(No Model.) 5 Sheets—Sheet 1.

L. WESTON.

PAPER BOX COVERING MACHINE.

No. 296,257. Patented Apr. 1, 1884.

Fig 2.

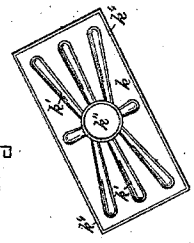


Fig 1.

Witnesses
Henry Chadbourn.
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by Wm. Gaudreau
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N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 5 Sheets—Sheet 2.

L. WESTON.

PAPER BOX COVERING MACHINE.

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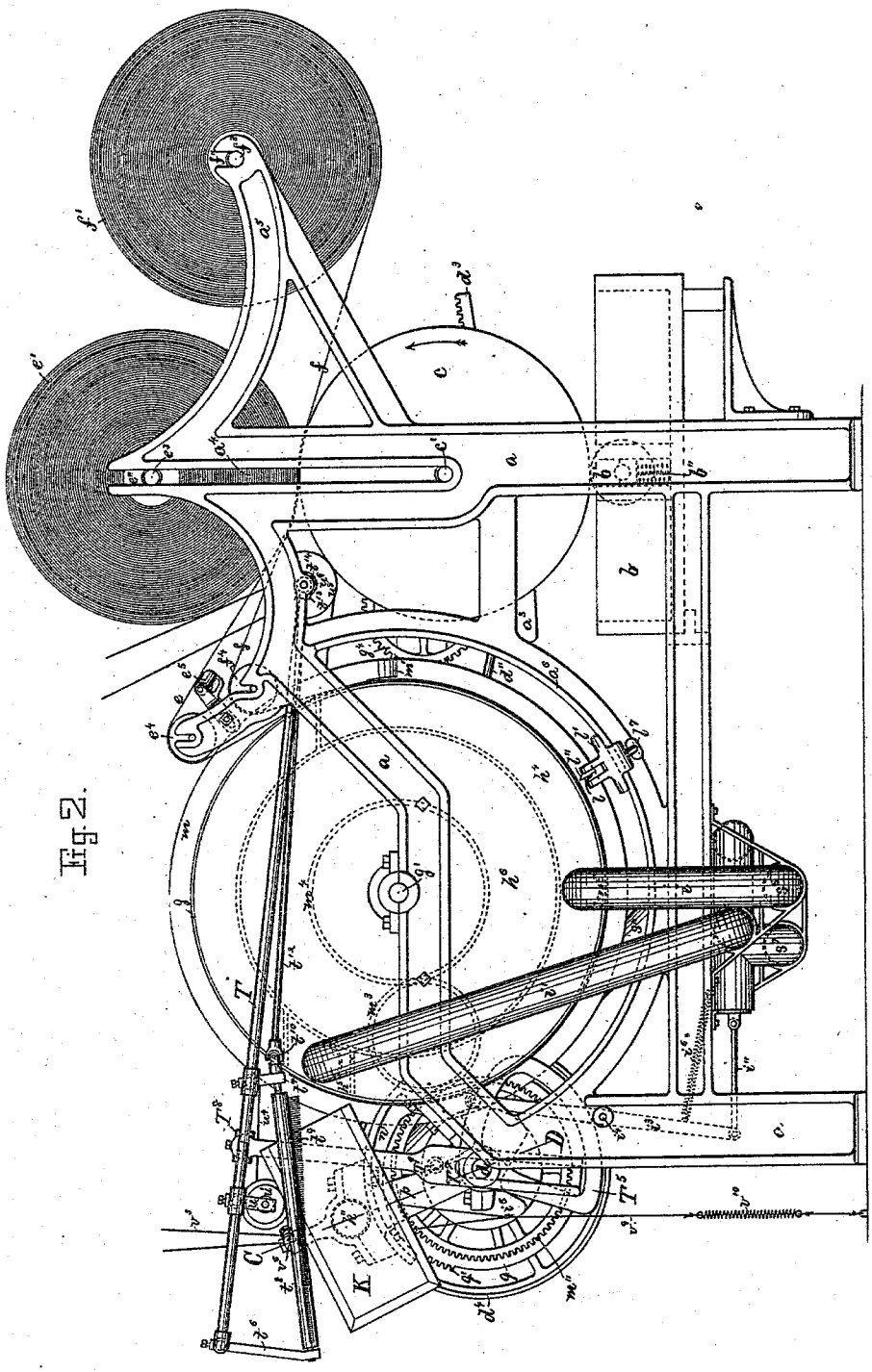


Fig. 2.

Witnesses
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L. WESTON.

PAPER BOX COVERING MACHINE.

No. 296,257. Patented Apr. 1, 1884.

Fig. 7.

