Oct. 25, 1955 C. D. KEELY 2,721,669

MACHINE FOR APPLYING GUMMED TAPE TO BOX BLANKS

Filed April 21, 1950 5 Sheets-Sheet 1

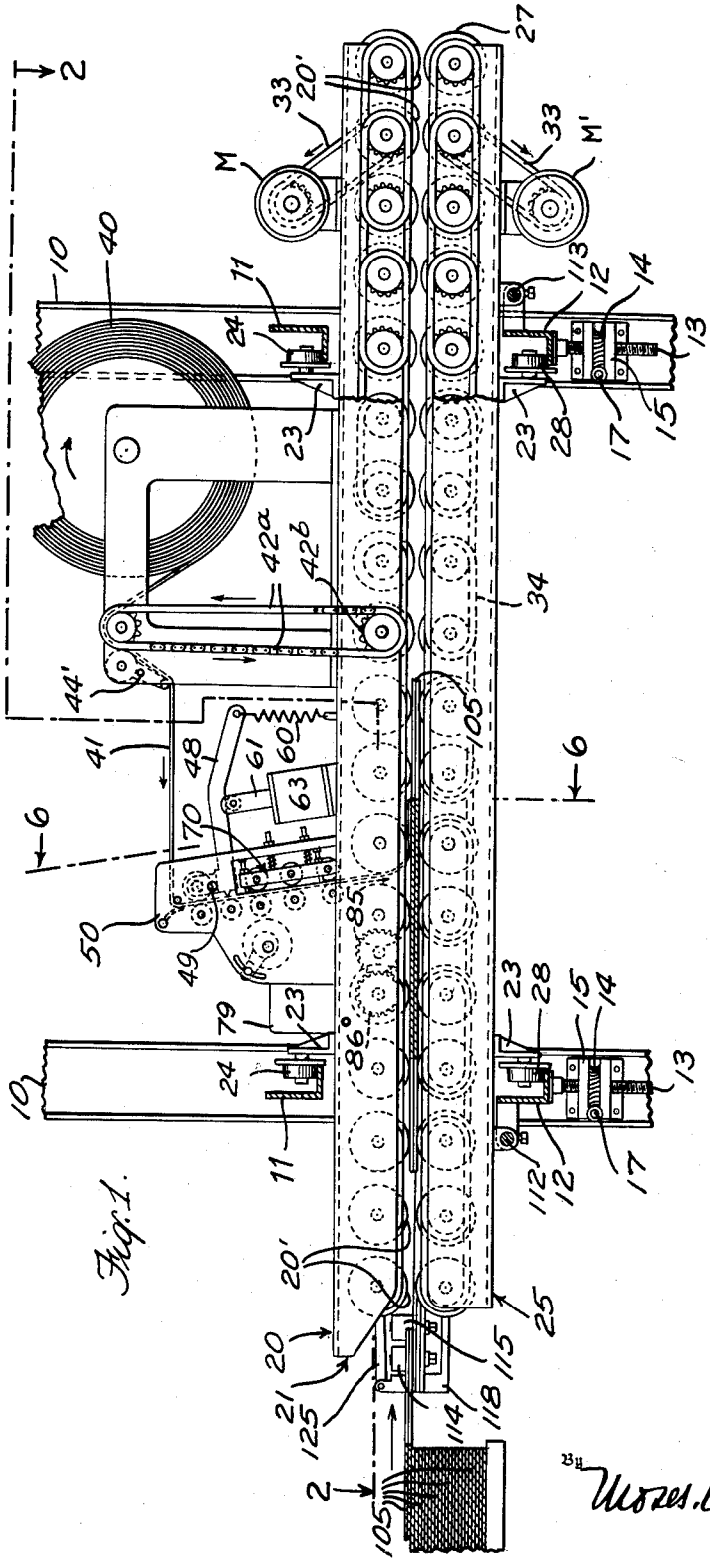


Fig. 1.

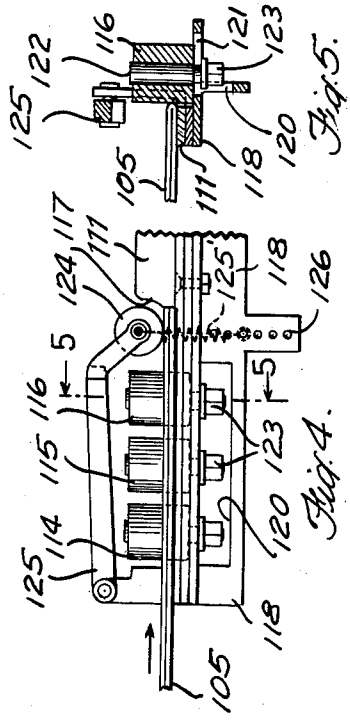


Fig. 4.

Fig. 5.

