

M. B. DISKIN.
TAPE APPLYING MACHINE.
APPLICATION FILED DEC. 29, 1908.

948,575.

Patented Feb. 8, 1910.

5 SHEETS—SHEET 1.

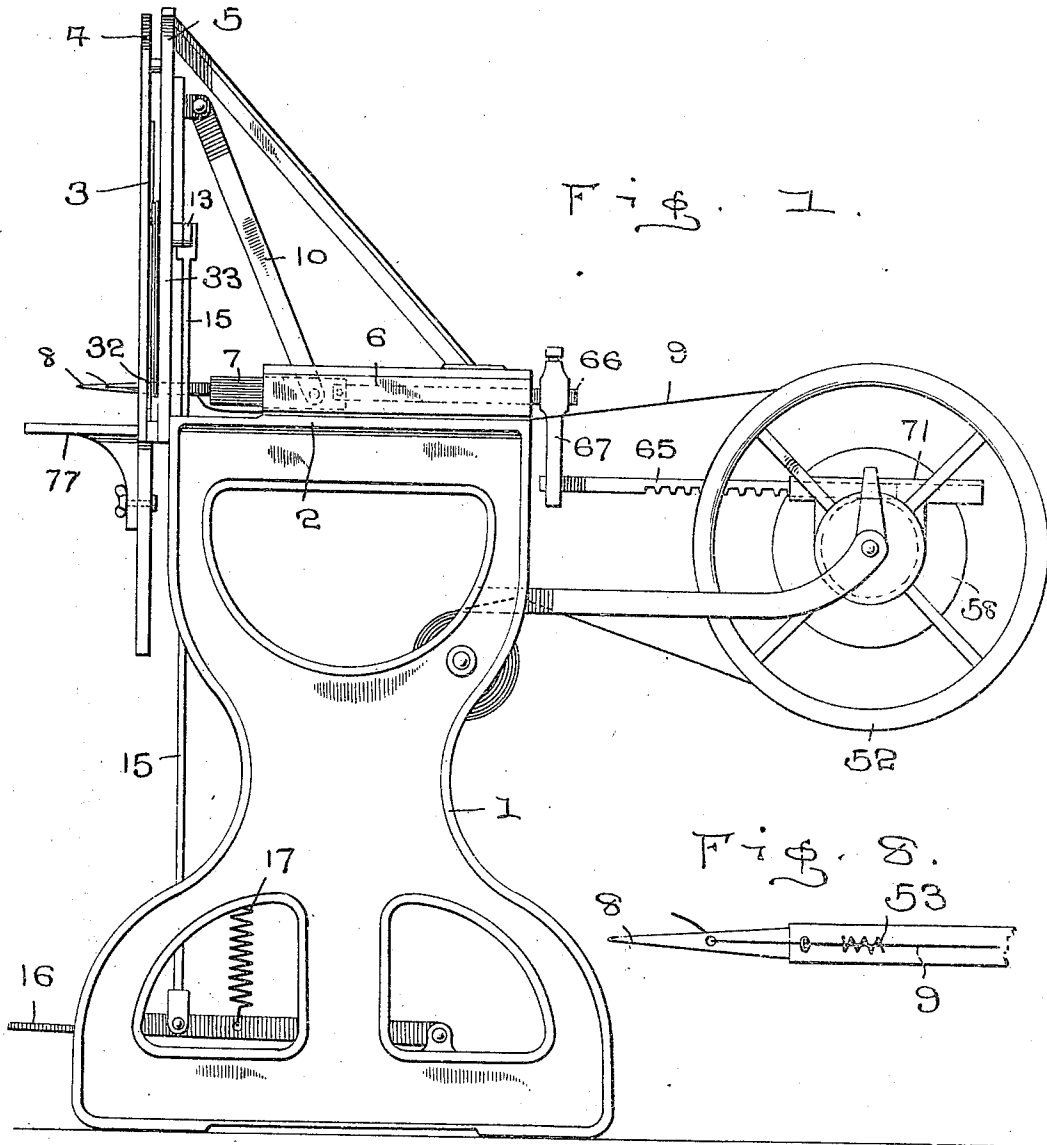


Fig. 1.

Fig. 8.