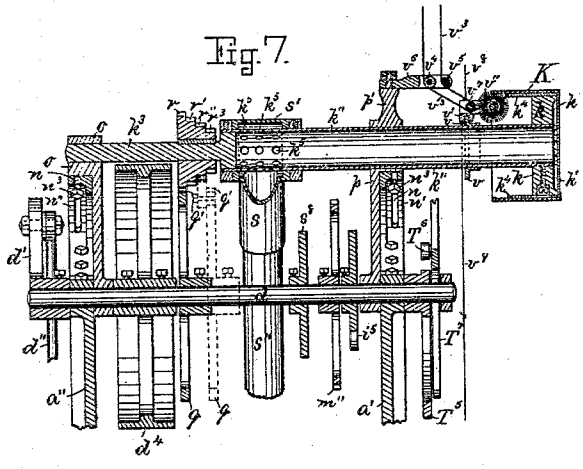


Fig. 8.

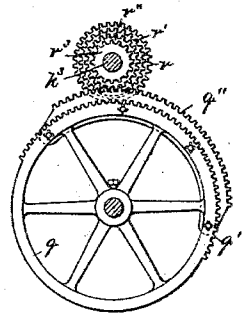
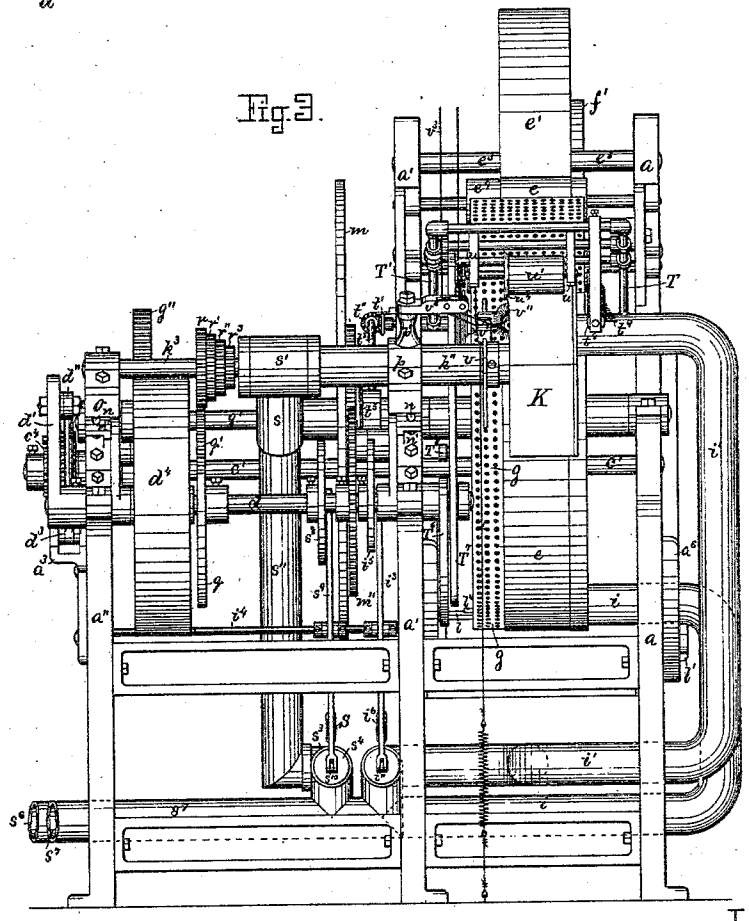


Fig. 9.



Witnesses
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L. WESTON.

PAPER BOX COVERING MACHINE.

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Fig. 5.

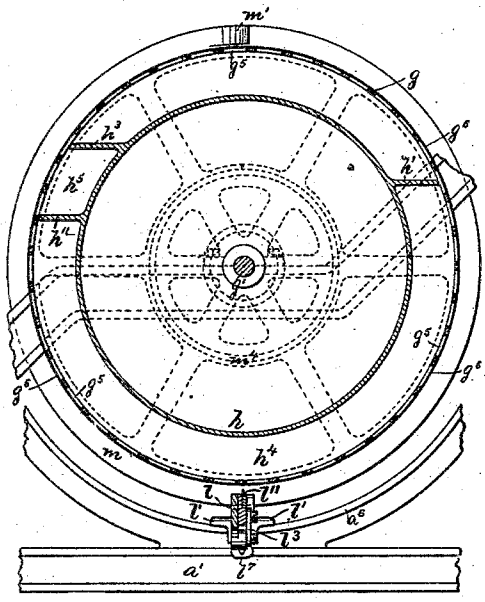


Fig. 6.

