J. HREN.

BOOK BACKING MACHINE.

APPLICATION FILED SEPT. 11, 1914.

1,252,114.

Patented Jan. 1, 1918.

5 SHEETS—SHEET 1.

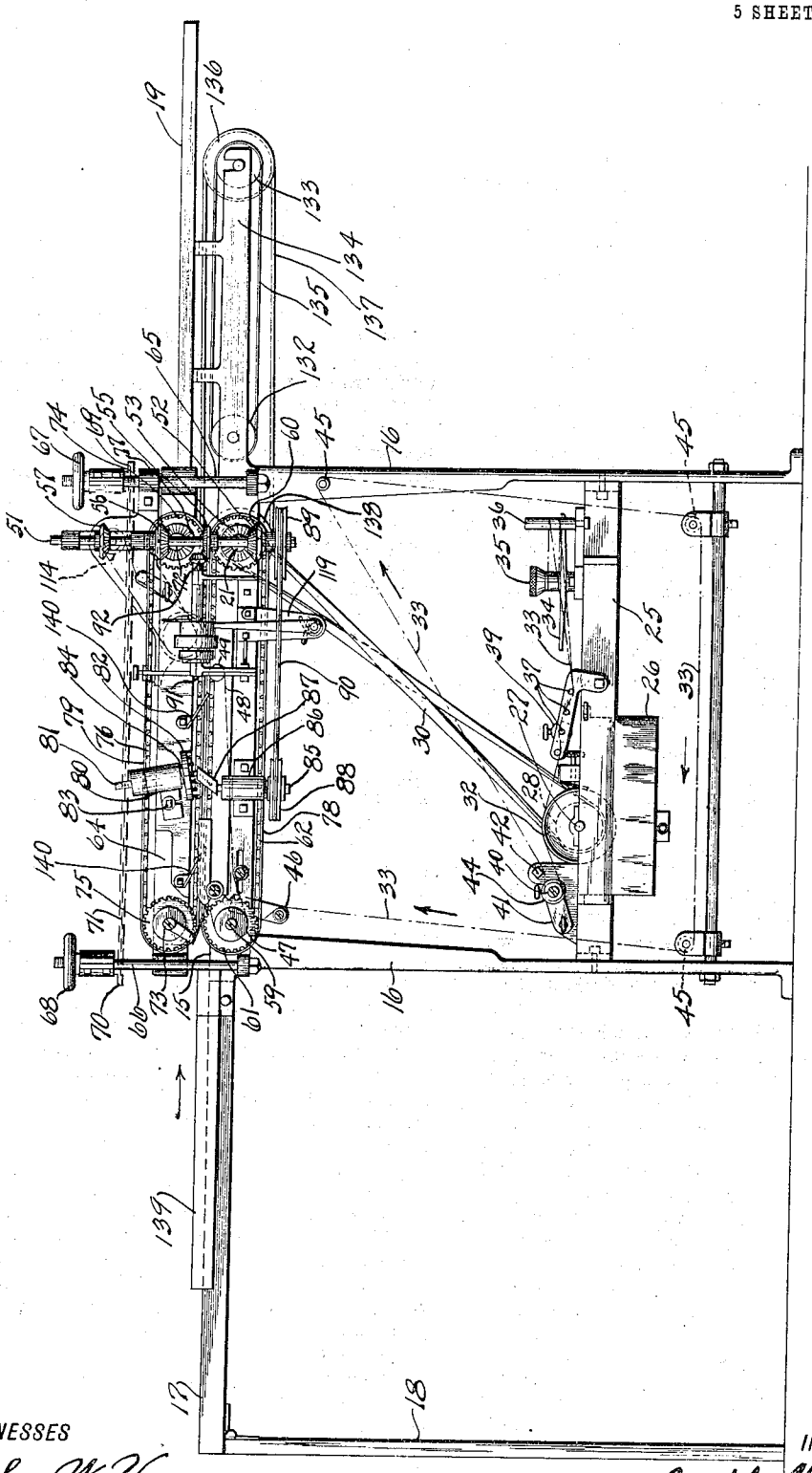


Fig. 1.

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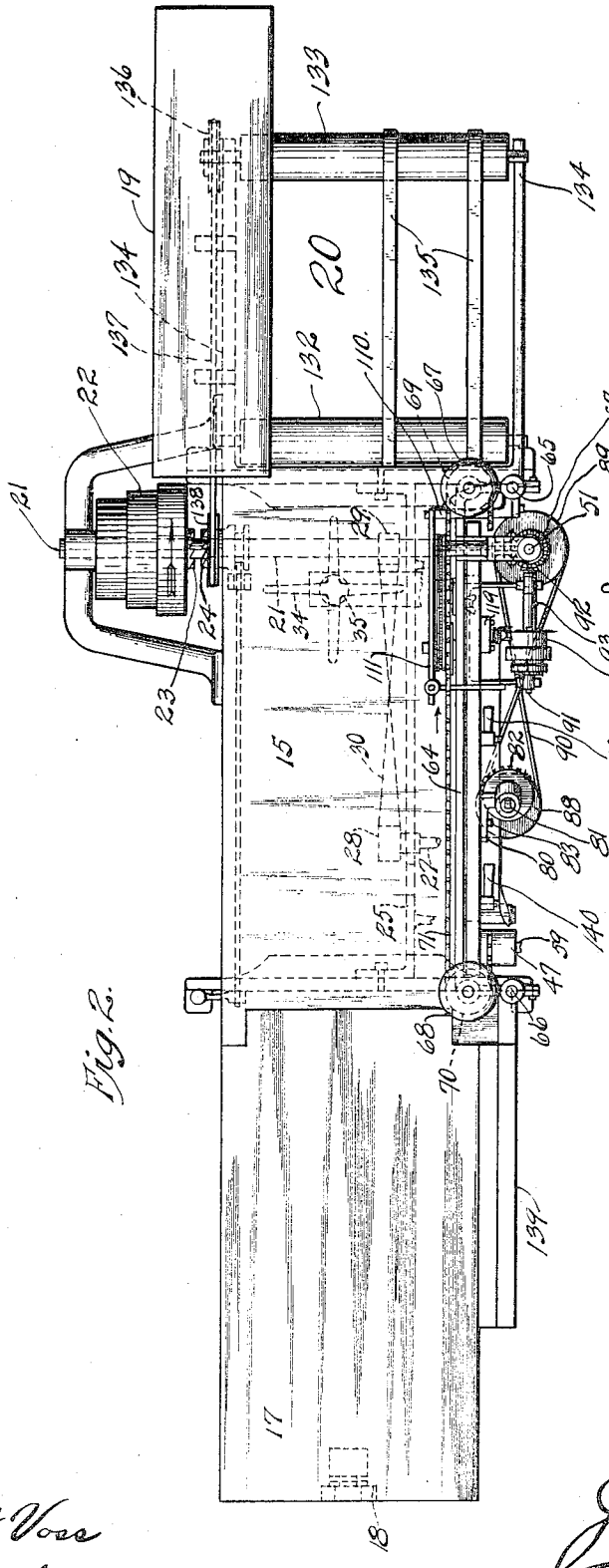


