

C. B. BALDWIN.
BOX COVERING MACHINE.
APPLICATION FILED JAN. 25, 1907.

984,641.

Patented Feb. 21, 1911.

3 SHEETS-SHEET 1.

FIG. 1.

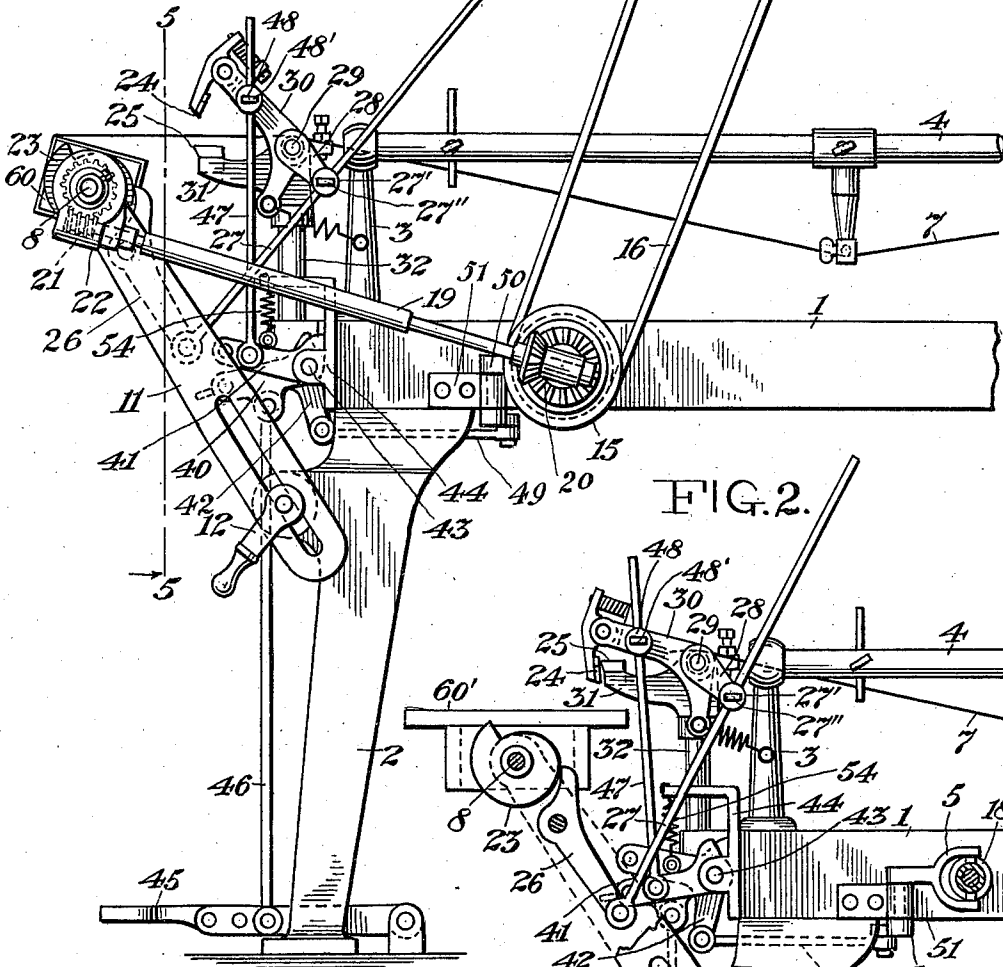


FIG. 2.

