No. 773,484. PATENTED OCT. 25, 1904.

J. C. DRUCKLIEB.

APPARATUS FOR MAKING CIGARETTE PAPER BOOKS.

APPLICATION FILED JUNE 10, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

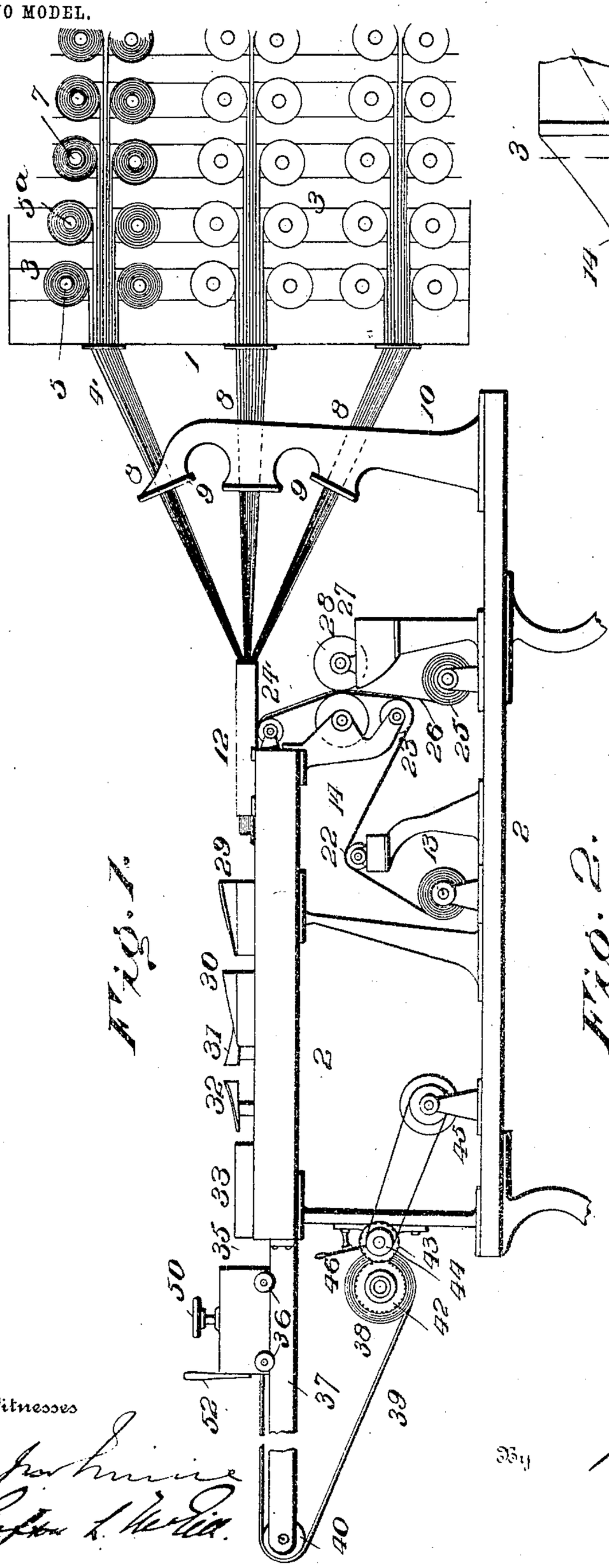

Fig. 1.