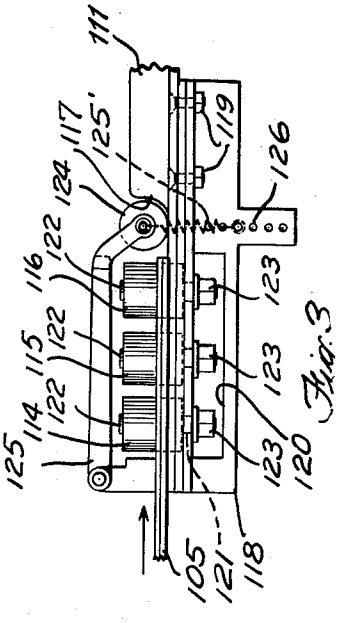


Fig. 3

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MACHINE FOR APPLYING GUMMED TAPE TO BOX BLANKS

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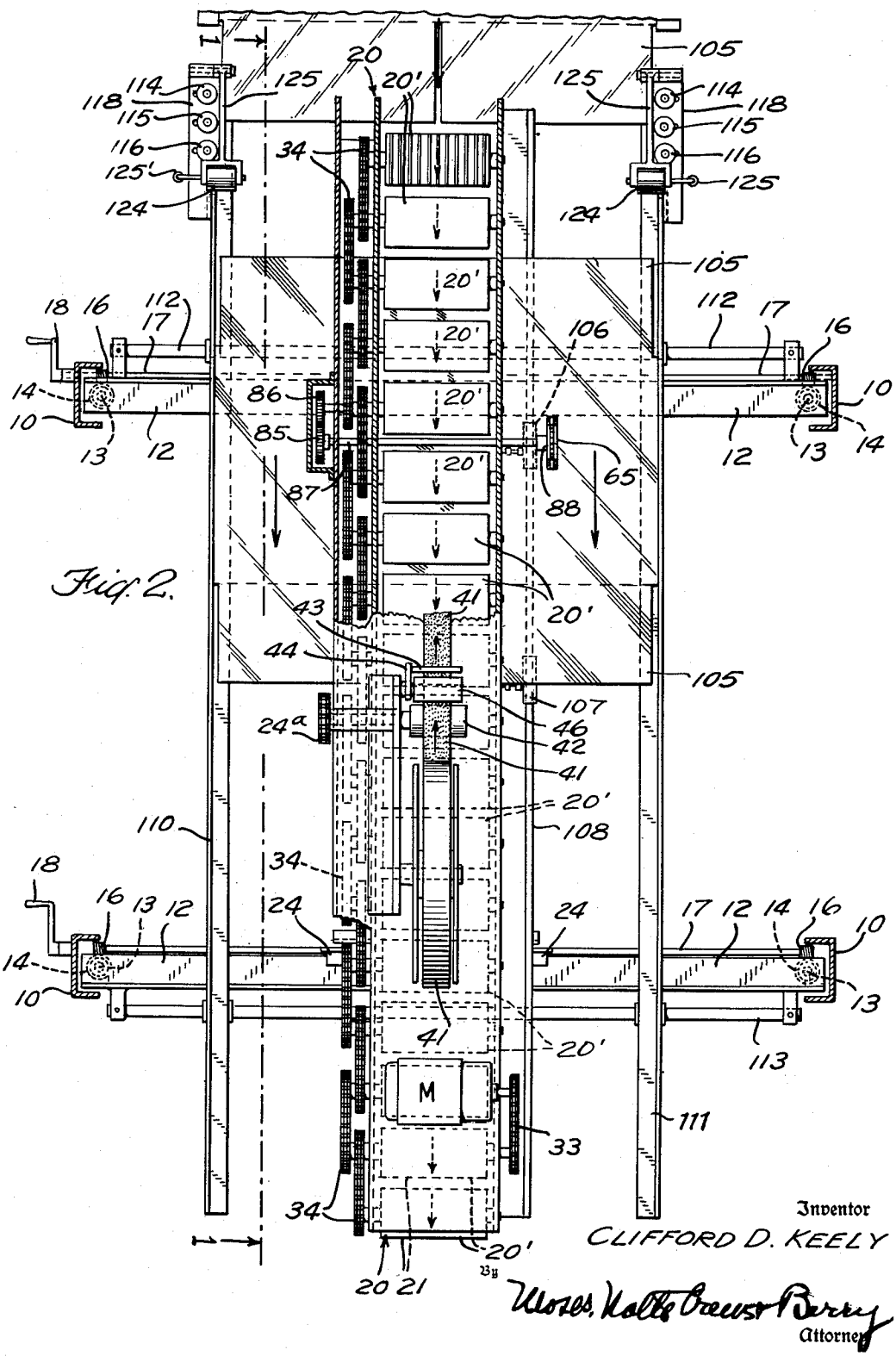


Fig. 2.

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MACHINE FOR APPLYING GUMMED TAPE TO BOX BLANKS

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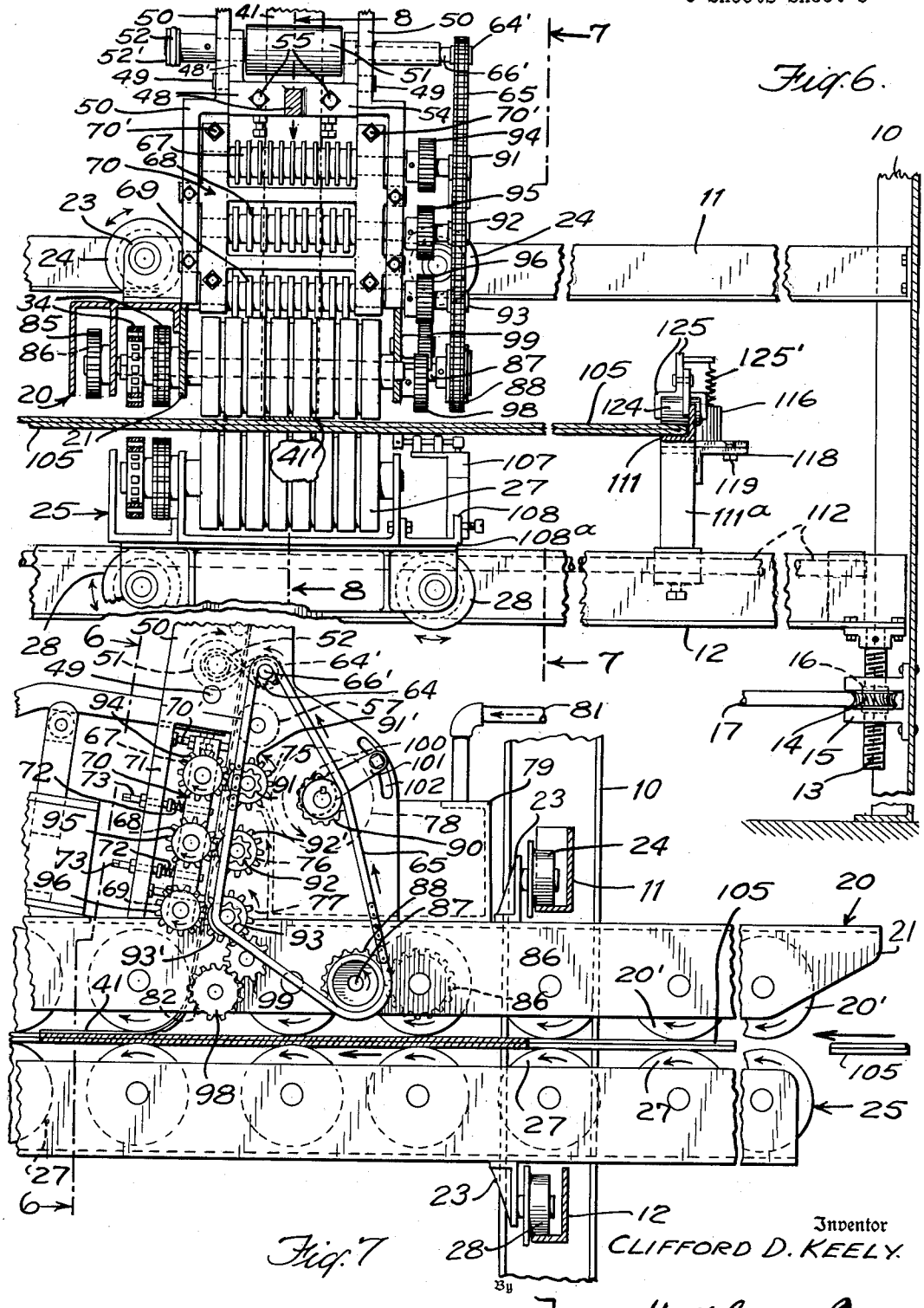