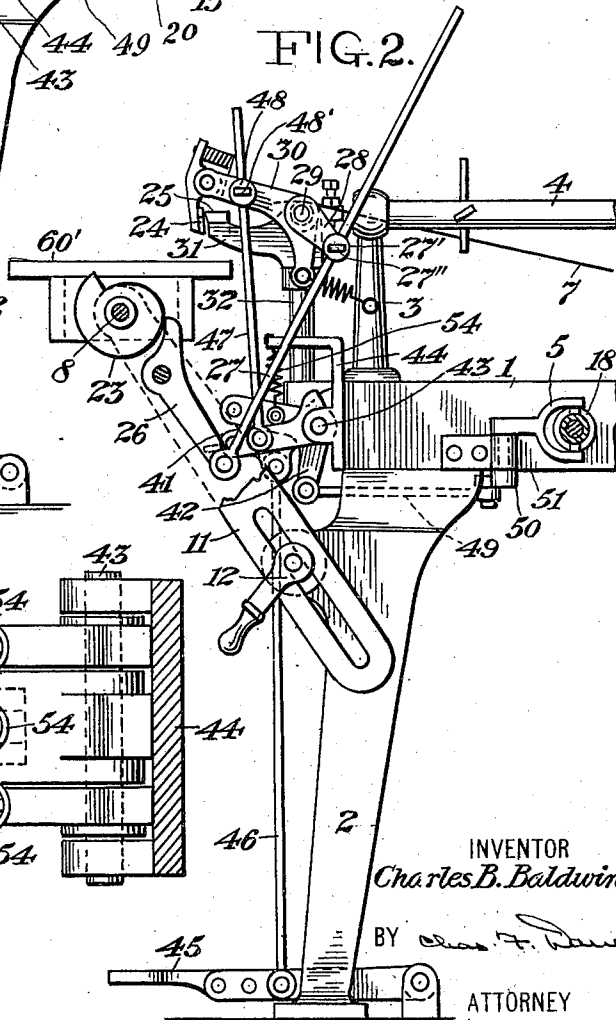
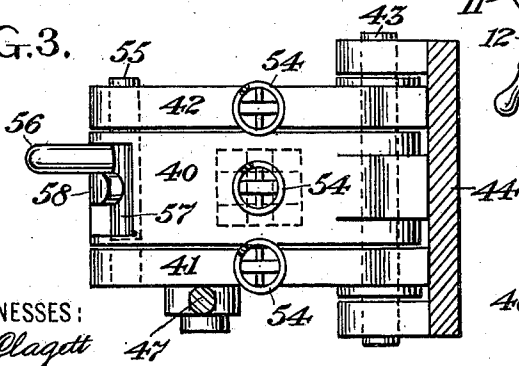


FIG. 3.



WITNESSES:
Chas. Clagett
M. E. Stanton

INVENTOR
Charles B. Baldwin

BY Chas. F. Davis

ATTORNEY

C. B. BALDWIN.
BOX COVERING MACHINE.
APPLICATION FILED JAN. 25, 1907.

984,641.

Patented Feb. 21, 1911.

2 SHEETS—SHEET 2.

FIG. 4.