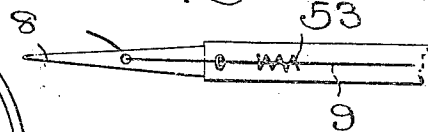
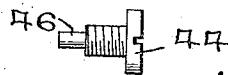


Fig. 9.

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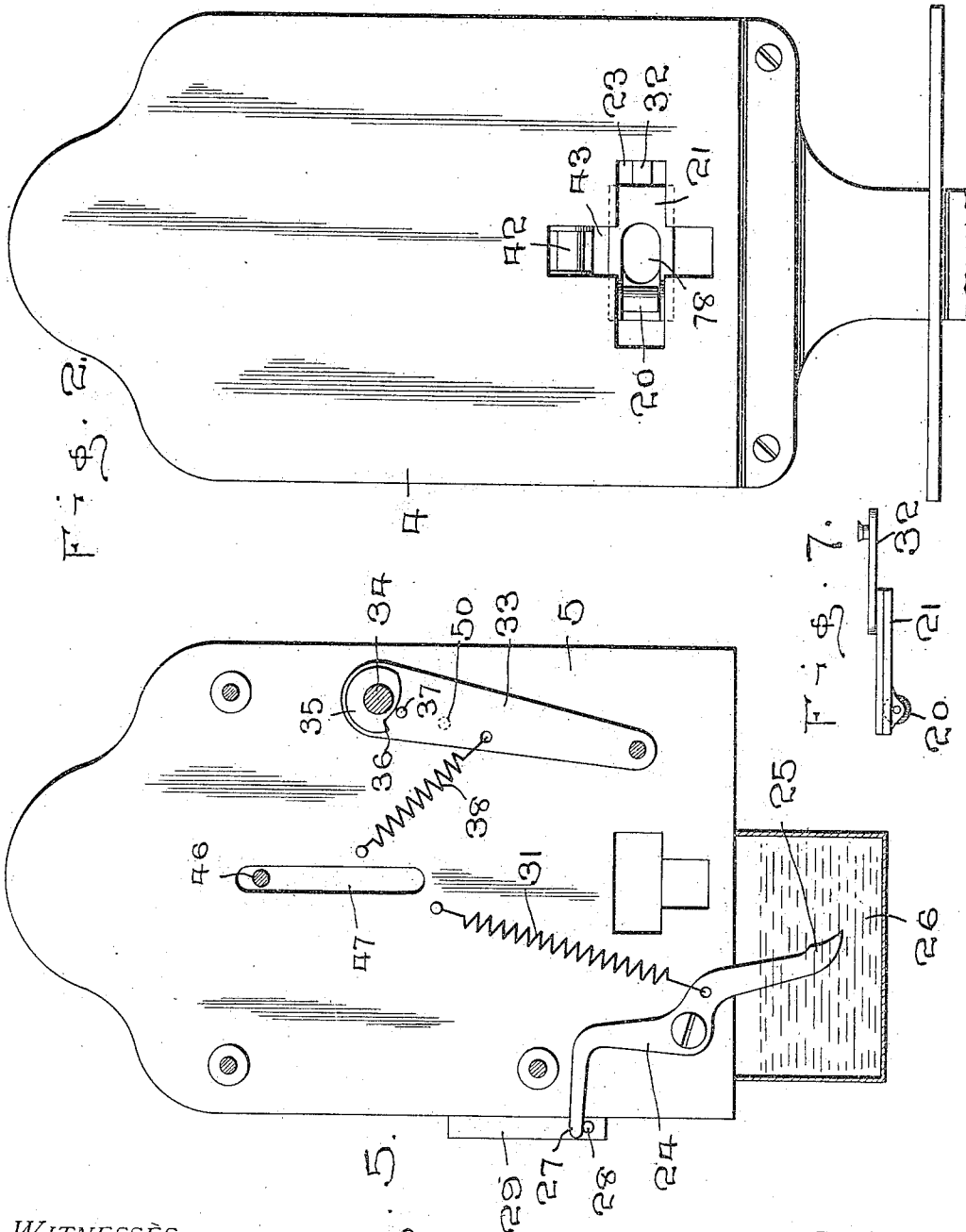