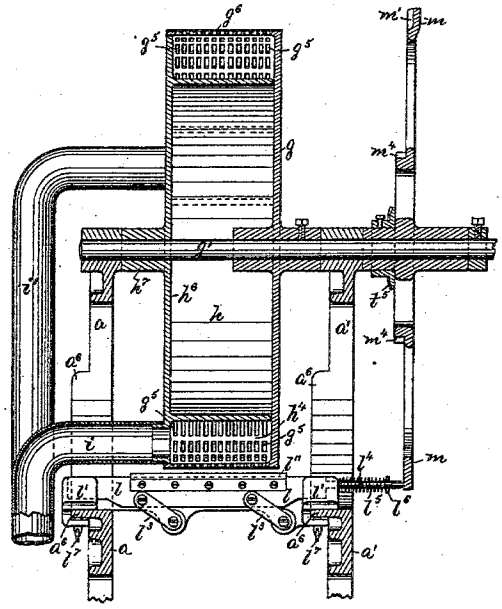
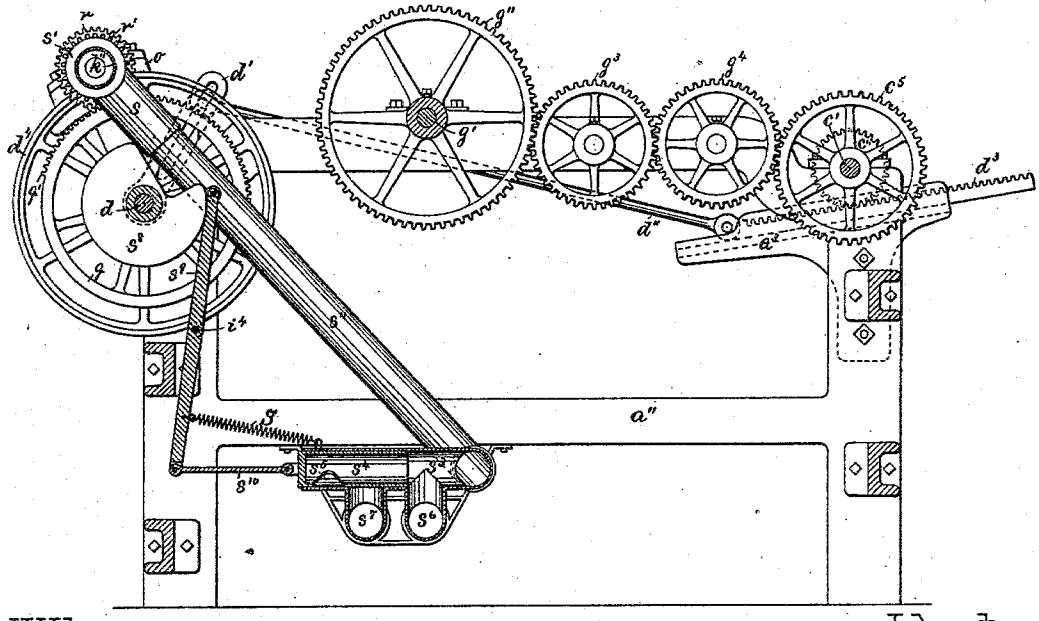


Fig. 4.



Witnesses
Henry Chadbourn.
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(No Model.) 5 Sheets—Sheet 5.

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PAPER BOX COVERING MACHINE.

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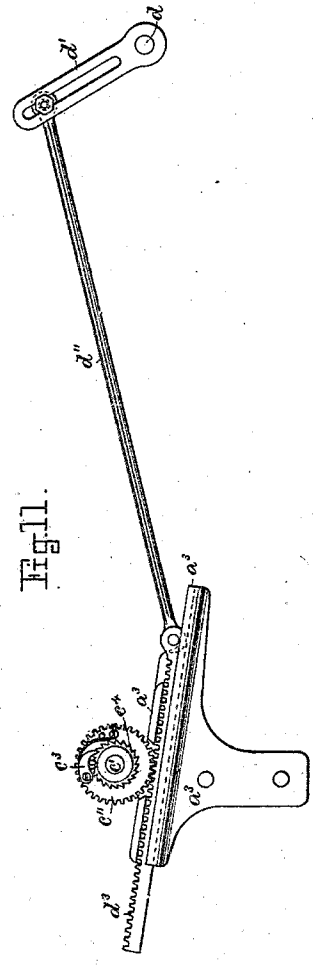


Fig. 11.

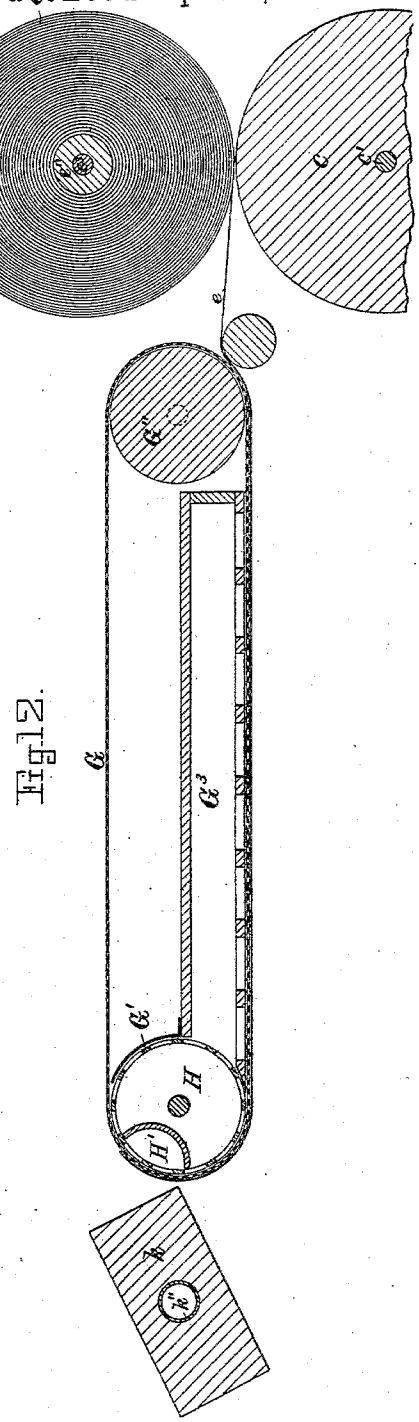


Fig. 12.

