

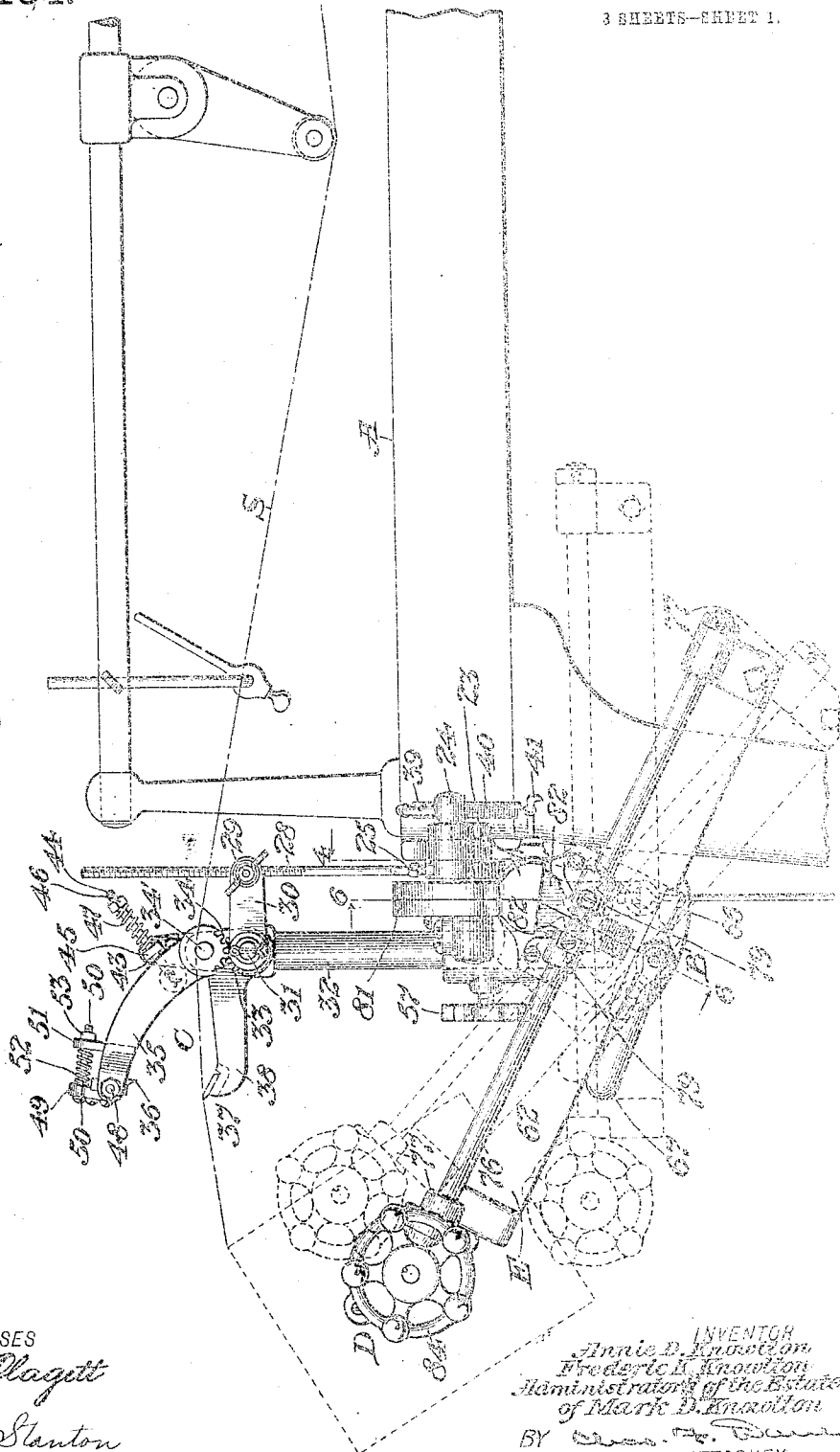
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A. D. & F. K. KNOWLTON, ADMINISTRATORS.
BOX COVERING MACHINE.
APPLICATION FILED FEB. 11, 1907.

1,037,154.

Patented Aug. 27, 1912.

