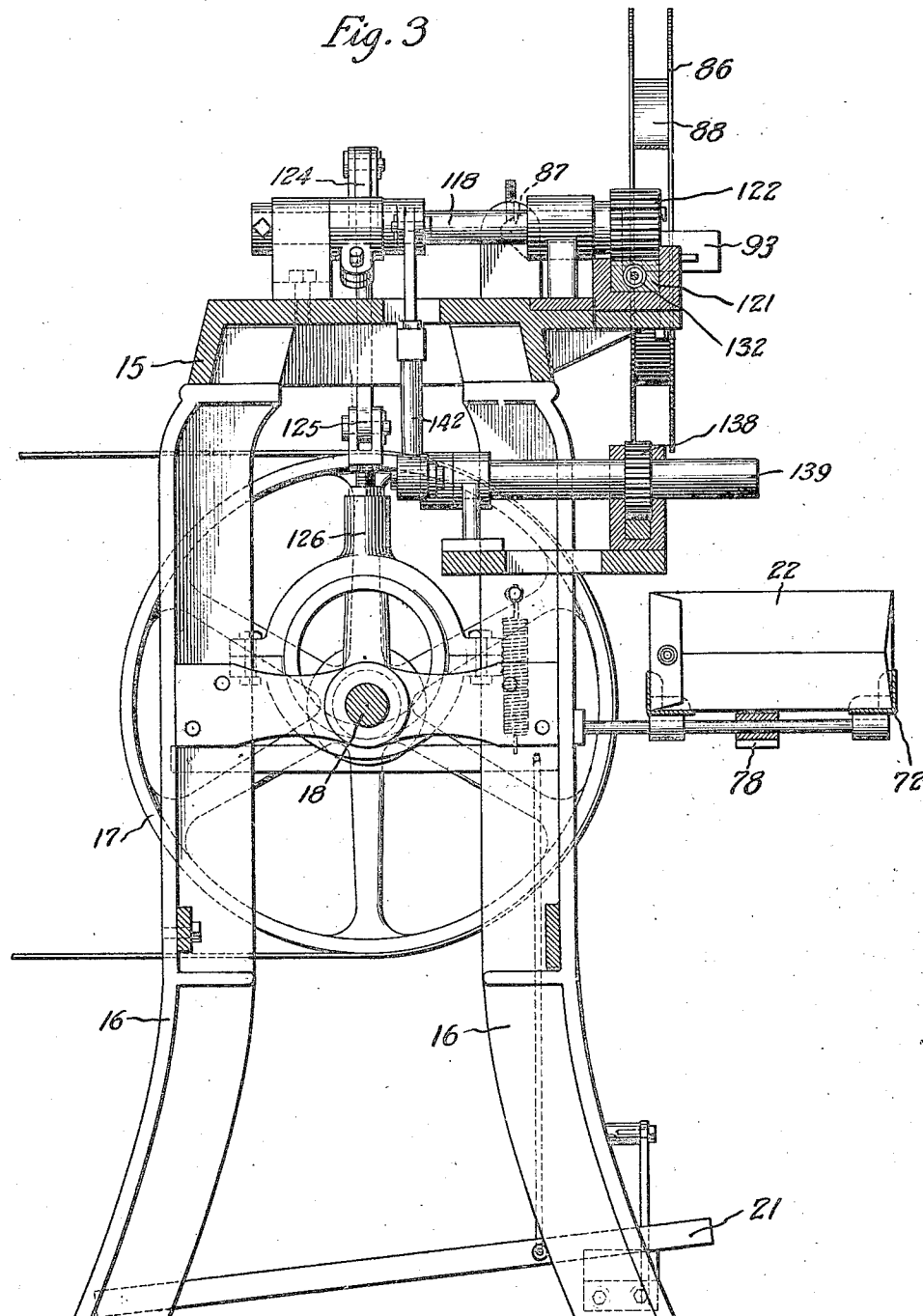
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MACHINE FOR PUNCHING AND REENFORCING BLANKS

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8 Sheets-Sheet 3

Fig. 3



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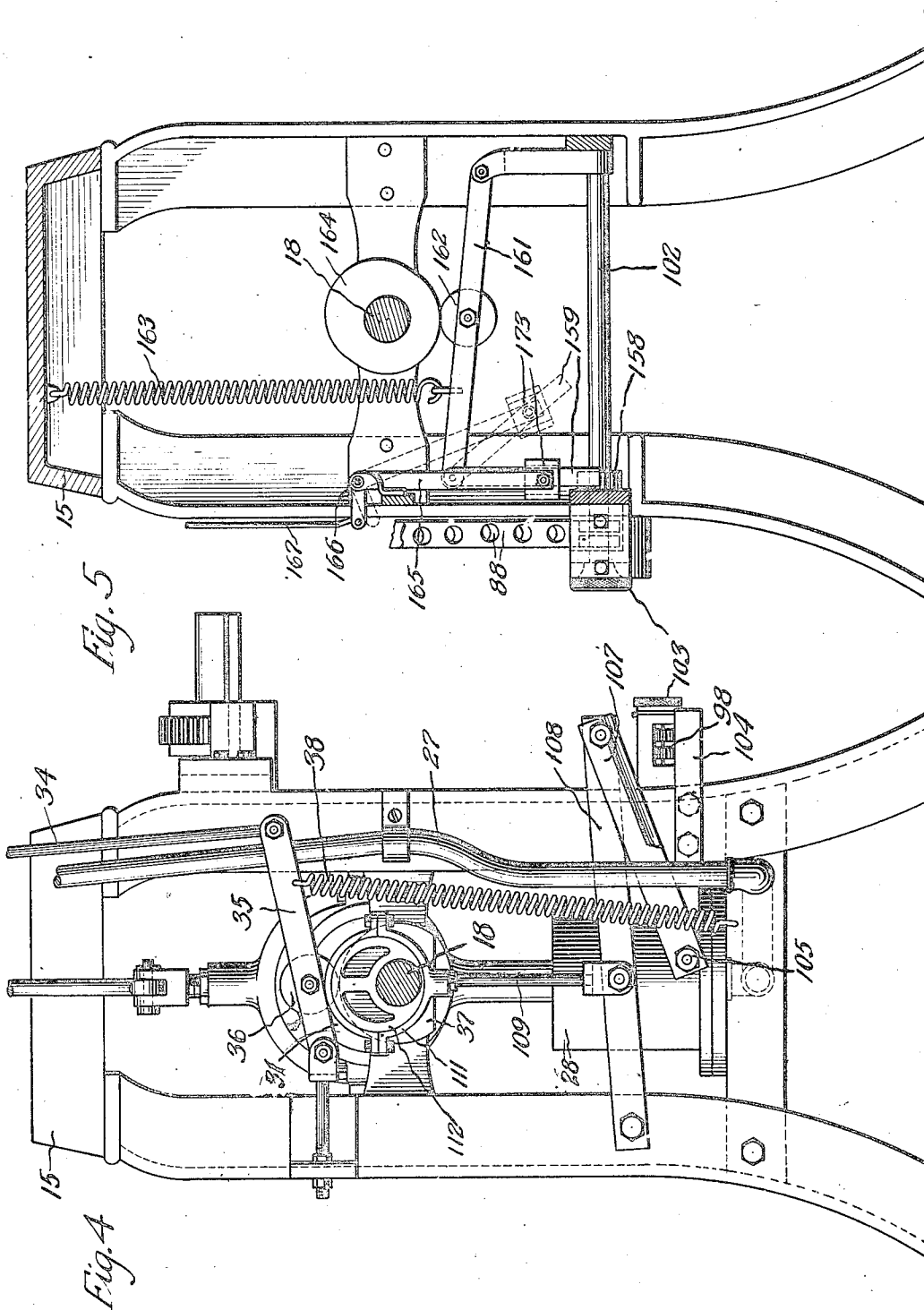
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MACHINE FOR PUNCHING AND REENFORCING BLANKS

