

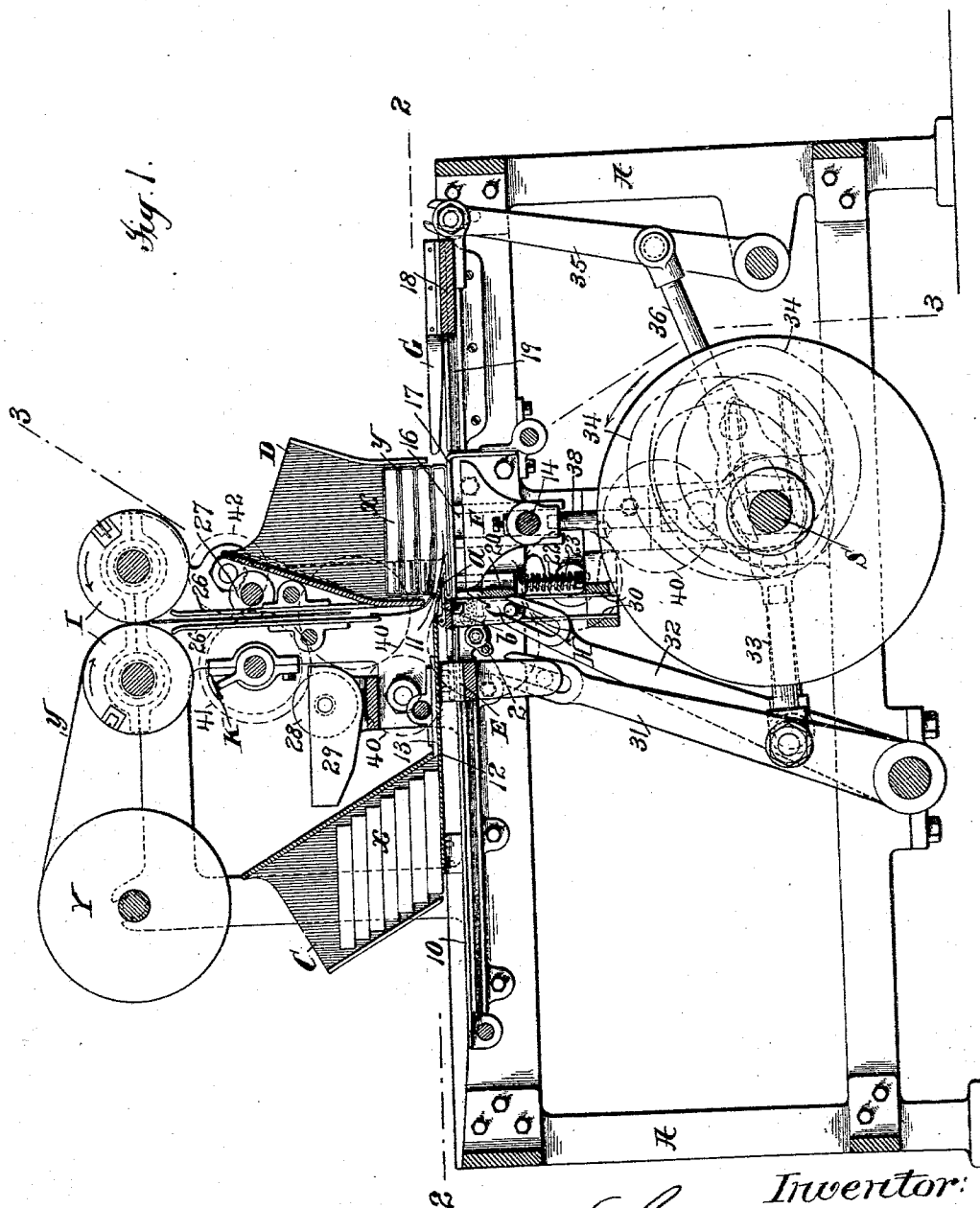
(No Model.)

8 Sheets—Sheet 1.

L. C. CROWELL.
NEWSPAPER WRAPPING MACHINE.

No. 551,463.

Patented Dec. 17, 1895.



Attest:

S. W. Whitall
J. M. Board

Inventor:

Luther C. Crowell
Chief Engineer & Phelps
Atty's

(No Model.)

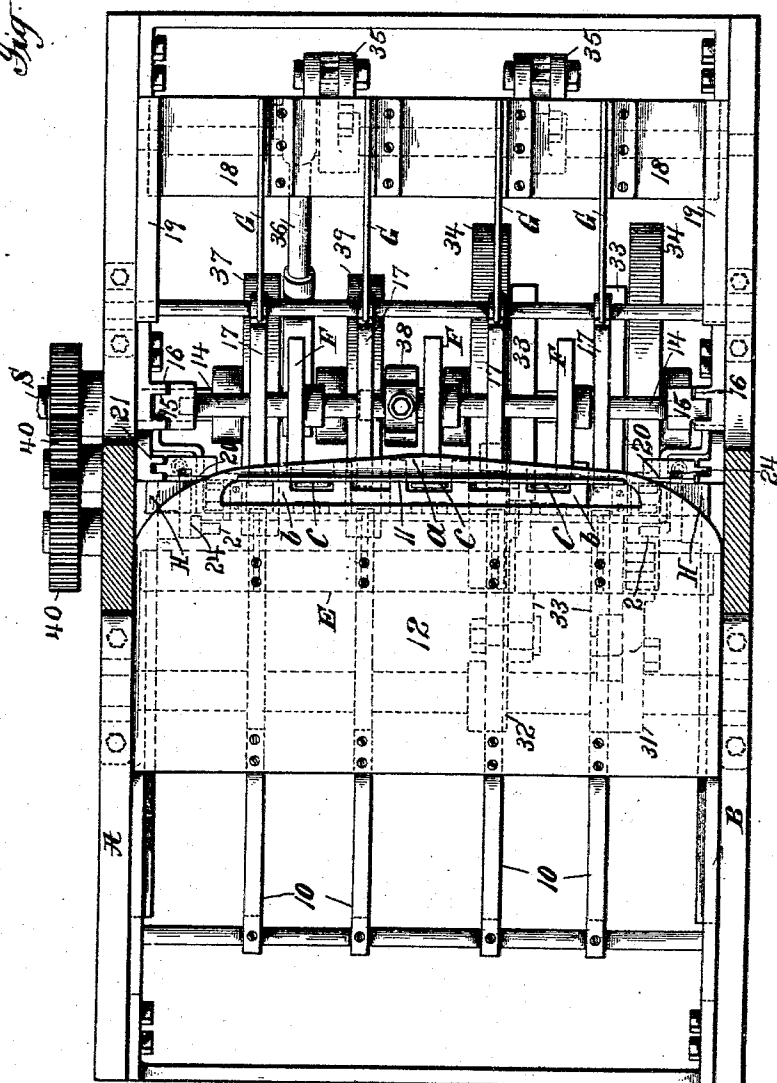
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L. C. CROWELL.
NEWSPAPER WRAPPING MACHINE.

No. 551,463.

Patented Dec. 17, 1895.

Fig. 2.



Attest:
S. Muthal
Wm. Borch

Inventor:
Luther C. Crowell
Charles Munson & Phelps
Attys.