3 SHEETS—SHEET 1.

Fig. 1



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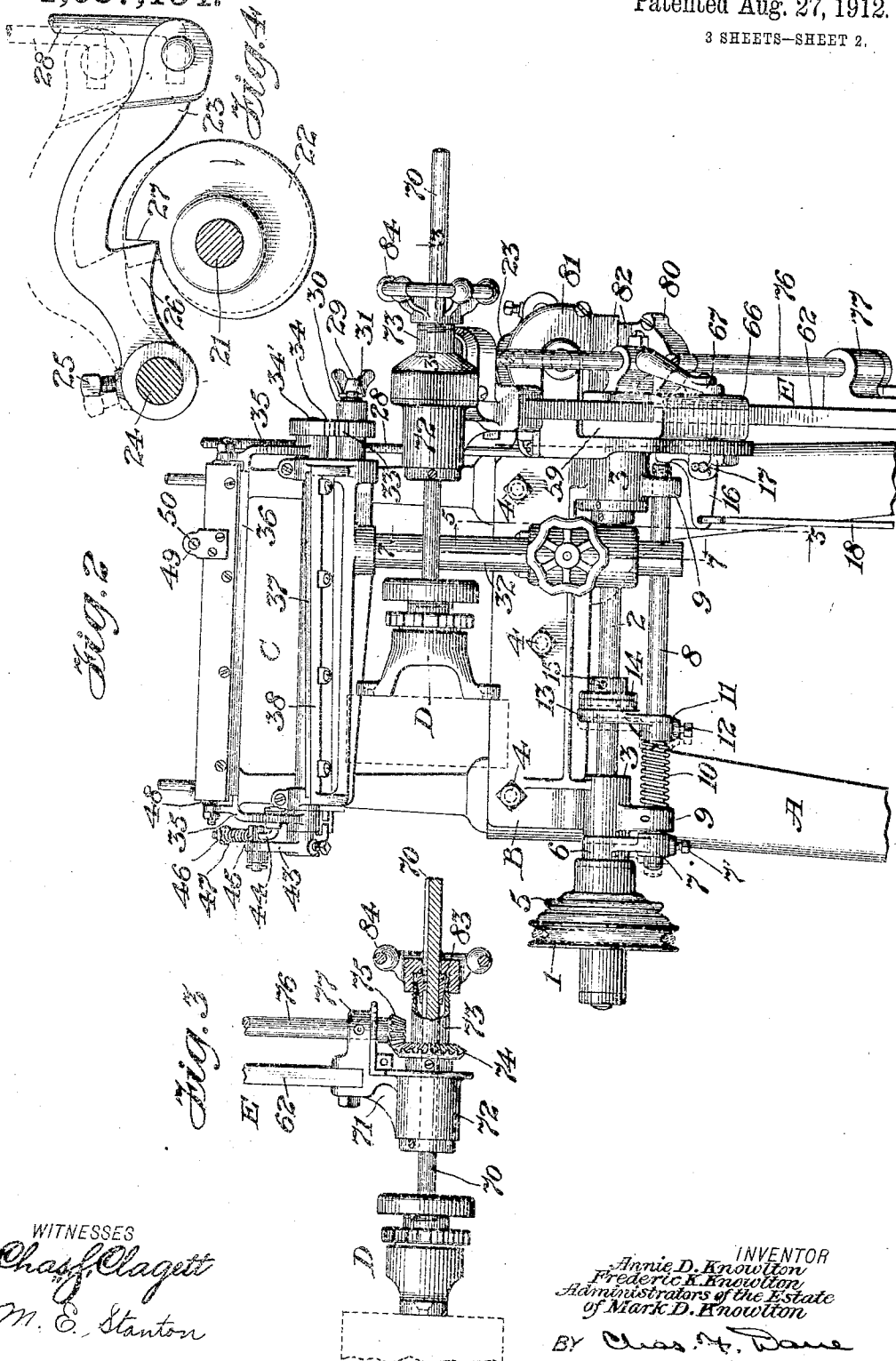
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3 SHEETS—SHEET 2.