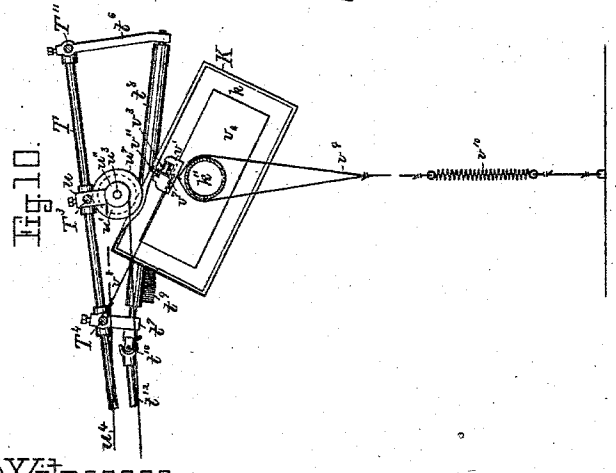


Fig. 10.

Witnesses
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UNITED STATES PATENT OFFICE.

LON WESTON, OF BROCKTON, MASSACHUSETTS.

PAPER-BOX-COVERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 296,257, dated April 1, 1884.

Application filed August 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, LON WESTON, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Paper-Box-Covering Machines; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

This invention relates to paper-box-covering machines of that kind in which one or more paper strips are carried from reels to a pasting device for applying paste or other adhesive substance to the under side of such paper strips, which are afterward conducted to and pasted onto the paper box, which is supported on a box-former, and made to rotate with the same until the box is covered, when it is removed from its former and another one placed thereon.

The object of my present invention is to automatically paste one or more paper strips, and when more than one is used to cause them to lap over each other slightly and to adhere, to be automatically cut off to the proper length necessary for covering the desired box, and subsequently feeding the paper strip or strips to the box rotating on a box-former; also, to automatically lay the paper on the outside of the box, to turn the outer and inner edges of the paper strips and automatically paste them onto the outer and inner edges of the box, and to automatically hold the box on its former while being covered, and to expel it after it is finished—in fact, automatically covering a box by machine without any hand manipulation, except placing the box on its former, as will hereinafter be more fully shown and described, reference being had to the accompanying drawings, where—.

Figure 1 represents a plan view of the machine. Fig. 2 represents a side elevation, and Fig. 3 represents a front elevation, of the same. Fig. 4 represents a longitudinal section on the line A B, shown in Fig. 1. Fig. 5 represents a cross-section of the perforated conveyer, its internal pneumatic chamber, and shearing mechanism. Fig. 6 represents a longitudinal section of said conveyer, pneumatic chamber, and shearing mechanism. Fig. 7 represents a section of the driving and box-former shafts on the line C D, shown in Fig. 2. Fig. 8 represents a section on the line E E, shown in Fig. 1, showing the gears and cone of gears for driving box-former shaft. Fig. 9 represents a front elevation of the box-former. Fig. 10 represents a rear view of the box-former, showing the mechanism for turning the inner edge. Fig. 11 represents a detail view of rack and pinion for driving paste-distributing roller, and Fig. 12 represents a modification of the rotary conveyer and its internal stationary pneumatic chamber.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

a a' a'' represent the frame-work of the machine, to which is secured in the lower rear end the paste-tank *b*, containing paste or suitable adhesive material. Within said paste-tank *b* is located in suitable bearings the paste-roller *b'*, which is pressed upward against the paste-distributer roller *c* by means of coiled or other springs, *b''*, (shown in dotted lines in Fig. 2,) or by means of weighted levers or equivalent pressure device. The paste-distributer roller *c* is secured to shaft *c'*, that is located in bearings in the frames *a a' a''*, and is set in an intermittent rotary motion from the driving-shaft *d* by means of the following intermediate mechanism:

To the rotary driving-shaft *d* is secured the slotted crank-arm *d'*, to which is connected, by means of a suitable connecting-bolt, the rod *d''*, the rear end of which is jointed to the cog-rack d^3, which is guided forward and back in suitable guides, a^3 a^3, secured to frame *a''*, as shown in Figs. 1, 4, and 11. The cog-rack d^3 actuates the pinion *c''*, which is loose on the shaft *c'*, and has hinged to it one or more pawls, c^3, that engage into the teeth of the ratchet-wheel c^4, (shown in Fig. 11,) secured to shaft *c'*, by which arrangement the latter is set in an intermittent rotary motion in the direction shown by the arrow in Fig. 2 during the revolution of the driving-shaft *d*, and thus cause the desired amount of paper to be fed forward during each revolution of the driving-shaft, and it will thus be seen that during a portion of the revolution of said driving-shaft the distributer-roller *c* remains station-

ary, to permit the box to be removed from its former and another one placed thereon, and the paper to be cut off the desired length, according to the size of the box, which is regulated by adjusting the forward end of the connecting-rod d'' to the slotted crank-arm d', and locating the shearing device accordingly. As the paste-distributer roll c rotates, it takes up a proper amount of paste on its periphery from the paste-roller b', with which it is always held in contact, as described, and distributes it evenly on the under side of the paper strips e and f, the former coming from the covering-reel e' and the latter from the trimmer-reel f', as shown in Fig. 2. The reels e' f' are respectively wound upon the cores e'' f'', as shown.