Fig. 6.

Fig. 7

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MACHINE FOR APPLYING GUMMED TAPE TO BOX BLANKS

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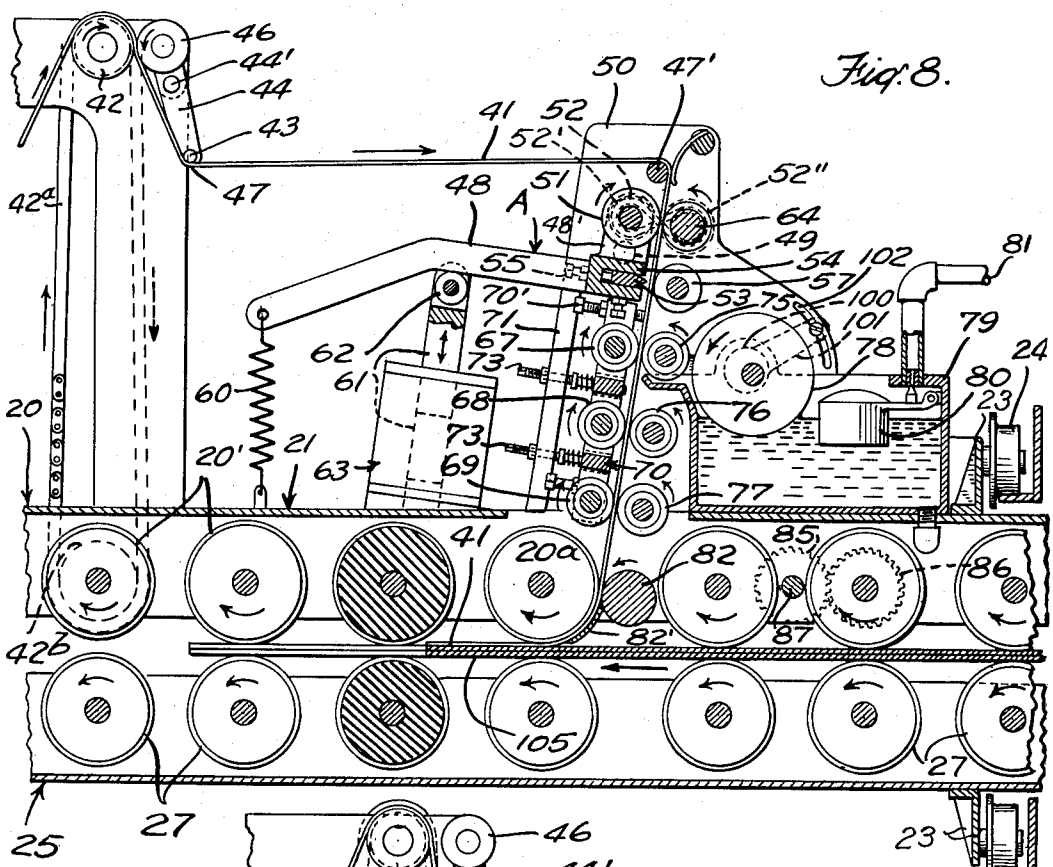


Fig. 8.

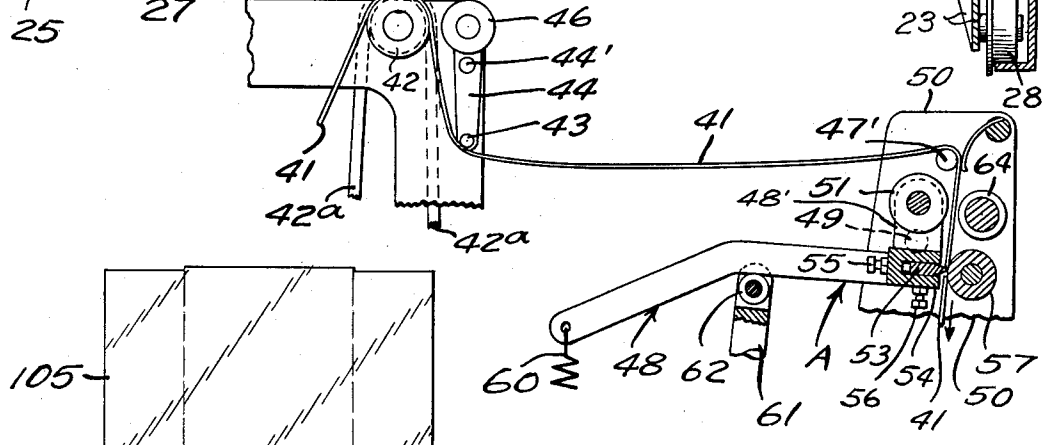


Fig. 9.

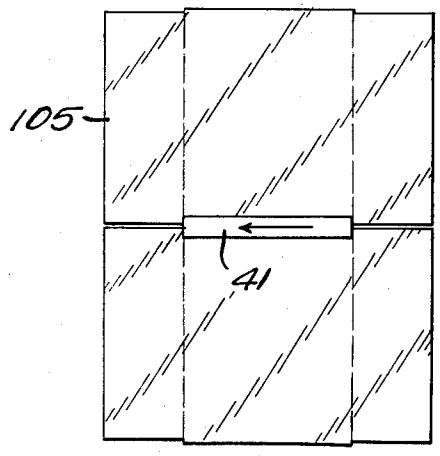


Fig. 14.