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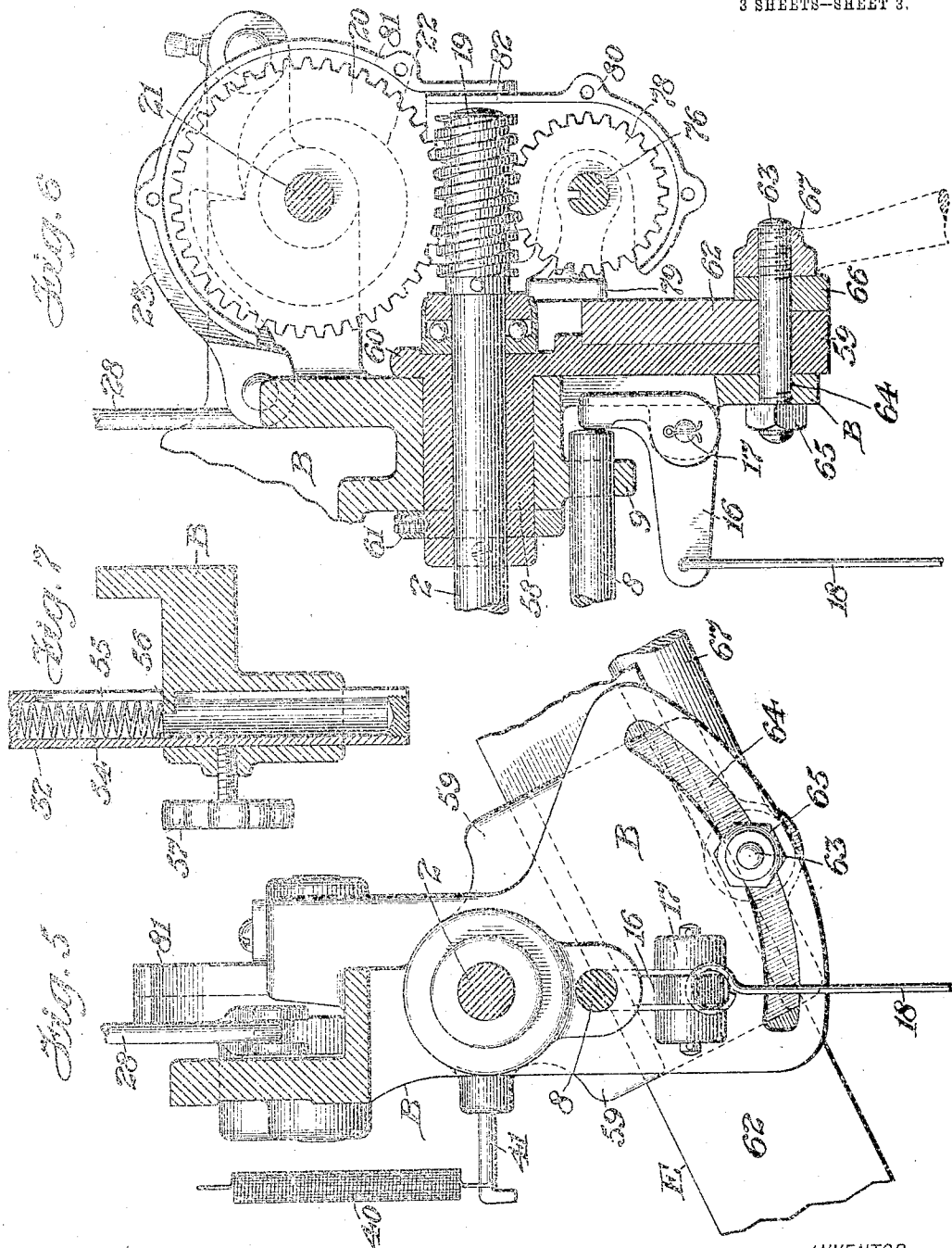
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FOX COVERING MACHINE.
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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BOX-COVERING MACHINE.

1,037,154.

Specification of Letters Patent.

Patented Aug. 27, 1912.

Application filed February 11, 1907. Serial No. 356,883.

To all whom it may concern:

Be it known that MARK D. KNOWLTON, late a citizen of the United States, and resident of Rochester, Monroe county, State of New York, now deceased, did invent certain new and useful Improvements in Box-Covering Machines, of which the following is a specification.

This invention relates to that class of machines adapted for applying a covering strip of paper or other material to paper or straw-board boxes and the like.

Machines of this class usually comprise a main supporting frame upon which are supported in proper relative positions, the reel for carrying the covering-strip, the means for rendering the stay-strip adhesive, the rotatable carrier for the box-form on which the boxes to be covered are placed, the guides for directing the covering-strip from the reel to the box-form, the "cut-off" for severing the covering-strip into proper lengths for the boxes to be covered, and the mechanism for actuating the box-form carrier and the cut-off. Of these several elements the box-form carrier and the cut-off with their actuating mechanism are the parts most subject to wear and consequently the parts most often requiring replacement; and it has therefore been one of the main objects of the present invention to improve this class of machines by associating the box-form carrier and the cut-off with their actuating mechanism in the form of an attachment that may be readily attached to or detached from the frame of any usual form of box-covering machine.

Another important object of the invention is to improve this class of machines by rendering the box-form carrier and the cut-off capable of any desired adjustments to meet the requirements of either the work or the operator, and by permitting such adjustments to be effected in a simple and easy manner.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides, first, in the provision, as a new article of manufacture, of an attachment, comprising the box-form carrier and the cut-off with their actuating mechanism, that may be readily attached

to or detached from the frame of any usual box-covering machine; second, in the provision of means for permitting the box-form carrier to be adjusted in a direction longitudinally of the cutters, whereby the box-form and supported box may be brought to a position in line with the covering strip at whatever point it is advanced from between the cutters; third, in the provision of a simple and efficient mechanism for operating the box-form carrier and cut-off; fourth, in the provision of a simple and efficient means for permitting pivotal and longitudinal adjustments of the holder for the box-form carrier; and fifth, in the provision of counter-balance means for facilitating the adjustment of the cut-off.

