J. D. REIFSNYDER AND W. A. WEIGHTMAN.

BOX COVERING MACHINE.

APPLICATION FILED JUNE 8, 1917.

1,343,748.

Patented June 15, 1920.

8 SHEETS—SHEET 1.

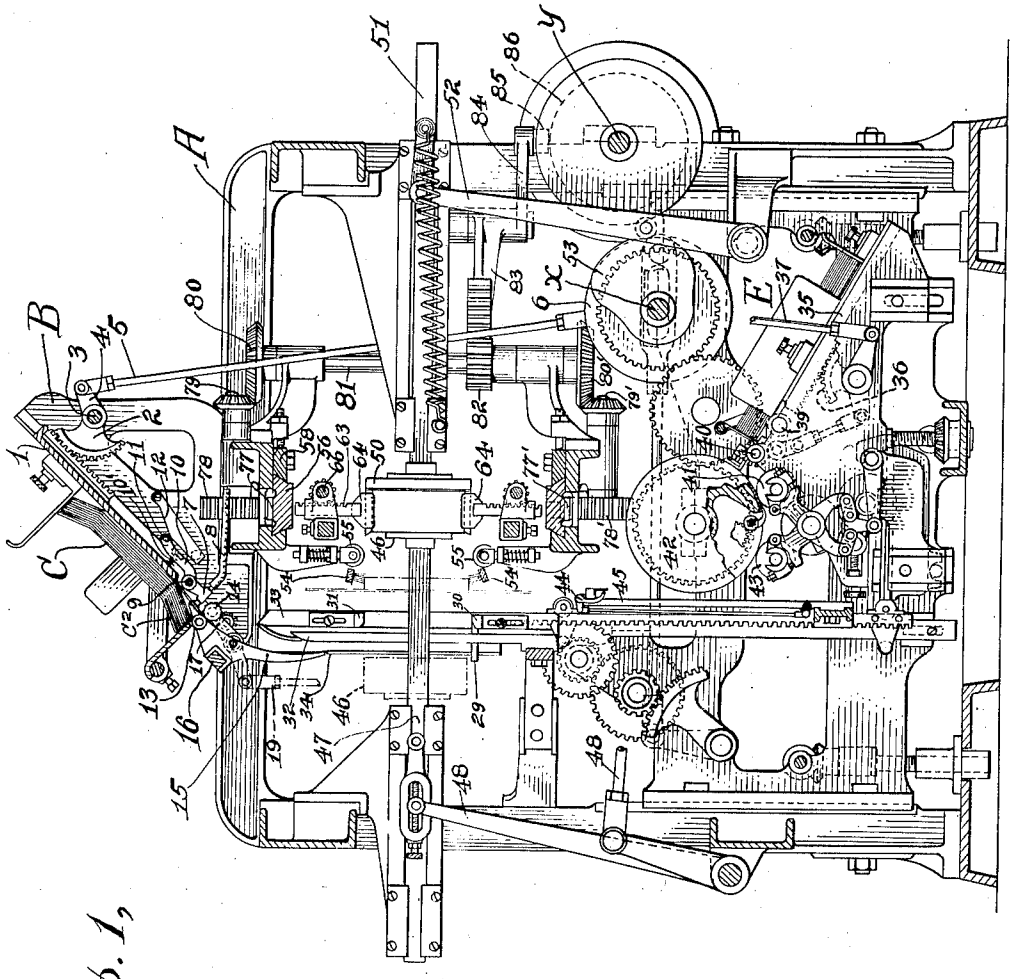


Fig. 1,

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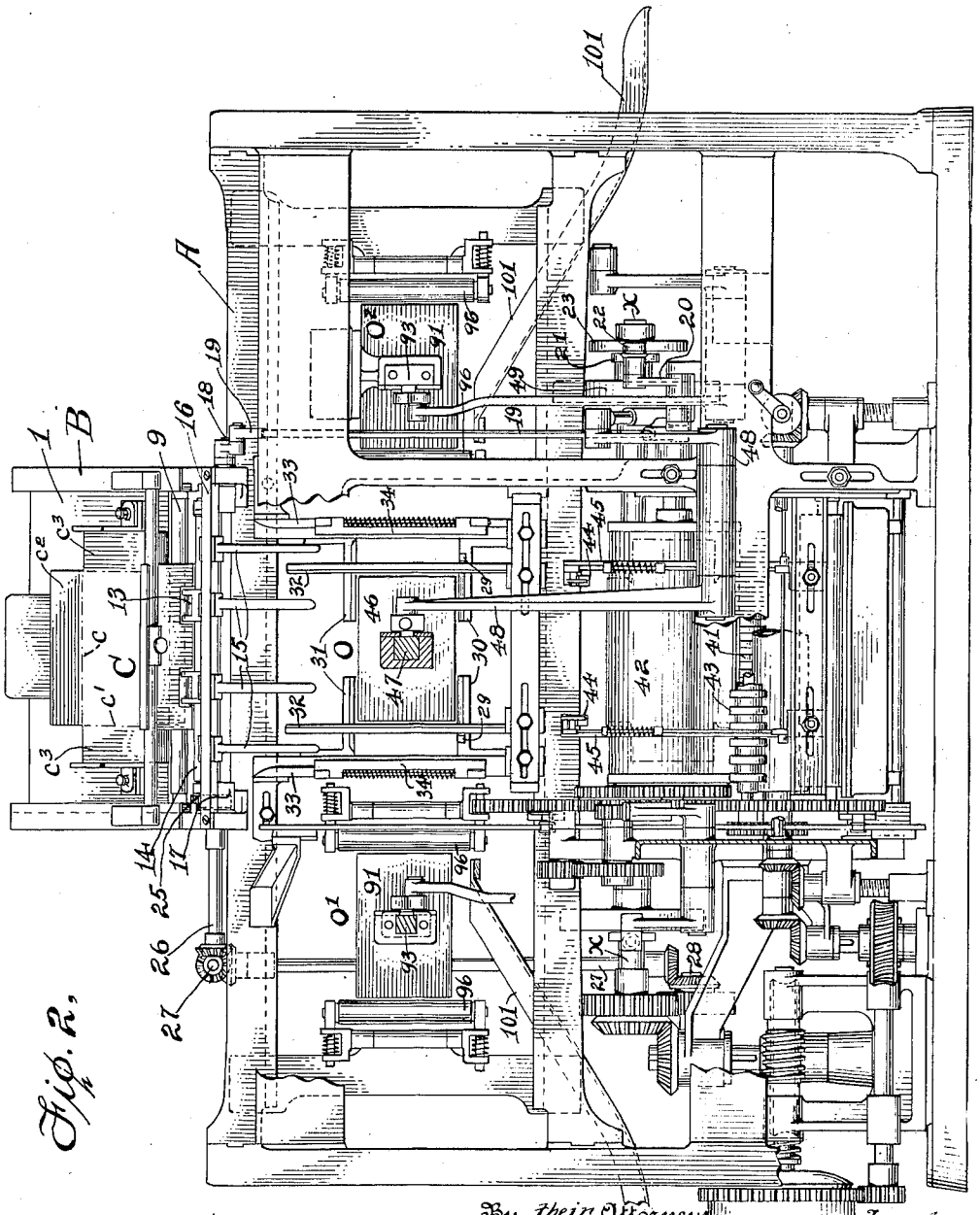


Fig. 2.