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MACHINE FOR APPLYING GUMMED TAPE TO BOX BLANKS

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Fig. 10.

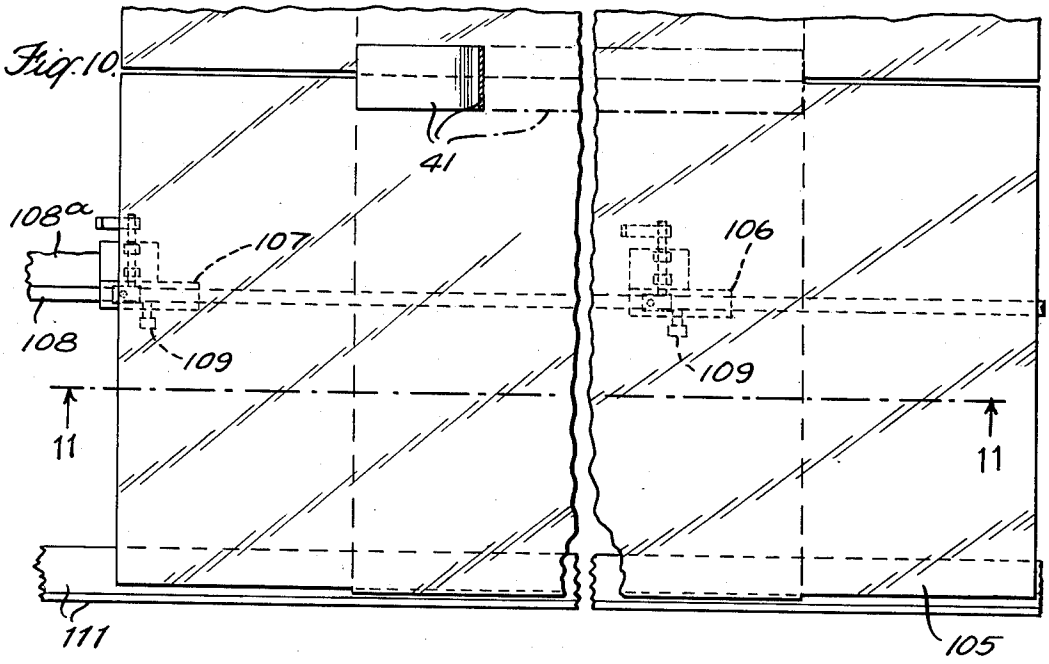


Fig. 11

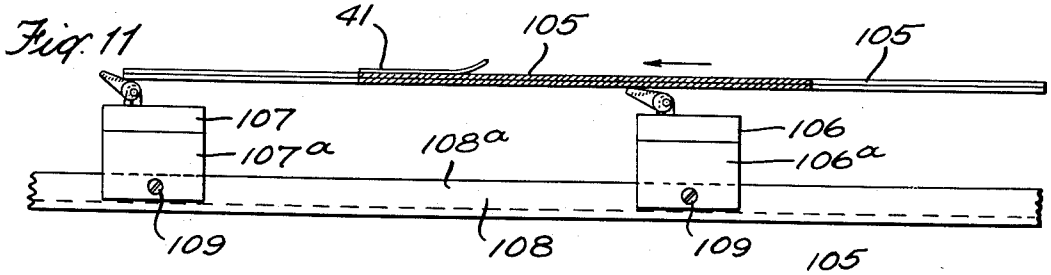


Fig. 12.

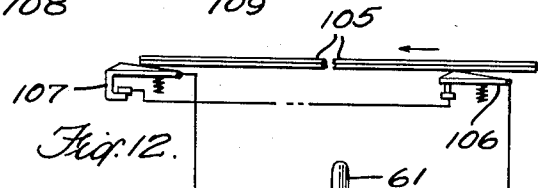
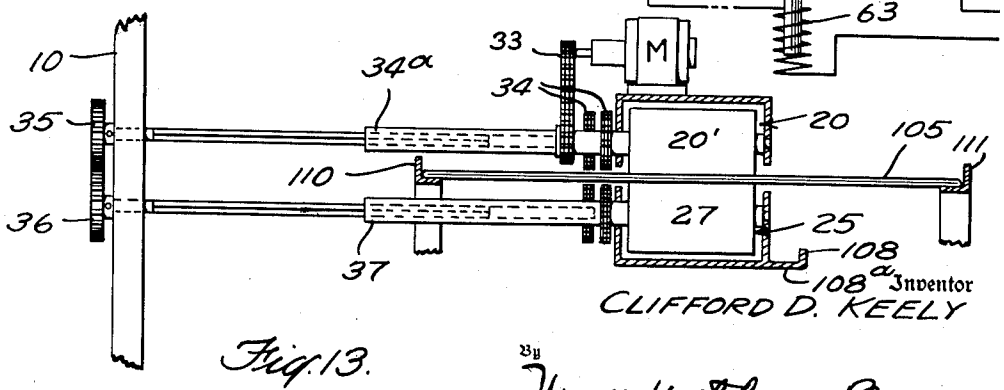


Fig. 13.



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2,721,669

MACHINE FOR APPLYING GUMMED TAPE TO BOX BLANKS

Clifford D. Keely, West Englewood, N. J.

Application April 21, 1950, Serial No. 157,216

11 Claims. (Cl. 216—29)

My present invention relates to an improved apparatus for applying a strip of tape of pre-determined length to work. It is particularly concerned with the application of tape to box blanks, to constitute a seam or reinforcement of the box.

In the art of making paper boxes, a supply of box blanks is first slotted and creased, usually from a double-faced corrugated board or the like; then the operator feeds a folded blank to the taping machine, usually just after folding over the two panels to be joined, which have been formed by the creasing. Sometimes the folding is done by mechanical means. Then a strip of gummed tape is applied to effect union of the abutting edges of the folded blanks as they are successively fed through the machine.

It is therefore a principal object of my invention to improve existing machines to the following ends inter alia that (1) an accurate length of tape will be cut from a bulk supply and be accurately applied to the work, (2) this shall be done in such speeds as are permitted by other limiting factors incident to the feeding and folding of box blanks, for example, (3) the machine will be capable of adjustment to operate upon a wide range of blank sizes, and (4) the blank will be conveyed through the machine without disturbing the alignment of the folded panels and with the proper pressure applied for effecting a strong bond between the tape and the box blank, without crushing.