The invention also resides in certain other features of construction and combinations of parts all to be hereinafter referred to in the detailed description of the invention which follows:

In the accompanying drawings forming part of this specification, Figure 1 is a side elevation of the front end of the box-covering machine provided with the improvements constituting the present invention. Fig. 2 is an end elevation thereof. Fig. 3 is a detail, partly in section on the line 3-3 of Fig. 2, showing the means for adjusting the box-form carrier laterally with respect to its holder. Fig. 4 is an enlarged detail, taken in section on the line 4-4 of Fig. 1, showing a portion of the cut-off actuating mechanism. Fig. 5 is an enlarged detail, taken in section on the line 5-5 of Fig. 2, showing a portion of the means for permitting pivotal and longitudinal movement of the holder for the box-form carrier. Fig. 6 is an enlarged sectional detail, on the line 6-6 of Fig. 1, showing a portion of the actuating mechanism for the cut-off and the box-form carrier. Fig. 7 is an enlarged section on line 7-7 of Fig. 2, showing the counter-balance means for facilitating the vertical adjustment of the cut-off.

Like reference characters indicate corresponding parts on the different figures of the drawings.

The reference letter A indicates a portion of the frame of a box-covering machine, which may be of any suitable form and con-

struction to support the usual elements of a box-covering machine. As hereinbefore intimated, one of the main features of the present invention resides particularly in the association of the cut-off and the box-form carrier with their actuating mechanism in the form of an attachment that may be readily bolted or otherwise detachably secured to the box-covering machine frame. It will be apparent, therefore, that any old and usual form of box-covering machine may be readily and conveniently equipped with the improvements of the present invention by merely bolting or otherwise securing the attachment to the frame thereof, and that consequently, in the event of any of the mechanism carried by the attachment becoming unduly worn or broken, new mechanism may be readily supplied by removing the old attachment and substituting a new one.

The reference letter B indicates the frame of the improved attachment, which is adapted to be bolted or otherwise secured to the frame A of a box-covering machine; C indicates generally the cut-off for severing the covering-strip of paper or other material; D indicates generally the box-form carrier; and E indicates generally the holder for the box-form carrier, which holder is capable of pivotal and longitudinal movement for the purpose of adjusting the position of the box-form relatively to the cut-off according to the size and form of the box being covered, and also for the further purpose of adjusting the height and general location of the box-form according to the convenience of the operator.

The mechanism for operating the box-form carrier and the cut-off preferably includes a main driver in the form of a belt-wheel 1, which, as shown in Fig. 2, is loosely mounted upon a main shaft 2, mounted in journals 3 of the frame B of the attachment, which frame, in the present case, is shown as secured to the box-covering machine frame A by means of bolts 4. The said belt-wheel 1, which is adapted to be driven from any suitable source of power and have a continuously rotating movement on the shaft 2, normally turns idly on said shaft, but it may be coupled thereto when it is desired to operate the machine, by any suitable clutch device, such as the friction member or disk 5, which is splined or keyed on the shaft 2, and is adapted to be pressed against the belt-wheel 1 to couple the shaft 2 therewith. The means for pressing the friction member 5 into clutching engagement with the belt-wheel 1 preferably comprises a sleeve 6, which loosely surrounds the shaft 2 adjacent to the hub of the member 5, and is provided with an arm 7 adjustably connected in any suitable manner, as by means of the set-screw 7', with a push-rod 8 mount-

ed for sliding movement in hangers 9 connected with the frame B. The push-rod 8 is forced normally to the right in Fig. 2, with the member 5 released from clutching engagement with the belt-wheel 1, by means of a spring 10 which abuts at one end against one of the hangers 9, and at the other end against a sleeve or collar 11, adjustably fixed on the push-rod 8 by means such as the set-screw 12. The sleeve or collar 11 is preferably provided with an arm 13 which loosely surrounds the main shaft 2 for frictional engagement with a collar 14 adjustably fixed on said main shaft by means of a set-screw 15, the said arm 13 serving as a brake member for engaging the collar 14 to quickly stop rotation of the same and its driven parts upon the release of the clutch member 5 from coupling engagement with the belt-wheel 1. In the operation of the machine, when it is desired to start the machine, the push-rod 8 is moved to the left in Fig. 2, thereby releasing the brake member 13 from braking engagement with the collar 14 and forcing the clutch member 5 into clutching engagement with the belt-wheel 1; and when it is desired to stop the machine, the push-rod 8 is released and thereupon automatically moved to the right by the spring 10 to release the member 5 from clutching engagement with the belt-wheel 1 and move the brake member 13 into braking engagement with the collar 14. Any suitable means may be employed for operating the push-rod 8 to move the same against the tension of the spring 10, the means herein shown for such purpose comprising a bell-crank lever 16 suitably pivoted on the frame B of the attachment at 17 and being adapted to be operated by a rod 18 having connection with a treadle or other operating element (not shown), by means of which the main shaft 2 may be thrown into and out of operation at the will of the operator, as will be apparent.