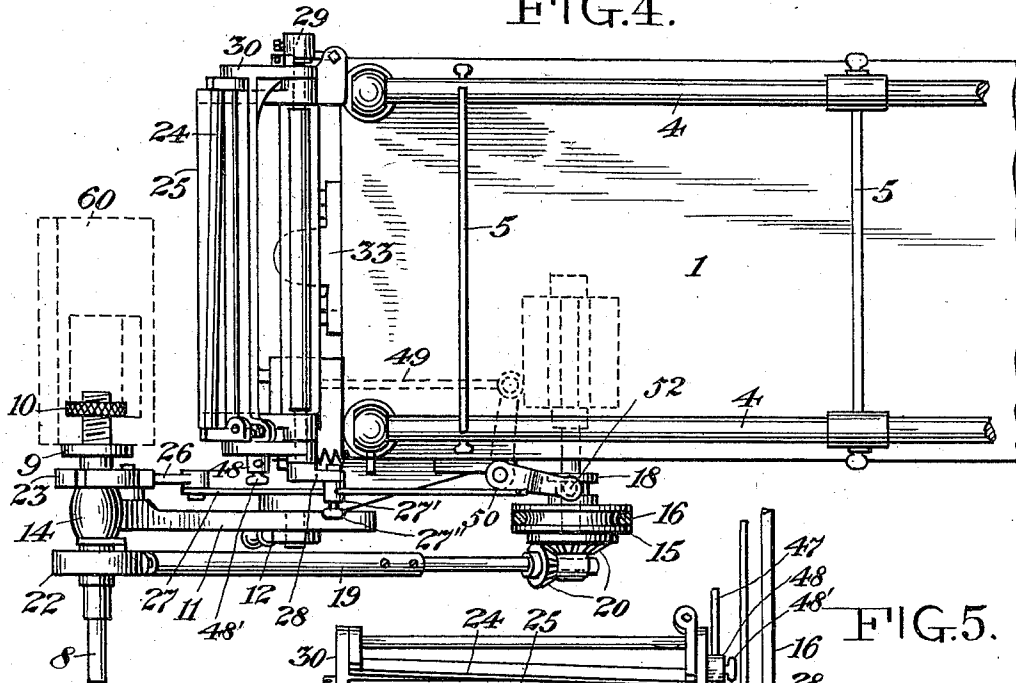
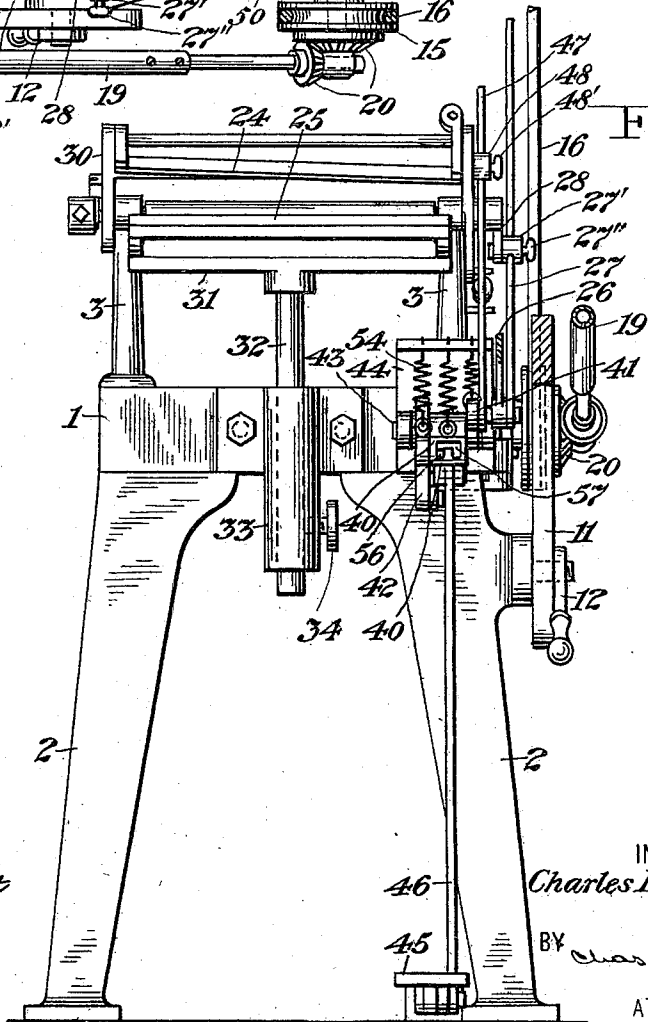


FIG. 5.



WITNESSES:
Chas. J. Claggett
M. Stanton

INVENTOR
Charles B. Baldwin

BY *Chas. F. Daw*
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES B. BALDWIN, OF NEW YORK, N. Y.

BOX-COVERING MACHINE.

984,641.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed January 25, 1907. Serial No. 354,048.

To all whom it may concern:

Be it known that I, CHARLES B. BALDWIN, a citizen of the United States, and resident of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Box-Covering Machines, of which the following is a specification.

In the manufacture of boxes having their exterior surfaces covered by paper or other material applied with an adhesive, two machines are generally employed, viz:—a “stripping” machine for applying the covering material to the side walls of the box, and a “topping” machine for applying the covering material to the top or bottom of the box. This use of the two independent machines and the consequent double handling of the boxes causes much inconvenience and delay in the process of manufacture, besides making it necessary to use a considerable amount of space for temporary storage of the boxes during the time intervening between the completion of the “stripping” process and the beginning of the “topping” or “bottoming” process and also loss of time and labor and liability of damage in handling, when moving the boxes from one machine to the other.