e^3 e^3 are the journals of the core e'', and said journals are guided loosely in the forked supports a^4 on the frames a a', so as to cause the reel e' to rest on top of the distributer-roll c, by which the paste from the latter is conveyed to the under side of both strips e and f.

f^3 f^3 are the journals of the core f'', which journals are loosely supported in the brackets a^5 a^5, extending backward from the frames a a', as shown in Fig. 2. The covering and trimming reels are arranged one in front of the other, but laterally at a sufficient distance to allow the meeting edges of the respective paper strips to overlap each other slightly, so as to unite them together before they are pasted on the box. The strips e f, while in contact with the paste-distributer roller c, become pasted on their under sides, with the exception of that portion of the covering-strip e which overlaps the trimmer-strip f, and it becomes therefore necessary to spread said strips e f apart by conducting strip e over guide-roller e^4, and strip f over guide-roller f^4, as shown in Fig. 2. Between said rollers e^4 and f^4 is located in bearings the loosely-journaled paste-spreader roll e^5, arranged obliquely to the paper strip e, and so as to lie in contact with the under side of said strip, by which arrangement the paste is spread from the pasted to the unpasted portions of said strip e, so as to permit the strips e and f to be pasted together at their overlapping surfaces when afterward brought together. From the rollers e^4 f^4 the strips e f pass onto the outer perforated surface of the conveyer-cylinder g, that is secured to the axle g', located in bearings in the frames a a' a'', and set in an intermittent rotary motion from the shaft c' by means of the spur-gear c^5, secured to the latter, and spur-gear g'', secured to axle g', and intermediate loose gears, g^3 g^4. (Shown in Fig. 4.) The outer periphery of the conveyer g is provided with a number of perforations, g^5. (Shown in Figs. 5 and 6.)

Concentric within the conveyer g is located the stationary pneumatic cylinder h, having outwardly-projecting walls h', h'', and h^3, extending nearly to the inside of the cylinder g, so as to permit the latter to rotate around the stationary cylinder h without coming in frictional contact with it.

h^4 is a pneumatic chamber between the walls h' and h'', and h^5 is another pneumatic chamber between the walls h'' and h^3, as shown in Fig. 5. The space or chamber h^4 has a pipe or channel, i, leading from it to a suitable air-exhauster, by means of which a partial vacuum is at all times produced within the space h^4, so as to cause the paper strips e and f to be held against the outer periphery of the cylinder g during their travel around the latter on their way to the rotary box-former. i' is another pipe leading from the space h^5 to the air-exhauster as well as to a suitable air-compressor, and is provided with a suitable valve or cut-off, having rod i'' connected to lever i^3, which is hinged at i^4 to the frames a' a'', and is acted upon in its upper end by means of the cam-disk i^5, secured to the driving-shaft d, as shown in Fig. 2, and said lever i^3 is drawn backward by the spring i^6 when the cam i^5 ceases to act upon its upper end, and in this manner or in any other similar way the air within the space h^5 is intermittently exhausted and compressed—exhausted for the purpose of holding the forward ends of strips e f onto the periphery of conveyer g until the ends of said strips come opposite to the box-former k, when the exhaust in the chamber h^5 is reversed to a blast, causing that portion of the strips e f opposite space h^5 to be automatically blown against the paper box held on the box-former k. I do not confine myself to any particular blower or exhauster or valves for this purpose, as any of the well-known devices for compressing and exhausting air will answer the purpose with any suitable cut-offs or valves, it being only necessary that the compressed and exhausted air within said chamber h^5 shall be automatically operated at the proper and positive times by means of automatic mechanism from moving parts of the machine.

h^6 is the stationary rear wall of the cylinder h, having a hub, h^7, loosely supported on the shaft g'. The wall h^6 may be secured to the frame a or other stationary part of the machine by means of suitable screw-bolts or other equivalent device, as may be most convenient and practical.

To the outside of the perforated conveyer g, I secure a suitable covering, g^6, having perforations corresponding with those in the cylinder g. Such covering may be made of paper, soft metal, or other suitable material for the shears to cut against when the strips e f are cut off by the cutting mechanism that consists of the laterally-movable bar l, guided in stationary guides l' l', and provided with the knife or cutter l'', as shown in Fig. 6. The bar l is jointed to extensions of the guides l' l' by means of links l^3 l^3, and has a side-extending rod, l^4, which is operated in one direction by means of the cam-wheel m, supported loosely on the shaft g', and in the other direction by means of the coiled spring l^5, sur-