The means for operating the cut-off C from the main shaft 2, as shown particularly in Figs. 4 and 6, includes a worm 19 fixed on the shaft 2 and meshing with a worm-wheel 20 fixed on a stud-shaft 21, suitably journaled in the frame B. Fixed on the said shaft 21 adjacent to the worm-wheel 20 is a cam member 22, which coöperates with a lever 23 which is mounted at one end on a rock-shaft 24 suitably journaled in the frame B, the said lever being rigidly secured to the said rock-shaft by means of a set-screw 25. The form of the cam member 22 and the coöperating lever 23 is such that the rotation of the cam member will first raise the lever 23 slowly and then permit it to drop suddenly when the projection 26 of the lever passes the shoulder 27 of the cam member; such operation

of the lever 23 serving to control the action of the cut-off as will hereinafter be referred to. Suitably connected with the lever 23 is an upwardly-extending rod 28, which is adjustably connected in any suitable manner, as by means of the clamping device 29, with a lever 30, suitably fulcrumed at 31 upon the vertically-adjustable support 32 of the cut-off C. The lever 30 is provided with gear-teeth 33, which mesh with similar teeth 34 on a rock-shaft 34' to operate the latter, the said rock-shaft having operatively connected thereto the frame 35 of a gravity-actuated, movable cutter 36, adapted to cooperate with a stationary cutter 37 mounted on a frame 38 connected with the vertically-adjustable frame 32 of the cut-off. With this described combination of parts, it will be understood that the rotation of the cam 22 operates to first raise the lever 23, which, through the rod 28 and lever 30, rocks the shaft 34' in the proper direction to raise the frame 35 and supported cutter 36. As soon as the projection 26 of the lever 23 passes the shoulder 27 of the cam 22, the lever 23 drops down into the full-line position of Fig. 4, thus permitting the cutter 36 to drop by gravity and cooperate with the cutter 37 to sever the in-

terposed covering strip of paper or other material S, illustrated by the broken line in Fig. 1.

For the purpose of imparting a quick initial downward movement to the gravity-actuated cutter 36 upon its release by the cam 22, the pivot member or rock-shaft 24 of the lever 23 is provided with a laterally-extending arm 39, with which is connected the upper end of a spring 40, the lower end of which is secured to a pin 41 rigidly connected with the frame B of the attachment, whereby, when the projection 26 of the lever 23 passes the shoulder 27 of the cam 22, the spring 40 will impart a quick initial downward movement to the lever 23 and transmit a corresponding movement to the cutter 36 on its downward working stroke.

In operating box-covering machines it is sometimes desirable to operate the movable cutter by hand, independent of its power actuating mechanism. In order to permit this operation, the shaft 34', which is journaled on the support 32 and carries the gear-teeth 34, is provided with a rigidly-connected upwardly-extending arm 43, and the frame 35 of the movable cutter 36 is pivotally mounted on the shaft 34', and is yieldingly connected with said arm 43 by a rod 44 extending through a lug 45 on the arm 43 and being provided with a nut 46, between which latter and the lug 45 is interposed a spring 47 supported on the rod 44. This construction provides a yielding connection between the cutter frame 35 and the

shaft 34' which is operative to cause the cutter frame to be normally movable with the said shaft, but which permits it to be capable of independent movement by hand whenever it is so desired.

In order to permit the movable cutter 36 to be properly adjusted for cooperation with the stationary cutter 37, said cutter 36 is pivotally mounted on the frame 35 in any suitable manner, as indicated at 48, and is provided with an arm 49, with which is connected a rod or bolt 50, which extends loosely through a lug 51 on the frame 35, and is provided with a coil-spring 52 and a nut 53; the said coil-spring expanding between the arm 49 and the lug 51 to permit of a yielding movement of the cutter 36 when cooperating with the stationary cutter, and the said nut 53 serving as an adjustable stop for engagement with the lug 51 to limit the movement of the cutter under the action of the said spring. By turning the nut 53 on the rod 50, the position of the cutter 36 may be adjusted, as will be apparent.

In order to facilitate the raising of the cut-off C, counter-balance means are employed, which, as shown in Fig. 7, preferably are in the form of a coil-spring 54 which is mounted in the tubular stem or support 32 of the cut-off with one end bearing against the upper end wall of said support and its other end bearing against a fixed projection 56 on the frame B, which projection extends through a longitudinal slot 55 in the support to prevent turning of said support in the socket or opening forming its bearing in the frame B. In effecting a vertical adjustment of the cut-off, the spring 54 will be compressed when the cut-off is lowered, and will consequently serve as a counter-balance means to facilitate any subsequent raising of the cut-off, the said cut-off being held stationary in adjusted position by suitable fastening means, such as the set-screw 57.