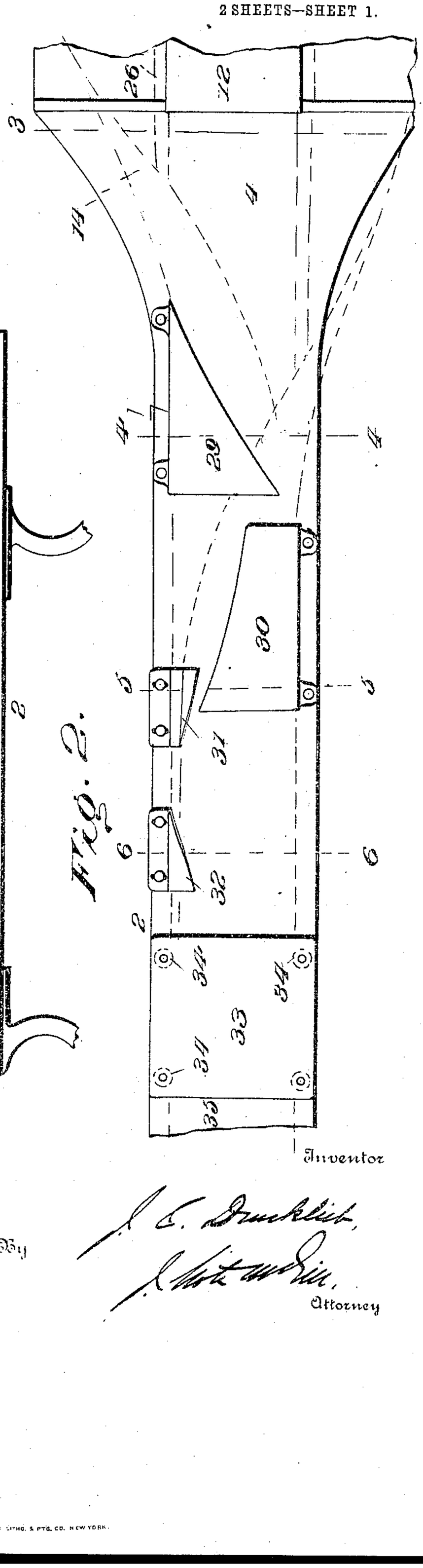

Fig. 2.

Witnesses

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

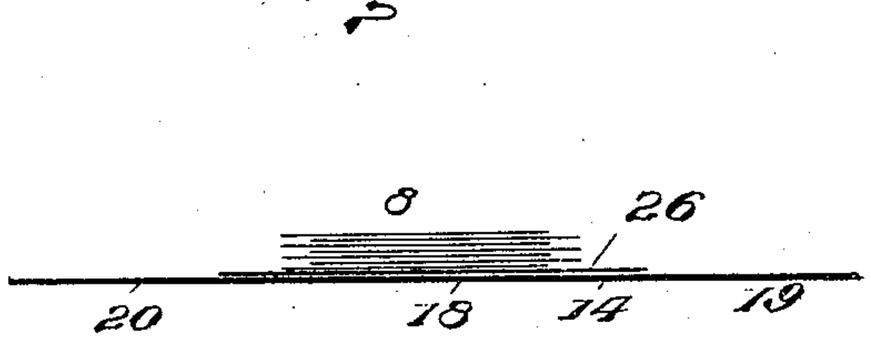


Fig. 4.

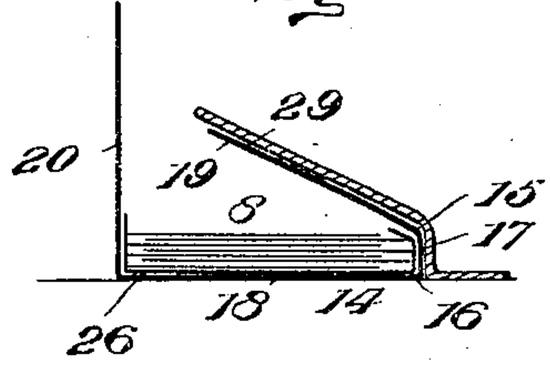


Fig. 5.

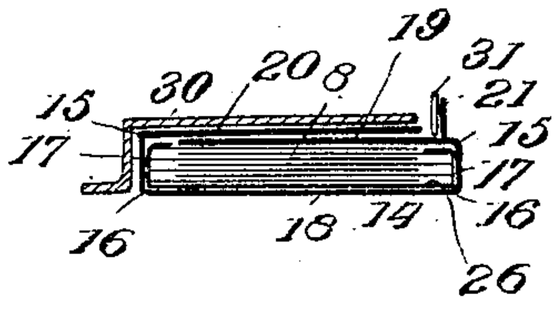


Fig. 6.

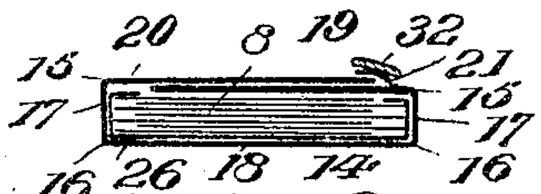


Fig. 7.