A further and important object is to provide a tape feeding and cutting device which will operate entirely independently of the mechanism for moving the box blank through the machine. Heretofore dependence has been had upon the movement of the box blank, to which the end of the tape has just been adhesively attached, to pull the tape from the bulk supply. In order, however, to prevent the freshly applied tape from slipping from its initial position on the box blank, it is necessary to press the tape upon the blank with considerable force, which causes the corrugations of the blank material to be crushed. This and other disadvantages are, however, overcome by my improved tape feeding and cutting device.

A still further object of the invention is to devise an improved mechanism for feeding and cutting the tape which will operate without inertia or backlash effects, thus eliminating the use of mechanisms such as single revolution clutches and others which by their inertia cause inaccuracies in the feed of the tape, or of producing objectionable noise and vibration and of requiring that the machine be operated at a speed slower than otherwise would be necessary.

A further and more specific object is to provide an improved aligning mechanism for insuring accurate folding of the box blank as it is fed through the machine.

Further objects of my invention and the advantages thereof will be apparent as the description proceeds.

In carrying out my invention, I first of all have sought to avoid the use of tape feeding and measuring mechanisms which depend for their action upon the starting and stopping of feed rolls or other devices having appreciable inertia thus giving rise to backlash, which even at moderate speeds causes an inaccurate length of tape to be cut. I have further provided for the operations of tape feeding, measuring and cutting to be performed upon the dry tape, thus keeping these important mechanisms free from wet gum or the like. Further, I have provided for an even pressure to be applied to tape freshly applied to the work for such time as will effect a proper union without crushing the corrugations of the corrugated board. This problem is accentuated by reason of the fact that the tape is as a rule applied to edges of corrugated board which have been cut and because of the cutting operation are somewhat crushed and weakened, so that it is important to avoid sudden and heavy crushing pressures to cause the gummed tape to adhere to the low spots of the work. In carrying out my invention, I thus not only provide for this even rolling-in pressure over an appreciable time interval but by providing means for conveying the taped blank by driven roller conveyor elements above and below the blank, I am able to feed the blank to the taping unit without causing the folded panels which are to be joined to the tape from getting out of alignment. Finally, in devising my improved tape measuring and cutting mechanism, I make use of a pair of feeding rolls, at least one of which is in constant rotation; between these rolls when the mechanism is actuated the tape is gripped and payed out during the period of actuation; at the end of this period the tape is released and simultaneously cut. The timing of the combined feed-cut actions is controlled by the box blank itself and determines the length of the piece of tape cut and the point on the blank at which it is first applied thereto.

My invention and advantages thereof will be best understood from the following detailed description taken with the annexed drawings, in which

Fig. 1 is a view in elevation of a preferred embodiment, with parts broken away along section **1—1** of Fig. 2;

Fig. 2 is a plan view thereof with parts broken away;

Fig. 3 is a fragmentary view on an enlarged scale of the folded blank aligning and straightening device;

Fig. 4 is a fragmentary view of the same but with the blank shown in Fig. 3 further advanced;

Fig. 5 is a view on section **5—5** of Fig. 4;

Fig. 6 is an enlarged view taken on section **6—6** of Fig. 1 or **6—6** of Fig. 7;

Fig. 7 is a view taken on section **7—7** of Fig. 6;

Fig. 8 is a view on section **8—8** of Fig. 6;

Fig. 9 is an enlarged view of the part of the mechanism for feeding and cutting tape;

Figs. 10 and 11 are fragmentary views showing the action of the traveling box blank in tripping the switches controlling the tape feeding and cutting mechanisms;

Fig. 12 is a simplified circuit diagram involving the switches shown in Figs. 10 and 11, and

Fig. 13 shows alternative means of driving the box blank feeding devices.

Fig. 14 is a plan view of the box with the tape applied in place.

Referring now to the figures in detail, the machine consists of a frame having four vertical frame members or columns, each denoted **10**, pairs of such columns being connected cross-wise both by upper beams **11** and lower beams **12**, such beams being preferably standard structural steel channels or I-beams, etc. Upper I beams **11** are secured to the fixedly vertical frame members **10** as seen in Figs. 6. Lower beams **12**, however, are not fixed to the frame members **10** but are free to move up and down by being mounted on screw shafts **13**, seen in Figs. 6 and 1, each of which is engaged by an interiorly

threaded worm wheel 14 held by a U-shaped bracket 15 attached to frame 10. Worm wheel 14 is engaged by the worm 16 on shaft 17. It will be understood that for each end portion of lower longitudinal beam 12 a similar holding and raising or lowering device is provided and a crank 18 is provided for turning each shaft 17, which, as will be evident from Fig. 2, operates the worms at either end portion of beam 12.

Resting upon the longitudinal frame members 11, and making rolling contact therewith, is an upper conveyor 20 comprising set of feed rolls 20', carried by and journalled in longitudinal frame member 21 of generally U-shaped cross-section, Figs. 6 and 7, said frame member 21 being movably supported on upper frame members 11 by means of a carriage adjacent either end portion, each comprising a pair of journals 23, 23, of which the left hand journal 23 is seen in Fig. 7. Such journals, four in number, carry the flanged rolls 24 which in the embodiment shown rest upon the horizontal flanges of the channel shaped longitudinal beams 11.

Similarly, a lower conveyor 25 is provided which corresponds to upper conveyor 20, in which is journalled lower feed rolls 27, such conveyor having similar supporting flanged rolls 28 and which travel upon the lower flange of a lower frame member 12, at one end portion of the frame 25 while similar means are provided to support the other end portion on the other frame member 12.

It will be seen from the description given thus far that the box blank is adapted to be fed between the upper conveyor 20 and the lower conveyor 25, which conveyors are independently movable cross-wise of the machine, and that the lower roll conveyor 25 may be moved vertically toward and away from the upper roll set 20' by turning the shafts 17. Both conveyors 20 and 25 are held in adjusted position across the width of the machine by engagement with the transverse beams 11, 12, by means not shown, as by a fastening pin attached to said conveyors passing through a perforation in said beams.