Fig. 2.

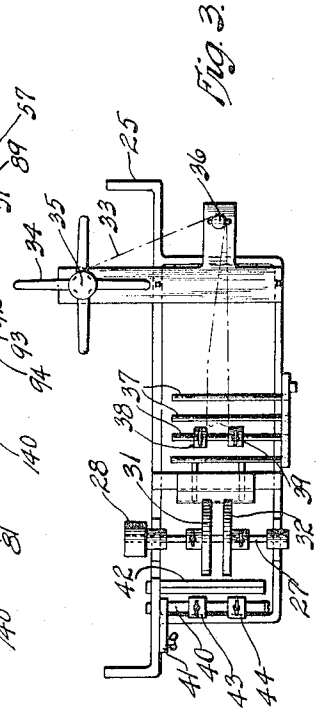


Fig. 3.

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5 SHEETS—SHEET 3.

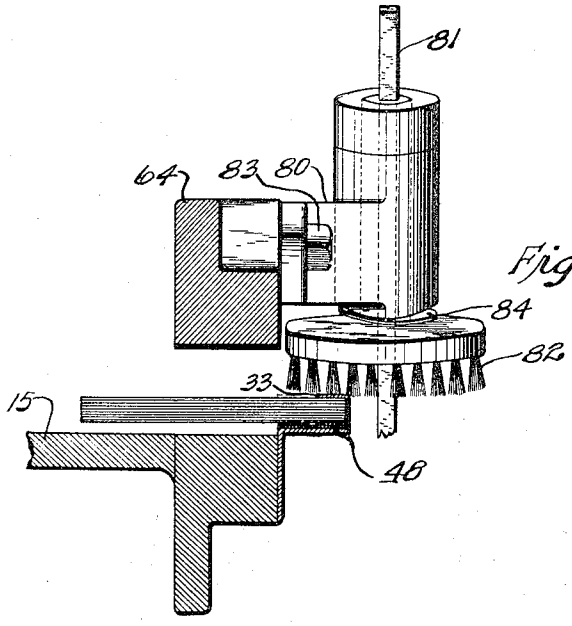


Fig. 4.a

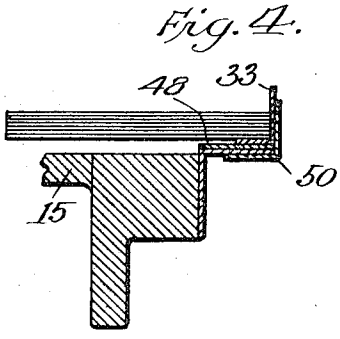


Fig. 4.

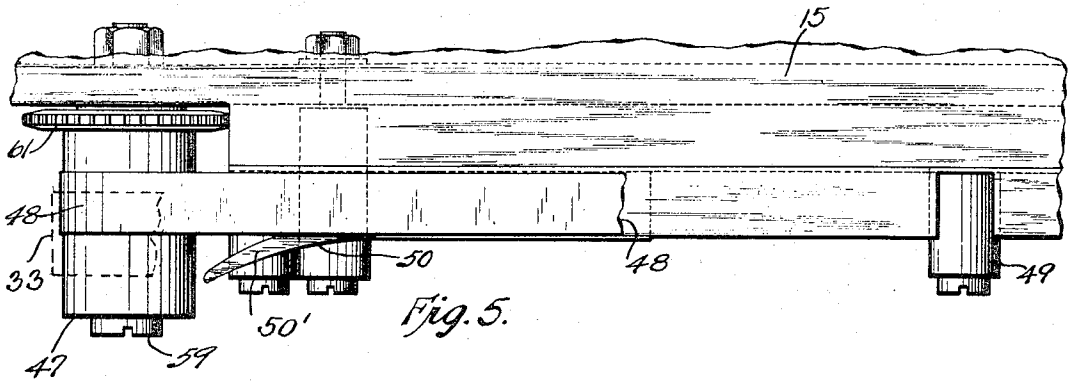


Fig. 5.