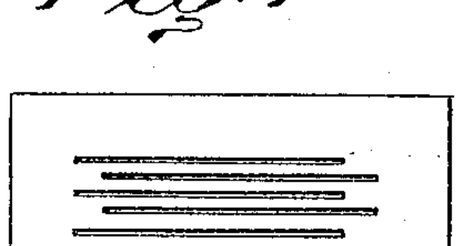


Fig. 8.

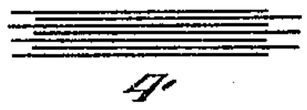


Fig. 9.

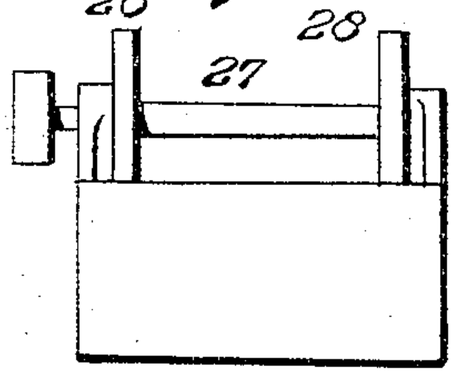


Fig. 10.

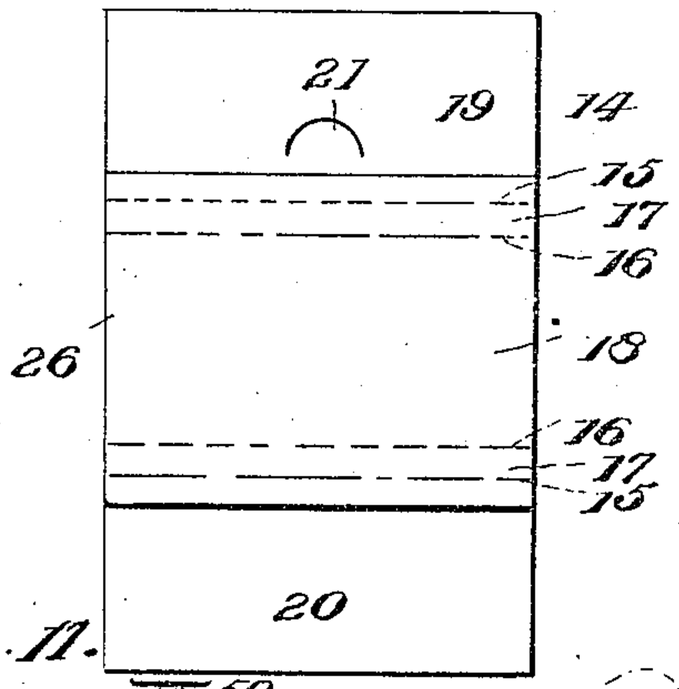
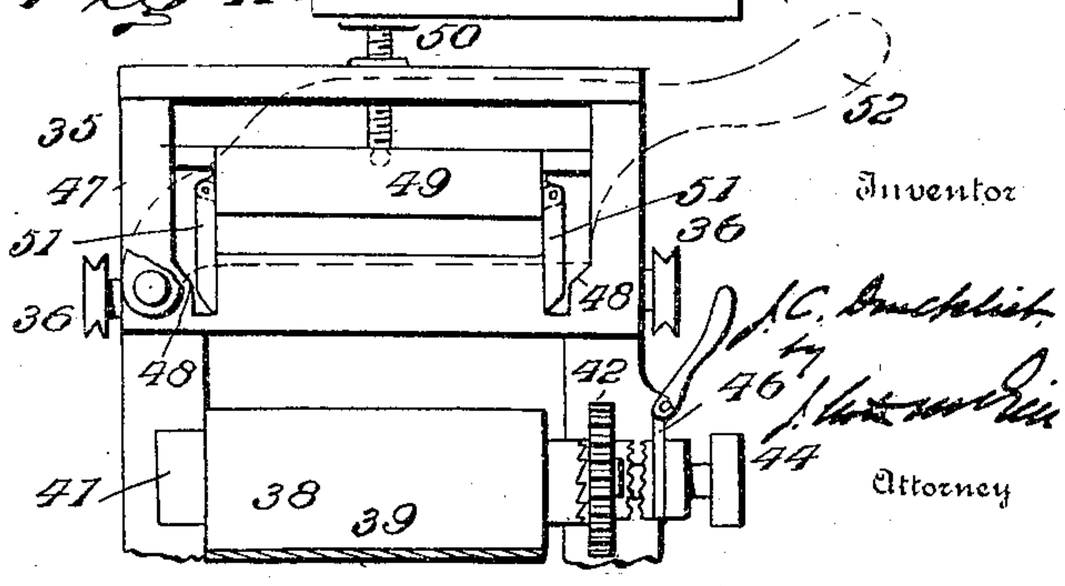