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8 Sheets-Sheet 4



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MACHINE FOR PUNCHING AND REENFORCING BLANKS

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Fig. 6

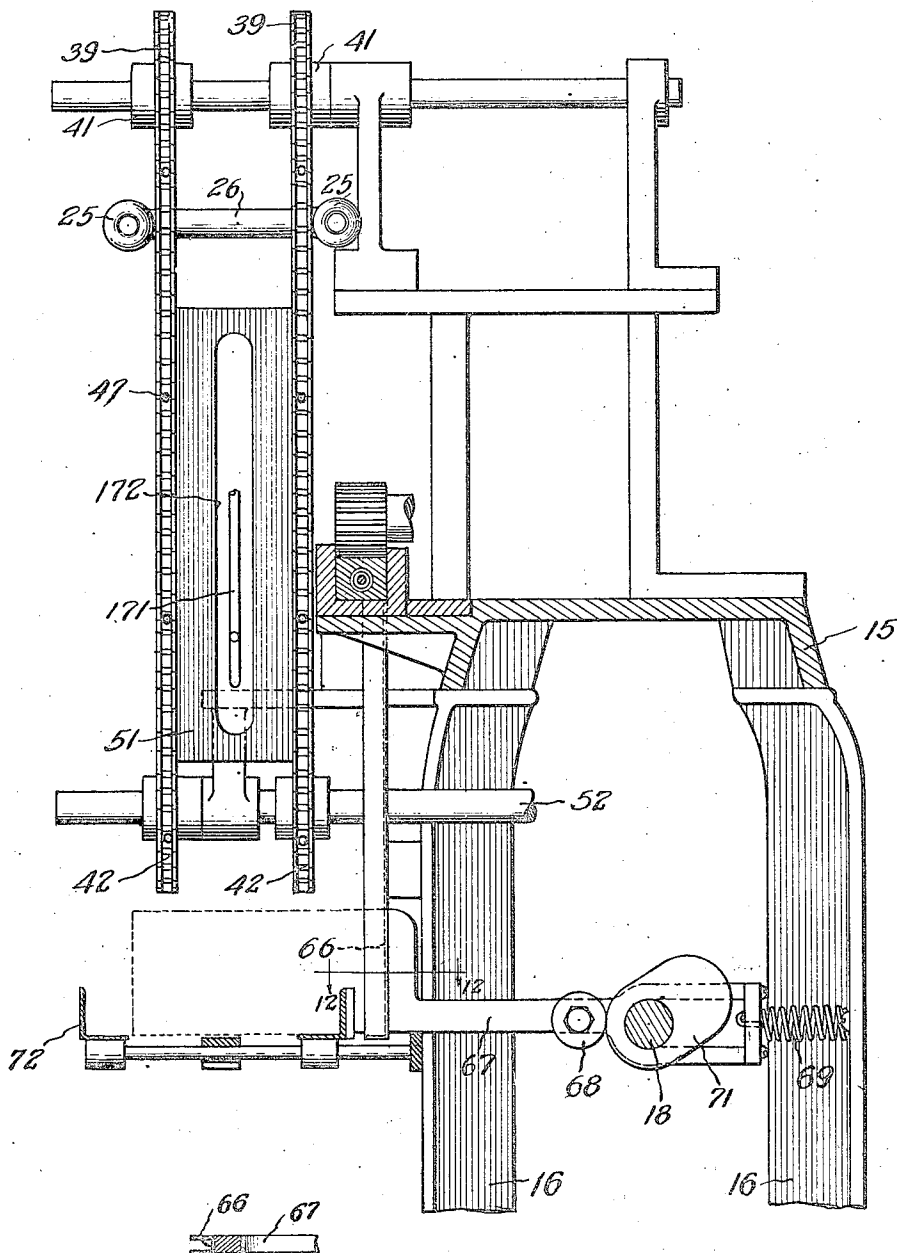