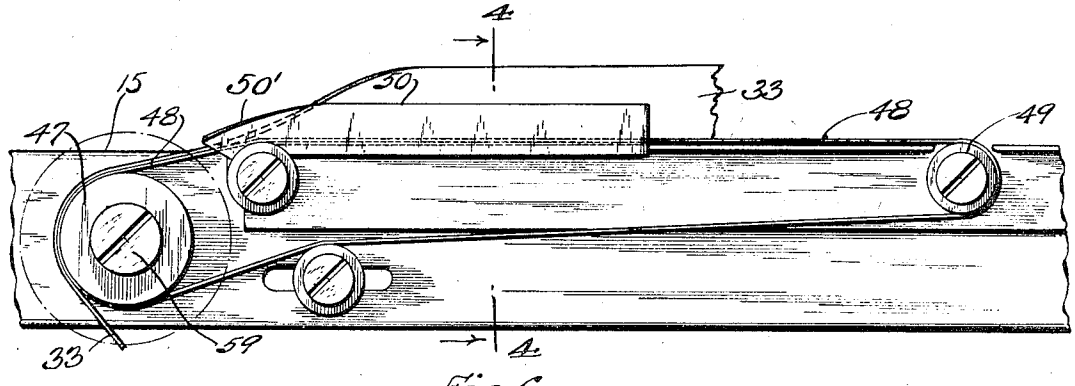


Fig. 6.

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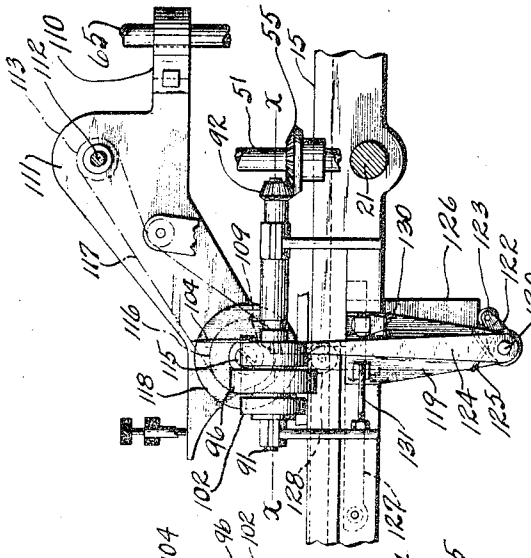


Fig. 9.

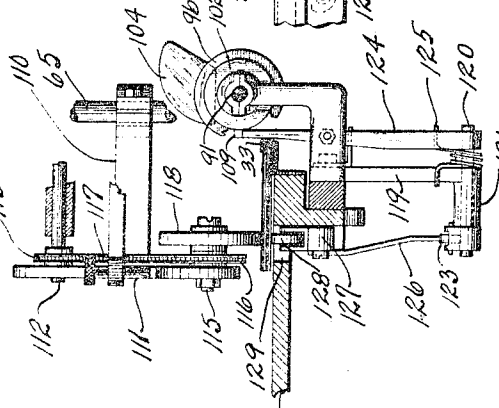


Fig. 8.

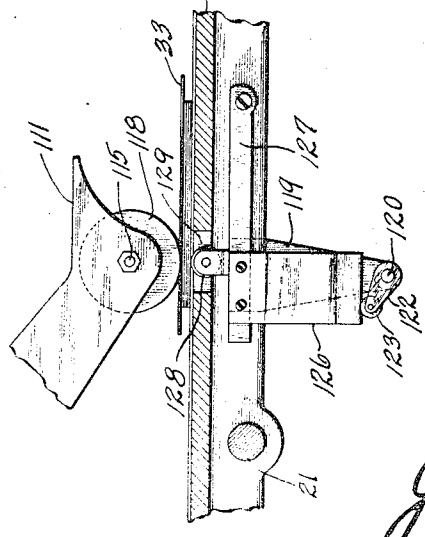


Fig. 7.

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5 SHEETS—SHEET 5.

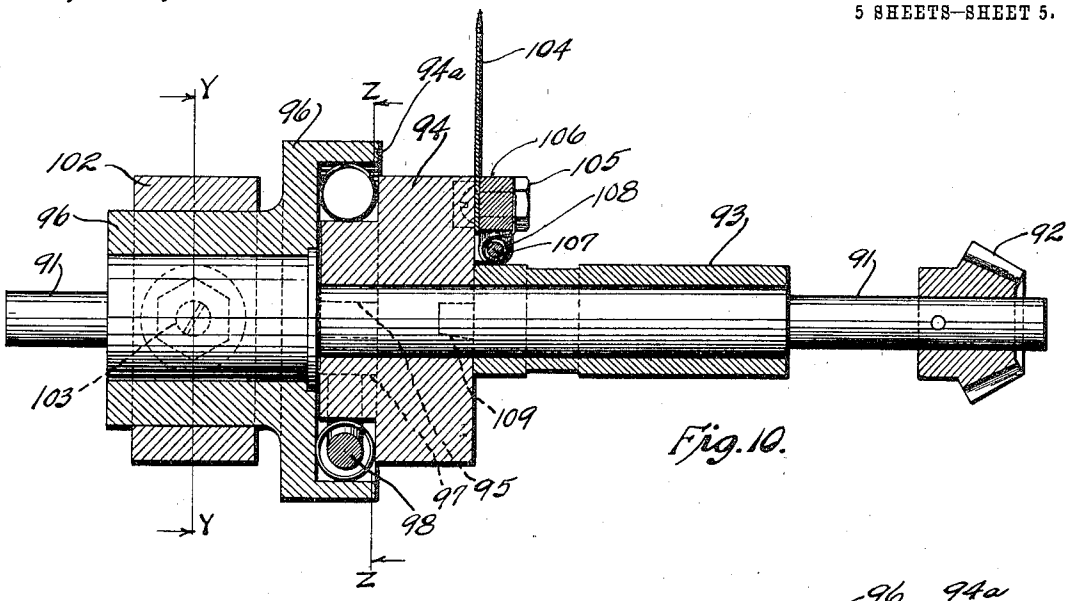


Fig. 10.

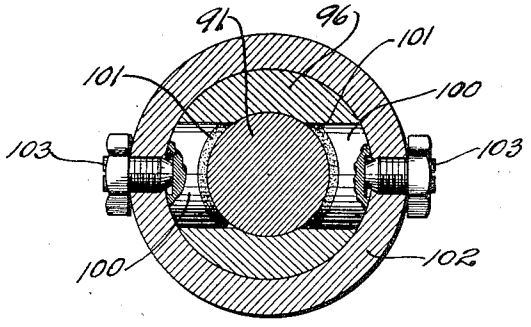


Fig. 11.