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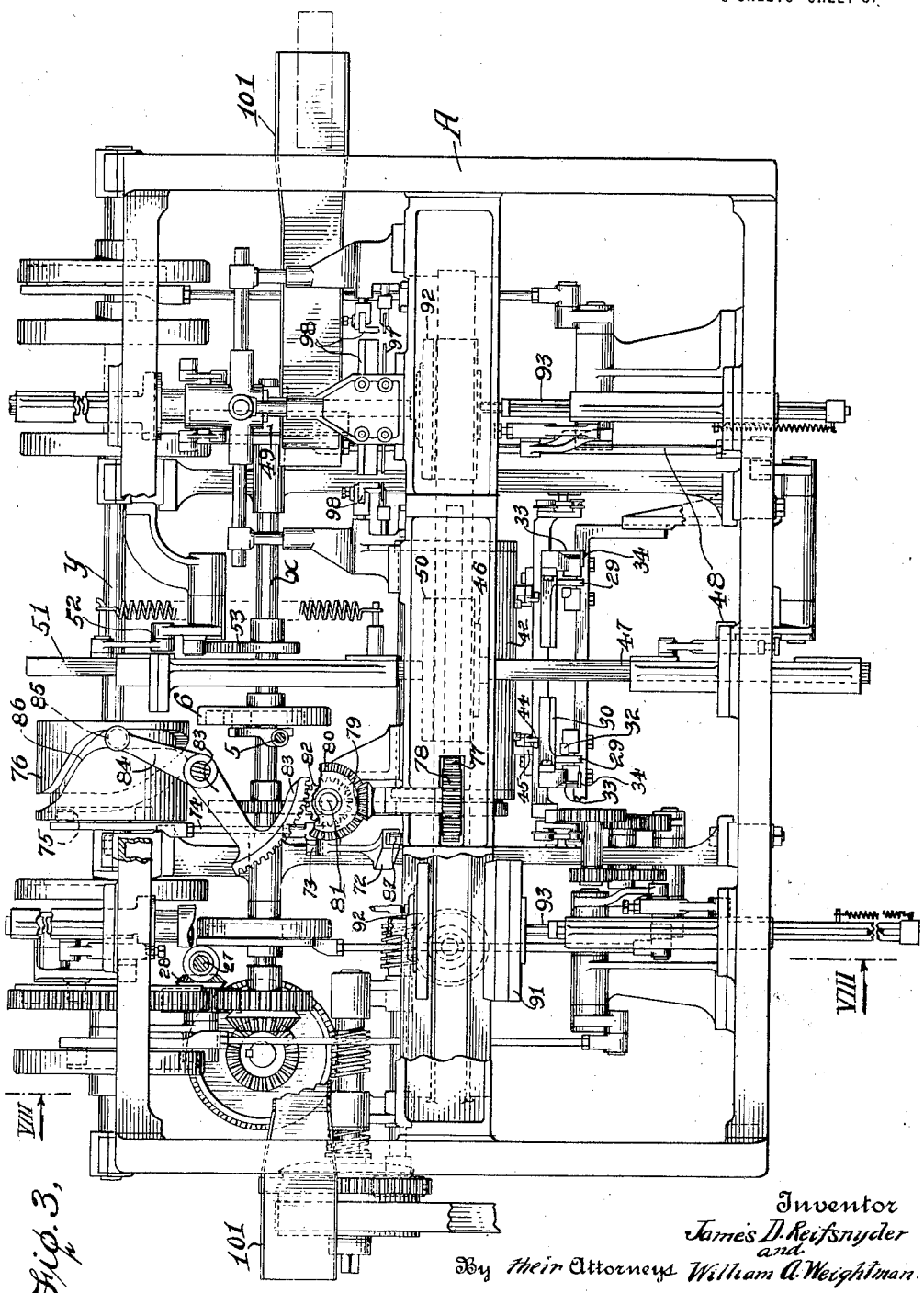


Fig. 3.

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Fig. 5.

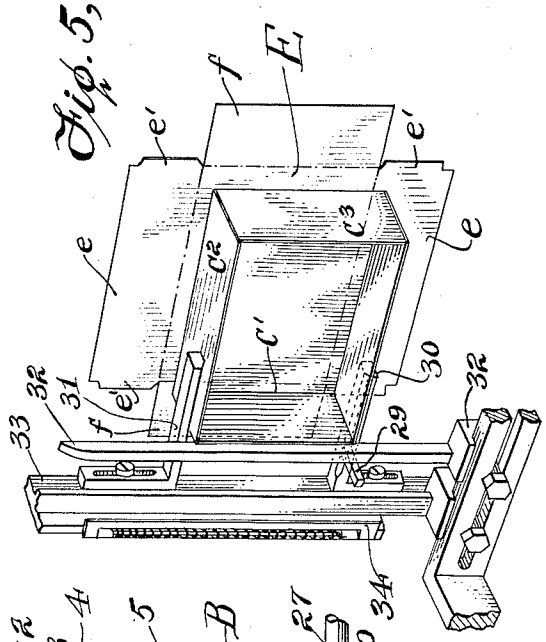
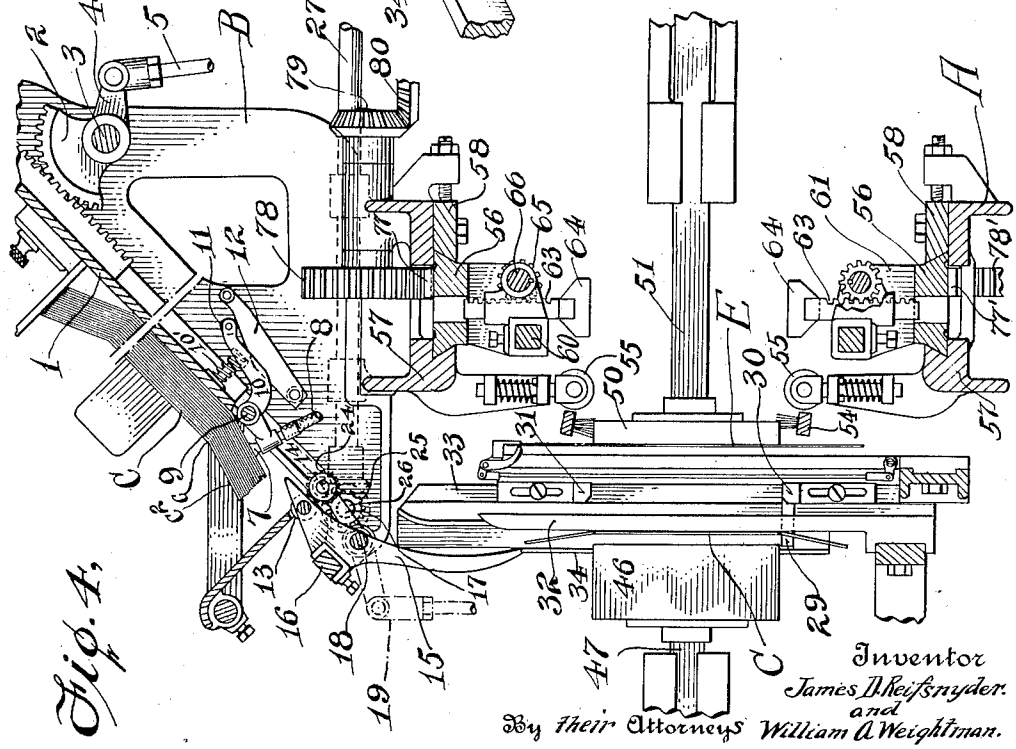


Fig. 4.