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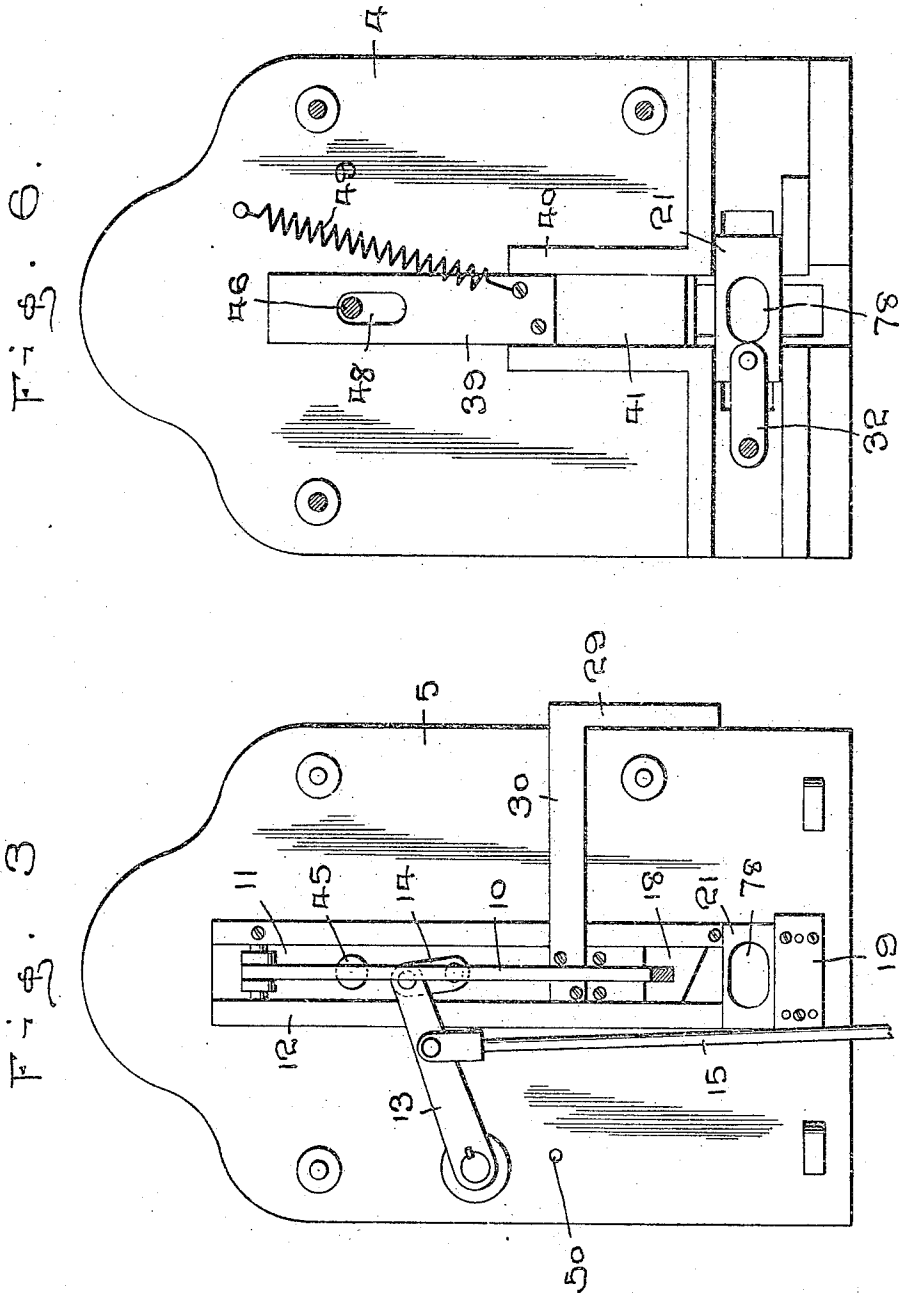
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5 SHEETS—SHEET 3.