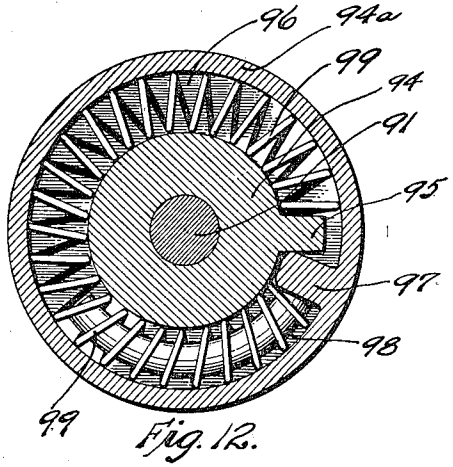


Fig. 12.

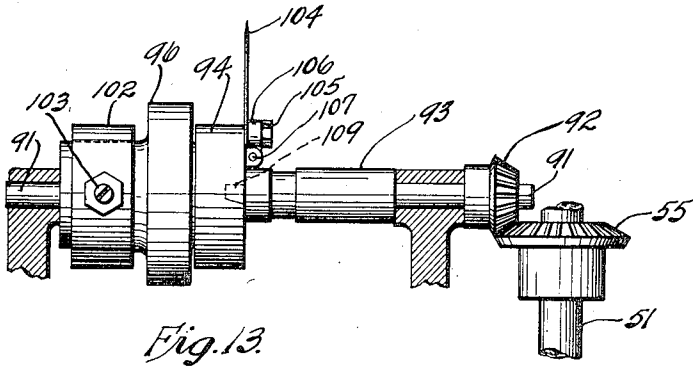


Fig. 13.

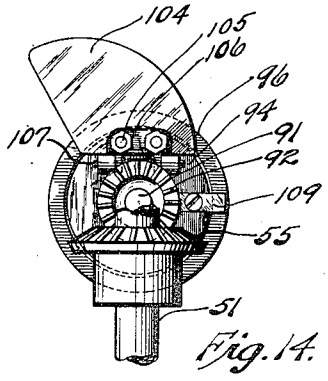


Fig. 14.

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UNITED STATES PATENT OFFICE.

JOSEPH HREN, OF BROOKLYN, NEW YORK.

BOOK-BACKING MACHINE.

1,252,114. Specification of Letters Patent. Patented Jan. 1, 1918.

Application filed September 11, 1914. Serial No. 861,158.

To all whom it may concern:

Be it known that I, JOSEPH HREN, a citizen of the United States, and a resident of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Book-Backing Machines, of which the following is a specification.

This invention relates to book backing machines of the character employed for applying to the backs of books, pamphlets, tablets and the like, or to some portion or portions of the covers thereof, strips of paper, cloth or other material which have either had some adhesive substance applied thereto prior to their introduction into the machine, or receive such adhesive application during their passage through the machine, and in general the present invention relates to the same type of machine as that shown and described in U. S. Letters Patent No. 803,488, granted to me October 31, 1905.

Some of the principal objects of the present invention are: to minimize the floor space occupied by machines of this character, as related to their output capacity and the sizes of the products which they are adapted to handle; to simplify the mechanism of such machines, lessen the liability of breakdowns and of necessity for repairs and renewals and render the operation of said mechanism positive and dependable; to afford means for regulating the proportion of the total width of the binding strips to which either moisture or adhesive material is applied by the machine; to improve the auxiliary mechanism which is employed as part of the machine for automatically cutting off the tape at proper intervals; to render more positive, capable of adjustment and generally more efficient the device or devices used with the machine for giving the desired shape to the tape immediately prior to its application to the books and for pressing it securely and smoothly into place, and, in general, to otherwise improve upon the machine covered by my earlier patent, aforesaid.

As is well known, it is frequently necessary, in the backing of various forms of books by the application of tape thereto, that the tape be applied in different ways, and particularly that changes be made from time to time in the position or positions in which the tape is applied to the books and in the proportion of the total width of the tape which is caused to adhere. It will be noted from the following description of my improved book backing machine that it embodies features of adjustment and other details of design and construction which adapt it for the accomplishment of the foregoing and other desirable objects.

Other features of improvement than those to which I have made specific reference will be readily apparent to those skilled in this art, and will be clearly understood from the following specification and claims and the accompanying drawings, in which—

Figure 1 is a side elevation of a book backing machine embodying my present invention;

Fig. 2 is a top plan view of the same;

Fig. 3 is a detail plan view of the gumming or moistening mechanism, showing the lead of the tape thereto;

Fig. 4 is an enlarged sectional detail view, taken substantially on the line 4—4 of Fig. 6;

Fig. 4ª is a similar view, the section being taken beyond the preliminary tape-folding guide-way, hereinafter described, and including the brush mechanism for finally folding and pressing the tape to place around the edge of the work;

Fig. 5 is an enlarged fragmentary plan view of the main table top of the machine, including the guideway for the tape, with the tape (shown in broken lines) and the belt for advancing the same each broken away;

Fig. 6 is a side elevation of the parts shown in Fig. 5, the portion of the tape shown being extended to illustrate the preliminary folding operation.

Fig. 7 is an enlarged detail view, in side elevation, of a part of the actuating mechanism for the cut-off device;

Fig. 8 is an enlarged detail view, in end elevation, of the cut-off device and the actuating mechanism therefor;

Fig. 9 is an enlarged detail view, in side elevation, of the parts shown in Fig. 8;

Fig. 10 is an enlarged sectional detail view taken substantially on line X—X of Fig. 9;

Fig. 11 is an enlarged sectional detail view taken substantially on line Y—Y of Fig. 10;

Fig. 12 is an enlarged sectional detail view taken substantially on line Z—Z of Fig. 10;

Fig. 13 is an enlarged detail view, in side

elevation, with parts broken away, of the mechanism shown in section in Fig. 10, and Fig. 14 is an enlarged detail view showing the method of mounting the knife for cutting off the tape.