Feed rolls 20' may be driven as shown from synchronous motor M, Fig. 2, by means of chain 33 and a sprocket shown associated with one of said rolls, which in turn drives the other feed rolls 20' by means of sprockets and chains 34 which connect in driving relationship successive rolls 20', all as clearly shown in said Fig. 2.

A similar motor M', Fig. 1, driven in synchronism with motor M drives the lower feed roll set 27 through the same arrangement of chains and sprockets as described for feed roll set 20'. Alternatively the lower roll set may be driven mechanically from the upper roll set, as shown in Fig. 13, wherein the motor M drives the top roll set and the bottom roll set is driven by means of a telescopic shaft 34*a*, intermeshing sprockets 35, 36 and lower telescopic shaft 37.

The devices for measuring, moistening and applying the tape may now be described. A roll 40 of gummed tape is shown in Fig. 2 suitably mounted above the upper conveyor 20, the tape 41 passing therefrom over a driven pulley 42 (Fig. 8, by chain 42*a* and sprocket 42*b*) and thence to the feed-cut device denoted generally by "A." (See also Fig. 9.) In the path of the tape 41 is a pin or roller 43 carried by a lever 44 pivoted at 44'. At its other end the lever 44 carries an idler roll 46. Normally the tape merely rests upon the feed roll 42 and hence is not affected by the rotation of said roll. However, when the tape is pulled taut so as to diminish the angle of the bend 47 therein at the roller or pin 43, Fig. 8, the idler roll 46 is carried to the left against the tape 41 passing over the driving roll 42, thereby pressing the tape sufficiently to cause it to be fed from the roll 40, and creating a prefeeding loop of the tape between the roll 42 and guide roller 47' ahead of the feed-cut device A. As soon as such loop is formed, however, the weight of the lever 43 causes the roll 46 to disengage the tape and the auxiliary feed by the roll 42 stops. The condition in which the tape is slightly slack is shown in Fig. 9.

Feed-cut device A comprises in the embodiment shown a modified bell crank of which the longer arm is identified as 48, which is pivoted at 49 in the shorter arm thereof 48' above the apex of the angle, in a frame 50 which is borne by the conveyor frame 21. At the upper extremity of the shorter arm, a feed roll 51 is carried which, if preferred, can be separately driven by means of a crossed belt 52, passing over pulley 52', Fig. 6, from a pulley 52'', Figs. 7 and 8. Beneath the pivot 49 the shorter arm 48' carries a knife 53 held in adjusted position in a support 54 by means of set screws 55 coacting with set screw 56 (Fig. 9). Serving as a mandrel for the knife 53 is roll 57, Fig. 8. As shown, arm 48 has at its extremity a spring 60 which when actuated is in tension, to cause the bell crank arm when released to move downwardly and accomplish the cutting action of the knife 53. To overcome the effect of the spring 60 is a push rod 61 having a slotted end in which is journalled a roller 62 which is in contact with arm 48. The push rod 61 is actuated by reason of the fact that its lower end portion constitutes the armature of a solenoid 63, such that when the solenoid is actuated the arm 48 is pushed upwardly so as to bring the feed roll 51 operatively against the tape 41, whereby the tape is seized between said roll and driven backing roll 64' and payed out for the full required length during such time as the solenoid is actuated. When the circuit supplying current to the solenoid is broken, however, the spring 60 comes into play to release the tape 41 and to sever it by the action of knife 53 against the mandrel 57. Backing roll 64', mounted in the frame 50, is driven by means of chain 65 through sprocket 64 and shaft 66', Figs. 6 and 7. The tape having been severed, the severed portion is now to be moistened and fed to the work and applied thereupon. Means for accomplishing this will now be described.

Outer feed rolls 67, 68, 69 are mounted in a frame 70 floating on pins 73, which in turn are held in drilled holes in housing frame 50. The purpose of making the frame floating is in order to be able to hold the pressure of the feed rolls 67, 68 and 69 on the tape, such pressure being accomplished by means of the helical springs 72, Fig. 7, each of which surrounds a screw bolt 73, which are threaded into frame member 50. Thus springs 72 urge the floating frame toward rollers 75, 76 and 77, all driven, and by turning the bolts 73, compression of springs 72 can be varied to hold the pressure of the driven feed rollers 67, 68 and 69 against rolls 75, 76 and 77 respectively, the driven floating relationship allowing for traveling the tape down to the blank. Adjusting screws 70' serve to provide minimum spacing of rolls.

Opposite to rolls 67, 68 and 69 are rolls 75, 76 and 77 respectively, roll 75 being an applicator roll to moisten the gum on the tape. This roll is supplied with water by bath roll 78 in tank 79 supplied with water by means of a float valve 80 from pipe 81. Finally a lower travel roll 82 is provided for conducting the moistened tape to the space between the box blank feed roll 20^a and curved guide 82', Fig. 8.

The means for driving the various tape feed rolls may now be described. A spur gear 85, Fig. 2, meshes with and is driven by gear 86, which is mounted on the same shaft as feed roll 20'. Spur gear 85 is keyed to shaft 87, on the opposite end of which is sprocket 88, which in turn drives the chain 65, driving sprocket 90 for the bath roll 78, sprocket 64 together with an idler to take out slack, not shown, and sprockets 91, 92 and 93, which respectively turn rolls 75, 76 and 77. For turning feed rolls 67, 68 and 69, spur gears 94, 95 and 96 are shown in Figs. 6, 7 and 8, which mesh with gears 91', 92' and 93' respectively, the length of the teeth of these gears last mentioned permitting the necessary to and fro movement required for adjustment of the floating carriage 70 to accommodate the tape thickness. For driving the lowermost tape feed roll 82, Figs. 2 and 8, gears 98, 99 are

provided, the latter, which is an idler gear, meshing with a gear on the same shaft and turning with gear **93'**. For adjusting the position of the bath roll **78** to control the amount of water applied, an eccentric mounting **100** is provided for, which is controlled by arm **101** in a curved slot **102**.

It will be apparent from the foregoing that a proper length of tape is caused to be severed from the bulk supply roll **40**, is moistened and fed onto the passing box blank **105**.