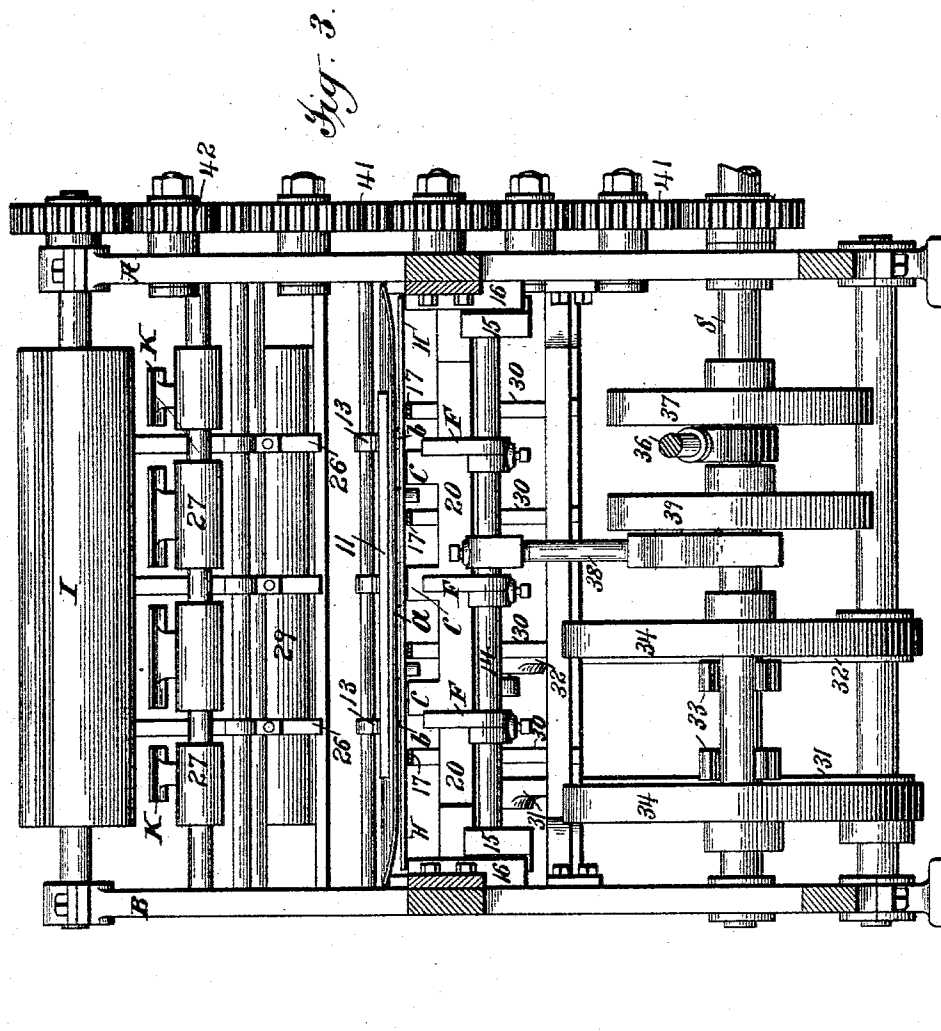
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8 Sheets—Sheet 3.

L. C. CROWELL.
NEWSPAPER WRAPPING MACHINE.

No. 551,463.

Patented Dec. 17, 1895.



Attest:

S. M. Kitchell
Geo. B. Borch

Inventor:

Lucas B. Crowell
Chief Mendenhall
Attys

(No Model.)

8 Sheets—Sheet 4.

L. C. CROWELL.
NEWSPAPER WRAPPING MACHINE.

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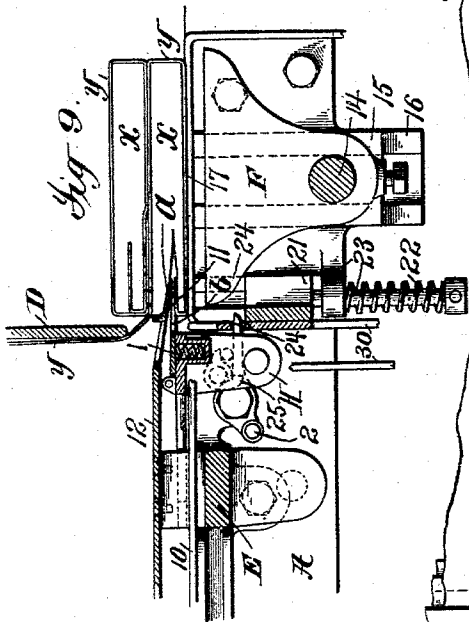
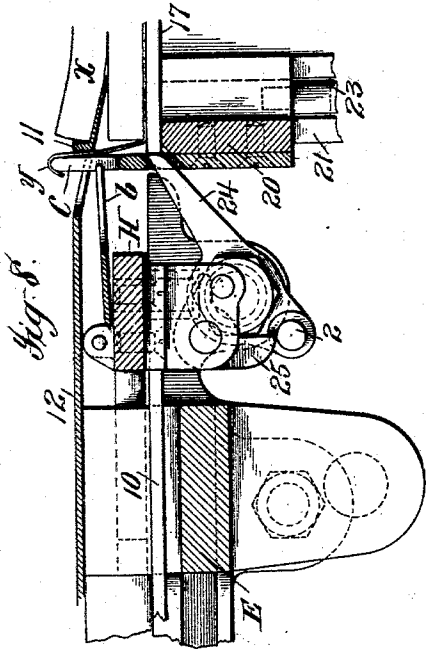
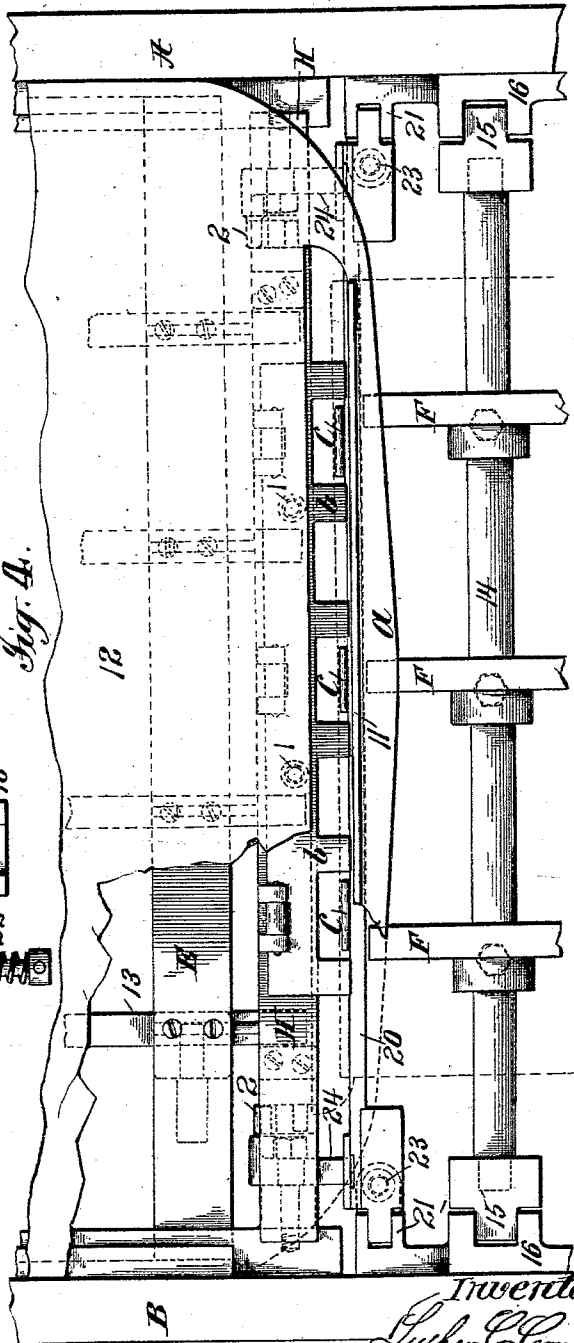


Fig. 4.