Referring now to the drawings in detail, numeral 15 indicates the main table top of the machine, supported upon suitable legs or standards 16, and at one end of table 15 and connected therewith is feed table 17, supported at the end farthest from table 15 by a leg or standard 18, while at the opposite end of table 15 is discharge table 19 and discharge mechanism 20. In order to minimize the floor space occupied by the machine when not in use, the connection of feed table 17 with main table 15 and with the leg 18 is in the form of hinges or the like which permit leg 18 to be folded up substantially parallel with table 17, and said table and leg to be dropped down into a position substantially at right angles to table 15. It is manifest that, if desired, the discharge table 19 and discharge mechanism 20 may be mounted in a similar manner, so as to reduce still farther the floor space occupied by the machine when not in use.

Arranged transversely of table 15, at one end and on the under side thereof, and journaled in suitable bearings supported from said table, is the main driving shaft 21, which has revolubly mounted at one end thereof a set of step pulleys 22, for receiving power from any suitable source and permitting variations of the speed at which shaft 21 is driven. A jaw clutch member 23 is secured to said set of step pulleys, and a similar jaw clutch member 24 is feathered or otherwise slidably secured on shaft 21, in such a position that said clutch member may be thrown into or out of engagement with clutch member 23 by sliding clutch member 24 on shaft 21, either toward or away from clutch member 23 as the case may be, and thus the operation of the machine through the medium of shaft 21 may be stopped or started without stopping the revolution of the step pulleys.

Legs 16 which support main table 15 also support, at a considerable distance below said table, a frame 25, and carried by said frame is a tank or receptacle 26 for water or the adhesive substance which is to be applied to the tape. Journaled in suitable bearings supported by frame 25 is a shaft 27, having secured at one end thereof a pulley 28, said pulley being connected with a pulley 29, secured on shaft 21, through the medium of a belt 30, so that revolution of shaft 21 causes revolution of shaft 27. Set-screwed or otherwise secured on shaft 27, in such a manner that their positions on said shaft may readily be changed, are two similar disks 31 and 32, the diameter of which is such that they extend a considerable distance into receptacle 26, while the width of the peripheral faces of said disks is dependent largely upon the width of the tape to be used in connection therewith, and also upon the portion or portions of said tape that are to be brought into contact with said disks. Tape 33, as used in this machine, has first been wound on a suitable center or core, in the well-known manner of preparing tape for use in the various arts, and the roll of tape thus wound is placed upon a spindle 34 which is revolubly mounted on a suitable pin 35 supported in a vertical position from frame 25. The tape is led from spindle 34 to a vertical guide pin 36, also supported from frame 25, and thence to a set of horizontal pins 37 located between pin 36 and disks 31 and 32, the tape being led alternately over and under the various pins of the set in such a manner as to act as a brake upon the passage of the tape through the set of pins, and thus to afford means for regulating the tension of the tape as it is drawn over disks 31 and 32.

Set-screwed or otherwise secured on one of the said pins, in such a manner that their positions thereon may readily be changed, are two disks or collars 38 and 39, the purpose of which is to guide the tape in its passage through the set of pins. From the pins the tape is led over disks 31 and 32, and thence under a horizontally arranged pin 40 carried by a bracket 41, which is adjustably mounted on frame 25 in such a way that said pin may be raised or lowered to regulate the contact of tape 33 with disks 31 and 32. A scraper pin 42, of suitable shape and dimensions, is supported horizontally from frame 25 in such a position that after the tape passes partially around pin 40 that surface of the tape which has been in contact with disks 31 and 32 contacts with scraper pin 42 and any excess of moisture or adhesive is removed from the tape by said scraper pin and drops back into receptacle 26. Pin 40 is preferably provided with two guide disks or collars 43 and 44, which are similar to guide disks 38 and 39 and are adjustably mounted on the pin in a similar manner. From scraper pin 42 the tape is led around a series of guide pins 45, and thence to a guide pin 46 which regulates the passage of the tape over the roller 47, which is located at the point where the tape enters the machine and is engaged by belt 48 which extends between power-driven pulley 47 and idler pulley 49 and serves to advance the tape as it comes in contact with the book.

The belt 48 passes over and along the horizontal wing of an L-shaped guide-way 50. Projecting from the near end of the vertical wing of this guide-way 50 is a lip or tongue 50', the extreme end of which is substantially horizontally disposed in the plane of

the horizontal wing of said guide-way, and from this end said lip or tongue is curved upwardly and inwardly and finally merges into the vertical wing of the guide-way. The tape 33 is so directed over the roller 47 that a substantial portion thereof—and usually the major portion—projects beyond the edge of the belt in the direction of the tongue 50′, as illustrated in Fig. 5. It will be seen, therefore, that as the tape is advanced the projecting edge thereof will be up-turned by the tongue 50′, the tape passing along said guide-way in substantially L-shaped cross-sectional configuration and being there initially applied to each advancing pile of sheets, or other work to be taped, the horizontal portion of the tape being applied to the under side of the work at the work-edge and the vertical portion of the tape being applied to and projecting above said work-edge (as shown in Fig. 4) for subsequent application to the upper side of the work in a manner which will be hereinafter described.

A vertical shaft 51 is journaled in suitable bearings supported from the main table 15, and secured on said shaft is a bevel gear 52 which meshes with bevel gear 53 secured on main drive shaft 21. Bevel gears 55, 56 and 57 are also secured on shaft 51, and serve the purposes described hereinafter. Journaled in suitable bearings supported from main table 15 is the horizontal shaft or stud 59, and secured on the shaft 21 and the stud 59 are sprocket wheels 60 and 61, respectively, said sprocket wheels being connected by a sprocket chain 62. Pulley 47 is secured to sprocket wheel 61, and thus belt 48 is driven in the same direction as sprocket chain 62.