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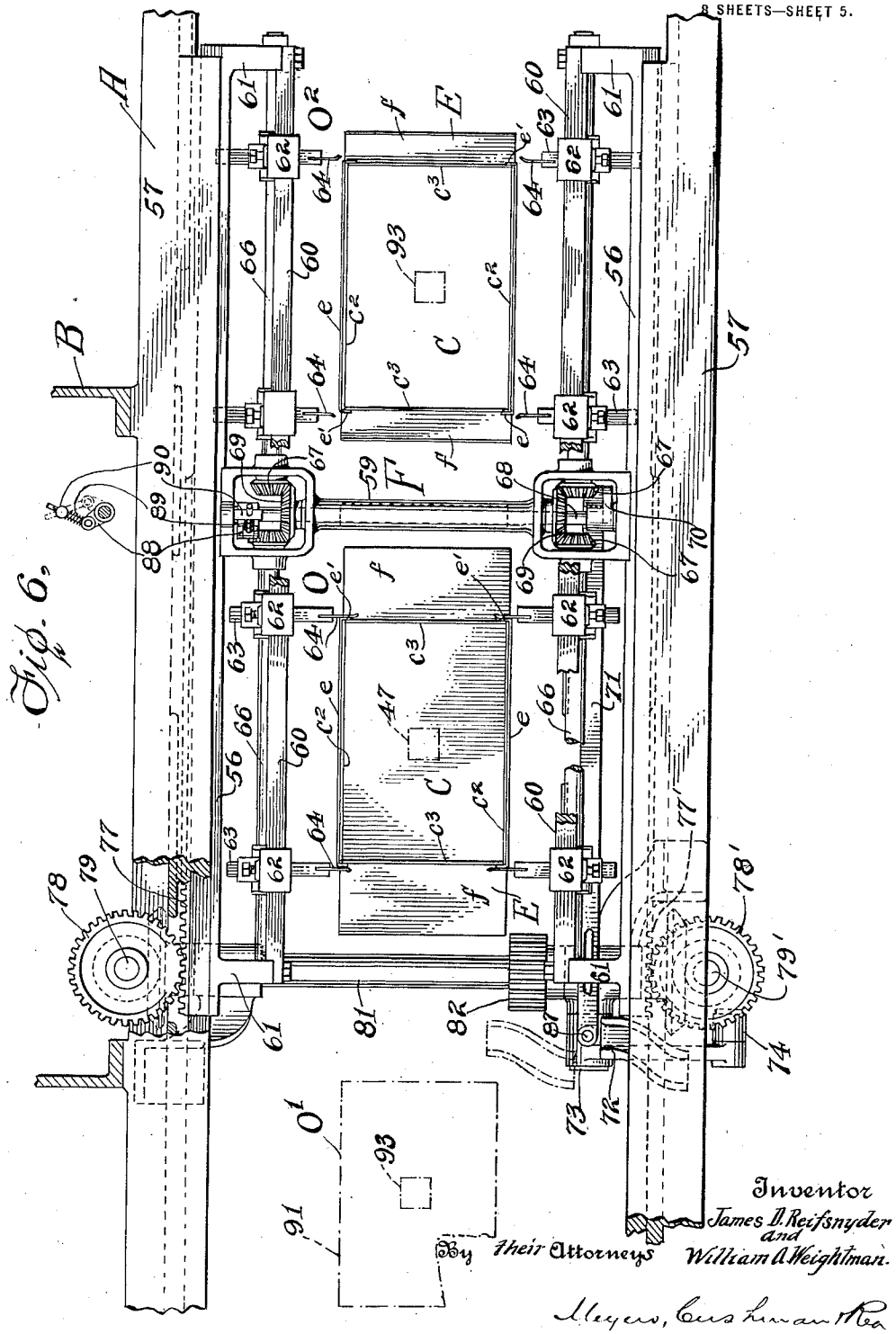


Fig. 6.

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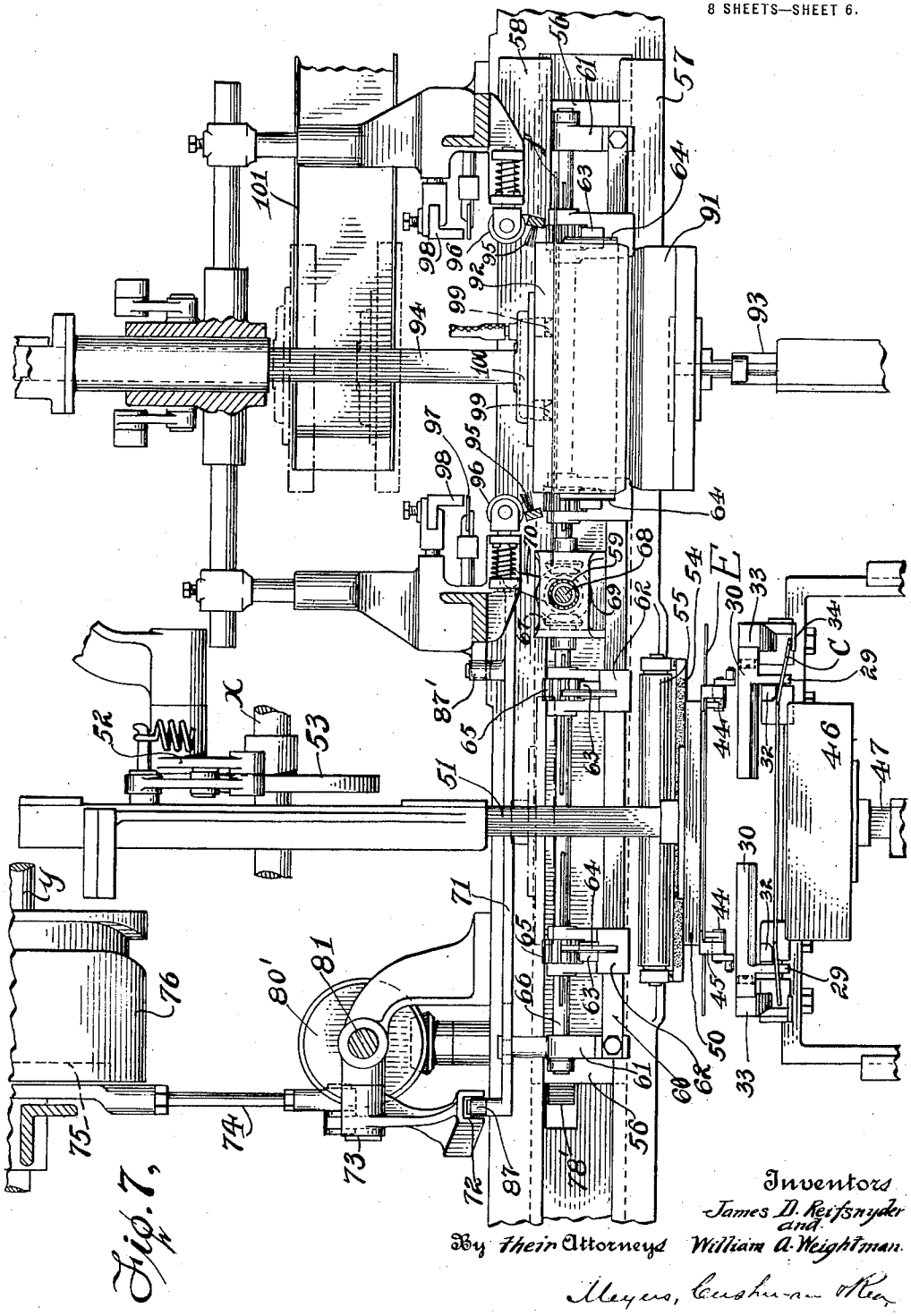