The means shown in the present case for supporting the holder H for the box-form carrier in a manner to permit of its pivotal and longitudinal adjustments, are as follows: A pivotally mounted frame or support for the holder is provided, which is best shown in Figs. 5 and 6 as comprising a sleeve or bushing 58 loosely surrounding the main shaft 2 within one of the hangers 9 of the frame B and having a depending bracket extension 59, the said sleeve or bushing 58 being retained in connection with the hanger 9 by means of a flange 60 at one end thereof engaging one side of the hanger, and a collar 61 at its other end engaging the opposite side of the hanger. The said bracket extension 59 of this support is preferably provided at one side thereof with a suitable way within which is slidably mount-

ed a bar 62 which forms the main element of the holder E for the box-form carrier D. Any suitable means may be provided for locking the said holder E in adjusted position; a single means preferably being provided that is operative at one operation to effect the locking of the holder with respect to both its pivotal and sliding adjustments. The means provided in the present case for such purpose comprises a bolt 63 mounted in the pivotal or oscillatory support 59, with one end extending through a segmental or arc-shaped slot 64 in the frame B and having a head or nut 65 for engagement with said frame, and its other end carrying a retaining member 66 for engagement with the bar 62, and a clamping member in the form of a lever-nut 67. By loosening the clamping member 67, the support 59 may be rocked or oscillated about the shaft 2 to permit of an upward or downward pivotal movement of the holder E with respect to the cut-off C, and the said holder E may be given a sliding longitudinal movement on the support 59 to permit of its adjustment in a generally horizontal plane toward and from the cut-off C. By tightening the clamping member 67, it will cooperate with the nut 65 to clamp the interposed parts and lock the bar 62 of the holder E against sliding movement on the support 59, and also lock the support 59 in connection with the frame B against pivotal or oscillatory movement on the shaft 2.

The means for mounting the box-form carrier D upon its holder E includes a bracket 71 attached to one end of the bar 62 of said holder, as shown particularly in Fig. 3, and having a journal-bearing 72 in which is rotatably mounted a sleeve or hollow shaft 73 adapted to receive therethrough the attaching spindle 70 of the box-form carrier; the said spindle 70 being adapted to be adjustably coupled to the shaft 73 in a manner to be hereinafter referred to.

The means employed in the present case for rotating the shaft 73 and connected box-form carrier from the main shaft 2, comprises a bevel-gear 74, fixed on the shaft 73, and meshing with a gear 75, fixed on a shaft 76, which is mounted in bearings 77, 77, connected to the bar 62 of the holder E. Splined or keyed on the shaft 76 is a worm-gear 78 which, as shown in Fig. 6, is constantly in mesh with the worm 19 on the main shaft 2 to be operated therefrom, the said worm-gear 78 being splined on the shaft 76 to permit longitudinal movement of the latter with the holder E, and being held in mesh with the worm 19 by means of two oppositely-engaging bracket sleeves 79, 79, connected to the pivotal support 59. With this described combination of parts, it will be understood that the worm-gear 78 will

impart rotation to the shaft 76 from the worm 19 on the main shaft 2, and at the same time permit of any desired longitudinal adjustment of the holder E and connected parts relative to said worm-gear. The gears 78 and 20, as shown, are preferably inclosed in casings 80 and 81 respectively, the said casings being formed with extensions 82 arranged with one extending loosely into the other to provide a casing for the intermediate worm 19.

For the purpose of permitting the box-form carrier D to be adjusted in a direction longitudinally of the cutters, the spindle 70 of said carrier, as more clearly shown in Fig. 3, extends loosely through the hollow shaft 73 and is provided with a coned bushing or expanding block 83 splined thereon, with which cooperates a hand-wheel 84 that is threaded on the end of the shaft 73 for engagement with said expanding block. By loosening the hand-wheel 84, the spindle 70 of the box-form carrier, together with the supported box-form, can be adjusted laterally on the holder E in a direction longitudinally of the cut-off, and by tightening the hand-wheel 84 so as to force the expanding block 83 into the end of the hollow shaft 73, the spindle 70 can be locked securely to the shaft 73 so as to rotate therewith. The advantage of having the box-form carrier adjustable in a direction longitudinally of the cut-off is, first, that it enables the operator to readily bring the box-form to any position opposite the cut-off at which the covering-strip may be advanced therefrom; and second, that it also enables the strip to be brought between the cutters at the sharpest portions of the same.