Because of the aforesaid objectionable features attending the use of two independent machines in the complete box-covering operation, it has been the object of my present invention to provide a simple and efficient machine capable of use for performing either one or both of the two covering operations referred to, and thereby providing a more expeditious, convenient and economical means of covering boxes than heretofore.

The invention consists in the novel features of construction and combinations of parts as hereinafter set forth in detail and particularly pointed out in the appended claims.

Referring now to the accompanying drawings forming part of this specification,—Figure 1 is a side elevation of the front end of a box-covering machine embodying my invention. Fig. 2 is a similar view with certain of the parts broken away and showing the remaining operative parts in a different position. Fig. 3 is an enlarged detail showing in top plan certain cutter and clutch operating devices together with means for controlling their action. Fig. 4 is a plan of the machine as shown in Fig. 1. Fig. 5 is

a vertical section through line 5—5 of Fig. 1, looking in the direction indicated by the arrow.

Similar reference characters designate like parts in the several figures of the drawings.

The machine shown in the drawings as embodying my invention is similar in many of its main features to box-covering machines now on the market, the same comprising a body portion or bed 1 supported on legs 2 and having uprights or posts 3 carrying side-bars or rails 4 which in turn support guide rods 5 by which the covering strip 7 is directed in its travel from the supply-reel (not shown) to the cutters, it being understood that this strip will be coated with glue or other adhesive in any known manner before it is delivered to the box or box-blank on the box form or support. This form or support on which the box is placed preparatory to its being covered may be attached in any suitable manner to a rotary carrier, such as the shaft 8, the same in the present case, as indicated by dotted lines in Fig. 4, being adapted to be held in place on said shaft between a flange or collar 9 and a clamp-nut 10. The shaft 8 is mounted in bearings in a bracket support 11 which is movable with respect to the main frame of the machine in order to permit adjustment of the box support with respect to the cutters according to the size of the box to be covered, the said bracket support 11 as herein shown being in the form of a swinging arm pivoted on one of the legs 3 and locked thereto in any desired adjusted position by means of a lever-nut 12. The bearing at the upper end of the arm 11 in which the shaft 8 is mounted is indicated at 14, and at opposite sides of this bearing are located the driving mechanism for turning the shaft 8 and the driven mechanism for controlling the movements of the swinging cutter to be hereinafter described.

The main driver of the machine is herein shown in the form of a grooved pulley 15 which is adapted to be driven from any suitable source of power by a belt 16, as shown in Fig. 1. This pulley shown in Fig. 1 is loosely mounted on its shaft and normally turns idly thereon, but it may be coupled thereto by any suitable clutch device, such as the sliding friction clutch 18, which permits the operator to start and stop the turning of the box support during the “stripping” op-

eration as often as may be necessary. From the said main driver 15 power is transmitted to the shaft 8 by means of adjustable driving connections, which in the present construction shown comprise an extensible side-shaft 19 driven from the main driving shaft by bevel gearing 20, while at its forward end the shaft 19 transmits its movement to the shaft 8 through worm-gearing 21 which is shown as protected by a gear-case 22.

At the inner side of the bearing 14 the shaft 8 is provided with a cam 23 formed with a gradual rise and a quick fall for the purpose of controlling the action of the movable cutter 24 through suitable connections and permitting it to cooperate with the fixed cutter 25 to sever the paper covering strip at the proper point in the box "stripping" operation. The connections between the said cam 23 and the movable cutter, which are so organized as to multiply the drop of the cam 23 and permit the movable cutter to have a working stroke of considerable length, comprise a lever 26, the short arm of which cooperates with the cam and the long arm of which is connected to a link 27, which latter in turn is adjustably connected to a short rock-arm 28 secured to a rock-shaft 29 with which the movable cutter supporting frame 30 is connected to be actuated thereby. With these described connections between the cam 23 and the movable cutter, each complete revolution of the cam, which occurs upon a like movement of the box-support in presenting the several sides of the box to be covered, operates to effect a release of the movable cutter at a proper time to permit it to gravitate toward the fixed cutter and cooperate therewith in severing the covering strip, as shown in Fig. 2, and to thereafter raise the cutter to its normal position for the succeeding box "stripping" operation, as shown in Fig. 1.