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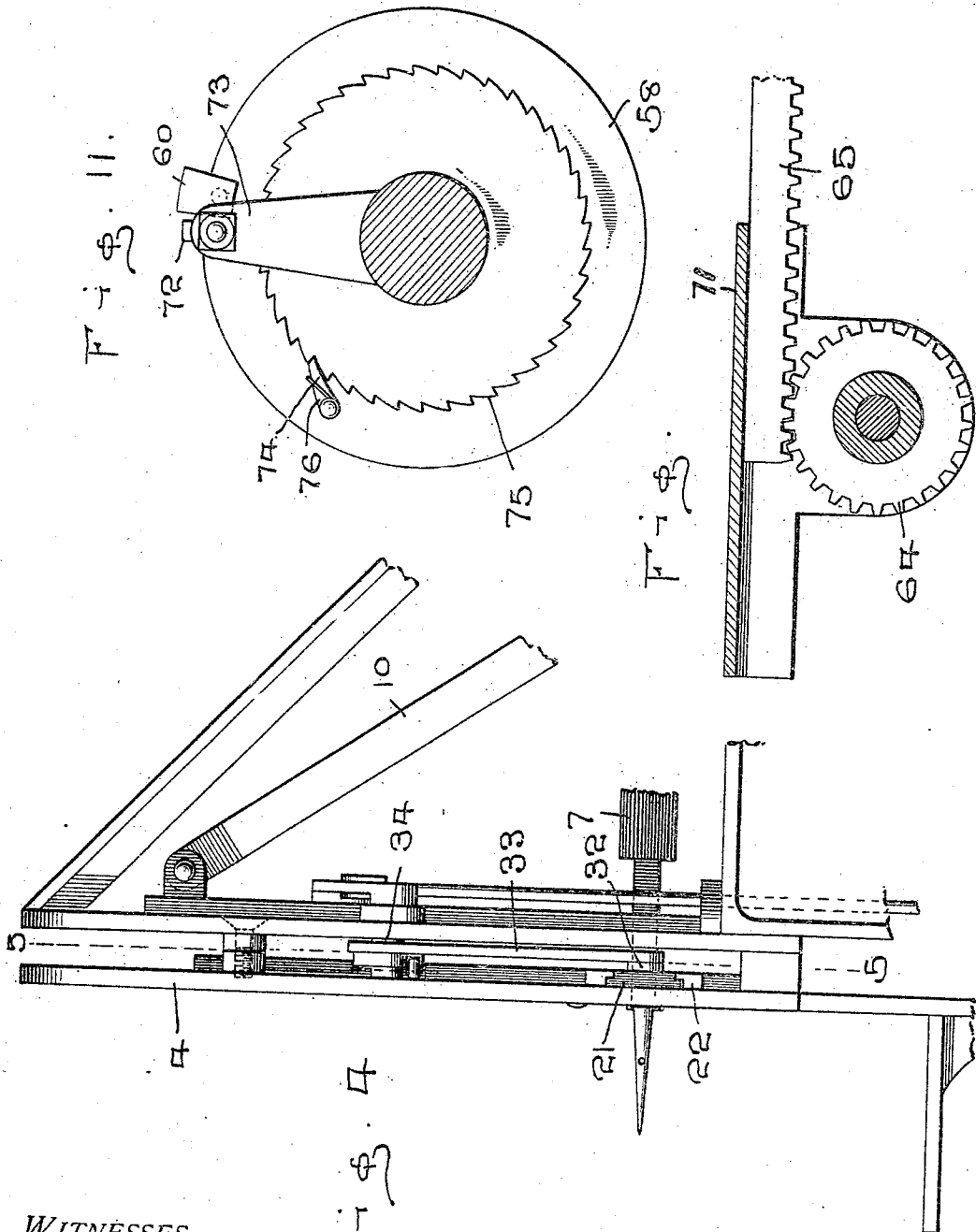
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