Fig. 12

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MACHINE FOR PUNCHING AND REENFORCING BLANKS

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Fig. 8

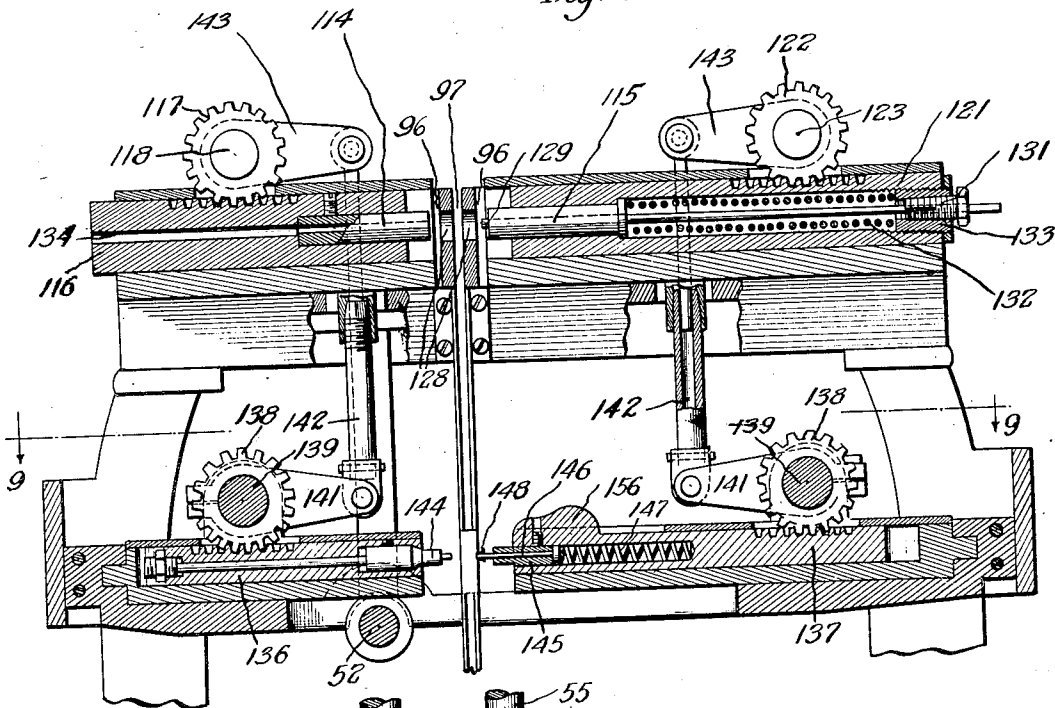
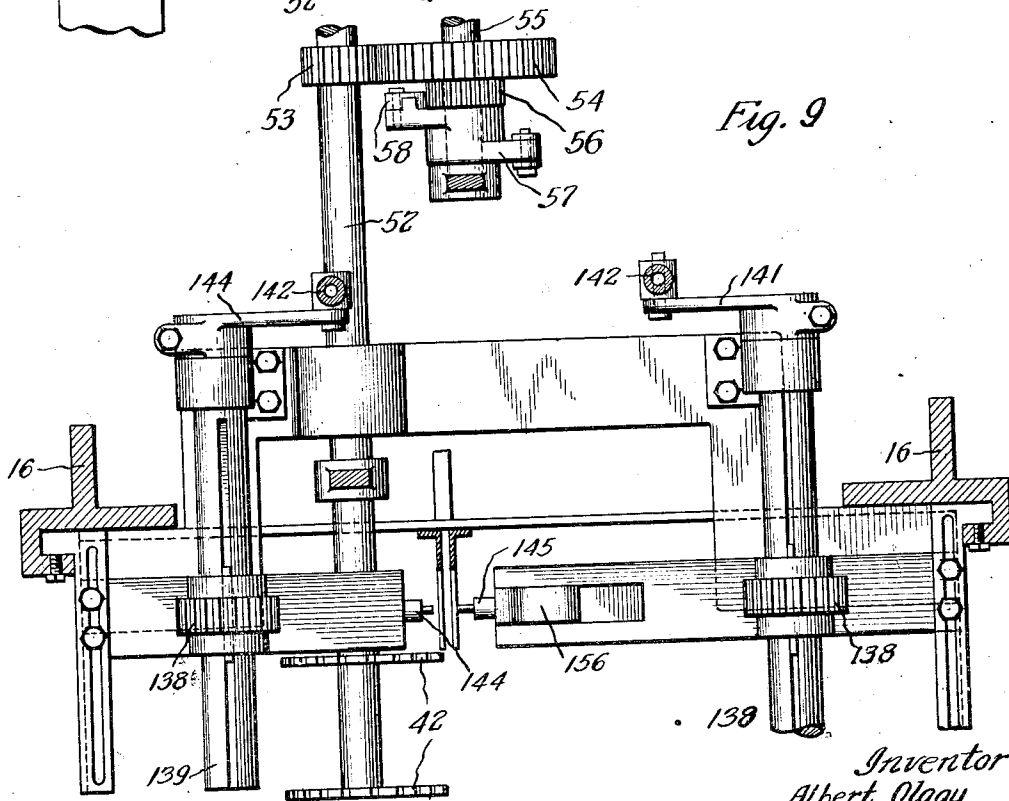