Fig. 11.



Witnesses

Inventor

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PHOTO LITHOGRAPHED BY SACHETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 773,484. Patented October 25, 1904.

UNITED STATES PATENT OFFICE.

JULIUS C. DRUCKLIEB, OF NEW YORK, N. Y.

APPARATUS FOR MAKING CIGARETTE-PAPER BOOKS.

SPECIFICATION forming part of Letters Patent No. 773,484, dated October 25, 1904.

Application filed June 10, 1904. Serial No. 212,041. (No model.)

To all whom it may concern:

Be it known that I, JULIUS C. DRUCKLIEB, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Apparatus for Making Cigarette-Paper Books; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its object the provision of means for making cigarette-paper books—that is, packages of paper the sheets whereof are designed to be withdrawn one at a time by the user and rolled or manipulated over a tobacco-filler.

Letters Patent of the United States No. 712,914, issued to me November 4, 1902, shows a cigarette-paper book comprising two sets or series of sheets, the sheets of each set being secured together along one edge and arranged alternately with the sheets of the other set, the free edge of each sheet extending to near the secured edge of the adjacent sheet. A cover in three sections envelops the pile or package of sheets, the face of the central section being secured to the bottom of the pile and the bends between the central and outer sections forming the points for securing the cover to the longitudinal edges of the respective sets of sheets. The outer sections overlap and are secured together by a locking-tongue.

The present invention is primarily designed for making the book embraced by the patent referred to and comprehends means for feeding ribbons of paper from a series of separate sources through guides which cause them to assume the described relative arrangement and be brought into close contact. The cover in the form of a continuous strip is supplied with adhesive fluid and fed into contact with the ribbons of paper, and as the cover and ribbons move together the former is bent and pressed into engagement with the ribbons and the outer sections of the cover locked together. The cover and ribbons are then cut to form books of the desired size.

In the accompanying drawings, Figure 1 is a view in side elevation, showing the general arrangement of the parts. Fig. 2 is a plan view of the binding and compressing table. Figs. 3, 4, 5, and 6 are transverse sectional views on lines 3 3, 4 4, 5 5, and 6 6, respectively, Fig. 2. Fig. 7 is an enlarged plan view of one of the combs. Fig. 8 shows the relative arrangement of the ribbons. Fig. 9 shows the device for applying adhesive fluid to the binding-strip which is secured to the cover intermediate the latter and the ribbons of paper. Fig. 10 is a diagrammatic view showing the cover and the binding-strip. Fig. 11 is a detail front elevation of the device for withdrawing and cutting the finished band.

Referring to the drawings, 1 designates the roll-frame, and 2 the binding and compressing table. As shown, the paper is fed from a series of rolls 3, the rolls being rotatably mounted upon studs or spindles on the frame, the number of such rolls corresponding to the number of sheets which the book is to contain. Fig. 1 shows the manner in which the ribbons are relatively disposed as they are drawn from their respective rolls—that is, the ribbon 4 from the roll 5 is above the ribbon from roll 5^a and the latter in turn above the ribbon from roll 7, the ribbon from each successive roll in the horizontal series being similarly disposed with relation to the one thereafter. If desired, the spindles supporting the rolls may be vertically adjustable to avoid the possibility of the feed of the ribbons being hindered by engagement with the adjacent roll, and obviously the feed may be from the top of each roll instead of from the bottom. The ribbons 8 from the respective rolls are suitably supported at intervals, as by racks, and are threaded through a comb or series of combs 9. As shown, these combs are mounted upon a bracket 10 on the table 2, and each of them is provided with a series of horizontal slots 6 in staggered arrangement—that is, the slots are of uniform length, sufficient to accommodate their respective ribbons; but the alternate slots terminate at one end within the length of the intermediate slots and extend correspondingly beyond the latter at the other end. In the relative lateral arrange-

ment resulting from passing through the combs (shown in Fig. 8) the paper ribbons are introduced into a trough or channel 12.