It now remains to describe the timing devices whereby the proper length of tape is cut at the proper time. The start of the feed of tape, as has already been pointed out, commences with the energizing of the solenoid **63**, and the feed is stopped and the tape is cut by the deenergizing thereof. The energizing of the solenoid is accordingly brought about by the advancing front edge of the box blank, which closes "normally-open" switch **106** (Figs. 11 and 12). When, however, the advancing edge of the box blank reaches the "normally-closed" switch **107**, the circuit which was made by switch **106** is broken. Then when the box blank has completely passed over the first switch **106** the circuit is thereafter broken until the arrival of the next box blank. The switches **106**, **107** are carried by brackets **106***a* and **107***a* respectively, which in turn are adjustably held on a flange **108** of channel **108***a* (Figs. 6, 10, 11, and 13) by means of set screws **109**, channel **108***a* being part of the frame of conveyor **25**. It will be apparent that the position of switch **106** will determine the point on the box blank at which the leading edge of the tape is applied, whereas the distance of the switch **107** from switch **106** will determine the length of tape which will be cut. The accuracy of the registry of the tape on the box and of the length of tape cut is of the utmost importance. By special circuits, not shown, the second blank will start the taping cycle even though the first box is still on the second switch. Only a small space between blanks is required to allow the first switch to operate.

For the purpose of guiding the folded blank and for insuring the parallelism of the folded edges, guide rails **110**, **111** are by means of brackets **111***a*, Fig. 6, adjustably carried on shafts **112**, **113**, secured to beams **12**, **12** respectively, Fig. 1, such guide rails being of the same level and each having an upstanding edge as shown; conveniently such rails are formed of light angle irons, as shown. It will be understood that these angle irons are first adjusted so that the upstanding edges thereof will be spaced sufficiently to accommodate a folded box blank. Further to insure the trueness of the fold, vertically disposed press rolls **114**, **115** and **116** are provided, which are secured to rail **111** as shown in Figs. 3, 4 and 5. The upstanding flange of rail **111** is cut away at **117** as shown in Figs. 3 and 6. Secured to the horizontal portion of said rail is a T-shaped plate **118** by means of bolts **119**, T-plate **118** having a vertically extending cut out portion **120**, as shown in Figs. 3, 4 and 5, together with horizontal laterally extending slots **121** in which are mounted the vertical shafts **122** of rollers **114**, **115** and **116** and adjustably positioned by nuts **123**. A horizontally extending press roll **124** is mounted on a pivoted arm **125** and engages the newly formed fold of the box blank with a pressure, preferably against an opposing idler roll not shown, which is had by means of spring **125'**, the end of which is adjustably secured in holes **126**. As will be evident from Fig. 2, the rolls **114**, **115** and **116** and **124** and attendant mechanisms are duplicated at the opposite side of the machine, whereby the two sets of rolls cooperate to align the folds of the box blank and further to complete such folds by means of the horizontally disposed pressure rolls **124**.

It will be seen from the foregoing that my improved machine is readily adjustable to provide for applying tape of any desired length to boxes of varying width and wherever the abutting edges of the box blank occur which are to be joined by the tape. Furthermore, by means of the positive drive of the upper and lower conveyors **20** and **25**, the box blank guided by the rails **110**, **111** is fed so as to maintain the abutting edges to be joined in accurate alignment while supplying the correct "rolling-in-action" for union of the freshly moistened or gummed surfaces without, however, unduly crushing the corrugations of the box material which in the usual case comprises a layer of corrugated paper, such pressure being maintained to the end of the conveyors **20**, **25**, at which time the union of the tape and box blank is complete.

It will be understood that, if desired, the tape in roll **40** may be without gum and the gum applied by the applicator roll **75**. Further, as will be apparent from Figs. 6 and 8, feed rolls **67**, **68** and **69** which contact the back of the tape are preferably grooved as shown, as are the rolls **76** and **77** which are in contact with the gummed surface of the tape.

While the moving tape feeding roll **51** has been shown as driven, it is readily possible because of the fact that this roll is light in weight and has a low moment of inertia to omit the driving means and rely entirely upon the fact that the backing roll **64** is positively and continuously driven. Desirably, both rolls are surfaced to insure good gripping action on the tape, such as knurled metal or rubber or a combination of the two.

It is understood that various changes will occur to those skilled in the art, without, however, departing from the spirit of my invention or the scope of the appended claims.

I claim:

1. In a machine for applying tape to box blanks, an upper conveyor device, a lower conveyor device between which said blanks are to be engaged and moved through the machine, means for driving at least one of said conveyor devices, a pair of longitudinally separated transversely extending frame members on which said upper conveyor device is freely supported and on which it is adjustably slidable across the width of the machine, a frame member upon which said lower conveyor device is freely supported and upon which it is adjustably slidable across the width of the machine, tape handling devices including tape feeding, cutting and applying devices directly supported upon said upper conveyor device whereby said upper conveyor device and associated tape handling devices may be brought as a unit into juxtaposition with said lower conveyor device at varying distances crosswise of the machine to accommodate box blanks of varying width and of seam location together with means for urging said conveyor devices together in order to engage the blanks between them.

2. A machine according to claim 1 in which at least one of said conveyor devices is in the form of a train of individual rollers whose axes are crosswise of the direction of movement of the blank.

3. A machine according to claim 1 in which said conveyor devices have rolling contact with their respective supporting frame members.

4. A machine according to claim 1 in which the driving means for at least one of said conveyor devices is carried thereby and is movable therewith.

5. In a machine for applying tape to a moving piece of work, a tape feeding and cutting mechanism for alternately feeding and cutting controlled tape lengths comprising in combination a pivoted lever, a feed roll directly supported on one arm of the lever, a knife blade directly supported on a second arm of the lever at the opposite side of the lever pivot, a backing roll for said feed roll toward and away from which said feed roll is movable by the action of said lever, means for continuously driving at least one of said rolls, power operated means responsive to a light pull of said rolls for drawing tape from a bulk supply and paying it out to said rolls in accordance with the requirements of said rolls, an automatic timing and actuating device for rock-

ing said lever about said pivot in one direction to grip the tape between said rolls intermittently to accomplish the feeding of the tape, and means for rocking said lever in the opposite direction to bring said knife into severing contact with said tape and to release the tape between said rolls.