The rock-shaft 29 which carries the movable cutter frame 30 is mounted in bearings in the fixed cutter-frame 31 which latter in turn is carried on a standard 32 which is supported in a vertically adjustable position within an opening of a frame bracket 33 by means of a set-screw 34 engaging therewith. By this means the cutting mechanism may be vertically adjusted to suit the requirements of the operator.

The machine as thus far described is more particularly adapted for use as a stripping machine, the same being actuated by clutch-controlled power-operated mechanism. In order to utilize the machine as a topping machine, however, the box support should be stationary and the cutter be manually controllable. The means for adapting the machine for such two-fold use will now be described.

The movable cutter 24 may be connected with its power-actuating mechanism in any

suitable manner to permit of its being actuated independently thereof and by manual means when it is desired to utilize the machine for the box "topping" operation. The means for so connecting the movable cutter with its power-actuating mechanism as shown in the present case comprises the adjustable connection between the link 27 and the cutter rock-shaft arm 28 which may be effected by passing the link loosely through an opening in a pivot-block 27' attached to the arm 28 and adjustably connecting the parts by means of a set-screw 27''. Thus when the machine is to be used as a "topping" machine the said screw will be loosened to permit the cutter to be operated manually and independent of the power mechanism.

As it is desirable that the operator should have the use of both hands in effecting the box covering operation, the power-mechanism clutch in the "stripping" operation and the movable cutter in the "topping" operation should both preferably be controllable by a foot treadle, and as a simple and desirable means for effecting such control of the said parts in the two-fold use of the machine, I have provided three manually-controlled so-called actuators, one of which is connected with the cutter, another with the power-mechanism clutch, and the third with a foot-treadle, and have provided further means for adjustably connecting either of the said cutter or clutch actuators with the treadle-operated actuator according to whether the machine is to be used for "topping" or "stripping" purposes; it being understood that when the machine is to be used for "topping" purposes the cutter-actuator will be connected with the treadle-connected actuator in order to be rendered capable of treadle control, and that the clutch-actuator will be disconnected from the said treadle-connected actuator to render the power-mechanism inoperative and the box-support stationary. On the other hand, when the machine is to be used for "stripping" purposes the said cutter-actuator will be disconnected from the treadle-connected actuator and the clutch-actuator will be connected with the latter to again place the power-mechanism under clutch-control. The three actuators referred to are indicated by the reference numerals 40, 41, 42, and are all pivoted on a shaft 43 carried by a bracket 44 attached to the front end of the machine frame; the treadle-connected actuator 40 having connection with the treadle 45 through the medium of a connecting rod 46, the cutter-actuator 41 having connection with the movable-cutter frame 30 through the medium of a connecting rod 47 and a pivot-block 48 attached to said frame, and the clutch-actuator 42 (herein shown in the form of a bell-crank lever) having connec-

tion with the clutch 18 through the medium of a connecting-rod 49 and a bell-crank lever 50, the latter being pivoted in a frame bracket 51 and having a forked arm 52 for engagement with the clutch within an annular groove therein in usual manner. Suitable means, such as the springs 54 carried by an overhanging arm of the bracket 44 and having connection with each of the three actuators 40, 41, 42, operate to movably hold said actuators and their connecting parts in normal position and to automatically return them to such position after being operated from the treadle. The means shown in the present case for effecting connection with the treadle-connected actuator 40 of either the cutter or clutch actuators, comprise a bolt 55 slidably mounted in said actuator 40 and adapted to be entered at its opposite ends into openings in either the cutter or clutch actuators to effect connection therewith, in manner as clearly illustrated in Fig. 3. A radially-projecting arm 56 on the bolt 55 extending through an elongated slot 57 in the wall of the actuator 40 affords a handle for operating the bolt, and a centrally located wall portion 58 at the lower side of the slot 57 affords a means for engaging with the bolt handle 56 to prevent accidental endwise movement of the bolt from locking position with either the cutter or clutch actuators.