Fig. 9



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MACHINE FOR PUNCHING AND REENFORCING BLANKS

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Fig. 10

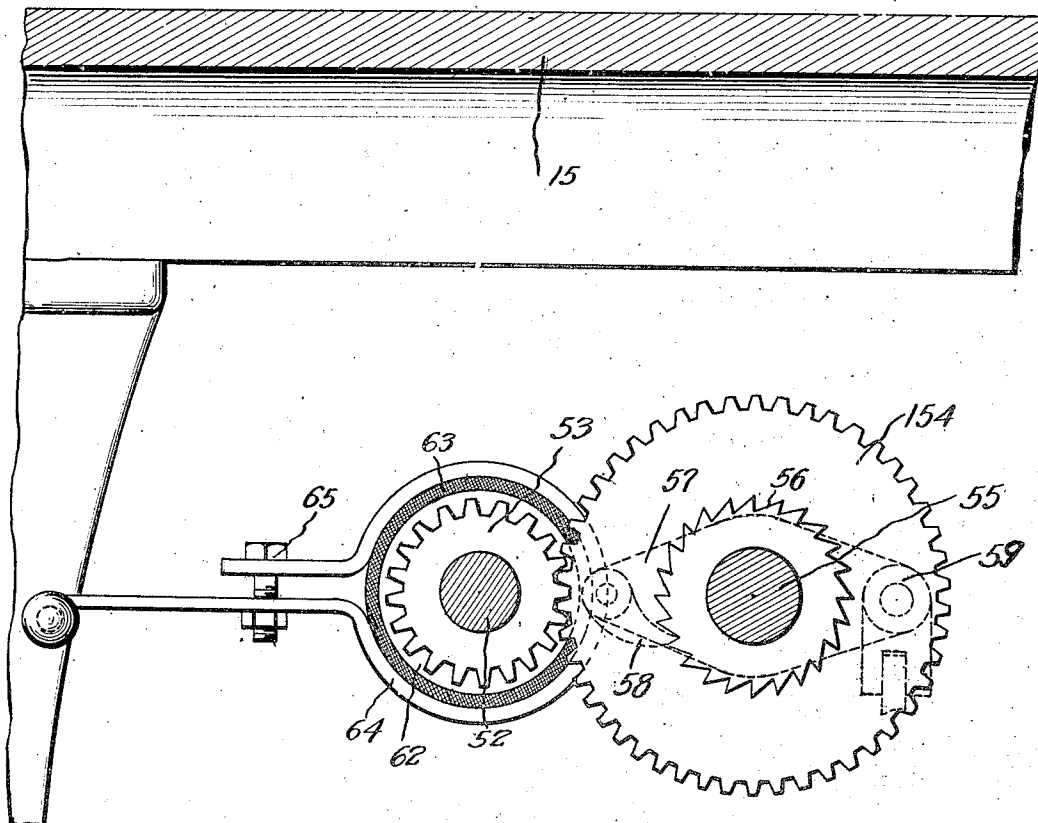
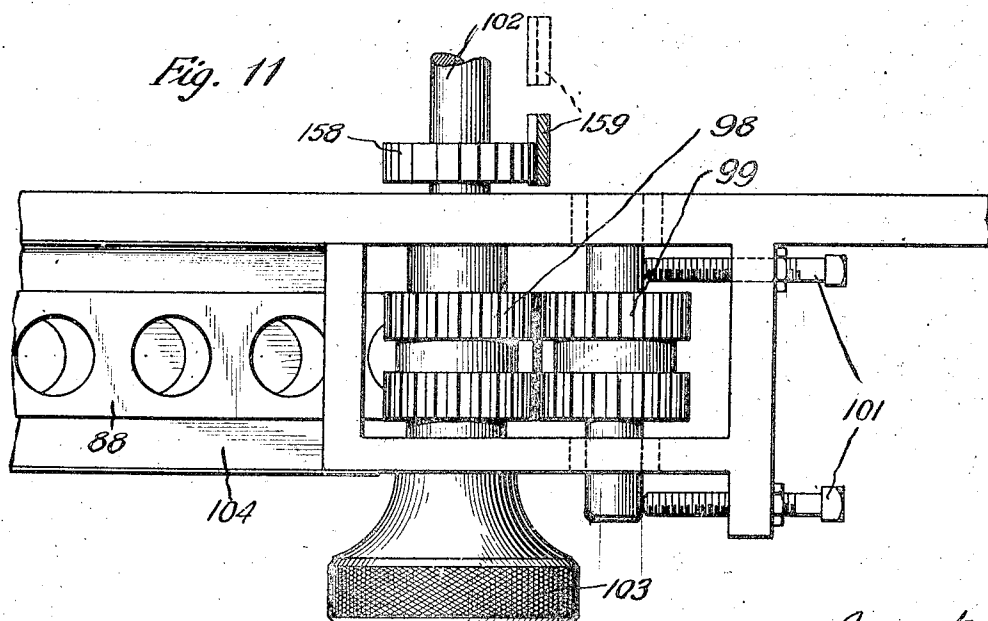


Fig. 11



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1,619,214

UNITED STATES PATENT OFFICE.

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MACHINE FOR PUNCHING AND REENFORCING BLANKS.

Application filed February 5, 1923. Serial No. 617,181.

In the manufacture of shipping tags, shipping envelopes, and various other articles, which are designed to be supported or fastened by a string or wire passing

5 through an opening in the article it is necessary to punch such an opening in the article, and also to reenforce the margins of the opening to prevent the same from tearing out.

My present invention aims to provide a
10 machine for automatically punching and reenforcing the openings in articles of this character. While a shipping envelope is shown in the present instance, particularly
15 in Fig. 13, as the article operated upon by the machine, it should be understood that many articles of paper or cardboard, such, for instance, as shipping tags, calendar
backs, and many others, are capable of being operated upon by the machine, and such
20 articles are hereinafter to be comprehended within the term "blanks" which will be used herein in its generic sense.

One of the primary objects of my present invention is to provide a machine of the
25 character indicated which will automatically handle the blanks, the reenforcing material, and the eyelets, if they be used, and one which will be extremely speedy and reliable in operation as well as entirely automatic,
30 so as to relieve the operator of any manual manipulations except keeping the machine supplied with material and removing the completed product of the machine.

With these general aims in view, my
35 invention contemplates a machine which will automatically remove blanks, one at a time, from a magazine and feed them in succession to an operating station, where they are disposed between two strips of reenforcing
40 material, and at which station reenforcing disks are cut from the material, applied to opposite faces of the blank, and punched so as to form an opening or eye extending
45 through the blank and through the reenforcing disks on each face thereof, thus providing an opening which is marginally reenforced on both faces of the blank. The
blanks are then moved to another station, where, if desirable, metal eyelets are auto-
50 matically inserted through the reenforced opening and riveted or clinched at each side, thus providing further reenforcement for the opening. From the eyelet station the envelopes are delivered in succession to a
55 delivery magazine in which they are packed

and from which they may be removed in quantities by the operator and boxed for shipment.

For the purpose of facilitating an understanding of my invention, I have illustrated
60 on the accompanying drawings a preferred embodiment thereof, but it should be manifest that the scope of the invention is not circumscribed by the structural details shown, but on the contrary, the invention
65 may be embodied in machines differing widely in structure.

Referring to the drawings:

Fig. 1 is a front elevation of a machine embodying my invention;

Fig. 2 is a partial vertical sectional view of the machine taken on the line of the main drive shaft;

Fig. 3 is a sectional view on the line 3—3 of Fig. 2;

Fig. 4 is a sectional view on the line 4—4 of Fig. 2;

Fig. 5 is a sectional view on the line 5—5 of Fig. 2;

Fig. 6 is a sectional view on the line 6—6 of Fig. 1;

Fig. 7 is an enlarged fragmentary view, partially in section, of the mechanism directly operating upon the blanks;

Fig. 8 is an enlarged fragmentary view, partially in section, of the punching mechanism;

Fig. 9 is a sectional view on the line 9—9 of Fig. 8;

Fig. 10 is an enlarged detail view showing the feed chain drive;

Fig. 11 is a detail plan view of the reenforcing strip feed mechanism;

Fig. 12 is a detail sectional view on the line 12—12 of Fig. 6;

Fig. 13 is a plan view of a shipping envelope which has been reenforced by my improved machine; and

Fig. 14 is a sectional view on the line 14—14 of Fig. 13.