rounding rod l^4 between its guide l' and a pin or collar, l^6, on said rod l^4, as shown in Fig. 6. The action of the cam-wheel m on the rod l^4 releases the cutter l'' from cylinder g. The knife l'' cuts the strips e f against the cylinder g when the groove or recess m' in cam-wheel m reaches the rod l^4, which is then forced by the influence of spring l^5 toward the right in Fig. 6, causing the knife l'' to be brought against the cylinder g, and the strips e f held against the latter, and thus cut off the said strips at the proper time and of the desired length, according to the size of box that is being covered. The position of the cutter l'' may be regulated by moving the guides l' l' on the circular portions a^6 a^6 of the frames a a', and securing them in a stationary position by means of screws l^7 l^7 or equivalent device. The cam-wheel m is set in continuous rotation from the driving-shaft d by means of gear m'', secured to the latter and gearing into the intermediate loose gear, m^3, that gears into the gear-wheel m^4, secured to or made in one piece with the cam-wheel m.

Instead of cutting the strips against the periphery of the conveyer g, a bar or knife may be located opposite the knife l'', between it and the cylinder g, and the strips made to pass between said knife l'' and the additional one, although I prefer to cut the strips in the manner as described, and indicated on the drawings.

The driving-shaft d is located in bearings in the frames a' a'', and is provided with a pulley, d^1, to which rotary motion is applied by means of a belt in the usual way.

The box-former k is preferably made of wood, and provided in its end with a number of grooves or recesses, k' k', as shown in Fig. 9, and it is secured to the tubular portion k'' of the box-former shaft k^3, as shown in Fig. 7.

k^4 is the side or circumference of the box-former, and is of a somewhat smaller external size than the box K, which is placed over it during the process of being covered, so that the box may easily be put on and removed from the said box-former.

To the frames a' and a'' are secured, respectively, the curved horns n' and n'', on the curved portions of which are secured, respectively, the adjustable bearings o and p for the box-former shaft, as shown in Figs. 1, 2, 3, and 7, which bearings are hinged on and made to swing on the driving-shaft d, as shown in said figures. The curved horns n' and n'' have each a slotted perforation, n, by means of which and suitable fastening-screws, n^3 n^3, the said bearings o and p may be secured in position on the curved horns n' and n'' after the box-former shaft has been adjusted in its proper relative position to the conveyer-cylinder g, according to the size of the paper box that is being covered. The box-former is set in an intermittent rotary motion from the rotary driving-shaft d by means of the segmental gear-disk q, secured to shaft d, and having teeth q' on a portion of its circumference only, as shown in Fig. 8. The teeth of the segmental gear q mesh into the teeth of the gear r, secured to the solid portion k^3 of the box-former shaft, as shown in Fig. 7, and by this means I cause the box-former to be rotated one and a half revolution during the engagement of the segmental gear q with the pinion r, which latter, as well as the box-former, remains stationary during the remaining part of the revolution of the driving-shaft, so as to keep the box-former stationary long enough to remove the covered box and replace it with a new one to be covered. The gear r is one of a series of smaller cone-gears, r', r'', and r^3, as shown in Figs. 1, 3, 7, and 8, and by means of either of said cone-gears and a segmental detachable toothed section, q'', attached to the segmental wheel q, as shown in full lines in Fig. 8 and in dotted lines in Fig. 7, any desirable motion may be imparted to the box-former shaft from the driving-shaft d as may be required for round boxes or boxes of other peculiar forms. In using a toothed section q'' with any of the cone-gears r' r'' r^3 the segmental gear-wheel q is moved longitudinally on the shaft d, so as to be out of gear with the main pinion r, as shown in dotted lines in Fig. 7. The inner end of the tubular portion k'' of the box-former shaft is provided with a number of perforations, k^5 k^5, (shown in Fig. 7,) which are in communication with the air-pipe s by means of the hollow head s', that surrounds the tubular shaft k'' at the place where the perforations k^5 are located, as shown in Fig. 7.

Into the lower end of pipe s is fitted the telescopic pipe s'', the lower end of which is jointed to the valve-chamber s^3, having a sliding valve, s^4, open at its rear end, and provided with a side opening, s^5, so that as the valve s^4 is moved forward and back within the valve-chamber s^3 communication can be made between the pipes s s'', head s', hollow box-former shaft k'', and either the exhaust-pipe s^6 or air-pressure pipe s^7, as shown in Fig. 4, which latter pipes s^6 s^7 communicate with a suitable air compressor and exhauster. The valve s^4 is automatically operated forward by means of cam-disk s^8, secured to driving-shaft d, and rocking-lever s^9, fixed to shaft i^4, which rocks in bearings on the frames a' a'', and having its lower end jointed to valve-rod s^{10}, that is hinged in its rear end to the valve s^4, as shown in Fig. 4. The spring S, secured in one end to lever s^9 and in the other end to valve-chamber s^3, serves to move the valve s^4 backward after the cam s^8 ceases to act on the upper end of lever s^9. By means of this above-described pneumatic device the box is automatically held in place on the box-former during the operation of the machine, and automatically expelled from said box-former as soon as the box is covered, the automatic pneumatic mechanism being so timed as to cause a suction in the hollow box-former shaft k'' and grooved end of the box-former during the operation of pasting onto the box the paper strips, and to cause a compression of the air in said parts as soon

as the box is covered, and thereby to automatically force the box away from its former at the proper time.