13 designates a roll of heavy paper designed to constitute the cover for the book. As shown in Fig. 10, which illustrates so much of such cover as is usually employed for one book, the strip has been previously scored along the lines 15 and 16, leaving an intermediate space 17 and forming a back section 18 and outer sections 19 20, the former having a locking-tongue 21 struck up therefrom.

The strip 14 is fed from its roll over a paste-applying device 22, designed to apply the adhesive fluid to what will subsequently be the inner face of the back section 18. The strip 14 is then passed around rollers 23 24 onto the table.

25 designates a roll of binding-paper whose strip 26 is designed to be directly secured to the cover-strip and to the ribbons, thus constituting the intermediate connection between the ribbons and the cover. This binding-strip is passed over rollers 23 24, and thus caused to adhere to the cover-strip supplied on its adjacent face with adhesive fluid at 22, as described. In Fig. 10 I have indicated the binding-strip in connection with the cover-strip 14. It will be noted that the binding-strip is of such width as to extend slightly beyond the spaces 17 intermediate the back and outer sections of the cover-strip.

27 designates a paste-applying device for supplying adhesive fluid to the binding-strip 26 on the face thereof opposite to that secured to the cover-strip—that is, supplying the fluid to the face designed to adhere to the ribbons 8. While this pasted surface may obviously extend throughout the width of the binding-strip, yet the points thereof at which paste is essential are those engaging the outer longitudinal edges of the two sets of ribbons 8, and hence the adhesive fluid may be applied to the binding-strip at the margin thereof—that is, the edges without the inner scored line 16 of the cover-strip, Fig. 10. The paste-applying device 27 I have shown provided with rotary disks 28, partly submerged in the adhesive fluid and sufficiently spaced apart to contact with the binding-strip at the proper points. The binding-strip 26 and cover-strip 14 being now pressed together by the rollers 23 24 and disks 28 and the strip 26 having its exposed face pasted are passed beneath trough or channel 12, and as the ribbons are drawn from the latter through the channels formed by the table the respective sets thereof contact at their outer longitudinal edges with the pasted surfaces of the binding-strip 26. The ribbons with the cover and binding strip are then drawn along the table, and in their progress an upturned flange 29 contacts with the outer section 19 of the cover and bends or folds it down over the ribbons 8, as shown in Fig. 4. A guide-flange 30 in the path of section 20 of the cover bends or folds the latter down over section 19; but before the two sections are brought together a guide 31 engages the locking-tongue 21 and bends it into an upright position, as shown in Fig. 5. When section 20 of the cover passes from contact with flange 30, it is bent down upon section 19, and thereupon a guide 32 engages the locking-tongue and bends it down over the free edge of section 20. (See Fig. 6.) The parts have now formed a narrow continuous band, which is passed through a casing 33, where it is further pressed. The casing is provided with upright studs or spindles forming bearings for horizontally-disposed wheels 34, having milled peripheries designed to lie in the path of the longitudinal edges of the band, compressing the latter and slightly crimping the cover to insure the ribbons adhering firmly to the binding-strip. In the bending and compressing operation the margins of the binding-strip (shown in Fig. 10) fold over the secured edges of the topmost two ribbons. Hence by employing heavy paper on rolls 5 and 5ª a protection is afforded the subjacent ribbons of more delicate texture. As the band issues from the casing 33 it is engaged by a clamp 35, provided with wheels 36, mounted upon tracks 37. This clamp is designed to be moved over the tracks toward and away from table 2 and is shown connected to a drum 38 through the medium of a belt 39, passed over a roller 40 at the outer end of the tracks. The drum 38 is mounted upon a shaft 41, having suitable bearings in the frame of the table. Also mounted upon shaft 41 is a gear-wheel 42, meshing with a pinion 43, carrying belt-pulley 44, which may be connected to a motor, (indicated at 45, Fig. 1.) A suitable clutch (indicated at 46) is designed to throw the gear-wheel 42 into and out of engagement with the pinion. As shown in Fig. 11, the clamp comprises a housing 47, having its side walls beveled, as at 48, and an inner plunger 49, controlled by a hand-wheel 50. The plunger is provided with pivoted jaws 51, having their free ends beveled. The band issuing from the table 2 is passed beneath plunger 49 and the latter operated to firmly grip the band. By the described construction the band, which is of slightly greater width than the normal space intermediate the jaws 51, will force the latter outwardly against the beveled portions 48 of the side walls, and as the plunger is operated the side edges of the band will be compressed between the jaws and the walls, thus obviating the tendency of the ribbons to separate from the binding-strip, which might follow if only vertical pressure were exerted upon the band. When the operator has secured the band within the clamp, he operates the clutch 46 to rotate the drum 38, causing the belt 39 to draw the clamp along the tracks and pull the band with it.