Referring now to the drawings more in detail, it will be observed that the machine comprises essentially a frame, of suitable construction shown in the present instance as comprising a bed or table 15, supported upon
100 standards or legs 16, the various mechanisms hereinafter described being carried by this frame structure. Power is applied to the machine through a belt pulley 17, loosely mounted upon the main drive shaft 18 and adapted
110

to be connected to said shaft for the purpose of driving the same by a clutch 19 of any preferred construction, which may be controlled from a foot treadle 21 disposed at one side of the machine in position accessible to the operator.

Handling the blanks.

Referring more particularly to Figs. 1, 6, and 7, it will be seen that the blanks designated by reference character 22, and which, as previously stated, may be envelopes, cards, tags, or other articles are stacked on edge in an inclined magazine 23 near the top of the machine, the foremost envelopes being held in position in the magazine by a plurality of upper retaining fingers 24, and lower retaining fingers 20, which engage the upper and lower edges, respectively of the foremost blank.

The blanks are pulled forwardly, one at a time, from the magazine by pneumatic transferers or suction cups 25, carried upon a forked pipe 26 to which suction is supplied through a pipe 27 from a suction pump 28. This pump, of the reciprocatory type, is operated through an eccentric 29 from a cam 31 mounted on the main drive shaft 18. The suction cups are moved toward and from the magazine by a bell crank lever 32 fulcrumed in a bracket 33 and oscillated by a link 34, connected at its lower end, as shown in Figs. 1 and 4, with a lever 35 carrying a cam follower 36, which is held against the perimeter of a cam 37 on the shaft 18 by a tractile spring 38. The foremost blank in the magazine is withdrawn therefrom upon retraction of the suction cups engaged therewith and disposed in operative relation to a feeding or transferring mechanism, which will now be described.

This feeding mechanism comprises a pair of endless chains 39 trained over upper and lower sprockets 41 and 42, respectively, and also around an adjustable tightening idler 40 mounted in a bracket 43, which is adjustable by means of an adjusting screw 44 and a clamping bolt 45 upon the ledge 46 of the machine frame. Pins or studs 47 extend outwardly from the faces of these chains in position to engage the upper edge of blanks disposed against the face of the chains by the pneumatic suckers as previously described, and whereby the blanks are fed downwardly at each actuation of the feed mechanism. Springs 48 and 49 yieldingly urge the blanks against the chain beneath the magazine and against a plate 51 extending between and at either side of the feed chains, and slotted to accommodate the chains so that the faces thereof lie substantially flush with the face of this plate. The chains are actuated intermittently to impart a step-by-step movement to the blanks by mechanism best illustrated in Figs. 1, 2, 9, and 10. The sprockets

42 are fixedly mounted upon a shaft 52, which adjacent one side of the machine has fixed thereon a gear 53, meshing with and adapted to be driven by a gear 54, loosely mounted upon a stub shaft 55 and provided with a ratchet wheel 56. A lever 57, the hub of which is fulcrumed upon the shaft 55, is provided at one end with a pawl 58 adapted to engage the ratchet wheel 56 and impart a partial revolution thereto at each oscillation of the lever. A link 59, connected with a strap 61 surrounding an eccentric on the main shaft 18, imparts an oscillatory movement to the lever 57 to thereby move the blank feeding chains a predetermined distance at each actuation. In order to prevent over-feeding of the chains, the shaft 52 has fixed thereon a brake drum 62 (Fig. 10) covered with brake lining 63, made of any suitable material, and surrounded by a brake member 64, the tension of which may be regulated by an adjustable bolt 65. This constant braking action not only prevents over-feeding or overthrow of the feed mechanism, but also holds the feed chains in proper position during the operations upon the blanks supported thereby.

At one or more stations at which the blanks are stopped under control of the feed chains, certain operations are performed thereon, which will be later described, and when these stations have been passed by the blanks it becomes necessary to impart a horizontal movement to the blanks in the direction of their major axes to free them from alignment with the gummed waste strips of reenforcing material at that time disposed in proximity to each face of the blank, as will be later explained. The mechanism for imparting this longitudinal movement to the blanks is best shown in Figs. 6 and 12, referring to which, it will be observed that the right-hand edge of each blank, as it approaches the limit of its feeding movement by the feed chains, enters a groove 66, carried by a horizontally reciprocatory pusher 67 bifurcated to straddle the shaft 18, as shown in Fig. 6, and equipped with a cam follower 68, held by a tractile spring 69 against the perimeter of a cam 71 on the shaft 18, by which reciprocatory movements are imparted to the pusher. By means of this pusher each blank is pushed horizontally into a delivery or stacking magazine 72 at the back of the machine. In this magazine the blanks are packed against a yieldingly retreating block or plate 73 (Fig. 7) by means of a reciprocatory packer 74 carried by a rod 75 projecting horizontally from an upstanding portion 76 of a reciprocatory slide 77 provided on its lower surface with rack teeth 78. A toothed sector 79, fulcrumed at 81 upon the machine frame, as shown in Fig. 2, is oscillated through a link 82 by an eccentric strap 83 embracing an eccentric 84 upon the shaft 18,

to thereby reciprocate the packer in timed relation with respect to the actuations of the feed chains and the horizontal pusher to thereby pack the blanks in vertical position in the magazine 72. Each blank is retained in position in this magazine upon retraction of the packer by one or more pawls or fingers 85 engaging the upper margin of the blank.

Handling the reenforcing material.