Fig. 7.

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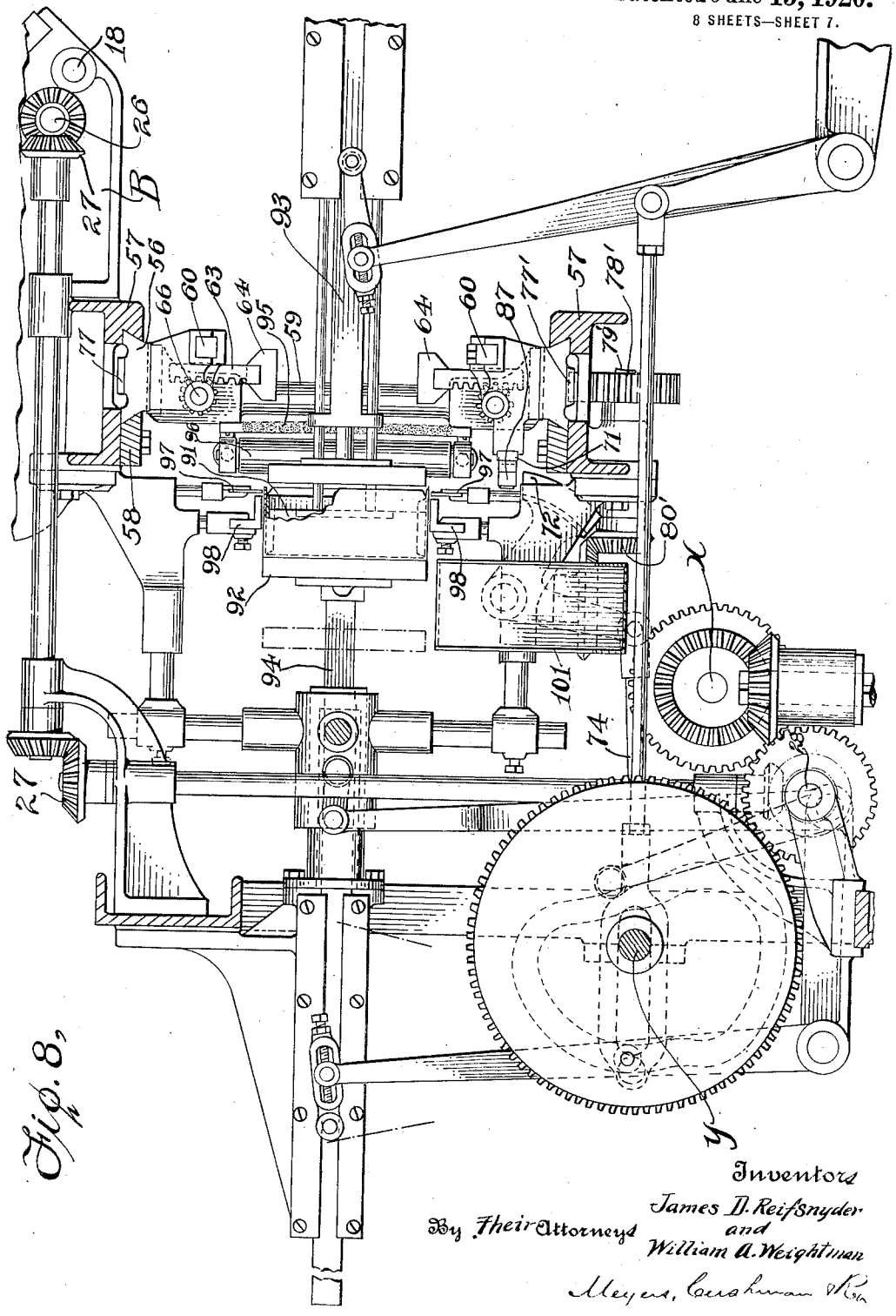


Fig. 8.