When the clamp reaches the outer end of the tracks, the rotation of drum 38 is stopped and hand-wheel 50 operated to release the plunger. The clamp is then moved back out of engagement with the band and a knife 52, carried by the clamp, operated to cut the band into books of the desired sizes, or the clamp may be at once moved to the limit of its travel and the band cut there into one large section, which may be subsequently cut to form the finished books.

While I have shown the mechanism as designed for making a book having two alternately-arranged sets of sheets, yet it will be apparent that by dispensing with the staggered arrangement of slots in the comb and substituting combs having slots in alinement the machine may be employed for making books of but a single set of sheets secured at one edge within a cover having two sections. The changes in construction necessary for such purpose, as well as those which may be expedient for making the book described—such as the sources of ribbon-supply, the guiding devices, the supply of paste, and bending of the cover—are within the spirit of the invention, the latter permitting wide range of modification in its mechanical embodiment.

I claim as my invention—

1. In an apparatus for assembling sheets or ribbons, means for feeding such ribbons, means for guiding the respective ribbons, and means for securing a cover-strip to said ribbons.

2. In an apparatus for assembling sheets or ribbons, means for feeding such ribbons, means for guiding the respective ribbons, means for feeding a cover-strip, and means for causing said cover-strip to envelop said ribbons.

3. In an apparatus for assembling sheets or ribbons, means for feeding such ribbons to form a series of superposed ribbons, means for guiding said ribbons, means for guiding a cover-strip into engagement with said ribbons, and means operating by the advance of said ribbons and strip for bending said strip to envelop said ribbons.

4. In an apparatus for assembling sheets or ribbons, means for feeding such ribbons, means for guiding said ribbons and arranging them in staggered relation, and means for securing a cover-strip to said ribbons.

5. In an apparatus for making books having a plurality of sets of sheets, the sheets of one set being arranged alternately with the sheets of another set, means for feeding ribbons from separate sources to form a series of superposed ribbons, means for arranging the alternate ribbons out of alinement or in staggered relation, and means for securing a cover-strip to the ribbons.

6. In an apparatus for making books having a plurality of sets of sheets, the sheets of one set being arranged alternately with the sheets of another set, means for feeding ribbons from separate sources to form a series of superposed ribbons, means for arranging the alternate ribbons out of alinement or in staggered relation, means for feeding a cover-strip along the line of advance of said ribbons and guiding the same to cause it to envelop said ribbons, and means for securing said ribbons to said strip.

7. In an apparatus for assembling sheets or ribbons, means for feeding ribbons from separate sources, a comb having a series of slots in staggered relation, through which said ribbons are designed to pass, means for advancing the ribbons through said slots, whereby the alternate ribbons extend laterally beyond the longitudinal edges of the intermediate ribbons, forming a plurality of sets of ribbons, and means for securing a cover-strip to the outer edges of said sets.

8. In an apparatus for assembling sheets or ribbons, means for feeding ribbons from separate sources, a comb having a series of slots in staggered relation, through which said ribbons are designed to pass, means for advancing the ribbons through said slots, whereby the alternate ribbons extend laterally beyond the longitudinal edges of the intermediate ribbons, forming a plurality of sets of ribbons, means for feeding a cover-strip into the line of advance of said ribbons, and means operating in the travel of said ribbons and cover-strip for securing the latter to the edges of said sets of ribbons.