The reenforcing material from which the reenforcing disks are produced is of ribbon or tape-like structure, and is wound upon two spools 86 which are supported upon arms 87 projecting laterally from the machine, as shown in Fig. 1. This reenforcing material, indicated by reference character 88, is unwound from the spools, carried beneath depressing guides 89 and 91, and over a roller 92 partially submerged in liquid in a container 93. The reenforcing material may either be previously gummed with suitable adhesive on its inner face, in which event the rolls 92 are simply moistening rolls to render the gum adhesive; or the material may be ungummed, in which event the adhesive is applied by the rolls 92. In either event, when the tape leaves the guides 91, the adhesive face is disposed downwardly. To reverse this face so that it will be opposed to the blanks for adhesion thereto, a half twist is imparted to the tape, as indicated at 94 in Fig. 2, between the guide 91 and the guide pulley 95 from which the tape is trained. From the pulleys 95, the tape extends downwardly in alignment with and in proximity to the opposite faces of the blank and continues downwardly through guide slots 96 (Fig. 8), the edge of the blank being guided in the meantime in a central guide slot 97. At a point beneath the horizontal blank pusher 67, by which the blank is pushed from between the tapes, these tapes pass between corrugated feeding rollers 98 and 99 (Figs. 1 and 11), the rollers 99 being adjustable toward and from rollers 98 by adjusting screws 101. For purposes of manually reeding the tape, for adjustment or other reasons, the shaft 102 upon which rollers 98 are mounted, is provided with a handwheel 103, as shown in Fig. 11. These feed rolls are intermittently actuated in timed relation with the movements of the feed chains by mechanism which will later be described, and after passing through these rolls, the tape, the two strips of which are then stuck together, is deflected horizontally along a tray 104 at the outer end of which there is pivotally mounted at 105 (Figs. 1, 4, and 6) a knife 107, which cuts the tape into lengths so that long pieces of tape will not curl up and become tangled with the feet of the operator and dragged around the floor. A lever 108 is pivotally connected at one end to the knife and at its other end to the machine frame, and this lever is vertically actuated to operate the knife by means of a link 109 connected with an eccentric strap 111 surrounding an eccentric 112 upon the shaft 18, just inside the fly wheel 113 mounted upon the outer end of this shaft. The two strips of tape are therefore unrolled from their respective spools, gummed or moistened, as the case may be, fed downwardly with their gummed faces opposed and in proximity to the blank to be reenforced, the disks are cut therefrom and applied to the blank by mechanism which will be later described, the feeding movements are imparted to the tapes intermittently in timed relation with the movements of the blank, and the tape scrap, after the reenforcing disks have been formed, is delivered at the bottom of the machine and cut into relatively short ends.

Applying the reenforcements.

Referring now to Figs. 7 and 8, it will be observed that when a blank is positioned by the feeding chains in the slot 97 between the tapes disposed in the slots 96, the blank and tapes are all disposed between horizontally movable opposed punches 114 and 115, respectively. Punch 114 is fixedly mounted in a slidable rack 116, the teeth of which are in mesh with an oscillatory drive pinion 117 fixed on a shaft 118, to which an arm 119 is connected. Punch 115 is yieldingly mounted in a rack 121 adapted to be reciprocated by a pinion 122, mounted on a shaft 123, similarly equipped with an operating arm 124 (Fig. 2). The two arms 119 and 124 are actuated in unison by links 125 connected with eccentric straps 126 surrounding eccentrics 127 on the main shaft 18 to thereby reciprocate the punches 114 and 115 simultaneously, but in opposite directions, thereby forcing the punches through the aligned eyes 128 (Fig. 8). The conjoint action of each punch with its eye, in which it snugly fits, punches a disk from each tape of reenforcing material and applies the disks thus punched out, under considerable pressure, to the opposed faces of the blank disposed in the guide slot 97 between the punches. These reenforcing disks are therefore firmly applied to opposite faces of the blank to which they are affixed by the adhesive on the disks.

It will be observed from Fig. 8 that the punch 115 carries a smaller centrally disposed punch 129 projecting a limited distance beyond the end of punch 115. The rear end of the rod forming the punch 129 is adjustably disposed in a split clamping sleeve 131 and may be adjusted longitudinally to project any desired distance beyond the face of punch 115 by simply loosening the sleeve 131. Punch 115 is yieldingly held

in projected position by a coiled expansion spring 132 disposed within the rack 121, the tension of this spring being regulated by an adjustable collar 133 threaded into the outer end of the rack. The other punch 114 and its rack 116 are provided with a central bore 134 adapted to receive the projecting end of punch 129 so that when the punches 114 and 115 are forced together to cut out and apply the reinforcing disks, the punch 129 is forced through both of the applied disks and through the interposed blank, thereby forming a central opening or aperture extending entirely through the blanks and the reinforcing disks. The small waste pieces punched from the disks and the blanks by the punch 129 are forced through the bore 134 by succeeding pieces, and finally are discharged from the bore into a chute or receptacle 135 (Fig. 7).

For some classes of work the reinforcement of the punched opening in the blank by the surrounding reinforcing disks is sufficient, and in that event the blanks are simply fed on through the machine, and without further operation thereon are packed in the magazine 72. Some classes of work, however, require further reinforcement of the opening by a metal eyelet, and the mechanism by which such reinforcing eyelets may be applied will now be described.

Referring again to Figs. 7 and 8, it will be observed that beneath the punches 114 and 115 a distance equal to the travel of a blank at each actuation of the feed chains there is mounted another pair of punch carrying racks, indicated by reference characters 136 and 137, respectively. Each rack is actuated from a pinion 138 mounted on a shaft 139, which is provided with an arm 141 connected by an adjustable link 142 with an arm 143 fixed on the respective shafts 118 and 123, so that at each actuation of these shafts to operate punches 114 and 115, a similar and simultaneous movement will be imparted to the punch carrying racks 136 and 137. Rack 136 carries an adjustable punch or anvil member 144, and rack 137 carries a similar anvil member 145, in which is disposed a pin 146 yieldingly projected into the position shown in Fig. 8 by a coiled expansion spring 147. This pin is adapted to remove an eyelet from a magazine, which will be later described, and align such eyelet with the opening in the blank previously produced by the punch 129, whereupon movement of the anvil members 144 and 145 toward each other will insert the eyelet through the opening and upset or rivet the ends thereof on the outer faces of the reinforcing disks, thus anchoring the eyelet in the opening. The eyelets, indicated by reference character 148, are disposed in a magazine 149 (Fig. 7) from which they are fed in succession into a chute 151, extending

laterally and downwardly substantially into alignment with the end of pin 146 when the punch rack 137 is in retracted position. The eyelets may be fed automatically from the magazine into the chute, or a quantity may be intermittently fed into the chute by manual manipulation of a crank 152, which actuates mechanism causing the delivery of the eyelets into the chute. The magazine and chute are pivotally mounted at 153 upon a standard 154, and the chute is normally tilted downwardly into substantial alignment with the pin 146 by a spring 150. The delivery end of the chute 151 is so constructed as to hold an eyelet in position to receive the pin 146 upon movement of the same to the left, viewing Figs. 7 and 8. When an eyelet has therefore been removed from the chute and positioned on the pin, as shown in Figs. 7 and 8, it is desirable that the chute be elevated out of the path of rack 137. To accomplish this result, the chute is supported upon a roller 155 disposed in the path of travel of a cam 156 positioned on the top of rack 137, near the inner end thereof. When, therefore, the rack is moved to the left, viewing Figs. 7 and 8, this cam will engage the roller 155, thereby causing the end of chute 151 to be tilted upwardly clear of the rack. When the rack is retracted, the chute will automatically lower to dispose the next eyelet in the chute in position to be removed therefrom by the pin 146 upon the next actuation of the rack.