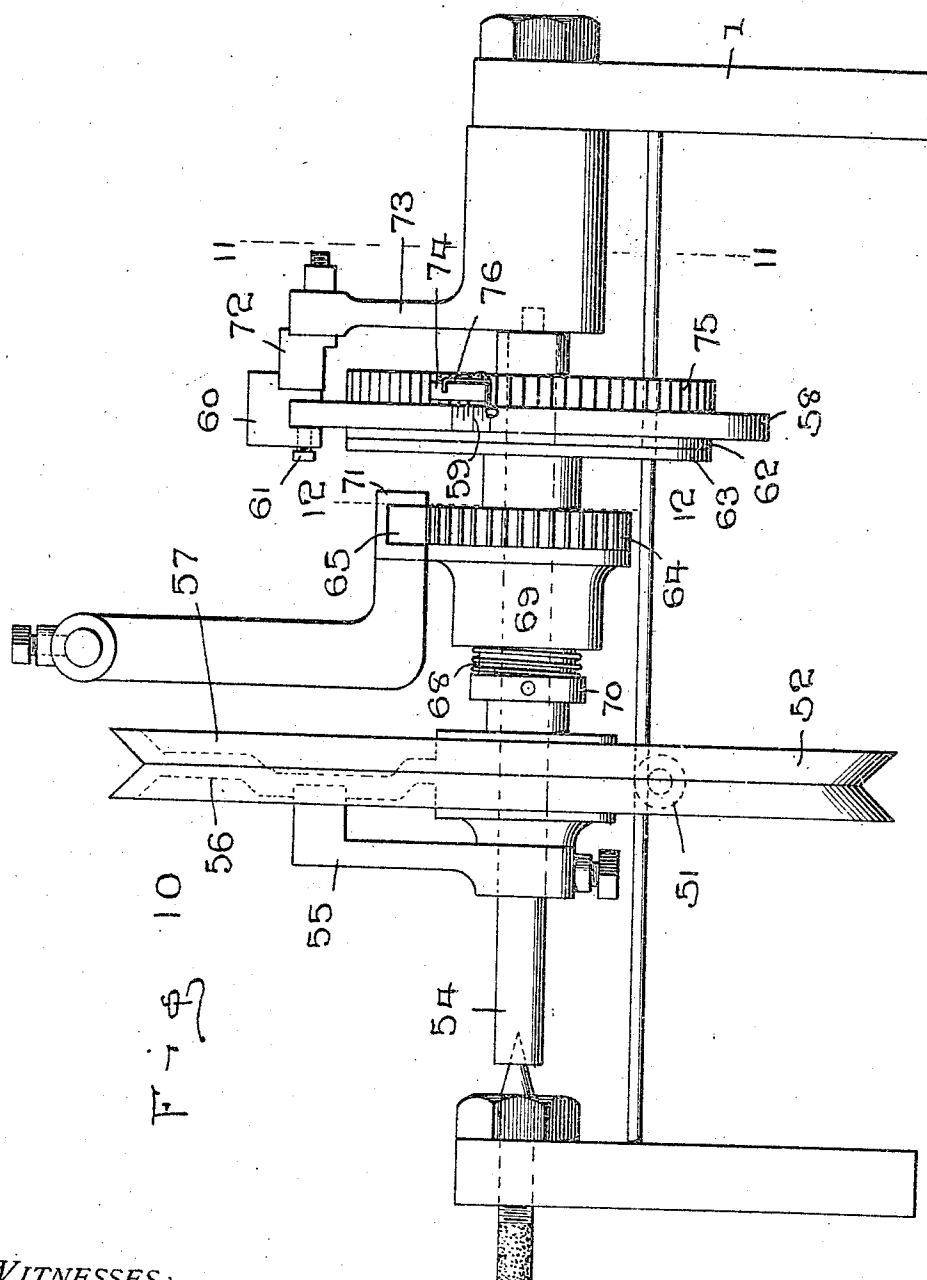
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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