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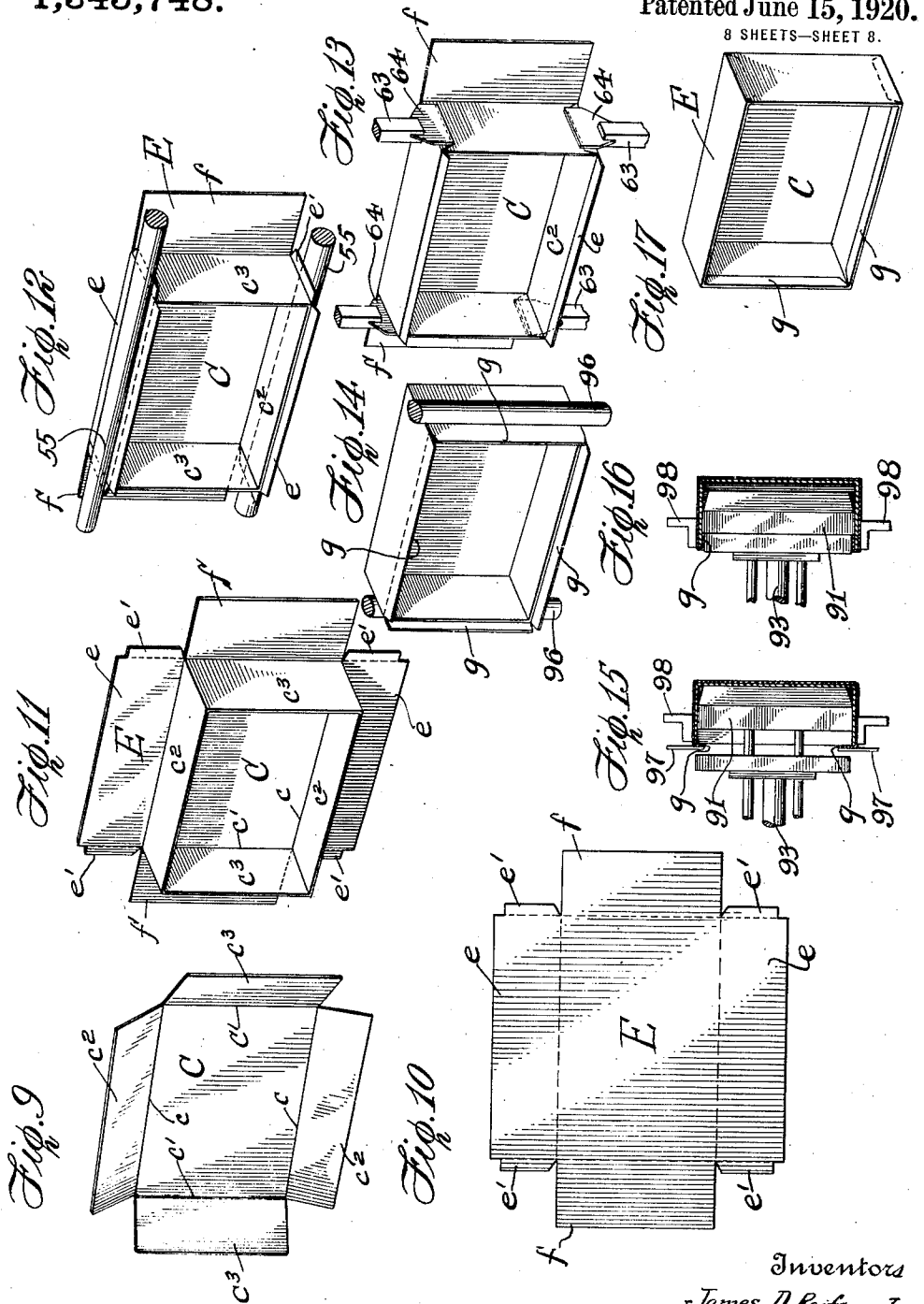
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8 SHEETS—SHEET 8.



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UNITED STATES PATENT OFFICE.

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BOX-COVERING MACHINE.

1,343,748. Specification of Letters Patent. **Patented June 15, 1920.**

Application filed June 8, 1917. Serial No. 173,516.

To all whom it may concern:

Be it known that we, JAMES D. REIFSNYDER and WILLIAM A. WEIGHTMAN, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Box-Covering Machines, of which the following is a specification.

This invention relates to box covering machines of the general class illustrated by patents to Smith No. 691,329, dated January 14, 1902 and No. 778,805, dated December 27, 1904, that is to say, pertains to a machine wherein a blank of cardboard, boxboard or similar material is shaped into box-like form and covered with a properly folded and glued cover blank.

In prior machines of this general class with which we are acquainted it has been found that although the box blank or board may be folded into box-like form and properly centered or positioned on or relative to the cover blank or cover material with great rapidity, yet the capacity of the machine to produce finished, completely covered boxes has been restricted and limited in a certain sense, due mainly to the fact that the subsequent steps of tucking in, and folding or laying the various flaps of the cover blank has consumed more time and required more steps or operations, relatively speaking, than the before mentioned prior operation of folding the box blank itself, centering the same on the glued or gum-coated side of the cover blank and partially folding the latter about the shaped box. In other words, it has been found that with prior machines, boxes could be partially formed up to a certain point or step with greater rapidity than could be attained in the subsequent steps necessary to complete the covered box, and of course this has resulted in the inability to operate the machine to the full capacity of the mechanism used in preliminarily or partially making the covered box.

It is, therefore, our object and purpose with the present invention to provide a box-covering machine wherein we employ a single or common mechanism for partially making the covered box and operate in association therewith a plurality of mechanisms for completing the operation of covering boxes, the function and structure of these correlated mechanisms being such that as fast or as rapidly as a box to be made is operated upon by the common initially acting mechanism, it is transferred to one of these box completing mechanisms which is operated in proper timed relation to receive the partially formed box, so that while such a one mechanism is completing the formation of a box, another of such mechanisms is operating to receive a second partially completed box from the common mechanism before mentioned, and the result is that the machine may be worked to the full speed and capacity of the common mechanism for partially forming the box, and thus the total output of the machine may be increased to a marked degree and the consequent saving of time, labor and expense in the production of boxes of this type is attained.

A further object of our invention is the provision of a box-covering machine which is automatic in its operation, and which will embody the desired features of simplicity, efficiency and reliability, and through the agency of which covered boxes may be produced economically in large quantities.

With the above recited objects and others of a similar nature in view, our invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claims.

In the accompanying drawings:

Figure 1 is a view partly in side elevation and partly in section of a box covering machine embodying our invention.

Fig. 2 is a view partly in front elevation and partly in section.

Fig. 3 is a top plan view of the machine, certain duplicate parts being omitted for the sake of clearness.

Fig. 4 is an enlarged view partly in side elevation and partly in section of the device for feeding and positioning the box blanks and the cover blanks in the preliminary operation of making the box.

Fig. 5 is a perspective view showing the folding mechanism for the box blank.

Fig. 6 is a partial front elevational view of the transfer carriage.

Fig. 7 is a partial sectional plan view

showing the transfer carriage, the blank forming mechanism, and one of the box finishing mechanisms.

Fig. 8 is a sectional view taken on the line 8—8 of Fig. 3.

Figs. 9 to 16 inclusive are detail views showing the various steps in the forming and covering of the box.

Fig. 17 is a perspective view of the finished covered box.

Before entering into a detailed description of our invention, we will briefly state that in the form shown herein, it embraces a common or single mechanism for partially forming the covered box, and which has associated therewith a plurality of other mechanisms, each of which is, in and of itself, capable of performing the subsequent steps of completing a covered box which has been partially formed by the aforesaid common mechanism. This common mechanism is, in the present instance, preferably located in a central position relative to the entire machine, the mechanism for completing the boxes lying, so far as relative position is concerned, at opposite sides of this common mechanism, a suitable transfer carriage being employed for carrying the boxes to the box-completing mechanisms in predetermined order. The common mechanism for performing the initial steps for making the box includes, in the machine shown herein, suitable devices for gumming and feeding a cover blank or sheet and suitable devices for feeding the box blanks into proper position relative to the cover blanks. When the two blanks have been properly centered or positioned relative to each other, suitable forming mechanism is brought into operation to bend or fold the box blank into box-like form and to simultaneously partially fold and glue the cover blank about the box blank, the box thus partially formed being then transferred to a suitable carriage wherein, as hereinafter described, the operation of tucking or folding flaps of the cover blank around the corners of the box blank, to stay such corners takes place, and by which carriage the box is conveyed, in an established order of delivery to a selected or predetermined one of the mechanisms for completing the operation of folding, tucking and laying the box flaps to make the complete article. In the present instance this carriage is constructed to supply the partially formed boxes to both of the mechanisms for completing the boxes, which as before mentioned, lie at opposite sides of the common mechanism for partially forming the boxes, such carriage shifting or traveling back and forth so that at the time it is delivering a partially formed box to one of the mechanisms for completing the box, it is receiving a second partially formed box to be subsequently delivered to the other box completing mechanism at the opposite side of the machine.