I will now briefly describe the operation of the machine in so far as it relates to the two-fold use of the same.

When the machine is to be used as a "stripping" machine, the screw 48' will preferably be loosened to operatively disconnect the movable cutter from its manually-operated actuator 41, the screw 27" will be tightened or set to operatively connect the cutter with the power-actuating mechanism, and the bolt 55 will be adjusted to connect the clutch 18 with the treadle-connected actuator 40 to place the power mechanism under treadle control. When the machine as thus adjusted is set in operation the box-support carrier will be rotated to revolve the box and have applied to its several side walls the covering strip, and the movable cutter will be operated at the proper time to sever the covering-strip, in usual manner. To now adapt the machine as a "topping" machine, the screw 27" will preferably be loosened to operatively disconnect the cutter from the power mechanism, the screw 48' will be tightened or set to operatively connect the cutter with its manually-operated actuator 41, and the bolt 55 will be adjusted to disconnect the clutch-actuator from the treadle connected or main controller actuator 40 and to connect the cutter-actuator therewith. With the machine as now adjusted, the box-support will be rendered stationary for the support of the

box in the "topping" or end covering operation and the cutter will be manually controllable from the foot-treadle.

The ordinary type of box form or support used in the box stripping operation and indicated at 60 in the drawings may also be used in the box topping operation, or a different type of box support, in the form of a table such as indicated at 60' in Fig. 2 of the drawings, may be substituted for the support 60 during the topping operation.

What I claim is:

1. A box-covering machine comprising a rotary box-support carrier, a movable cutter, power-operated mechanism for actuating said carrier and cutter, means including a connecting-rod and set-screw for effecting adjustable connection between said power-operated mechanism and the cutter, a manually-operated cutter-actuator operative to actuate said cutter when the power-operated mechanism is inoperative, and means including a connecting-rod and set-screw for effecting adjustable connection between said manually-operated cutter-actuator and the cutter.

2. A box-covering machine comprising a rotary box-support carrier, a movable cutter, power-operated mechanism for actuating said carrier and cutter, a manually-operated cutter-actuator operative to actuate the cutter when the power-operated mechanism is inoperative, a controller-actuator, and means for effecting connection of said power-operated mechanism or the manually-operated cutter-actuator.

3. A box-covering machine comprising a rotary box-support carrier, a movable cutter, power-operated mechanism for actuating said carrier and cutter, a manually-operated cutter-actuator operative to actuate the cutter when the power-operated mechanism is inoperative, a controller-actuator, and means for effecting connection of said controller-actuator with either the said power-operated mechanism or the manually-operated cutter-actuator, and a foot-pedal operatively connected with said controller actuator.

4. A box-covering machine comprising a rotary box-support carrier, a movable cutter, power-operated mechanism for actuating said carrier and cutter, a clutch controlling the action of said mechanism, a clutch-actuator, a manually-operated cutter-actuator, a controller-actuator, and means for effecting connection of said controller-actuator with either the said clutch-actuator or the manually-operated cutter-actuator.

5. A box-covering machine comprising a rotary box-support carrier, a movable cutter, power-operated mechanism for actuating said carrier and cutter, a clutch controlling the action of mechanism, a pivoted

clutch-actuator, a pivoted manually-operated cutter-actuator, a pivoted controller-actuator, and means for effecting connection of said controller-actuator with either the
5 said clutch-actuator or the manually-operated cutter actuator.

6. A box-covering machine comprising a rotary box-support carrier, a movable cutter, a power-operated mechanism for actuating said carrier and cutter, a clutch controlling the action of said mechanism, a clutch-actuator, a manually-operated cutter-actua-

tor, a controller-actuator, and a bolt slidably supported by the controller-actuator and being movable to engage with either the said
15 clutch-actuator or the manually-operated cutter-actuator.

Signed at New York, in the county of New York and State of New York, this
27th day of November, A. D. 1906.

CHARLES B. BALDWIN.

Witnesses:

CHAS. F. DANE,
M. E. STANTON.