A bracket plate 64 is supported by vertical rods 65 and 66 from main table 15, said bracket being vertically adjustable relative to said table by means of hand wheels 67 and 68, and said adjustment being rendered uniform at the two ends of said bracket through the medium of sprocket wheels 69 and 70 and sprocket chain 71, all in substantially the same manner as described in detail in my prior patent to which reference has been made hereinbefore. Horizontal shafts 72 and 73 are journaled in suitable bearings supported by bracket 64, and on these shafts are secured sprocket wheels 74 and 75, respectively, said sprocket wheels being connected by sprocket chain 76. A bevel gear 77 secured on shaft 72 meshes with bevel gear 56 on shaft 51, so that sprocket chain 76 is driven from shaft 51. Bevel gear 56 is feathered or otherwise slidably secured on shaft 51, so as to permit vertical adjustment of said gear to accord with the vertical adjustment of bracket 64. Sprocket chains 62 and 76 coöperate in the manner fully described in my prior patent, referred to hereinbefore, to advance the books on main table 15, and, as described in said patent, said sprocket chains may be covered with belts of suitable soft or yielding material, 78 and 79 respectively.

Secured on bracket plate 64 is the frame 80 of a brush mechanism comprising a shaft 81 revolubly mounted in said frame and having at its lower extremity a brush 82, frame 80 being secured to bracket plate 64 by means of a bolt 83 which permits adjustment of the angle of inclination of shaft 81, and thus of the angle at which brush 82 is inclined with respect to the path of travel of the partially taped work. Said brush is located just beyond the far end of the guide-way 50 and is so adjusted that the revolving bristles on the lower side thereof only engage the upwardly projecting vertically disposed edge of the tape, as the latter is passed from the guide-way, and wipe the same over the upper side of the work at the work-edge, as shown in Fig. 4ª. As is thought to be clearly apparent, the object of inclining the brush is to elevate the bristles thereof on the side which is traveling in a general direction which would cause said bristles to tend to dislodge that portion of the tape or binding-strip which has been folded over the work by the bristles on the opposite and lower side of the brush. A coil spring 84 is interposed between bracket 80 and brush 82, and shaft 81 is slidably mounted in frame 80, so that brush 82 is yieldingly mounted. A vertical shaft 85 is journaled in a bearing 86 which is secured to main table 15 below brush 82, and between the upper end of shaft 85 and the lower end of shaft 81 is interposed a universal joint 87 which secures the two shafts together without interfering with changes in the angle of inclination of shaft 81 or the yielding movement of brush 82. A pulley 88 is secured at the lower end of shaft 85 and is connected with pulley 89 secured to the lower end of shaft 51 by means of a belt 90, so that the brush 82 is driven from shaft 51.

As shown and described in a divisional application, filed June 9, 1917, Serial No. 173,865, a shaft 91 is journaled in suitable bearings supported from main table 15, and at one end of said shaft is secured a bevel gear 92 which meshes with bevel gear 55 on shaft 51. A sleeve 93 is revolubly mounted on shaft 91, and at the end of this sleeve is mounted a circular hub or collar 94 which is provided with a lug 95 on one side thereof. A second sleeve 96 is revolubly mounted on shaft 91 adjacent the hub or collar 94, sleeve 96 terminating at the end nearest hub 94 in what may be termed a jaw portion 94ª which embraces a reduced portion of hub 94 and the interior diameter of which is somewhat greater than the exterior diameter of reduced portion of said hub. A lug

97 projects inwardly from one side of the jaw 94a, and has secured thereto a round rod 98 which is curved to conform substantially to the periphery of hub 94 but is not in contact therewith or with jaw 94a. Loosely mounted on rod 98, between and free from contact with hub 94 and jaw 94a, and extending between lug 95 and lug 97, is a coil spring 99 which is compressed somewhat when said lugs are in contact, as in the position shown in Fig. 12, and is adapted to be further compressed.

Slidably secured in suitable openings near that end of sleeve 96 which is opposite the jaw portion thereof, are two similar plugs 100 100, and between the inner ends of these plugs and shaft 91 are removable frictional wearing surfaces 101, of leather or other suitable material. A collar 102 is mounted on sleeve 96 over plugs 100, and set screws 103 pass through threaded openings in collar 102 in such positions that the interior ends of said screws engage plugs 100, in the manner shown in Fig. 11. The purpose of set screws 103, plugs 100 and wearing surfaces 101 is to control the frictional contact between sleeve 96 and shaft 91 by regulating the pressure of said wearing surfaces against said shaft, the object being to so regulate said pressure that when shaft 91 is caused to revolve, and hub 94 is held against revolution, the said frictional contact will be sufficient to cause sleeve 96 to revolve with shaft 91, thereby separating lugs 95 and 97 and compressing coil spring 99 until lug 95 is brought into contact with the free end of rod 98, after which sleeve 96 will remain stationary and shaft 91 will revolve therein between the frictional wearing surfaces 101.

A knife blade 104 is secured by means of screws 105 to a bracket 106, and said bracket is pivotally secured to hub 94 by bolt 107, in such a manner that knife 104 is held, by means of coil spring 108 on bolt 107, in a position at right angles to shaft 91, but is capable of pivotal movement on bolt 107, away from hub portion 94, to swing said knife into an inclined position or even into a position substantially parallel to shaft 91. Sleeve 93 is provided at one side of the largest part thereof with a lug 109, the purpose of which will be explained hereinafter.