In Figs. 13 and 14 I have illustrated a shipping envelope which has been provided with a reinforced opening in accordance with my invention. Referring to these figures, it will be observed that the reinforcing disks or patches 157 have been applied to opposite faces of the envelope, a hole has been punched by the punch 129 through the envelope and reinforcing patches, and this opening has been further reinforced by the introduction of a metal eyelet 148 therein, the ends of which have been upset or riveted over, as will be apparent from Fig. 14, by the action of the anvils 144 and 145.

It will be apparent, therefore, that the machine of my invention is adapted to automatically cut and apply reinforcing disks or patches around an opening punched in a blank, and will also further reinforce such opening, when desired, by automatically applying a metal eyelet thereto. The reinforced opening is adapted to receive a string, wire, or other means of attachment of the blank to an article to be shipped, so that there is no danger of the string or wire becoming torn from the blank. Should it be desirable to reinforce the opening by the disks or patches only, the eyelet applying mechanism may be rendered inoperative by simply tilting the eyelet delivery chute into

inoperative position and fastening it in that position so no eyelets will be delivered to the pin 146. The eyelet applying anvils may be permitted to run idly, or the mechanism by which they are operated may be disconnected, if desired. While the reenforcing patches are shown in the present instance, for illustrative purposes, as being round, it should be understood that they may be made of any preferred shape by substituting suitably shaped punches for the round punches 114 and 115 shown.

Automatic tape and eyelet feed control.

The mechanism for actuating the tape feeding rolls 98 is designed to be automatically thrown out of operation in the event of failure of envelopes to be fed through the machine; otherwise, unless the machine were stopped, the tape would continue to feed, disks would be punched therefrom, and these disks would not only tend to clog the machine, but considerable waste of tape might result. The tape feeding mechanism and the automatic control therefor will now be described.

Upon the tape feed roll shaft 102, best shown in Figs. 2, 5, and 11, there is mounted a ratchet wheel 158, which is intermittently actuated by a reciprocating pawl 159 pivotally suspended from a lever 161, carrying a follower 162, which is retained in engagement by a tractile spring 163 with the perimeter of a cam 164 on the shaft 18. This pawl 159 may be swung from the operative position shown in full lines in Figs. 5 and 11, to the inoperative position indicated in dotted lines in said figures, by a bell crank lever 165 fulcrumed at 166 upon the machine frame, and connected by link 167 with a lever 168 (Figs. 1 and 7) pivoted in a bracket 169 and carrying a curved finger 171, which is normally urged toward the plate 51 along which the blanks travel. The end of lever 168, to which link 167 is connected, is suitably weighted so that the finger 171 will be normally urged toward the left, viewing Fig. 6, under the influence of gravity. The plate 51 is provided with a slot 172 adapted to receive this finger when no blank is interposed between the finger and the plate; consequently, in the absence of a blank, the lever 168 will rock in a clockwise direction, viewing Fig. 6, the finger 171 in this event passing into the slot in the plate 51, and this rocking movement through the intermediary of the link 167 will rock the bell crank lever 165 in a counter-clockwise direction, viewing Fig. 5, thereby through the sliding sleeve 173 connected to the bell crank and slidably surrounding the pawl 159, swinging said pawl out of operative position with respect to the ratchet 158 into the dotted line position shown in Figs. 5 and 11. The pawl will therefore reciprocate

idly until the feeding of the blanks is again started, whereupon a blank traveling along the plate 51 under the influence of the feed chains will engage the finger 171 and cause it to be withdrawn from the slot 172, thereby restoring the pawl 159 to operative position, so that the feeding of the tape will again be inaugurated.

In order to likewise render the eyelet applying mechanism inoperative upon failure of the feeding of the blanks, there is adjustably mounted upon the link 167 a roller 180 (Fig. 7), which, upon downward movement of the link, as previously described, engages the magazine 149, tilting the same downwardly to thereby elevate the lower end of the chute 151 so that no eyelets will be positioned in the path of pin 146, and this pin and the anvils will therefore operate idly without wastage of eyelets.

It is believed that the construction, operation, and many of the inherent advantages of my invention will be understood from the foregoing without further description, and it should be understood that the principles of the invention may be embodied in structures differing materially from that shown and described, without departing from the essence thereof, as defined in the following claims.

I claim:

1. In a machine of the character described, the combination of means for feeding a succession of separate and unconnected blanks, means for supplying reenforcing disks for the blanks, means for automatically applying said reenforcing disks to opposite faces of each of said blanks, means for punching an opening through said disks and blanks, and means for automatically applying a metal eyelet to each of said openings.
2. In a machine of the character described, the combination of means for feeding a single blank by a step by step movement independently of any other blanks, means for feeding a strip of reenforcing material in proximity to each side of the blank, means for cutting a reenforcing disk from each of said strips and applying the same to said blank, and means for punching a hole through said applied disks and blank.
3. In a machine of the character described, the combination of an operating station, means for automatically feeding separate and unconnected blanks in succession to said station, means for feeding a strip of reenforcing material past said station, and means for automatically punching disks from said strip and applying the same to the successive blanks.
4. In a machine of the character described, the combination of an operating station, means for automatically feeding blanks independently of and in succession to one another to said station, means for feeding a

strip of reinforcing material past said station, and means at said station for automatically punching a reinforcing disk from said strip, applying said disk to the blank and punching an opening through said disk

5 and blank.
5. In a machine of the character described, the combination of a magazine adapted to contain a supply of blanks to be operated upon, means for removing the blanks, one at a time, from said magazine, means for feeding said blanks in a step-by-step movement through said machine, means for feeding strips of reinforcing material in proximity to opposite faces of said blank, means for punching a disk from each of said strips and applying the same to said blank, and means for punching a hole through said blank and the applied disks.