In this connection, we wish it to be understood that the machine as herein shown and described is merely by way of illustrating our invention, and we do not limit ourselves to the precise mechanisms or to the details of construction set forth, as we believe ourselves to be the first to have provided a box covering machine wherein partially completed boxes are distributed to a plurality of mechanisms, each of which is in and of itself capable of and designed to complete such partially formed boxes as it may receive.

Referring now to the accompanying drawings in detail, the letter A indicates the frame of the machine as an entirety, and this frame may be of any suitable character or construction to suit the individual requirements. Mounted on top of the frame and preferably located approximately centrally thereof is a box-blank feeding device indicated as an entirety by the letter B and best shown in Fig. 4. This device, which may be of any suitable or preferred form, in the present instance includes an inclined reciprocating table 1, which is operated through the rack and segment gear 2, which in turn receives motion through a rock shaft 3, the latter being operated through the lever 4 and link 5, the latter being operated by the cam 6, which is driven in any suitable manner from the cam shaft x of the machine. Upon this table there is placed a stack of box blanks C and these blanks may be of any preferred material, such as box-board, paste-board or the like. As will be seen by reference to Fig. 9, the blank is of approximately cross shaped form scored by the parallel longitudinal lines c and the transverse lines c' to form the side flaps c^2 and the end flaps c^3. Prior to stacking the box blanks and placing the same on the table they are partially bent or turned up on the scored lines so that they will appear as shown in said Fig. 9. As the table is moved forward and downward by its rack and pinion mechanism the front flap of the lowermost blank is engaged by the suction tip 7 to which suction is applied in any suitable manner through the pipe 8. This suction tip is carried by the shaft 9 mounted on the table and this shaft is rocked by the cam lever 10, the latter having in one end the cam roller 11 riding on the inclined surface of the cam bar or track 12. The result is, as will be understood by reference to Fig. 4, that as the roller 11 travels up the inclined face of the cam bar the suction tip will be lowered and moved forward with the travel of the carriage carrying with it the lowermost blank of the stack. A suitable spring device 10′ is employed to resiliently hold the cam roller on the cam track.

This suction tip 7 carries the bottom board-blank down and between the feed rolls 13 and 14; the feed roll 13 being, as shown in Fig. 4, mounted at the tongue end of the guide fender 15 which is in the form of fingers mounted on the bar 16. The lower guide roller 14 is movably mounted relative to the roller 13, being carried by arms 17 mounted on the rock shaft 18, the latter being rocked through a suitable link connection 19 operated from the cam shaft x of the machine through bell crank 20, yoke 21, and cam roller 22, the latter engaging the cam 23. The roll 14 is revolved by the spur gear 24—25, the latter being on the shaft 26 which is driven through suitable gearing 27, from the intermediate shaft 28, the latter in turn being geared to the shaft x.

The lowermost blank, after passing between the guide rollers is directed vertically downward by the fender and passes to and rests upon the bars 29 formed integral with the lower angular bending bars 30, as will be understood by reference to Figs. 2 and 5. A second pair of angular bending bars 31 is also employed in conjunction with the lower bending bars 30 and the parallel side bars 32 form a frame for bending up or folding the side flaps of the box blank. The bending bars 30 and 31 are preferably adjustably mounted upon the vertical side posts 33, the latter as will be understood by reference to Fig. 2, being equipped with spring tensioned guides 34 which assist in guiding the box blank downward into proper registered position and into its position of rest on the bars 29.

Referring now to Fig. 1, the wrapper blanks are shown at E and these are stacked upon the upwardly inclined reciprocating table 35, the latter being also operated through rack and pinion mechanism indicated at 36, and which in turn is operated through a suitable link connection 37 driven from the cam shaft x in any suitable manner. The lowermost cover blank of the stack E is fed by a suitable suction roller 39 of a well known form, and passing between the feed rollers 40, is brought into contact with the corrugated glue roller 41 and the glue drum 42; the blank passing between the roller and the drum and also over a second corrugated roller 43, being thence directed upward along the periphery of the drum. As the cover blank feeding and gluing mechanism forms the subject matter of another application it need not be further described in detail here. As the cover blank moves upward carried by the drum itself, the upper end is grasped by suitable grippers 44 mounted on the upper end of the vertically reciprocating carriage 45 and as this carriage travels upward, as indicated in dotted lines in Fig. 1, it brings with it the now glued cover blank and centers or registers the same in proper alinement or position with the previously centered or registered box blank, as will be understood by reference to Fig. 4; the cover blank, however, lying at the opposite side of the forming or bending bars 30 and 31. These bars, as heretofore mentioned, and as will be readily understood by reference to Figs. 1 and 4, form a frame-like structure for bending the wings or flaps of the box blank when the latter is pushed therethrough, so that as the box blank is struck by the form block 46, it will be pushed or forced through this forming or bending frame and the flaps of the blank will be bent or folded at approximately right angles to the main portion of such blank, as illustrated in Fig. 5. The form block 46 is operated through the plunger 47 and driven through the lever 48 and the cam 49, the latter being mounted on the cam shaft x. This form block operates in conjunction with a second form block 50 mounted on the plunger 51, which is also operated from the cam shaft x, through the lever 52 and the cam 53. As the form block 46 forces the box blank through the bending frame, as previously described, it brings it into contact with the previously centered cover blank, and as the plunger now moves inward of the machine carrying the two blanks, the cover blank is moved past the brushes 54 and the presser rolls 55 and the two flaps of the blank are wiped up and pasted against the adjacent sides of the folded box blank, as will be understood by reference to Fig. 12, the bottom section of the blank at the same time adhering to the bottom of the box. In this connection, it will of course be understood that when the two flaps or wings c^3 of the box blank are folded up, as shown in Fig. 11, for instance, they are temporarily held in such folded position, or prevented from opening out and back, by suitable flaps which are brought into action for this purpose. As flaps for performing this operation are well known in machines of this general class, for instance, the Stokes and Smith machine, they need not be here described.