Attest:
S. Knechtel
J. M. Borch

Inventor:
Lucas Crowell
by Philip Munson & Phelps
Attys

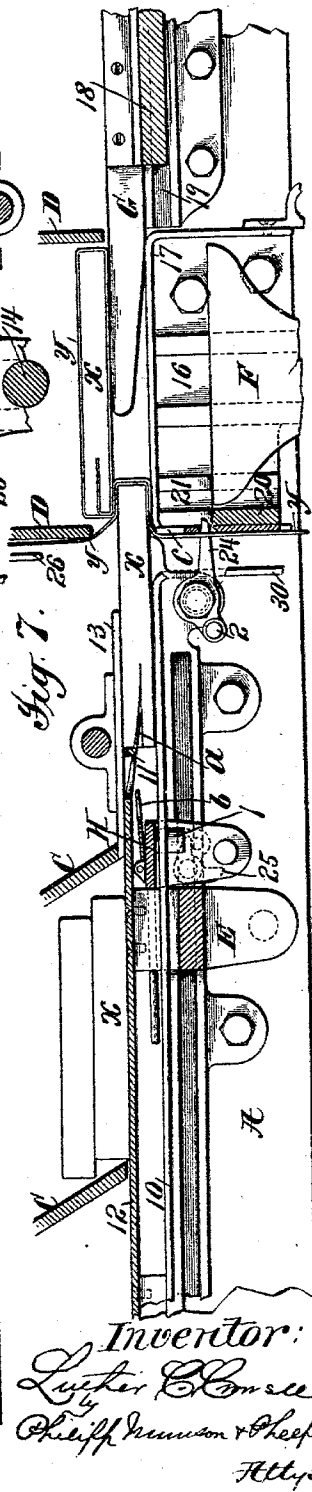
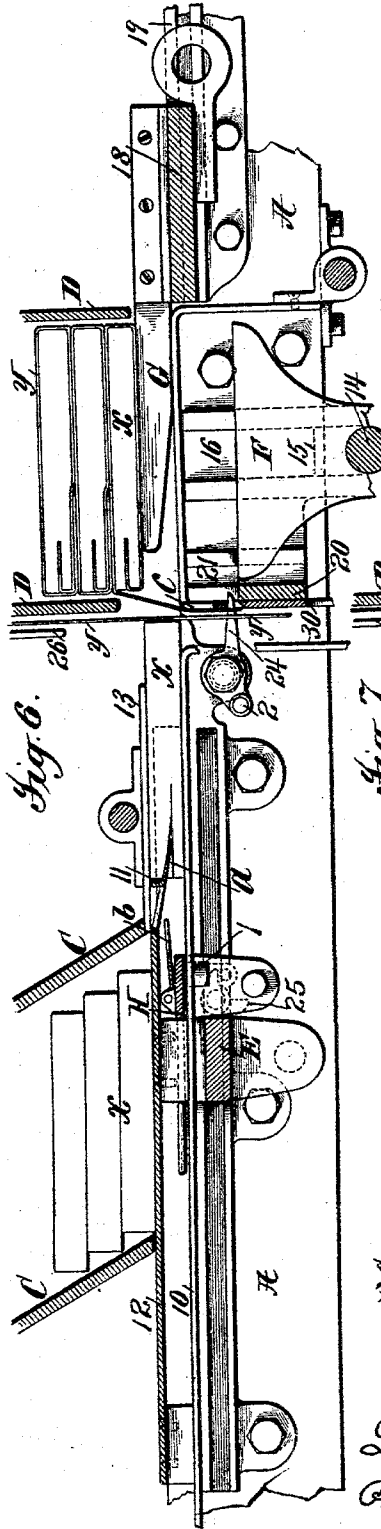
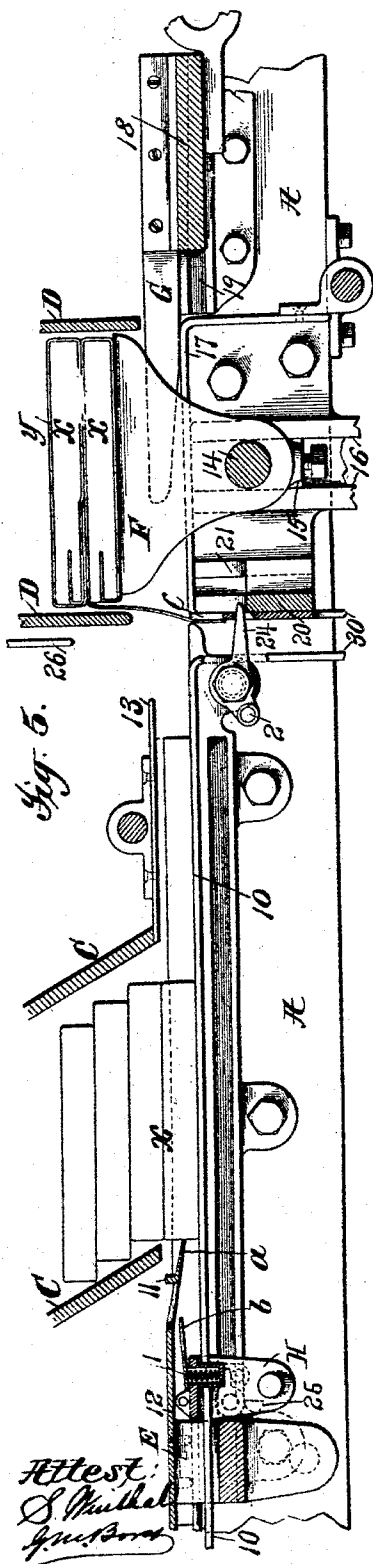
(No Model.)

8 Sheets—Sheet 5.

L. C. CROWELL.
NEWSPAPER WRAPPING MACHINE.

No. 551,463.

Patented Dec. 17, 1895.



Inventor:
Lucas B. Crowell
Chief Mechanic & Clerk
Atty.