6. In a machine for applying tape to a moving box blank, a tape feeding and cutting mechanism for alternately feeding and cutting controlled tape lengths comprising in combination a pivoted lever, a feed roll directly supported on one arm of the lever, a pinch cut knife blade having a beveled face which is engageable with the cut tape web disposed at an acute angle to the direction of tape feed, said knife blade being directly supported on a second arm of the lever at the opposite side of the lever pivot, a backing roll for said feed roll toward and away from which said feed roll is movable by the action of said lever, means for continuously driving at least one of said rolls, power operated means responsive to a light pull of said rolls for drawing tape from a bulk supply and paying it out to said rolls in accordance with the requirements of said rolls, an automatic timing and actuating device for rocking said lever about said pivot in one direction to grip the tape between said rolls, intermittently to accomplish the feeding of the tape, means for rocking said lever in the opposite direction to bring said knife into severing contact with said tape and to release the tape between said rolls, and a pinch cut anvil disposed across the path of and cooperative with said knife to effect a pinch cut.

7. In a machine for applying tape to a moving box blank, a tape feeding and cutting mechanism for alternately feeding and cutting controlled tape lengths comprising in combination a pivoted lever, a feed roll directly supported on one arm of the lever, a pinch cut knife blade having its face which is engageable with the cut tape web disposed at an acute angle to the direction of tape feed, said knife blade being directly supported on a second arm of the lever at the opposite side of the lever pivot, a backing roll for said feed roll toward and away from which said feed roll is movable by the action of said lever, means for continuously driving at least one of said rolls, power operated means responsive to a light pull of said rolls for drawing tape from a bulk supply and paying it out to said rolls in accordance with the requirements of said rolls, an automatic timing and actuating device for rocking said lever about said pivot in one direction to grip the tape between said rolls intermittently to accomplish the feeding of the tape and for maintaining said rolls in contact for the duration of the tape feeding operation, a pinch cut anvil opposed to the knife and extending across the path thereof, and a spring for rocking said lever in the opposite direction to release the tape between said rolls and concurrently to drive the knife against the tape and anvil for effecting a pinch cut of the tape.

8. A machine for applying tape to paperboard box blanks comprising a supporting bed along which box blanks may be moved, means for moving box blanks one after another along said bed, means for feeding a tape strip endwise toward said bed including a pair of feed rollers mounted for relative bodily movement to grip or to release the tape strip, means for continuously driving one of said rollers, means positioned to engage the leading end of said strip when it is advanced by said feed rollers to press the same against a blank on said bed, a reciprocable cutter blade normally positioned in the path of travel of said strip between said bed and said feed rollers and mounted to have a retracting stroke and a cutting stroke to sever the strip, cutter actuating means comprising a reversible motor operably connected to said cutter blade, actuation of said motor in one direction moving the blade away from said strip and out of the path of travel thereof, actuation of said motor in the opposite direction moving the blade into engagement with the strip to sever the same, spaced trips positioned to be successively engaged by each blank moving along said runway, means controlled by the trip first actuated by each blank for causing actuation of said motor in said one direction to move said blade away from its normal position in the path of said strip, means controlled by the other of said trips for causing actuation of said motor in said opposite direction to impart a cutting stroke to said blade and to return the same to said normal position, and means actuated by said motor for causing relative movement of said feed rollers to grip said strip and to advance the leading end thereof past said blade to the bed during the retracting stroke of the blade and to release said strip during the cutting stroke of the blade and substantially simultaneously with severance of said strip.

9. In a machine for applying tape to a moving piece of work, a tape feeding and cutting mechanism for alternately feeding and cutting controlled tape lengths comprising in combination a pivoted lever member having arms, a feed roll directly supported on one of said arms, a knife blade directly supported on a second arm of said member at the opposite side of the pivot from said feed roll, a backing roll for said feed roll toward and away from which said feed roll is movable by the action of said lever member, means for continuously driving at least one of said rolls, an automatic timing and reversible actuating device comprising a first trip positioned to be engaged by the moving piece of work for causing said actuating device to rock said lever member about said pivot in one direction to grip the tape between said rolls intermittently to accomplish the feeding of the tape, means comprising a second trip positioned further along in the path of travel of said piece of work for causing said actuating device to rock said lever member in the opposite direction to bring said knife into severing contact with said tape and to release the tape between said rolls, and means for guiding the cut tape lengths onto said work.

10. In a machine for applying tape to a moving piece of work, a tape feeding and cutting mechanism for alternately feeding and cutting controlled tape lengths comprising in combination a pair of feed rollers mounted for relative bodily movement alternately to grip and to release the tape, means for rotationally driving at least one of said rollers, a movably mounted cutter having a cutting stroke and a retracting stroke, an electric motor and linkage means operating upon said cutter and feed rollers, a switch means controlling the action of said motor and linkage means upon said cutter and rollers, an automatic timing and switch means actuating device comprising a first trip means positioned to be actuated by the moving piece of work for causing said switch means to be placed in a first condition for causing said cutter to be moved into retracted position and said feed rollers into tape gripping position in response to said motor and linkage means operation, and a second trip means positioned further along in the path of travel of said piece of work to be actuated by said piece of work for causing said switch means to be placed in a second condition for causing said cutter to be moved into tape cutting position and said feed rollers into tape releasing position in response to said motor and linkage means operation, and means for guiding cut tape lengths onto said work.

11. In a machine for applying tape to a moving piece of work, a tape feeding and cutting mechanism for alternately feeding and cutting controlled tape lengths comprising in combination a pair of feed rollers mounted for reciprocable relative bodily movement to alternately grip and release the tape, means for rotationally driving at least one of said rollers, a reciprocably mounted cutter having a retracting stroke and a cutting stroke, a linkage interconnecting said feed rollers and cutter synchronizing movement of said rollers into tape gripping position with movement of said cutter into retracted position and move-

ment of said rollers into tape releasing position with movement of said cutter into tape cutting position, an electric motor means actuating said linkage for reciprocating said cutter and feed rollers, a switch means controlling operation of said motor means, an automatic timing and switch means actuating device comprising a first trip means positioned to be actuated by the moving piece of work for causing said switch means to be placed in a first condition for causing said feed rollers to be moved into tape gripping position and said cutter into retracted position, and a second trip means positioned further along in the path of travel of said piece of work to be actuated by said moving piece of work for causing said switch means to be placed in a second condition for causing said feed rollers to be moved into tape releasing position and said cutter into tape cutting position, and means for guiding cut tape lengths onto said work.

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