When the box blank with its cover has been folded to the stage shown in Fig. 12, it is brought by the traveling form blocks to the carriage or transfer mechanism which is indicated as an entirety by the letter F, and it is when the block is brought or transferred to the carriage that the end laps e' are folded inward at the corners of the box to set the box blank, that is, to connect the laps c^2 with the laps c^3. In the present instance the carriage or transfer mechanism F is made up of a pair of track members 56 sliding on the parallel frame sections 57, suitable adjustable gibs 58 bearing against the track members and constituting guideways therefor in conjunction with the frame sections 57, and as will be understood by

reference to Figs. 4 and 6, the carriage is intended to slide transversely of the path of movement of the box when the latter is carried by the form blocks. The sliding track members 56 in turn are connected at approximately their central portion by a tie casting 59 so that the carriage is practically divided into two sections. The carriage is further provided with a pair of spaced parallel rods 60 carried by suitable brackets, such as shown at 61, and each of these rods has adjustably mounted thereon a pair of castings 62, and each casting in turn has slidably mounted therein a short rack bar 63 carrying at its inner end a lap plate 64, which is intended to fold in a corner lap of the cover. Each rack bar with its lap plate is moved toward and from the box by means of a pinion 65. These pinions are in turn operated through shafts 66, each shaft carrying a bevel pinion 67 by means of which the shaft is rotated. The bevel pinions 67 in turn are driven from a vertical shaft 68 through intermeshing bevel pinions 69, and this shaft 68 is given a rocking motion through a lever 70, reciprocating bar 71 and the sector cam 72. As will be seen by reference to Figs. 3 and 7, this segmental cam 72 is mounted to rock on a stud shaft 73, and has its rocking motion imparted through a cam link connection 74 actuated by the cam 75 at the side of the drum cam 76 on the cam shaft Y.

Now by reference to Fig. 6, it will be seen that we have shown in dotted and full lines the two extreme positions which the segmental cam 72 attains when rocked from the cam 75, and in such figure it will further be noted that two box blanks and their covers are shown in position in the machine. For the sake of clearness, we will state at this time that in the operation of the machine a partially covered box is fed by the plungers 46 and 50 to whichever set of lap plates 64 happens to be in register or alinement with the box carrying plungers to receive the box therefrom, and that when one set of these lap fingers 64 is receiving such a partially covered box, the other set of lap fingers is having a previously inserted box removed therefrom. This second set of lap fingers having conveyed the box with the travel of the carriage to one set of the mechanisms for completing the covering of the box. This will be understood by reference to Fig. 6 wherein it will be seen that the partially covered box shown at the left-hand-side section O of the carriage is in the grasp of the set of lap plates 64, and this box will be carried farther to the left or to the position indicated in dotted lines O′ at the extreme lefthand side of the figure. In the meantime, that box which is shown at the righthand-side section of the carriage O^2 having been previously received by its lap fingers has been brought to the position shown, and has been pushed out of the fingers and the latter have been brought to their retracted position, ready to return with the travel of the carriage and to receive another box. The mechanism for accomplishing this reciprocation or shifting of the carriage to present one section and then the other section thereof to the box supplying plungers and then to carry the boxes and transfer the same to the selected box-covering mechanism for completing the covered box is as follows:

The carriage is provided with top and bottom racks 77 and 77′ and these racks are engaged and driven by the gears 78 and 78′ respectively. These gears 78 and 78′ are mounted on shafts 79 and 79′, these shafts being driven by the pairs of bevel gears 80 and 80′ respectively, these bevel gears 80 and 80′ being driven in turn from the vertical shaft 81. On this shaft 81 is a pinion 82 meshing with a segmental rack gear 83 which is connected to the cam lever 84, the roller 85 of which rides in the groove 86 of the drum cam 76. Through this train of mechanism under the influence of the drum cam the carriage will be shifted back and forth at predetermined and proper times.

The two sets of lap plates on the carriage are shifted in and out at predetermined times as now described, and it will be understood, especially by reference to Fig. 6, that when one set of lap plates is moved in to grasp a box, the other set is moved outward. To accomplish this shifting of the lap plates, the reciprocating bar 71, previously mentioned, is provided with a pair of spaced rollers 87 and 87′, these rollers being mounted on short upstanding studs or lugs. When the roller 87 is in engagement with the segmental cam 72 the set of fingers at the lefthand section O of the carriage will be moved inward into box-engaging position, the carriage at this time being in the position shown in Figs. 6 and 7, but when in the travel of the carriage the roller 87′ is brought into position or alinement with the segmental cam 72 and is operated thereby, the set of lap plates at the righthand section O^2 of the machine will be moved inward into box-engaging position, being at this time of course in alinement with the plungers feeding the box to the lap plates.

In order to hold the lap plates 64 momentarily in box-engaging position so as to retain the box during the shifting of the carriage any suitable means may be provided, such for instance as the short lever 88 mounted on the shaft 68 and provided with a spring tensioned link 89, one end of which passes through a pivoted pin 90 for the pur-

pose of acting as an abutment to allow the spring to exert its force in opposite tangential directions relative to the shaft 68. Thus, when the spring tensioned lever is in one of its extreme positions, one of the sets of lap plates will be held in box-engaging position, while when such lever is in its other extreme position, the other sets of lap plates will be held in box-engaging position. The final completion or covering of the box may now be understood by reference to Figs. 3, 7 and 8. The carriage having received the partially completed box, as heretofore described, and as illustrated in Fig. 6, is now moved through its rack and gear mechanism toward one side of the machine, in the present instance toward the right, and brings the box into position to be received between the form blocks 91 and 92, the block 91 being operated through the plunger 93, while the block 92 is similarly operated through a plunger 94. The form block 91 now moves forward and enters the box, as indicated in dotted lines in Fig. 7, and presses the box against the form block 92; the two blocks now start a rearward movement carrying with them the box and its cover, and the flaps or wings *f* of the cover blank are moved past the spreader brushes 95 and the presser rolls 96, which fold these flaps or wings *f* against the ends of the box and cause them to adhere thereto. The form blocks continue their rearward travel and bring the box to the position shown in full lines in Fig. 8. We might mention that the form block 91 is in the nature of a two-part block, well known in this class of machines and exemplified for instance in the patent to Philip S. Smith, No. 744,122, dated November 17, 1903, so that as the box is brought to position for the operation of tuck-in fingers 97, the two parts of the block will separate, permitting these tuck-in fingers 97 to move inward between the two parts of the block 91 and fold in the marginal laps *g* of the cover blank. The two parts of this form block 91 now move together again and as the tuck-in fingers 97 are withdrawn, this form block will push or fold the marginal laps downward against the inside of the box, as shown in Fig. 16. The operation of tucking in the marginal laps is shown in Fig. 15. While the box is still held by these form blocks 91 and 92 it is now passed between presser blocks 98 which press against the box to cause the cover or wrapper to positively adhere thereto throughout its surfaces, or in other words, to insure that there will be no loose points of connection between the flaps of the wrapper or cover and the inner parts of the box to which these flaps are attached.

The box is now ready to be discharged or ejected in its complete form from the machine and this may be accomplished in any suitable manner. For instance, after the presser blocks 98 have operated on the box, suction may be exerted through suction tips 99 mounted on the casting 100, and as this casting carries the form block 92, the retractive movement of the form block and casting, when the suction is applied, will cause the box to be withdrawn from the form block 91, the box being carried to a point above the discharge chute 101 where the suction being cut off from the suction tips in any suitable manner, the box will drop from the block and will be carried by the chute to the point of discharge. The form block 92 with the casting then travels forward again to position to receive another box from the carriage.