Supported from rod 65 by means of an arm 110, which is so secured to rod 65 as to be vertically adjustable thereon, is a bracket 111, and journaled in a suitable bearing carried by said bracket and in a bracket supported from bracket plate 64 is a shaft 112 having near one end thereof a sprocket wheel 113, and at the other end thereof a bevel gear 114 which meshes with bevel gear 57 on shaft 51, bevel gear 57 being feathered or otherwise slidably mounted on shaft 51 so as to permit vertical adjustment of said gear to accord with that of bevel gear 114. A shaft 115 is secured at the lower end of bracket 111, and a sprocket wheel 116 is revolubly mounted on said shaft and is connected with sprocket wheel 113 by sprocket chain 117. A circular disk 118 is also revolubly mounted on shaft 115 and is connected with sprocket wheel 116, so that sprocket wheel 116 and disk 118 are caused to revolve together through power transmitted from shaft 51.

A downwardly-projecting bracket 119 is secured to the side of main table 15 in approximately the same vertical center line as disk 116, and at its lower end said bracket carries a shaft 120 which is revolubly mounted in an extension 121 of said bracket. A short arm 122 is secured at one end of shaft 120, said arm having a revoluble roller 123 mounted at the free end thereof. At the other end of shaft 120 a vertical arm 124 is secured thereto, and is held in the desired position by a coil spring 125 which is interposed between bracket 119 and arm 124. A vertical arm 126 is secured to one end of a substantially horizontal arm 127, the other end of which is pivotally mounted on the under side of main table 15, so that arm 126 is adapted for substantially vertical movement. At its lower end arm 126 rests upon roller 123 carried by arm 122, and at the upper end of arm 126 a roller 128 is revolubly mounted, said roller extending through a slot 129 in main table 15 and part of the periphery of said roller normally projecting above the upper surface of main table 15 and being directly underneath disk 118. Pivotal movement of arm 124, due to partial revolution of shaft 120, is limited by stops 130 and 131, said stops being so located that when roller 128, arm 126, shaft 120 and arm 124 are in their normal positions, the upper end of arm 124 slightly clears lug 109 on hub 94, while when roller 128 is depressed so that the extreme upper point of its periphery is on substantially the same level as the upper surface of main table 15, and thus shaft 120 has been revolved slightly from its normal position by depression of roller 123 by arm 126, the upper end of arm 124 will be in position to engage lug 109 on hub 94, and thus to prevent revolution of said hub around shaft 91 and toward main table 15. Coil spring 125 tends to retain arm 124 in such a position that roller 128 will extend slightly above the upper surface of main table 15, and to return said roller to said position when displaced therefrom.

It will be apparent that the passage of a book over main table 15 and underneath disk 118 will depress roller 128 substantially to the level of the top of table 15, and will cause arm 124 to be moved into a position such that its upper end will engage lug 109 and thus to prevent revolution of hub 94,

carrying the knife 104, past the point where the knife is held in a substantially vertical position, as shown in Fig. 8; as soon as the book has passed out of contact with roller 128 the reaction of coil spring 125 will return roller 128 to its initial position, and will change the position of the upper end of arm 124 so as to throw it out of engagement with lug 109, thus permitting the reaction of compressed coil spring 99 to cause very rapid partial revolution of hub 94 and hence of knife 104, said knife passing through a suitable slot (not shown) in the edge of table 15 and severing the tape at the end of the book.

On completion of its partial revolution due to the reaction of spring 99, hub 94 continues to revolve, due to the continuous revolution of shaft 91, and if by the time knife 104 has returned to its substantially vertical initial position another book has not been interposed between disk 118 and roller 128 the knife will continue to revolve at practically the same speed as shaft 91 and will again sever the tape; in the normal operation of the machine, however, the books are so spaced apart as they are fed into the machine that by the time knife 104 has returned to its initial position, as aforesaid, a book will again be in position to depress roller 128, thus bringing the upper end of arm 124 into position to engage lug 109 and holding the knife stationary until the operation of cutting off the tape is again performed, in the manner just described.

The principal object in mounting knife 104 pivotally on hub 94 is to provide against breakage of said knife or stoppage of the machine in the event that the cutting edge of the knife should catch against one of the books or for some other reason fail to clear itself from the path of the books. Should this condition arise, the pivotal mounting of the knife would permit the same to be forced out of the path of movement of the book as the latter continues to be advanced automatically by the machine, said knife returning to its rectangular position relative to shaft 91 when the reaction of coil spring 108 returns the knife to said initial position.

Delivery mechanism 20 consists of two rollers 132 and 133 revolubly mounted in a suitable frame 134, the tops of said rollers being at substantially the same level as the top of main table 15, and said rollers being connected by a series of endless strips of canvas or other suitable material 135. A pulley 136 is secured at one end of roller 133, and is connected by belt 137 with pulley 138 secured on main drive shaft 21, so that rollers 132 and 133 are caused to revolve and as the books pass from main table 15 they are received upon the strips 135 and are advanced thereby toward pulley 133. While thus being advanced they may either be removed by hand and placed upon table 19, or they may be permitted to pass over roller 133 and into a suitable receptacle.

A guide plate 139 is adjustably mounted on table 17 from which the books are fed into the machine, and serves to direct the books so that as they pass upon main table 15 and are engaged by the feeding or advancing mechanism they will be in proper position relative to tape 33 and guideway 50.

A series of adjustable springs 140 are mounted on bracket plate 64 in position to engage the upper sides of the books near their backs as they pass under said springs, and to hold the books tightly against the top of main table 15 as they are advanced thereon, and thus to insure smooth and continuous application to the books of that portion of the tape which is to be applied to the under side thereof.

In general the operation of the machine covered by the present invention is the same as that of the machine described in my prior patent, referred to hereinbefore, though the numerous improvements which I have incorporated in the present machine render it capable of operation in ways which would have been impossible with the earlier machine. For example, the provision of two moistening or gumming disks 31 and 32, and for adjustment thereof, the use of the guideway 50 and the manner of mounting and operating brush 82 afford wide variation in the manner of applying the tape to the books and in the locations in which the tape is applied thereto. These improvements also provide for greater variations in the thickness of the books that one of these machines is adapted to handle, since with the present machine tape may be applied to books which are extremely thin, as to two covers without any leaves therebetween.