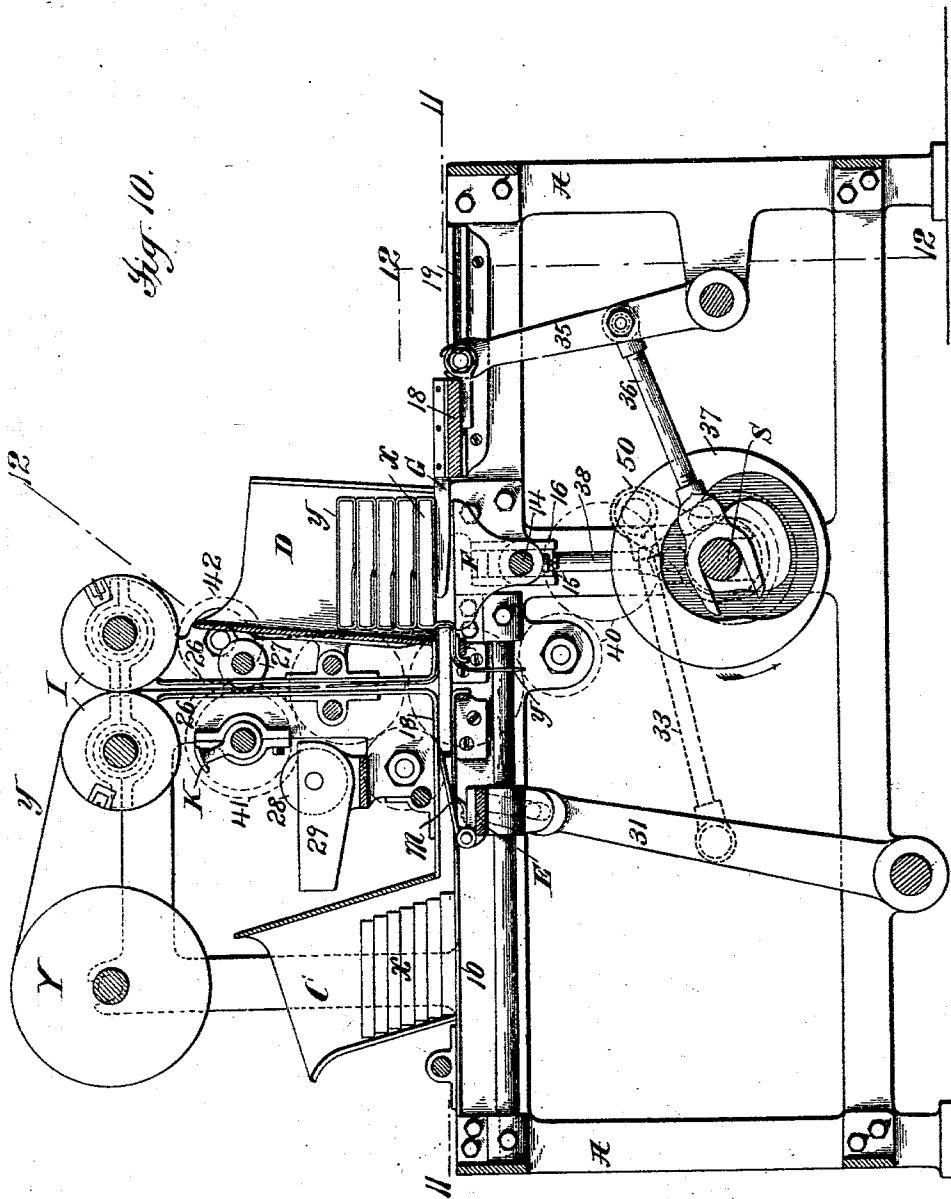
(No Model.)

8 Sheets—Sheet 6.

L. C. CROWELL.
NEWSPAPER WRAPPING MACHINE.

No. 551,463.

Patented Dec. 17, 1895.



Attest:
S. M. Kuhl
J. M. B. & Co.

Inventor:
Luther C. Crowell
Thos. M. Munn & Co.
Attys

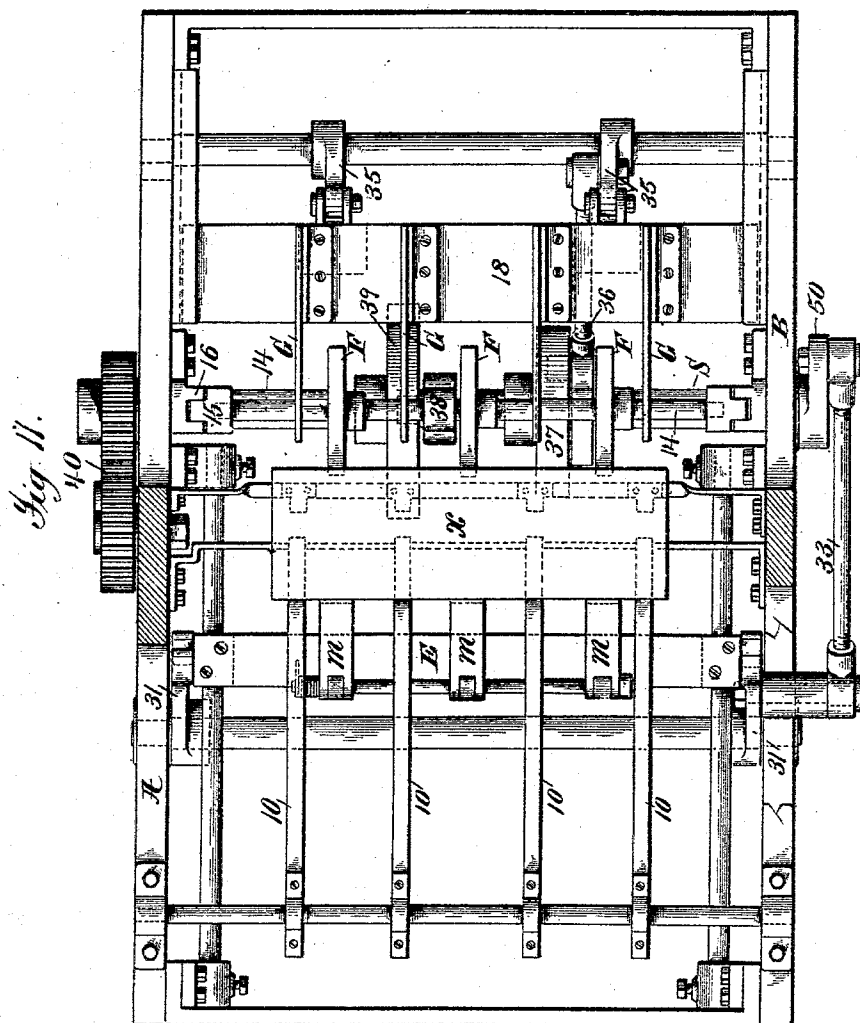
(No Model.)

8 Sheets—Sheet 7.

L. C. CROWELL.
NEWSPAPER WRAPPING MACHINE.

No. 551,463.

Patented Dec. 17, 1895.



Attest:
S. W. H. H. H.
J. M. B. B. B.

Inventor:
L. C. Crowell
By
Sheff. J. J. J. J. J.
Atty.

(No Model.)

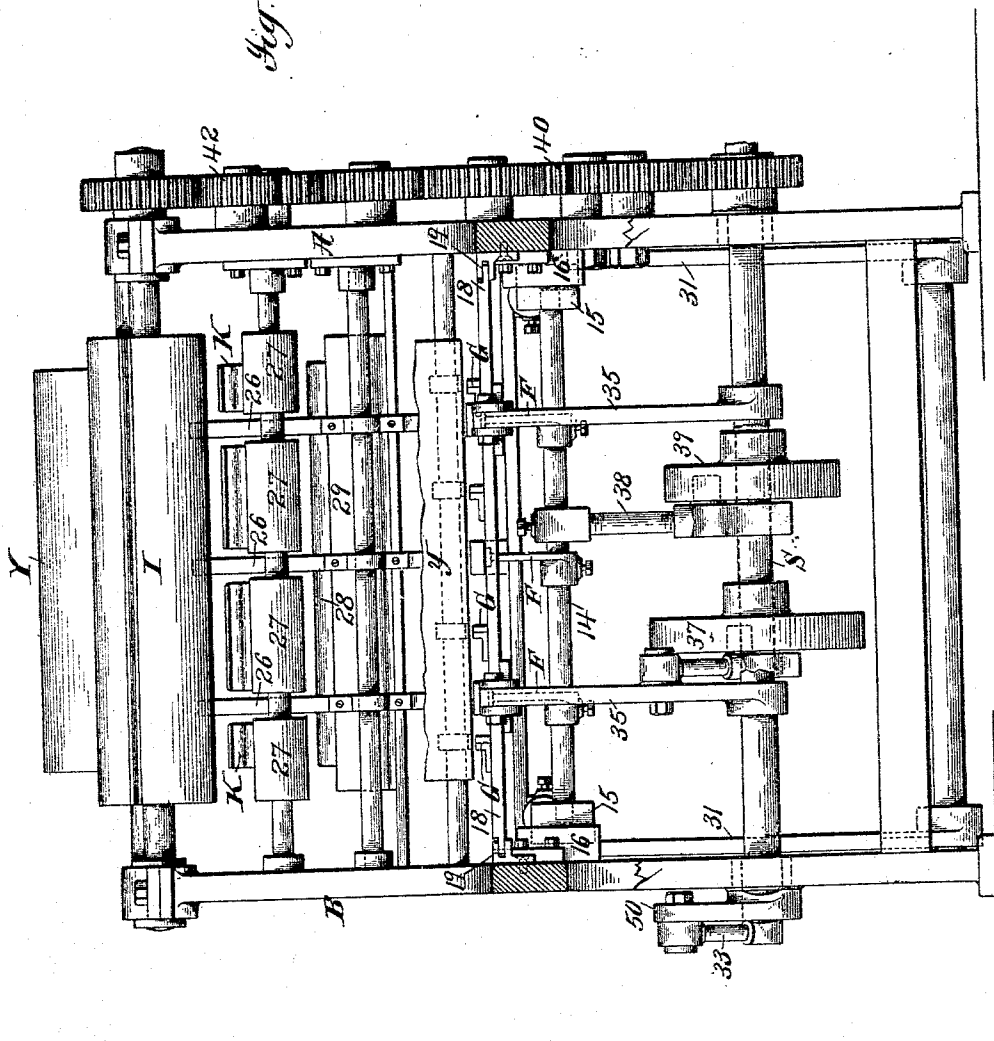
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L. C. CROWELL.
NEWSPAPER WRAPPING MACHINE.