Various, and more or less material, modifications of this invention may be made within the scope of any one or more of the appended claims.

What I claim is:—

1. A box covering attachment comprising a frame having provision for detachable connection thereof to a fixed machine frame, a rotary box-form carrier and a covering strip cut-off carried by the detachable frame, and independent means also carried by said detachable frame to actuate both said carrier and said cut-off.

2. A box covering attachment comprising a frame having provision for detachable connection thereof to a fixed machine frame, a rotary box-form carrier and a strip cutting device carried by said detachable frame, and independent power operated mechanism also carried by said detachable frame to actuate the carrier and the strip cutting device.

3. A box covering attachment comprising a frame, means for securing said frame to and alongside one end of a suitable support-

ing frame, in detachable relation with the latter, a rotary box-form carrier and a strip cutting device carried by the detachable frame, and independent operating means carried by the detachable frame to operate said box-form carrier and said strip cutting device.

4. A box covering attachment comprising a frame, means to detachably secure said frame to and alongside one end of a supporting machine frame, a cut-off comprising a stem rising from said detachable frame, a rotary box-form carrier mounted on the detachable frame, and independent power operated mechanism on the detachable frame to actuate both the box-form carrier and the cut-off.

5. In a box covering machine, the combination with a main supporting frame, of an auxiliary frame having provision for securing it detachably to one end of said main frame, a box-form carrier mounted on the detachable frame, a strip cutting device also mounted on said frame, and independent power operating mechanism on said detachable frame to actuate the box-form carrier and said strip cutting device.

3. In an attachment for box-covering machines, the combination of a rotary box-form carrier, a pivotally-mounted support, a holder for the box-form carrier slidably mounted on said support for pivotal and longitudinal adjustment, and power operated means carried by said attachment for positively rotating said box form carrier irrespective of its adjustment.

7. In a box-covering machine, the combination of a rotary box-form carrier, a pivotally-mounted support, a holder for the box-form carrier slidably mounted on said support for pivotal and longitudinal adjustment, and driving means for said box form carrier, comprising a shaft having its axis coincident with the axis of said support.

8. In an attachment for box-covering machines, the combination of a rotary box-form carrier, a fixed frame, a pivotally-mounted support located in juxtaposition to said fixed frame, a holder for the box-form carrier slidably mounted on said support for pivotal and longitudinal adjustment, and driving means for said box form carrier carried by said attachment and comprising a shaft journaled in said frame and operatively connected with said carrier irrespective of the adjustments of the latter.

9. In a box-covering machine, the combination with a rotary box-form carrier, of adjustable supporting means therefor, comprising a fixed frame having an arc-shaped slot therein, a pivotally-mounted support located in juxtaposition to said fixed frame, a holder for the box-form carrier slidably mounted on said support for pivotal and

longitudinal adjustment, clamping means carried by the said support and cooperating with the said fixed frame through the arc-shaped slot therein for securing the support and the holder in stationary adjusted position, and power operated driving means for rotating said carrier irrespective of its pivotal and longitudinal adjustments.

10. In an attachment for box-covering machines, a rotary box form carrier, means for mounting said carrier for bodily movement about a fixed pivot, and means carried by said attachment for driving said carrier irrespective of such movement.

11. An attachment for box covering machines, comprising a box form carrier, a slidably and pivotally adjustable holder therefor, and a single means carried by said attachment for rotating said carrier in all of its adjustments.

12. In a box-covering machine, a main frame, a subsidiary frame detachably connected to one end of said main frame at the upper part of the latter and projecting beyond said end, a cut-off rising from said detachable frame, a support on the latter projecting out from the end of the main frame, a box form carrier on said support, and independent means mounted on said detachable frame for actuating both said box form carrier and said cut off.

13. In an attachment for box-covering machines, a main driving shaft having fixed bearings, a pivotally mounted holder, a box form carrier on said holder, and means carried by said attachment for rotating said box form carrier from said driving shaft irrespective of the position of the box-form holder.

14. In a box-covering machine, a main driving shaft having fixed bearings, a pivotally and slidably adjustable holder, a rotary box form carrier on said holder, and a geared driving connection between said carrier and said shaft, operative irrespective of the adjustments of said holder.

15. In a box-covering machine, the combination with a main driving shaft, and a rotary box-form carrier, of a pivotally-mounted support having its axis coincident with that of the main shaft, a holder for the box-form carrier slidably mounted on said support, and means for operating the box-form carrier from the main shaft, comprising a counter-shaft mounted on the said holder to be movable therewith.

16. In a box-covering machine, the combination with a main driving shaft, and a rotary box-form carrier, of a pivotally-mounted support having its axis coincident with that of the main shaft, a holder for the box-form carrier slidably mounted on said support, and means for operating the box-form carrier from the main shaft, com-

prising a counter-shaft mounted on the said holder to be movable therewith, and a gear-wheel operatively connecting said counter-shaft with the main shaft.