Many modifications of minor details of my improved book backing machine will doubtless readily suggest themselves to those skilled in this art, and I therefore do not desire to limit my invention to the specific construction herein shown and described.

I claim as new and desire to secure by Letters Patent:

1. In a machine of the character described, the combination, with means for progressively advancing the work into and through the machine, and means for correspondingly advancing a strip of adhesive tape, of means for directing the advancing tape to the edge of the advancing work in such relative location and disposition that the portion of the tape at one edge thereof is first applied to one side of said work-edge and the remainder of said tape folded rectangularly for subsequent application of the other edge thereof to the other side of said work-edge, and yielding means for folding said rectan-

gularly disposed tape-portion over the work and wiping the same in the direction of its edge.

2. In a machine of the character described, the combination, with means for progressively advancing the work into and through the machine, and means for correspondingly advancing a strip of adhesive tape, of means for directing the advancing tape to the edge of the advancing work in such relative location and disposition that the portion of the tape at one edge thereof is first applied to one side of said work-edge and the remainder of said tape folded rectangularly for subsequent application of the other edge thereof to the other side of said work-edge, and a rotating brush for folding said rectangularly disposed tape-portion over said work and wiping the same in the direction of its edge.

3. In a machine of the character described, the combination, with means for progressively advancing the work into and through the machine, and means for correspondingly advancing a strip of adhesive tape, of means for directing the advancing tape to the edge of the advancing work in such relative location and disposition that the portion of the tape at one edge thereof is first applied to one side of said work-edge and the remainder of said tape folded rectangularly for subsequent application of the other edge thereof to the other side of said work-edge, and a rotating brush for folding said rectangularly disposed tape-portion over said work and wiping the same in the direction of itse edge, said brush being inclined to the plane of the advancing work whereby the bristles thereof are effectively operative in one general direction only.

4. In a machine of the character described, the combination, with means for progressively advancing the work into and through the machine, and means for correspondingly advancing a strip of adhesive tape, of means for directing the advancing tape to the edge of the advancing work in such relative location and disposition that the portion of the tape at one edge thereof is first applied to one side of said work-edge and the remainder of said tape folded rectangularly for subsequent application of the other edge thereof to the other side of said work-edge, yielding means for folding said rectangularly disposed tape-portion over the work and wiping the same in the direction of its edge, and means for finally compressing and compacting the taped edge of said work.

5. In a machine of the character described, the combination, with means for progressively advancing the work into and through the machine, and means for correspondingly advancing a strip of adhesive tape, of means for directing the advancing tape to the edge of the advancing work in such relative location and disposition that the portion of the tape at one edge thereof is first applied to one side of said work-edge and the remainder of said tape folded rectangularly for subsequent application of the other edge thereof to the other side of said work-edge, a rotating brush for folding said rectangularly disposed tape-portion over said work and wiping the same in the direction of its edge, and means for finally compressing and compacting the taped edge of said work.

6. In a machine of the character described, the combination, with means for progressively advancing the work into and through the machine, and means for correspondingly advancing a strip of adhesive tape, of means for directing the advancing tape to the edge of the advancing work in such relative location and disposition that the portion of the tape at one edge thereof is first applied to one side of said work-edge and the remainder of said tape folded rectangularly for subsequent application of the other edge thereof to the other side of said work-edge, a rotating brush for folding said rectangularly disposed tape-portion over said work and wiping the same in the direction of its edge, said brush being inclined to the plane of the advancing work whereby the bristles thereof are effectively operative in one general direction only, and means for finally compressing and compacting the taped edge of said work.

7. In a machine of the character described, the combination, with means for progressively advancing individual piles of assembled sheets into and through the machine, and means for correspondingly advancing a continuous strip of adhesive tape, of means for directing the advancing tape to the edge of each advancing pile in turn in such relative location and disposition that the portion of the tape at one edge thereof is first applied to one side of said pile and the remainder of said tape folded rectangularly for subsequent application of the other edge thereof to the other side of said pile, yielding means for folding over said rectangularly disposed tape-portion and wiping the same in the direction of its edge, means for finally compressing and compacting the taped edge of each pile, and means for automatically severing said tape between the advancing piles.

8. In a machine of the character described, the combination, with means for progressively advancing individual piles of assembled sheets into and through the machine, and means for correspondingly advancing a continuous strip of adhesive tape, of means for directing the advancing tape to the edge of each advancing pile in turn in such relative location and disposition that the portion of the tape of one edge thereof is first ap-

plied to one side of said pile and the remainder of said tape folded rectangularly for subsequent application of the other edge thereof to the other side of said pile, a rotating brush for folding over said rectangularly disposed tape-portion and wiping the same in the direction of its edge, means for finally compressing and compacting the taped edge of each pile, and means for automatically severing said tape between the advancing piles.

9. In a machine of the character described, the combination, with means for progressively advancing individual piles of assembled sheets into and through the machine, and means for correspondingly advancing a continuous strip of adhesive tape, of means for directing the advancing tape to the edge of each advancing pile in turn in such relative location and disposition that the portion of the tape of one edge thereof is first applied to one side of said pile and the remainder of said tape folded rectangularly for subsequent application of the other edge thereof to the other side of said pile, a rotating brush for folding over said rectangularly disposed tape-portion and wiping the same in the direction of its edge, said brush being inclined to the plane of the advancing piles whereby the bristles thereof are effectively operative in one general direction only, means for finally compressing and compacting the taped edge of each pile, and means for automatically severing said tape between the advancing taped piles.

In testimony of the foregoing I have hereunto set my hand in the presence of two witnesses.

JOSEPH HREN.

Witnesses:
JOHN C. KOPF,
AARON GINSBURG.