No. 551,463.

Patented Dec. 17, 1895.

Fig. 12.



Attest:

S. K. H. H.

J. M. D. S.

Inventor:

Luther C. Crowell

Thyffman & Phelps

Attys

UNITED STATES PATENT OFFICE.

LUTHER C. CROWELL, OF BROOKLYN, ASSIGNOR TO ROBERT HOE, THEODORE H. MEAD, AND CHARLES W. CARPENTER, OF NEW YORK, N. Y.

NEWSPAPER-WRAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 551,463, dated December 17, 1895.

Application filed May 8, 1895. Serial No. 548,563. (No model.)

To all whom it may concern:

Be it known that I, LUTHER C. CROWELL, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Wrapping-Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 The object of the present invention is to provide an improved wrapping method and machine and especially to provide a simple and rapid method and machine for wrapping books, pamphlets, and folded papers for mailing.

15 As the invention is especially designed for use in wrapping books and similar articles the term "books" will be applied hereinafter to the article to be wrapped, but it will be understood that this term is used only for convenience and intended to include all other articles of suitable form and character to be wrapped by the method and machine described. In attaining this object I advance
25 the successive books to be wrapped to the desired point with the wrappers overlapping their leading ends and with the flaps of the wrappers behind the books and close down the wrapper-flap of each book on the layer of
30 wrapper on the book for pasting by the next succeeding book.

The invention may be embodied in machines of widely different forms, and the books may be advanced and the proper relative positions of the successive books for the closing
35 down of the wrapper-flaps secured in any suitable manner. I prefer, however, to secure this proper relative position by moving the book the wrapper-flap of which is to be turned down sidewise out of the path of the next succeeding book, and for this purpose I prefer to use mechanical devices by which the books are moved sidewise independently of the next succeeding book, preferably employing a plunger moving transversely to the path of the advancing books,
45 so as to positively move each book sidewise when it reaches the proper position, this plunger being withdrawn to permit the next book to be fed into position between the preceding book and plunger, thus closing down the flap

of the wrapper on the preceding book, and being in turn moved sidewise by the plunger. The books may be advanced to the wrapping-point and moved out of the path of the advancing books in any suitable plane, and devices of widely different form may be used for securing the proper movements of the parts and the proper position of the flap of the wrapper in order that it may be closed
55 down for pasting by the next book. I prefer, however, to feed the books horizontally to the wrapping-point and to raise the successive books out of the path of the advancing books, the wrapper projecting from the upper side
60 of the book, so as to naturally fall across the path of the next advancing book. A very simple and efficient construction is thus provided, a sufficient number of books preferably being kept in the pile to be raised by the
65 plunger to secure the required pressure upon the wrapper, this construction resulting also in the delivery of the books in the most convenient form for subsequent handling—that is, in a pile open at the top for the removal
70 of the books as desired. The construction above outlined is very efficient, and certain features therein may be used in constructions in which the flaps of the wrappers are closed down wholly or partially by other means than
75 the next advancing book and such features form in themselves parts of the invention and are thus claimed.

In wrapping such articles as books or papers, it is important that the wrapper should
80 be held firmly, so as to prevent the book or paper from slipping out of the wrapper, and one convenient means of securing this result is by inserting the leading end of the wrapper between the leaves of a book or the plies
85 of a folded paper. I preferably provide for securing this result in connection with the method and machine above described, and this feature forms a part of the invention, and may be used in wrapping-machines embodying
90 other methods of wrapping.

The invention may be carried out in machines in which either the books or wrappers, or both, are fed by hand and such a machine
95 be practical and of commercial value on account of its simplicity and the convenient
100 delivery of the wrapped books arranged side

by side or one upon the other in the best form for subsequent handling, but it is preferable that both the books and wrappers should be fed automatically, and a simple, convenient and compact machine is provided by feeding the wrappers from an independent roll of paper transversely to the path of the advancing books, so that each book in advancing to the delivery-point takes up and carries with it its wrapper properly overlapped. This wrapping mechanism may be combined with any of the ordinary forms of folding or delivery mechanisms now in use in folding-machines, or combined printing and folding machines, so that books or papers may be printed, folded, wrapped and delivered by a single machine, or the wrapping-machine may be an independent machine in which books or papers are fed from a holder of any suitable form.

For a full understanding of the invention, I have shown in the accompanying drawings a construction embodying all the features of the invention in the preferred form, and a modification thereof omitting the feature of inserting the end of the wrapper between the leaves or plies of a book or paper, and a detailed description of these constructions will now be given in connection with the accompanying drawings forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings, Figure 1 is a longitudinal vertical section taken inside the frame, showing a machine of the preferred form. Fig. 2 is a horizontal section of the same on the line 2 of Fig. 1. Fig. 3 is a vertical section looking to the left from line 3 of Fig. 1. Fig. 4 is a detail section of the wrapping mechanism on an enlarged scale, with parts broken away to show the construction. Figs. 5, 6, 7, 8, and 9 are detail views showing successive positions in wrapping. Fig. 10 is a view similar to Fig. 1, showing a modified form of machine. Fig. 11 is a horizontal section on the line 11 of Fig. 10. Fig. 12 is a vertical section looking to the left from line 12 of Fig. 10.

Referring now especially to the machine shown in Figs. 1 to 9, the frame of the machine may be of any form suitable to support the parts. As shown, it consists of the two side frames A B, in which all the parts of the machine are mounted. The books to be wrapped are shown as fed from the bottom of a pile contained in the holder C and the wrapped books delivered upward into a vertical holder D, these holders being mounted on opposite sides of the path of the wrapper *y*, which is fed downward from the wrapper-roll Y in the upper part of the machine. The books are arranged in the holder C with the free edges of the leaves or plies rearward relatively to the line of feeding movement, and they are advanced to the wrapping-point over guides 10 by a carrier E sliding in ways in

the side frames A B, and provided with an inclined blade *a* entering between the leaves or plies of the books, this blade terminating at its rear end in a shoulder 11, which limits the movement of the blade between the leaves or plies, and engages the rear end of the book for advancing the same with the carrier. This blade *a* may be continuous, as shown, or formed of a series of fingers, but the continuous blade shown is preferred and it is preferably made convex, as shown, for ease and certainty in entering between the leaves or plies. The carrier is provided also with a supporting-plate 12, upon which the pile of books rests during the feeding of a book, the next book in holder C moving downward onto the guides 10 when the carrier is withdrawn again and the blade *a* carried rearward of the pile. A series of guides 13 are preferably used above the path of the book or paper and extending forward from the holder C nearly to the path of the wrapper.