The mechanism for automatically laying down and pasting the outer edge of the paper over the bottom of the box is as follows:

t is a shaft located in bearings in the frames *a a'*, and to it is secured the bevel-pinion *t'*, meshing into the bevel-pinion *t''* on shaft *t³*, located in bearings secured to frame *a'*, and provided in its other end with bevel-pinion *t⁴*, meshing into bevel-gear *t⁵*, that is secured to the hub of the cam-wheel *m*.

To the shaft *t* are hinged the rear ends of the rods T T', which are united by means of braces or stays T'', T³, and T⁴, forming together a frame, which is swung on the shaft *t* as a fulcrum by the action of the cam T⁵, secured to driving-shaft *d* on the pin and roll T⁶, which latter is arranged on the side of the arm T⁷. (Shown in Figs. 2 and 7.) The lower end of arm T⁷ is forked, and embraces the driving-shaft *d*, which thus acts as a guide for its proper motion. The upper end of arm T⁷ is hinged to the rod T' by means of the adjustable bearing-piece T⁸, that may be adjusted forward and back on rod T', to vary the throw of the said swinging frame, according to the size and shape of the box that is being covered.

The stays T'' and T⁴ are respectively provided with laterally-adjustable bearings *t⁶* and *t⁷* for the rotary roller *t⁸*, which is provided with an inclined brush, *t⁹*, or flexible wing, as shown in Fig. 2. Said roller *t⁸* and its flexible brush or wing *t⁹* are set in a rotary motion by means of universal coupling *t¹⁰*, shaft *t¹²*, and bevel-gears *t¹³* and *t¹⁴*, the former secured to rear end of shaft *t¹²*, and the latter secured to shaft *t*, as shown in Figs. 1 and 2.

To the stay T³ are secured the laterally-adjustable bearings *u u* for the roller *u'*, which is set in a rotary motion by means of cord-pulley *u''*, attached to its spindle *u³*, and provided with cord or belt *u⁴*, leading to pulley *u⁵*, that is loose on shaft *t*, and has attached to it the pulley *u⁶*, which is rotated by belt or cord power applied from a suitable shaft overhead. It will thus be seen that as the box-former, with its box thereon, is rotated, and while the paper strips are being wound on said box, they are smoothed down and pasted onto the box without wrinkles, by the action of the smoothing-roller *u'*, at the same time as the outer edge of the paper is laid over the bottom of the box by the rotary brush or flexible wing *t⁹*, that rotates once each time a side of the box is presented to said wing or brush. During this operation the roller *u'* lies against the paper box by its own weight and that of the hinged frame-work to which it is journaled. When the box is covered, the rollers *u'*, *t⁸*, and the hinged frame to which they are attached are automatically raised above the box by the action of the cam T⁵ on the pin and roll T⁶ and its arm T⁷, so as to permit of the removal of the box and replacing it with a new one.

The roller *u'* has toward the inner edge of the box an annular flange, *u⁷*, which is intended for the purpose of partially turning over the inner edge of the covering-strip of paper, and said inner edge is then ready to be turned over onto the inside of the box by the following mechanism, viz: To the tubular portion *k''* of the box-former shaft is secured a templet, *v*, similar in shape to the box, but somewhat smaller. On the upper edge of said templet rides the grooved shoe *v'*, which has an arm projecting in toward the open end of the box, serving as a bearing for the rotary brush *v''*, that is set in a rotary motion by means of a cord, *v³*, carried from overhead and guided on guide-pulleys *v⁴ v⁵* in an arm, *v⁶*, pivoted to a projection, *p'*, on top of the bearing *p* for the tubular box-former shaft *k''*. The cord *v³*, after being guided on pulleys *v⁴ v⁵* passes over guide-pulley *v⁷* in shoe *v'* to a pulley on the brush *v''*. As the templet *v* rotates, the shoe *v'* is held against its upper edge by means of a cord, *v⁸*, secured to said shoe and a suitable part of the swinging frame T' T'', as shown in Fig. 10, and, furthermore, held in position by means of the stirrup-cord *v⁹*, attached to said shoe and passing by the tubular shaft *k''* to a coiled spring, *v¹⁰*, secured to the floor or other stationary lower part of the machine, and in this manner as the box-former, box, and templet *v* rotate, the inner edge of the covering-strip is brushed down and pasted against the inside of the box by the action of the said rotary brush *v''*. During this operation the outer roller *u'* serves as an outer support to prevent the box from bulging out by the action and outward pressure of the inner rotary brush, *v''*.

The modification of the perforated cylindrical conveyer *g* is shown in Fig. 12, and consists of a pair of cylinders, G' and G'', over which is carried an endless perforated belt, G, against the inside of which is arranged a box, G³, perforated on its under side, and connected to a suitable air-exhauster in the same manner and for the same purpose as heretofore described relating to pneumatic chamber *h⁴*. The cylinder G' is constructed similar to the conveyer *g*, and is, like that, perforated on its periphery, and provided with an internal stationary pneumatic chamber, H, having a pocket, H', opposite to the box-former, in the same manner and all for the same purpose as heretofore described in relation to conveyer *g* and its internal stationary chamber, *h*, the only difference being that in the modification I use two cylinders, perforated belt, and air-box instead of the conveyer *g*. (Shown in Fig. 5.)