The operation of the mechanism for completing the box after it has been taken from the carriage is simply briefly described, as this mechanism is well known in the art and will be understood by reference to the patents to Philip S. Smith, Nos. 690,377 and 691,329, dated December 31, 1901, and January 14, 1902, respectively. In other words, after the box has been conveyed by the carriage to one of the covering completing mechanisms, it may be operated upon by well known box-covering mechanisms, such as shown in the patent aforesaid, there being of course two of these covering mechanisms employed and being fed from a common supply mechanism through the agency of the reciprocating carriage. The two mechanisms for completing the covering of the box are placed in operative relation with the common mechanism for partially covering the box through the arrangement herein described, but we wish it of course to be understood that modification and variation may be made in this respect without departing from the spirit of the invention or exceeding the scope of the claims. Of course the single or common mechanism for partially making the covered box is geared and timed to run at twice the speed of the mechanisms for completing the covering of the box, and thus this common mechanism is enabled to supply both of the mechanisms for completing the covering of the box.

What we claim is:

1. In a box covering machine, the combination with means for assembling and applying cover blanks to the exterior walls of box members, of a plurality of mechanisms associated with said means and each capable of applying marginal portions of the cover blanks to the interior walls of the box members received from the assembling and applying means, thereby completing the application of the cover blanks to such box members.

2. In a box covering machine, the combination with means for assembling and applying cover blanks to the exterior walls of box members, of a plurality of mechanisms associated with said assembling and applying means and each mechanism being capable of applying marginal portions of cover blanks to the interior walls of such box members as are received from said assembling and applying means, thereby completing the application of the cover blanks to such box members, and means for alternately transferring partially covered box members from the assembling and applying means to the mechanisms for completing the covering of the boxes.

3. In a box covering machine, the combination with means for assembling and applying a cover blank to the exterior walls of a box member, separate mechanisms located one at each side of said means for applying marginal portions of cover blanks to the interior walls of the box members fed thereto, thereby completing the application of the blank to such box members, and means interposed between the assembling and applying means and the aforesaid mechanism for transferring the partially covered box members from said means to such mechanisms.

4. In a box covering machine, common means for assembling and applying covers to the external walls of box members, thereby partially completing cover boxes, of a plurality of mechanisms each capable of applying marginal portions of the blanks to the interior walls of the box members, thereby completing the application of the covers to the box members, and means for distributing partially covered box members from the common means to the mechanisms for completing the covering of the boxes.

5. In a box covering machine, a plurality of separated mechanisms for applying the marginal edge portions of cover blanks to the interior walls of box members, thereby completing the application of cover blanks to the box members, and means interposed between such mechanisms and adapted to assemble and apply the cover blanks to the exterior walls of the box members, thereby partially covering said box members prior to the delivery of the latter to the mechanisms for completing the covering operation.

6. In a box covering machine, means for applying covers to the exterior walls of the box members, thereby partially covering said box members, of a plurality of separate mechanisms located one at each side of said means, each mechanism being adapted to apply marginal edge portions of blanks to the interior walls of the box members received by such mechanism, thereby completing the operation of covering such received box members, and conveying mechanism for bodily conveying partially covered boxes from the said means to the mechanisms at predetermined times.

7. In a box covering machine, the combination with common means for partially applying covers to boxes, of a plurality of mechanisms located one at each side of said common means, and each of said mechanisms being capable of completing the application of the cover blanks to the boxes and means, including a traveling carriage for transferring partially covered box members from the first mentioned means alternately to the mechanisms for completing the covering of the boxes.

8. In a box covering machine, the combination with means for assembling a cover blank in a predetermined position of registration relative to a box blank, of means for holding the box blank and the cover blank and partially applying the cover blank to the formed box shell, a traveling carriage for receiving the partially covered box shell from the folding and applying means, means mounted on the carriage for folding certain portions of the cover blank against the box shell to stay the corners of the latter, and a plurality of mechanisms adapted to alternately receive the partially covered boxes and complete the box covering operation thereon.

9. In a box covering machine, the combination with a plurality of spaced mechanisms for applying marginal portions of box blanks to the interior walls of box members, thereby completing the application of partially applied covers to the box members, of a traveling carriage operating between such mechanisms for alternately delivering partially covered boxes from a common source of supply to such mechanisms.

10. In a box covering machine, the combination with means for feeding a box blank into a predetermined position relative to a glued cover blank, of devices for folding the box blank into box-like form and partially applying the glued cover to the box blank so folded, means for folding certain portions of the cover blank about the corners of the box blank, mechanism for completing the folding and application of the cover blank to the box, and conveying means for carrying the partially covered box to the aforesaid mechanism for completing the covering operation.

11. In a box covering machine, the combination of means for feeding a cover blank, means for applying glue thereto, means for feeding a box blank into a predetermined position of registration with the cover blank, means acting on the box blank and cover blank to fold the box blank into box-

like form and to partially apply the cover blank thereto, a conveying device for receiving the partially covered box, and mechanism for receiving the partially covered box from the conveying means and for completing the application of the cover to the box.

12. In a box covering machine, the combination with means for feeding a cover blank, means for applying glue to the cover blank, and means for bringing the cover blank to a predetermined position, of means for feeding a box blank to a predetermined position of registration with the glued cover blank, means acting upon the two blanks for folding the box blank into box-like form and for causing the partial application of the cover blank to the box so formed, devices for receiving the partially covered box and for folding certain portions of the cover blank about the corners of the box to stay such corners, conveying means supporting said devices and adapted to carry the box along a predetermined path, and mechanism for receiving the box and completing the covering operation.

13. In a box covering machine, the combination with means for positioning a box blank relative to a glued cover blank, forming devices acting upon the two blanks to form the box blank into box-like form and to cause the application of the glued cover to the bottom and two sides of the box so formed, a traveling carriage, a plurality of members carried by the carriage and adapted to engage corner laps of the cover and to fold the same at the corners of the box to stay such corners, and means for receiving the box from the carriage and completing the application of the cover blank to the box, said means including coöperating form blocks, brushes and presser rollers, tuck-in fingers, and presser blocks, and means for discharging the completely covered box from the machine.

14. In a box covering machine, the combination with means for positioning a box blank relative to a glued cover blank, forming devices acting upon the two blanks to form the box blank into box-like form and to cause the application of the glued cover to the bottom and two sides of the box so formed, a traveling carriage, a plurality of members carried by the carriage and adapted to engage corner laps of the cover and to fold the same at the corners of the box to stay such corners, and means for receiving the box from the carriage and completing the application of the cover blank to the box, said means including coöperating form blocks, brushes and presser rollers, tuck-in fingers, and presser blocks, and suction means for removing the completely covered box from the machine.

15. In a machine of the class described, the combination with means for bending box blanks into box-like form and applying cover blanks to the bottom and two sides of the boxes, of a pair of mechanisms located at opposite sides of the aforesaid means adapted to complete the application of the cover blanks to the boxes, and conveying mechanism for alternately delivering partially covered boxes to the mechanisms for completing the application of the cover blanks.

In testimony whereof we affix our signatures in the presence of two witnesses.

JAMES D. REIFSNYDER.
WILLIAM A. WEIGHTMAN.

Witnesses:
CARL E. SCHAEFFER,
SILAS E. CHILDS.