Below the holder D for the wrapped books is mounted the plunger F, which acts to lift the books successively out of the path of the next advancing book, this plunger consisting, in the form shown, of a series of plates carried by a shaft 14 mounted in blocks 15 moving vertically in guideways 16 in the frames A B, these plates moving between guides 17, upon which the books are supported prior to the lifting movement of the plunger F and over which they are fed by the carrier E. To support the books in the holder D above the path of the next advancing book, a movable support G is used, this support consisting of a series of fingers between which the plates forming the plunger move, this support being carried by a plate 18 extending across the machine and moving in guideways 19 in the frames A B.

For the purpose of tucking the leading end of the wrapper between the leaves or plies of the book, a tucking-blade *b* having a series of fingers is used, which is carried by a carrier H mounted in the same manner as the carrier E and moving with the latter during the feeding movement for the purpose of actuating the blade *b* to tuck the leading end of the wrapper between the leaves or plies of the book, as fully described hereinafter in connection with the operation of the machine. The blade *b* is hinged on the carrier H and normally pressed upward by springs 1, so as to permit the fingers to follow the incline of the blade *a* in tucking in the wrapper. For the purpose of raising the leading end of the wrapper for the action of the tucking-blade *b* a series of fingers *c* are used, between which the fingers of blade *b* move, these fingers being carried by a bar 20 extending across the machine and sliding vertically in guideways 21 in the frames A B, this bar 20 and the fingers *c* being normally held in their lowest position below the guides 17 and the path of the advancing book by springs 22 coiled about pins 23, extending downward from the

bar 20 through brackets on the frame. To raise the fingers *c* against the pressure of springs 22, levers 24 mounted on studs in the frames A B are used, these levers projecting into openings in bar 20 at opposite sides of the machine and being provided at their rear ends with bowls 2 engaged by trips 25 carried by carrier H and acting to depress the rear arms of the levers 24 and thus raise the forward arms and the bar 20 with the finger *c*, these trips being pivoted to swing upward on the return of the carrier H, so as not to actuate the levers 24 on the return movement. The plate 12 of the carrier E is provided just rearward of the shoulder 11 with a slot extending the full width of the wrapper, through which the fingers *c* raise the leading end of the wrapper for the operation of the tucking-blade *b*.

The wrapper-web *y* is led from the web-roll Y between a pair of cutting-cylinders I by which the wrapper-web is severed into wrapper lengths and fed downward between the guides 26, which extend downward nearly to the path of the advancing books, and paste is applied to the tail end of the wrapper between the guides 26 by a rotary paster K acting against a roll 27 and taking paste from a fountain-roll 28 in fountain 29. Below the path of the books are a series of guides 30 between which the wrapper is fed downward.

Any suitable means may be used for operating the parts thus far described in suitable time.

The construction shown is as follows: The carriers E H are actuated respectively by slotted levers 31 32 engaging pins on the carriers and actuated from the main driving-shaft S by pitman 33 and cams 34. The plate 18 carrying the support G is actuated by similar slotted levers 35, pitman 36, and cam 37.

The shaft 14 carrying plunger F is mounted directly above the shaft S and is actuated therefrom by pitman 38 and cam 39. The paster K is driven from the shaft S through a series of intermediates 40 and a gear 41 on the shaft of the paster. The feeding and cutting cylinders I are driven from the gear 41 by intermediate 42 and gears on the shafts of the cylinders.

The operation of the construction is as follows: As shown in Fig. 5, a book *x* with the wrapper about the same has just been raised into holder D out of the path of the next paper to be advanced, the tail of the wrapper, which is formed by the rearward extension of the layer of wrapper on top of the book, extending downward across the path of the next book, the fingers forming the support G are just advancing into position to support the pile of books when released by the plunger, and carriers E H are withdrawn rearward of the books in holder C and are just about to be advanced to feed forward the bottom book *x* in holder C, which book rests on guides 10. The fingers *c* are in their lowest position, so as to be out of the way of the book *x* when it

is advanced by carrier E. As the operation of the machine continues, the plunger F is lowered below the guides 17, so as to permit the pile of books in the holder D to descend and rest upon the support G, which has been advanced into position to support the books prior to the release of the books by the plunger F, and the carriers E H are advanced, the blade *a* passing between the leaves of the book, so as to open them to receive the end of the wrapper, and the book being advanced by the pressure of the shoulder 11 against its rear end, the plate 12 of the carrier supporting the other books in the holder C during this feeding operation. All the parts are now in the position shown in Fig. 6 with the wrapper *y* fed downward into proper position and the books just about to engage said wrapper for carrying the latter with it over the guides 17. The book is now advanced beneath the pile of books in the holder D, which are supported by the movable support G, and the tail end of the wrapper on the next preceding book is thus carried under the book in holder D and lapped about the layer of wrapper upon the book, so that the paste upon the tail of the wrapper, which paste is applied between the fingers *c* and guides 17, will be pressed up against the wrapper on the under side of the book and the wrapper secured, and at the same time the advancing book laps its wrapper over the leading end of the book and carries the wrapper with it beneath the pile, the support G withdrawing as the book is advanced, so as to allow the latter to be fed in beneath the pile of books before the latter are released by the support. As shown in Fig. 7, the book has been partially fed in beneath the pile in the holder D and the support G has been partially withdrawn, the pile of books being supported in part by the advancing book and in part by the support. It will be seen that the pressure of the pile of books upon the book being fed in over the guides 17 acts to draw tight the wrappers of both the advancing book and the bottom book of the pile, and this is a very important result in securing the desired tightness of the wrapper upon the book. The advance of the carrier E with the book and the withdrawal of the support G continues until the support is entirely withdrawn from beneath the pile of books in the holder D and the advancing book is fed into line with the others, thus lapping and pressing down the pasted tail of the wrapper of the preceding book upon the layer of wrapper thereon and completing the wrapping of the preceding book. When the parts reach this position, the carrier E stops and the carrier H is advanced, and as carrier H moves forward the pivoted trips 25 engage bowls 2 on the rear arms of the levers 24 and rock these levers so as to raise the plate 20 and fingers *c* against the tension of springs 22 and carry the end of the wrapper projecting below the under side of the book—that is, the leading end of the wrapper—upward through the slot in the plate

12 and across the path of the fingers forming the blade *b*, and, as the advance of the carrier H continues, the blade *b* passes the fingers *c* and tucks this leading end of the wrapper between the leaves of the book beneath the blade *a*, the inclined position of this blade opening the leaves sufficiently for this purpose, and the blade *b* follows down the incline, depressing the springs 1. The stud 25 then passes off the bowls 2 on the rear arms of the levers 24 and releases the levers which are then returned to position and the plate 20 and fingers *c* depressed below the guides 17 by the springs 22. All the parts are now in the position shown in Figs. 1 and 9, with the leading end of the wrapper tucked in between the leaves of the book and the blades *a* and *b* ready to be withdrawn, while the plunger F is just advancing into position to raise this book into the holder D. The carriers E H are now returned to normal position and as the blades *a* and *b* are withdrawn from between the leaves of the book the plunger F engages the bottom book and raises the pile of books in the holder D above the top of the support G, and the support G then returns to position beneath the books, so as to support them as the plunger is again withdrawn. Upon the withdrawal of the plate 12 and blade *a* the tail end of the wrapper for the book which has just been advanced drops from the position shown in Figs. 1 and 9, so as to hang downward across the path of the next advancing paper, and all the parts are now in the position shown in Fig. 5 and ready for another operation, as just described.