The operation of the machine is as follows: After the machine is set in motion by applying rotary power to the pulleys, as described, and the overlapping and pasted strips *e f* have been fed around the conveyer *g* to or nearly opposite to the box held on the box-former, a portion of the said strips are blown against the outside of the paper box by air-pressure applied to the internal space, *h⁵*, within the con-

veyer *g*, causing the ends of said strips to adhere to the box, after which the box-former and its box held thereon commence to rotate and continue so to do until the whole of the box is covered, and half a revolution more, for the purpose as described, the box being during this operation held in place on its former by the pneumatic device, as described, and when finished it is automatically expelled from its former by the compressed-air device. After the box has been covered, the box-former remains stationary, to permit the said box to be automatically removed, as stated, and a new box placed on the former and secured thereto by suction-power applied to its hollow shaft, during which time the shear or shears have cut off another length of paper for another box, such quantity of paper having been fed on the rotary conveyer *g* beyond the shears during one complete revolution of the box-former, after which the said conveyer remains stationary until the box-former has completed its additional half of a revolution, to permit the mechanism for laying down the outside and turning over the outer edge of the paper to be automatically raised out of the way of the box, and until the main driving-shaft has completed a revolution from its starting-point. During the revolution of the box the strips are laid smoothly on the outside on the box by means of the positively-rotating brush or roll u', having the flange or annular rim u^1, which causes the overlapping inner edge to be partially turned over, and finally bent inward and pasted against the inside of the box by means of the rotary brush v'', as described, and the outer edge of the strip laid over and pasted on the bottom of the box by means of the rotary roll t^8 and its inclined brush or flexible wing t^9, as described.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent, and claim—

1. In a paper-box-covering machine, the reel e', loosely supported on top of paste-roller *c*, for the purpose of transferring the paste from said roller to the paper strip or strips, as described.

2. In a paper-box-covering machine, the reels e' f' and paste-distributer *c*, combined with guide-rolls e^4 f^4, for dividing the strips *e f*, and oblique paste-spreading roll e^5, as and for the purpose set forth and described.

3. In a paper-box-covering machine, the intermittently-rotating perforated conveyer *g*, in combination with the internal stationary cylinder, *h*, its pneumatic chambers h^4 h^5, and mechanism, substantially as described, for exhausting the air from chamber h^4 and intermittently exhausting and compressing the air in chamber h^5, as and for the purpose set forth.

4. In a paper-box-covering machine, the combination, with the perforated cylinder *g*, of the laterally-movable bar *l* and cutter l'', and means, substantially as described, for operating the bar and cutter and automatically cutting off the strips on the cylinder at the proper times, as and for the purposes set forth.

5. The box-former *k*, chambered or recessed at its end, secured to the hollow box-former shaft k'', and automatic pneumatic mechanism, substantially as described, for intermittently exhausting and compressing the air in said shaft and its former, for the purpose set forth.

6. The combination, with the revolving box-former *k*, of the shaft *t*, the parallel rods T T′, hinged at their rear ends to said shaft, the cross-braces T″, T³, and T⁴, connecting the parallel rods, and constituting a hinged frame having its fulcrum on said shaft, and the revolving smoothing-roller u', having annular flange u^1, and mounted in bearings *u*, laterally adjustable on the cross-brace T³ of the hinged frame, substantially as described.

7. The combination, with the revolving box-former *k*, of the shaft *t*, the parallel rods T T′, hinged at their rear ends to said rods, the cross-braces T″, T³, and T⁴, connecting the parallel rods, the bearings t^6 and t^7, laterally adjustable, respectively, on the cross-braces T″ and T⁴, and the roller t^8, mounted in said bearings, and provided with the spiral brush t^9, substantially as and for the purpose described.

8. In combination with the box-former and its hollow shaft, the templet *v*, grooved shoe v', having the inward-projecting arm forming a bearing-piece, rotary brush v'', resting on said bearing-piece, and guiding mechanism, substantially as described, for retaining the said shoe onto its templet for the purpose of automatically laying and pasting the inner edge of the paper on the inside of the paper box, as described.

9. The combination of frame T T′, the smoothing-roller u', roller t^8, spiral wing t^9, the cam T⁵, the driving-shaft *d*, and the forked arm T⁴, having pin and roll T⁶, and hinged in its upper end to the swinging frame T T′, substantially as described.

10. In a paper-box-covering machine, the intermittently-rotating perforated conveyer *g*, in combination with a paper-cutting-off mechanism, substantially as described, concentrically adjustable in relation to said conveyer *g*, as and for the purpose set forth.

11. In a paper-box-covering machine, the rotating conveyer *g*, in combination with the box-former and its shaft, and means, substantially as described, for adjusting said box-former shaft to and from the conveyer *g*, as and for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

LON WESTON.

Witnesses:
ALBAN ANDRÉN,
HENRY CHADBOURN.