MOSES B. DISKIN, OF NEW YORK, N. Y.

TAPE-APPLYING MACHINE.

948,575.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed December 29, 1908. Serial No. 469,781.

To all whom it may concern:

Be it known that I, MOSES B. DISKIN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Tape-Ap-
5plying Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will
10enable others skilled in the art to which it appertains to make and use the same.

My invention relates to new and useful improvements in tape applying machines and is an improvement over my patent
15dated Feb. 16, 1909, and numbered 912545, and allowed Sept. 24, 1908, and my object is to provide means for introducing a tape through the walls of a box.

A further object is to provide means for
20severing the tape after it has been introduced through the wall of a box.

A further object is to provide means for applying paste to portions of the tape.

A still further object is to provide means
25for pressing the portion of the tape having the paste thereon, into engagement with the wall of the box.

A still further object is to provide means
30for regulating the length of the tape as it is applied to the box and a still further object is to provide means for manually operating the various parts of the tape-applying mechanism.

Other objects and advantages will be here-
35inafter referred to and more particularly pointed out in the claims.

In the accompanying drawings which are made a part of this application, Figure 1
40is a side elevation of the tape-applying mechanism complete. Fig. 2 is a front elevation of the head of the machine, showing the tape-applying mechanism. Fig. 3 is a
45rear elevation of the machine head. Fig. 4 is an edge elevation thereof, showing the manner of attaching the same to the machine frame. Fig. 5 is a sectional view as
50seen on line 5—5, Fig. 4. Fig. 6 is a view similar to Fig. 5, looking in the opposite direction. Fig. 7 is a plan view of one of the mechanisms employed for applying the
55tape to the face of the box. Fig. 8 is a detail plan view of the needle employed for introducing the tape through the side of the box, showing a tension thereon. Fig. 9

is an elevation of a screw adapted to be used
56when the tape is to be directed vertically on the box. Fig. 10 is an elevation of the tape-measuring device; Fig. 11 is a sectional view thereof as seen on line 11—11, Fig. 10, and,
60Fig. 12 is a sectional view as seen on line 12—12, Fig. 10.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1
65indicates the frame of my improved machine, to the platform 2 of which is secured a head 3, said head comprising a front and rear plate 4 and 5, respectively.

Located on the platform 2 is a slide box 6,
70in which is adapted to slide a plunger 7, said plunger having removably secured to its forward end a needle 8, which needle is designed to convey the tape 9 through the wall of a box (not shown).

The plunger 7 is operated through the
75medium of a pitman 10, the lower end of which pitman is secured to the plunger, while the upper end thereof is pivotally secured to a vertically disposed slide 11, which
80slide is movably mounted in guide ways 12 on the rear face of the plate 5 and when the slide is moved vertically upwardly or downwardly, the plunger 7 will be correspond-
85ingly moved forwardly or rearwardly.

The slide 11 is operated through the me-
85dium of a bar 13, one end of which is pivotally mounted on the plate 5, while the opposite end thereof is connected to the slide 11 through the medium of a link 14, while in-
90termediate the ends of the bar 13 is secured a rod 15, the lower end of which is secured to a treadle 16, one end of the treadle being in turn pivotally secured to the frame 1, and
95the opposite end thereof extended beyond the frame and in position to be operated by the foot. When, therefore, it is desired to
100move the plunger rearwardly and remove the needle from the wall of the box, through which it is extended, downward pressure is exerted on the free end of the treadle 16,
105which will result in lowering the slide 11 and moving the plunger 7 rearwardly and when it is again desired to direct the needle through the wall of the box, the pressure on the treadle 16 is released, whereupon the
110treadle will be immediately elevated and the plunger moved forwardly through the medium of a spring 17, one end of which is se-

cured in any preferred manner to the frame 1, while the opposite end thereof is secured to the treadle, the tension of said spring being such as to normally hold the treadle in its elevated position.

The lower end of the slide 11 is provided with a knife 18, which coöperates with a plate 19, which is adjustably mounted on the face of the rear plate 5, the object of said knife and plate being to sever the tape after the needle has been removed from the wall of the box, the movement of the slide being so timed that the needle will be moved in the rear of the plate 5 before the knife 18 has been moved into engagement with the tape 9.

As soon as the tape has been severed, the portion thereof on the outer face of the box is pressed into engagement with the face of the box through the medium of a roller 20, which roller is carried by the block 21 slidably mounted upon ways 22 on the inner face of the forward plate 4, the plate 4 having a horizontally disposed slot 23 there-through, in which the roller 20 extends.

Previous to severing the tape 9, that portion of the tape between the outer wall of the box and the point of severance has applied thereto a quantity of paste or glue, which is automatically accomplished by pivotally mounting a lever 24 on the inner face of the rear plate 5, one end of the lever having a spoon or ladle 25 thereon, which is adapted to normally extend into a glue-pot 26, while the opposite end of the lever terminates in a finger 27, the free end of which is adapted to engage a pin 28 carried by the depending end 29 of an arm 30, the opposite end of said arm being fixed to and adapted to move with the slide 11 and as the finger 29 rests above the pin 28, it will be readily seen that when the slide 11 is in its elevated position, the spoon 25 will be disposed into the pot 26, but as the slide 11 descends, the spoon end of the lever 24 will be elevated through the medium of a spring 31, one end of which is secured to the lever 24 and the opposite end thereof to the inner face of the plate 5.