In Figs. 10 to 12 I have shown a simple construction, substantially the same as that already described, except that the end of the wrapper is not tucked between the pages of the book, so that the construction can be simplified by the omission of the parts employed for this purpose in the construction previously described. In this simpler construction the supports 10 for the books *x* in the holder C form a permanent base of the holder and the carrier E carries spring-pressed feeding-fingers *m*, which move between supports 10 and are adapted to engage the rear end of the bottom book and move it forward in the same manner as the shoulder 11 of the construction previously described, the carrier E being actuated through the levers 31 and connecting-rod 33 employed in the construction previously described, and a crank-arm 50 on shaft S. The operation of this construction will be readily understood from the drawings in connection with the description previously given, the relative timing and action of the feeding-carrier E, the support G, the plunger F, and the other parts of the mechanism being substantially the same as previously described.

It will be understood that many modifications may be made in the construction shown without departing from the invention and that I am not to be limited to the specific form

and arrangement of the devices shown. It will be obvious that the machine may readily be arranged to act upon books of different thicknesses by making the parts adjustable, as common in this class of machines.

What is claimed is—

1. A machine for wrapping books and other articles having means for advancing the books with the flaps of the wrappers projecting behind the books, and closing down the wrapper flap of each book by the next book as the latter is advanced, substantially as described.

2. A machine for wrapping books and other articles having means for advancing the books with the flaps of the wrappers projecting behind the books, and moving the successive books transversely to and out of the path of the advancing books with the wrapper flaps extending across said path and closing down the wrapper flap of each book by the next book as the latter is advanced, substantially as described.

3. A machine for wrapping books and other articles having means for advancing the books and wrappers in a horizontal plane with the flaps of the wrappers projecting behind the books, and raising the successive books into a pile formed by the preceding books with the wrapper flaps extending from the top of the books and closing down the wrapper flap of each book by the next book as the latter is advanced beneath the preceding book, substantially as described.

4. The combination with feeding devices for advancing books and wrappers thereon, of means for securing the advance of each book by the side of and against the wrapper flap of the next succeeding book, whereby the wrapper flap of a book is closed down by the next book as the latter is advanced, substantially as described.

5. The combination with feeding devices for advancing books and wrappers thereon, of means for moving the successive books transversely to and out of the path of the next book with the wrapper flap extending across said path, whereby the wrapper flap of a book is closed down by the next book, substantially as described.

6. The combination with feeding devices for advancing books and wrappers thereon, with the wrapper flaps projecting behind the books, of means for moving the successive books transversely to and out of the path of the next book with the wrapper flap extending across said path, whereby the wrapper flap of each book is closed down by the next book, as the latter is advanced by the feeding devices, substantially as described.

7. The combination with feeding devices for advancing books and wrappers thereon in a horizontal plane, of means for moving the successive books in a vertical plane and out of the path of the next book with the wrapper flap extending across said path, whereby the wrapper flap of a book is closed down by the next book, substantially as described.

8. The combination with feeding devices for advancing books and wrappers thereon in a horizontal plane, of means for raising the successive books out of the path of the next book with the wrapper flap extending across said path, whereby the wrapper flap of a book is closed down by the next book, substantially as described.

9. The combination with feeding devices for advancing books and wrappers thereon, of a holder opposite the path of the advancing books, and means for moving the successive books with the pile of books in the holder transversely to and out of the path of the next book with the wrapper flap extending across said path, whereby the wrapper flap of a book is closed down by the next book and the pressure of the pile of books utilized to press down the wrapper flap, substantially as described.

10. The combination with feeding devices for advancing books and wrappers thereon in a horizontal plane with the wrapper flaps projecting behind the books, of a holder above the path of the advancing books for receiving a pile of books, and means for raising the successive books with the books in the holder out of the path of the next book with the wrapper flap extending across said path, substantially as described.

11. The combination with feeding devices for advancing books and wrappers thereon in a horizontal plane, with the wrapper flaps projecting behind the books, of means for raising the successive books out of the path of the advancing books, a support for holding the pile of wrapped books above the path of the advancing books, and means for withdrawing said support as the books are advanced, substantially as described.

12. The combination with feeding devices for advancing books and wrappers thereon in a horizontal plane with the wrapper flaps projecting behind the books, of a plunger for raising the successive books out of the path of the advancing books, a support for holding the pile of wrapped books above the path of the advancing books when the plunger is lowered, and means for withdrawing said support to permit the books to be advanced beneath the pile, substantially as described.

13. The combination with feeding devices for advancing books and wrappers thereon, of means for moving the successive books transversely to and out of the path of the advancing books, a support for holding the successive books out of the path of the advancing books, and means for withdrawing said support as the books are advanced, substantially as described.

14. The combination with feeding devices for advancing books and wrappers thereon in a horizontal plane, of means for moving the successive books in a vertical plane out of the path of the advancing books, a support for holding the successive books out of the path of the advancing books, and means for

withdrawing said support as the next book is advanced, substantially as described.

15. The combination with feeding devices for advancing books and wrappers thereon, of a plunger for moving the successive books transversely to and out of the path of the advancing books, a support for holding the successive books out of the path of the advancing books when the plunger is withdrawn, and means for withdrawing said support as the books are advanced, substantially as described.

16. The combination with feeding devices for advancing books and wrappers thereon, of a plunger for moving the successive books transversely to and out of the path of the advancing books, and means for holding the successive books out of the path of the advancing books when the plunger is withdrawn, substantially as described.

17. The combination with feeding devices for advancing books and wrappers thereon, of means for moving the successive books transversely to and out of the path of the advancing books with the wrapper flap extending across said path, whereby the wrapper flap of a book is closed down by the next book, and means for tucking the other end of the wrapper between the plies of the book before the wrapper flap is closed down, substantially as described.

18. The combination with feeding devices for advancing books with wrappers thereon and with the wrapper flaps projecting behind the books, of means for moving the successive books transversely to and out of the path of the advancing books, a blade for separating the plies of the book at the rear end, and means for tucking the leading end of the wrapper between the plies of the rear end of the book before the flap of the wrapper is closed down, substantially as described.

19. The combination with a carrier for advancing books with wrappers thereon and with the wrapper flaps projecting behind the books, of means for moving the successive books transversely to and out of the path of the advancing books, a blade on the carrier for separating the plies of the book at the rear end, and means for tucking the leading end of the wrapper between the plies of the rear end of the book before the flap of the wrapper is closed down, substantially as described.

20. The combination with feeding devices for advancing books with wrappers thereon and with the wrapper flaps projecting behind the books, of means for moving the successive books transversely to and out of the path of the advancing books, a blade for separating the plies of the book at the rear end, means for bringing the leading end of the wrapper into position across the rear end of the book, and a blade for tucking the leading end of the wrapper between the plies of the book before the flap of the wrapper is closed down, substantially as described.

21. The combination with a carrier for advancing books with wrappers thereon and with the wrapper flaps projecting behind the books, of means for moving the successive books transversely to and out of the path of the next book, a blade on the carrier for separating the plies of the book at the rear end, means for bringing the leading end of the wrapper into position across the rear end of the book, and a blade for tucking the leading end of the wrapper between the plies of the book before the flap of the wrapper is closed down, substantially as described.