17. In a box-covering machine, the combination with a main driving shaft, and a rotary box-form carrier, of a pivotally-mounted support having its axis coincident with that of the main shaft, a holder for the box-form carrier slidably mounted on said support, and means for operating the box-form carrier from the main shaft, comprising a counter-shaft mounted on the said holder to be movable therewith, and a gear-wheel operatively connecting said counter-shaft with the main shaft and being held by the pivotally-mounted support in operative relation to the main shaft against longitudinal movement with the counter-shaft.

18. In a box-covering machine, the combination with a main driving shaft provided with a worm, and a rotary box-form carrier, of a pivotally-mounted support having its axis coincident with that of the main shaft, a holder for the box-form carrier slidably mounted on said support, and means for operating the box-form carrier from the main shaft, comprising a counter-shaft mounted on said holder to be movable therewith, and a gear-wheel slidably mounted on the counter-shaft in mesh with the worm on the main shaft and being held by the pivotally-mounted support in operative mesh with said worm on the main shaft against longitudinal movement with the counter-shaft.

19. In a box-covering machine, the combination with a cut-off and a box-form carrier, of a pivotally and slidably mounted holder for the box-form carrier, a spindle secured to the box-form carrier and adjustable in said holder to provide for the adjustment of the box-form carrier longitudinally of the cut-off, and means located adjacent the pivot of the box-form carrier holder and comprising devices mounted on said holder, to rotate said box-form carrier in all of its various adjustments.

20. In a box-covering machine, the combination with the cut-off, of a box-form carrier, and a pivotally-mounted longitudinally-adjustable holder for said carrier, the said carrier being adjustable on its holder in a direction longitudinally of the cut-off, and gearing on the holders and the box-form carrier respectively for actuating said carrier.

21. In a box-covering machine, the combination with a box-form carrier having a spindle, of a holder for said carrier, a rotatable sleeve or hollow shaft mounted on said holder to receive the carrier spindle therethrough, and hand wheel operated means for securing the box-form spindle in adjusted connection with the said sleeve or shaft.

22. In a box-covering machine, the combination with a rotary box-form carrier, of an adjustable cut-off having a tubular stem, and counter-balance means located in said cut-off stem and being cooperative with the cut-off to facilitate its adjustment.

23. In a box-covering machine, the combination with a rotary box-form carrier, of a vertically adjustable cut-off having a tubular stem, and a spring counter-balance located in said cut-off stem and being cooperative with the cut-off to facilitate its adjustment.

24. In a box-covering machine, the combination with a rotary box-form carrier, of a supporting frame having an opening or socket therein, and a cut-off having a stem adjustably supported within the opening or socket of said frame, the said frame and cut-off stem having cooperative means for holding the cut-off stem against rotary movement during adjustment of the cut-off.

25. In a box-covering machine, the combination with a rotary box-form carrier, of a supporting frame having an opening or socket and a projection, a cut-off provided with a tubular stem adjustably supported within the opening or socket of said supporting frame and having an elongated slot therein receiving the projection on said supporting frame, and a counter-balance spring located within the tubular stem of the cut-off and being cooperative with the said stem and with the said projection of the supporting frame to facilitate the adjustment of the cut-off.

26. In a box-covering machine, the combination with a rotary box-form carrier, and a cut-off, of actuating means for said carrier and cut-off comprising a main shaft having a worm, two gears in operative mesh with said worm to be driven thereby, means for transmitting movement from one of said gears to the carrier, and means for transmitting movement from the other of said gears to the cut-off.

27. In a box-covering machine, the combination with a rotary box-form carrier, of a cut-off embodying a movable cutting member, of a frame carrying said cutting member, a rock-shaft carrying said cutter frame and being provided with gear-teeth, a rock-lever carrying gear-teeth in mesh with said gear-teeth of the rock-shaft, a driving shaft, and means for operating the rock-lever from the driving shaft.

28. In a box-covering machine, the combination with a rotary box-form carrier, of a cut-off embodying a movable cutting member, a frame carrying said cutting member, a rock-shaft carrying said cutter frame and provided with gear-teeth, a rock-lever carrying gear-teeth in mesh with said gear-teeth of the rock-shaft, a driving shaft, and means including a cooperating cam and

lever for operating the said rock-lever from the driving shaft.

29. In a box-covering machine, the combination with a rotary box-form carrier, of a cut-off embodying a movable cutting member, a frame carrying said movable cutting member, a rock-shaft on which said frame is pivotally mounted, and means yieldingly connecting the cutter frame with the rock-

shaft, including a spring and means for adjusting the tension of said spring.

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