The block 21 is operated through the medium of a link 32, one end of which is pivoted to the block 21, while the opposite end thereof is pivoted to the lower end of an arm 33, the upper end of said arm being loosely mounted on the shaft 34, to which the bar 13 is secured, said shaft extending through the rear plate 5 and having fixed to its inner end, a cam 35, the shoulder 36 thereon being adapted to engage a pin 37 carried by the arm 33, by which means the arm is operated in one direction, the arm being moved in the opposite direction through the medium of a spring 38.

Instead of employing the block 21 and directing the end of the tape in a horizontal

position on the face of the box, said tape may be directed vertically, in which instance an auxiliary slide 39 is mounted in ways 40 on the inner face of the front plate 4, to the lower end of which slide is secured a block 41 having rotatably mounted thereon a roller 42, which roller likewise extends through a vertical slot 43 in the plate 4 and when the roller 42 is to be used, a screw 44 is entered through an opening 45 in the slide 11, the inner end of the screw having a stem 46, which is adapted to extend through a slot 47 in the plate 5 and enter a slot 48 in the auxiliary slide 39, whereby when the slide 11 is lowered, the auxiliary slide and roller carried thereby are correspondingly lowered.

The object in providing the slot 48 is to permit of partial operation of the tape applying mechanism before the stem 46 reaches the lower end of the slot 48 and to cause the auxiliary slide 39 to rise to its proper position and remain inactive at such time as the block 21 is being used, I employ a spring 49, one end of which spring is secured to the auxiliary slide and the opposite end thereof to the plate 4.

When the roller 42 is being used, the arm 33 is swung outwardly its full extent, thereby carrying the block 21 out of the path of the block 41 and the arm 33 is held in its outward position by introducing any suitable form of device through an opening 50 in the plate 5 and into the path of the swinging arm, thus holding the block 21 out of the path of the block 41.

The spool of tape 9 is rotatably mounted in any suitable manner between the sections of the frame 1 and in its passage from the spool to the needle, it is entered through a guide or eye 51 in the frame 1 and thence passed around a grooved wheel 52 and through suitable guides to the needle 8, said tape being entered through a tension 53 carried by parts of the needle 8.

The wheel 52 is rotatably mounted on a shaft 54 and is caused to rotate with the shaft by securing to the shaft a finger 55, the upper end of which is adapted to extend into the path of one of the spokes 56 of the wheel, said spoke having an outwardly bent portion 57, against which the finger is adapted to take, when the shaft is rotated and in order to regulate the amount of tape to be unwound from the spool at each operation of the needle, I provide a measuring mechanism, which consists of a dial 58, upon the edge of which are placed suitable graduations 59 coöperating with which graduations is a stop 60, said stop being adjustably secured to the dial 58 by means of a set-screw, or the like, 61.

The dial 58 is provided with a friction face 62, with which is adapted to engage a friction plate 63, which friction plate is rota-

ably mounted on the shaft 54 and is formed integral with a gear 64, which gear is in turn adapted to mesh with a rack bar 65 and be rotated thereby when said rack bar is moved longitudinally.

The forward end of the rack bar 65 is connected to the plunger 7 through a reach bar 66 and a hanger 67, so that as the plunger is moved back and forth, the rack bar 65 will likewise be moved longitudinally and the gear 64 and friction plate 63 rotated on the shaft 54, the plate 63 being held in frictional engagement with the friction face 62 by means of a spring 68, said spring being located around the shaft 54 and between a collar 69 and a ring 70, the rack bar 65 being held in position on the gear 64 by means of a shield 71 carried by the collar 69.

The length of the tape is regulated by the position of the stop 60 on the dial 58 and after the length of the tape required is ascertained, the stop 60 is placed at the proper position on the dial and secured by the set screw 61, said stop extending in the path of a lug 72, which lug is in turn secured to a standard 73 carried by parts of the frame and in order to cause the shaft 54 to positively rotate in one direction, a pawl 74 is pivoted to one face of the dial 58, and in position to engage the teeth of a ratchet wheel 75, which ratchet is in turn fixed to the shaft 54, the pawl being positively held in engagement with the ratchet by means of a spring 76.