22. The combination with feeding devices for advancing books and wrappers thereon, of means for tucking one end of the wrapper between the plies of the book before the wrapper flap is closed down, and means for closing down the wrapper flap, substantially as described.

23. The combination with feeding devices for advancing books and wrappers with the opposite ends of the wrappers projecting behind the books, of means for tucking one end of the wrapper between the plies of the rear end of the book, and means for closing down the wrapper flap, substantially as described.

24. In a machine for wrapping books and other articles consisting of two or more plies and having the wrapper lapped over one edge of the book and the two ends of the wrapper projecting beyond the other edge of the book, the combination of means for tucking one end of the wrapper between the plies of the book and means for closing down the other end or wrapper flap, substantially as described.

25. In a machine for wrapping books and other articles, the combination with means for lapping the wrapper over one edge of the book with the ends of the wrapper projecting beyond the other edge of the book, of means for tucking one end of the wrapper between the plies of the book and closing down the other end or wrapper flap, substantially as described.

26. The combination with book and wrapper feeding and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped about the leading end of the book and the wrapper flap projecting behind the book, of means for moving the successive books transversely to and out of the path of the next book with the wrapper flap extending across said path, whereby the wrapper flap of a book is closed down by the next book, substantially as described.

27. The combination with book and wrapper feeding and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped about the leading end of the book and the wrapper flap projecting behind the book and advance the book and overlapped wrapper in a horizontal plane, of means for raising the successive books out of the path of the next book with the wrapper flap extending across said path, whereby the wrapper flap

of a book is closed down by the next book, substantially as described.

28. The combination with book and wrapper feeding and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped about the leading end of the book and the wrapper flap projecting behind the book, of a holder opposite the path of the advancing books, and means for moving the successive books with the pile of books in the holder transversely to and out of the path of the next book with the wrapper flap extending across said path, whereby the wrapper flap of a book is closed down by the next book and the pressure of the pile of books utilized to press down the wrapper flap, substantially as described.

29. The combination with book and wrapper feeding and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped about the leading end of the book and the wrapper flap projecting behind the book and advance the book and overlapped wrapper in a horizontal plane, of a holder above the path of the advancing books for receiving a pile of books, and means for raising the successive books with the books in the holder out of the path of the advancing books, substantially as described.

30. The combination with book and wrapper feeding and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped about the leading end of the book and the wrapper flap projecting behind the book and advance the book and overlapped wrapper in a horizontal plane, of a plunger for raising the successive books out of the path of the advancing books, a support for holding the pile of wrapped books above the path of the advancing books when the plunger is lowered, and means for withdrawing said support to permit the books to be advanced beneath the pile, substantially as described.

31. The combination with book and wrapper feeding and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped about the leading end of the book and the wrapper flap projecting behind the book, of a plunger for moving the successive books transversely to and out of the path of the advancing books, and means for holding the successive books out of the path of the advancing books when the plunger is withdrawn, substantially as described.

32. The combination with book and wrapper feeding and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped about the leading end of the book and the ends of the wrapper projecting behind the book, of means for moving the successive books transversely to and out of the path of the advancing books, and means for tucking the other end of the wrapper between the plies of the book before the wrapper flap is closed down, substantially as described.

33. The combination with book and wrap-

per feeding and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped about the leading end of the book and the ends of the wrapper projecting
 5 behind the book, of means for moving the successive books transversely to and out of the path of the advancing books, a blade for separating the plies of the book at the rear end, and means for tucking the leading end of the
 10 wrapper between the plies of the rear end of the book before the flap of the wrapper is closed down, substantially as described.

34. The combination with book and wrapper feeding and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped about the leading end of the book and the ends of the wrapper projecting behind the book, of means for moving the successive books transversely to and out of the
 20 path of the advancing books, a blade for separating the plies of the book at the rear end, means for bringing the leading end of the wrapper into position across the rear end of the book, and a blade for tucking the leading
 25 end of the wrapper between the plies of the book before the flap of the wrapper is closed down, substantially as described.

35. The combination with book and wrapper feeding devices and wrapper pasting devices arranged to associate a book and wrapper with the latter lapped over one edge of the book and the two ends of the wrapper projecting beyond the other edge of the book, of
 30 means for tucking one end of the wrapper between the plies of the book, and means for closing down the other end or wrapper flap, substantially as described.

36. The combination with a blade for separating the plies of a book, of means for moving the end of a wrapper across the book, and a tucking blade for tucking the end of the wrapper between the plies, substantially as
 40 described.

37. The combination with an inclined blade for separating the plies of a book, of a tucking blade for tucking the end of a wrapper between the plies, substantially as described.

38. The combination with a slotted blade for separating the plies of a book, of fingers for moving the end of a wrapper across the book through the slot, and a tucking blade for tucking the end of the wrapper between the plies, substantially as described.

39. The combination with feeding devices, of plunger F moving transversely to the line of feed, and reciprocating support G holding the books when the plunger is withdrawn, and withdrawn to permit the feed of the successive books, substantially as described.

40. The combination with feeding devices feeding in a horizontal plane, of vertically moving plunger F, reciprocating support G holding the books when the plunger is withdrawn and withdrawn to permit the feed of
 65 the successive books, substantially as described.

41. The combination with holders C, D, of feeding devices for advancing a book from holder C to holder D, wrapper feeding mechanism for advancing wrappers transversely
 70 to the path of the books and between said holders, plunger F for moving the successive books out of the line of feed, support G for holding the wrapped books in the holder D when the plunger is withdrawn, and means
 75 for withdrawing said support to permit the successive books to be advanced to the holder D, substantially as described.

42. The combination with vertical holders C, D, of feeding devices for advancing a book
 80 from holder C to holder D, wrapper feeding mechanism for advancing wrappers vertically and downward across the path of the advancing books, vertically moving plunger F for raising the successive books into holder
 85 D, support G for holding the books in the holder D when the plunger is lowered, and means for withdrawing said support to permit the books to be advanced beneath the books in holder D, substantially as described.

43. The combination with carrier E having a blade for separating the plies of a book, of tucking blade *b*, substantially as described.

44. The combination with carrier E having inclined blade *a* for separating the plies of
 95 the book, of tucking blade *b*, substantially as described.

45. The combination with carrier E having inclined blade *a* for separating the plies of the book, of spring pressed pivoted tucking
 100 blade *b*, substantially as described.

46. The combination with carrier E having blade *a* and shoulder 11, of tucking blade *b*, substantially as described.

47. The combination with carrier E having
 105 blade *a*, shoulder 11 and a slot behind said shoulder, of tucking blade *b*, and lifting fingers *c*, substantially as described.

48. The combination with carrier E having a blade for separating the plies of a book, of
 110 lifting fingers *c*, and tucking-blade *b*, substantially as described.

49. The combination with carrier E having blade *a* and shoulder 11, of carrier H having tucking blade *b* and lifting fingers *c*, substantially
 115 as described.

50. The combination with holder C, of carrier E, having plate 12, inclined blade *a* and shoulder 11, and a tucking blade, substantially
 120 as described.

51. The combination with holder C, of carrier E, having plate 12, inclined blade *a* and shoulder 11, tucking blade *b*, and lifting fingers *c*, substantially as described.

In testimony whereof I have hereunto set
 125 my hand in the presence of two subscribing witnesses.

LUTHER C. CROWELL.

Witnesses:

C. J. SAWYER,
 A. L. KENT.