20 6. In a machine of the character described, the combination of a magazine for containing blanks to be operated upon, means for removing the blanks in succession from said magazine, feed mechanism for feeding the blanks by a step-by-step movement through the machine, means for preventing over-feeding of said feed mechanism, means for feeding strips of reinforcing tape in proximity to opposite faces of said blank, means including a pair of opposed punches for punching disks from said strips and applying the same to the faces of said blank, means for punching a hole through said blank and disks, means for applying an eyelet in said hole, and means for packing the reinforced blanks in position to be removed by the operator.

7. In a machine of the character described, the combination with means for feeding a pair of strips of reinforcing material in parallel relation through said machine, means for feeding blanks in succession between said strips, means for punching disks from said strips and applying the same to said blanks, means for punching a hole through the blanks and said applied disks, means for removing the blanks from between said strips, and means for packing the reinforced blanks.

50 8. In a machine of the character described, the combination of means for feeding a plurality of strips of reinforcing material in parallel spaced relation, means for feeding blanks in succession in alignment with said strips, means for punching reinforcing disks from said strips and applying the same to the opposite faces of the blanks, means for moving the reinforced blanks out of alignment with said strips, and means for packing said reinforced blanks.

9. In a machine of the character described, the combination of a pair of opposed reciprocatory punches, a pair of apertured plates arranged in spaced relation between said punches, means for feeding a strip of

reinforcing material between each punch and its opposed plate, means for feeding independent blanks in succession into position between said plates, means for reciprocating said punches through their respective plates to punch a reinforcing disk from each strip and apply the same to said blank, and means for punching a hole through said blank and said reinforcing disks.

10. In a machine of the character described, the combination of a pair of opposed punches, means for feeding strips of reinforcing material between said punches, means for feeding independent blanks in succession between said strips, means for reciprocating said punches whereby the same are caused to cut reinforcing disks from said strips and apply the same under pressure to an interposed blank, and a smaller punch carried by one of the aforementioned punches and cooperating with a bore of the other first mentioned punch, whereby a hole is punched through said blank and the disks applied thereto.

11. In a machine of the character described, the combination of a pair of punches, a pair of spools each carrying a roll of reinforcing material, means for feeding a strip of material from each of said rolls between said punches, means for moistening said strips en route to said punches, intermittently actuated feed mechanism for feeding individual and unconnected blanks in succession into position between said punches, means for reciprocating punches to cut disks of reinforcing material from said strips and apply the same under pressure to said blank, a smaller punch adapted to punch an opening through said blank and the disks applied thereto, a pair of reciprocatory anvils, a pin projecting from one of said anvils, means for positioning an eyelet on said pin, and means for actuating the anvils to apply said eyelet to said opening through said blank and disks.

12. In a machine of the character described, the combination of means for feeding a pair of strips of reinforcing material in parallel relation through the machine, a pair of punches between which said strips are fed, means for feeding blanks in succession into position between said punches, brake mechanism for preventing over-feeding of said blanks, means for actuating said punches to apply disks of said reinforcing material to opposite faces of the blanks and perforate the same, mechanism for separating said reinforced blanks from said strips of reinforcing material, reciprocatory means for packing the reinforced blanks in a delivery magazine, and means for cutting the waste strips into lengths.

13. In a machine of the character described, the combination of a pair of opposed reciprocatory punches, a pair of opposed re-

reciprocating anvils, means for feeding strips of reinforcing material between said punches and anvils, means for feeding individual and unconnected blanks in succession into position between said punches and subsequently between said anvils, mechanism for reciprocating said punches whereby the same are caused to cut disks of reinforcing material from said strips and apply the same to opposite faces of said blanks, means for positioning eyelets between said anvils, and means actuated from said punch operated mechanism for reciprocating said anvils to secure said eyelets to said blanks.

14. In a machine of the character described, the combination of a pair of hollow reciprocating punches, apertured plates through which said punches are adapted to be projected, said plates being arranged in spaced relation, means for feeding a strip of reinforcing material between each punch and its respective plates, means for feeding blanks into position between said plates, means for reciprocating the punches through said plates to cut reinforcing disks from said strips and apply the same to said blanks, a smaller punch disposed in one of the aforementioned punches projecting beyond the end thereof into alignment with the bore of the other punch whereby an opening is punched through said blank and the disks applied thereto, means for imparting a horizontal movement to the blanks thus reinforced to disalign the same from said strips, and means for packing the reinforced blanks in a magazine.

15. In a machine of the character described, the combination of blank feeding mechanism, means for feeding strips of reinforcing material in proximity to said mechanism, means for applying eyelets to blanks fed by said mechanism, a feeler finger retained in normal position by a blank, and means controlled by said feeler finger for rendering the eyelet applying means and reinforcing material feeding means inoperative upon failure of a blank to contact said finger.

16. In a machine of the character de-

scribed, the combination of blank feeding mechanism, means for feeding a plurality of strips of reinforcing material in proximity to said mechanism, means for automatically cutting reinforcing disks from said strips and applying the same to said blanks, means for automatically applying reinforcing eyelets to the blanks reinforced by said disks, and mechanism rendered operative by the absence of a blank from said blank feeding mechanism to render said strip feeding mechanism and said eyelet applying mechanism inoperative.

17. In a machine of the character described, the combination of blank feeding mechanism, means for feeding strips of reinforcing material in proximity to the blanks, punches for cutting reinforcing disks from said strips and applying the same to the blanks, means for applying reinforcing eyelets to the reinforcing blanks, means for cutting the waste strips of reinforcing material in lengths, and mechanism controlled by the feeding of the blanks for rendering the reinforcing material feeding mechanism and the eyelet applying mechanism operative or inoperative depending on the presence or absence of a blank in the machine.

18. In a machine of the character described, the combination of mechanism for feeding blanks by step-by-step movement through said machine, means for feeding strips of reinforcing material in proximity to said blanks, punches for applying reinforcing disks cut from said strips to opposite faces of said blanks, means for punching an opening through said blank and disks, mechanism for applying a metal eyelet to said opening, means for withdrawing the reinforced blanks from between said strips, means for packing said blanks in a delivery magazine, means for cutting the waste strips of reinforcing material into lengths, and means rendered operative by the absence of a blank on said feeding mechanism to stop the feeding of the reinforcing strips and the application of the eyelets.

ALBERT OLGAY.