In operation, a box is placed on the platform 77 and moved inwardly against the needle 8, the inward movement of the box being continued until it engages the outer face of the head 3. The operator then grasps the free end of the tape and draws the same outwardly until the proper length of tape is obtained, or until the stop 60 engages the lug 72 and stops further rotation of the ratchet 75 and shaft 54, to which the same is secured. Pressure is then directed on the treadle 16, which will result in moving the needle rearwardly and beyond the rear plate 5, the same operation lowering the slide 11 and permitting the ladle of the lever 24 to ascend and engage that portion of the tape between the side of the box and the end of the needle. As the slide continues to descend the tape will first be severed by the knife 18 and co-incident to this action, the shoulder 36 of the cam 35 will have engaged the pin 37 and the continued movement of the parts will swing the arm 33 outwardly and cause the roller 20 to press the glued portion of the tape against the face of the box. It is to be understood, of course, that the several parts of the device are so timed as not to interfere with the operation of each other; and to consume a less amount of space and require a shorter movement to accomplish the proper result, the needle 8 is

directed through an oblong opening 78 in the block 21, thereby requiring a shorter movement of the block to apply the tape to the box. As soon as the tape has been applied at one point on the box, the box is moved outwardly on the platform 77 and the pressure is released from the treadle, whereupon the spring 17 will immediately act and move the needle to its outward position, when the box is to be properly positioned on the platform and again forced into engagement with the needle and the needle entered through the wall of the box, when the same operation is performed as previously described. As the pressure is applied to the treadle and the needle is moved rearwardly, the rack bar 65 will reversely rotate the gear 64 and return the stop 60 into engagement with the lug 72 and should the stroke of the rack bar be greater in either direction than the movement of the dial 58, the frictional engagement of the parts will permit the gear to rotate, while the dial remains stationary and it will likewise be seen that the ratchet and shaft upon which the same is mounted, will remain stationary during the rearward movement of the rack bar, but will be positively rotated in the opposite direction through the medium of the pawl.

It will thus be seen that I have provided a cheap and economical form of device for permanently applying tape to a box and it will further be seen that the length of the tapes on the box may be readily regulated by means of the mechanism shown.

What I claim is:

1. In a machine of the character described comprising a head-member, a slide arranged thereon, a cutter carried by said slide, means including a shaft supported in said head-member for actuating said slide, a resiliently held arm pivotally suspended from said shaft, a cam fixed to said shaft and operated from said slide actuating means, said arm having means engaged by said cam for actuating said arm, a viscous-substance applying means, means connected with said slide for actuating the last mentioned means, means for delivering pressure upon the object to which the viscous substance is applied, and a jointed connection between said viscous substance applying means and said arm.

2. A machine of the character described comprising a head member, a slide arranged thereon, a cutter carried by said slide, a shaft mounted upon said head-member, means of connection between said slide and said shaft, means for actuating said shaft, a resiliently held arm pivotally suspended from said shaft, a cam fixed to said shaft, said arm being provided with a pin engaged by said cam for actuating said arm, a resiliently elevated lever of ladle-like forma-

tion, means carried by said slide for actuating said lever, a sliding block, a pressure applying roller carried by said sliding block, link connection between said sliding block and said pivotally suspended and resiliently held arm, an auxiliary slide adapted to carry pressure applying means, and detachable means of connection between the first referred to slide and said auxiliary slide.

3. A machine of the character described, comprising a plunger, a needle carried by said plunger, a head-member, a slide arranged upon the latter, means of connection between said plunger and said slide, a cutter carried by said slide, a shaft mounted upon said head-member, means of connection between said shaft and said slide, means for actuating said shaft, an arm pivotally mounted upon said shaft, a cam carried by said shaft, said arm being provided with means engaged by said cam for actuating said arm, a resiliently elevated lever adapted to serve as a ladle, means carried by said slide for actuating said lever for depressing said ladle, a sliding block, a pressure applying roller carried by said sliding block,

means of connection between said sliding block and said pivotally suspended arm.

4. A tape-applying machine of the character described, comprising a plunger, a needle carried by said plunger, means for delivering pressure to the tape engaged by said needle, means for applying a viscous substance to said tape, means for severing the tape, means for guiding the tape to said needle, including a wheel around which said tape is passed, a shaft bearing said wheel, a graduated dial, frictional coupling means between said shaft and said dial, a rack bar, means of connection between said plunger and said rack bar, a gear integral with a member of said frictional coupling means, said gear engaging said rack-bar, a stop carried by said dial and adjustable with relation to its graduations and a fixed lug arranged in the plane of rotation of said stop.

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

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Witnesses:

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