9. In an apparatus for assembling sheets or ribbons, means for feeding ribbons from separate sources, a comb having a series of slots in staggered relation, through which said ribbons are designed to pass, means for advancing the ribbons through said slots, whereby the alternate ribbons extend laterally beyond the longitudinal edges of the intermediate ribbons, forming a plurality of sets of ribbons, means for feeding a binding-strip, means for feeding a cover-strip, means for securing said binding-strip to said cover-strip, means for advancing said strips along the line of advance of said ribbons, and means for securing said sets of ribbons to said binding-strip.

10. In an apparatus for assembling sheets or ribbons, means for feeding the ribbons from separate sources, a comb having a series of slots in staggered relation, through which said ribbons are designed to pass, means for advancing the ribbons through said slots, whereby the alternate ribbons extend laterally beyond the longitudinal edges of the intermediate ribbons, forming a plurality of sets of ribbons, means for securing a binding-strip to one section of a cover-strip having a plurality of such sections, means for advancing said strips along the line of advance of said ribbons, means for securing the respective sets of the latter to said binding-strip, and means for folding said cover-strip over said ribbons.

11. In an apparatus for assembling sheets or

ribbons, means for feeding the ribbons from separate sources, a comb having a series of slots in staggered relation, through which said ribbons are designed to pass, means for advancing the ribbons through said slots, whereby the alternate ribbons extend laterally beyond the longitudinal edges of the intermediate ribbons, forming a plurality of sets of ribbons, means for securing a binding-strip to the central section of a cover-strip having three longitudinal sections, such binding-strip being of greater width than said central section of said cover-strip, means for advancing said strips along the line of advance of said ribbons, means for securing the respective sets of the latter to said binding-strip intermediate the central and outer sections of said cover-strip, and means for folding the outer sections of said cover-strip over said ribbons.

12. An apparatus for making books, comprising a frame, a series of ribbon-rolls rotatably mounted on said frame, a comb having slots arranged in staggered relation and designed to effect a corresponding relation between said ribbons, means for feeding said ribbons from said rolls through said comb, means for pressing said ribbons together, means for securing a binding-strip to a cover-strip, means for advancing said strips along the line of advance of said ribbons, means for securing said ribbons to said binding-strip, and means for folding said cover-strip over said ribbons.

13. In an apparatus for making books, the combination with the frame having a plurality of sets of ribbon-rolls rotatably mounted thereon, of a binding and compressing table, a series of combs having slots in staggered arrangement, secured to said table, guiding and pressing devices, and guide-flanges, for the purpose stated.

14. In an apparatus for making books, the combination with the frame having a plurality of sets of ribbon-rolls rotatably mounted thereon, of a binding and compressing table, a series of combs having slots in staggered arrangement, secured to said table, the ribbons from said rolls being designed to be drawn therefrom and through said combs, whereby they are divided into a plurality of sets the alternate ribbons of which extend laterally beyond the longitudinal edges of the intermediate ribbons of the other set, a trough on said table through which said ribbons are designed to be drawn, means for supplying adhesive fluid to the face of the central section of a cover-strip scored longitudinally to provide a central or back section and outer sections, means for guiding said cover-strip and a binding-strip onto said table and causing said binding-strip to adhere to said cover-strip, means for supplying adhesive fluid to the exposed face of said binding-strip, means for guiding said ribbons and strips along said table, means for bending the outer sections of said cover-strip over said ribbons whereby the exposed edges of the said sets of ribbons are caused to adhere to said binding-strip, means for locking said outer sections, and means for crimping the edges of the completed band.

15. In an apparatus for assembling sheets or ribbons, the combination with the binding and compressing table, of a pulling or withdrawing device comprising a casing or housing having the inner faces of its side walls beveled, a plunger movable within said housing, jaws pivoted to the sides of said plunger, having their free ends beveled, and means for moving said device relatively to said table, for the purpose set forth.

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

JULIUS C. DRUCKLIEB.

Witnesses:
GRAFTON L. MCGILL,
ALICE LIND.