

(No Model.)

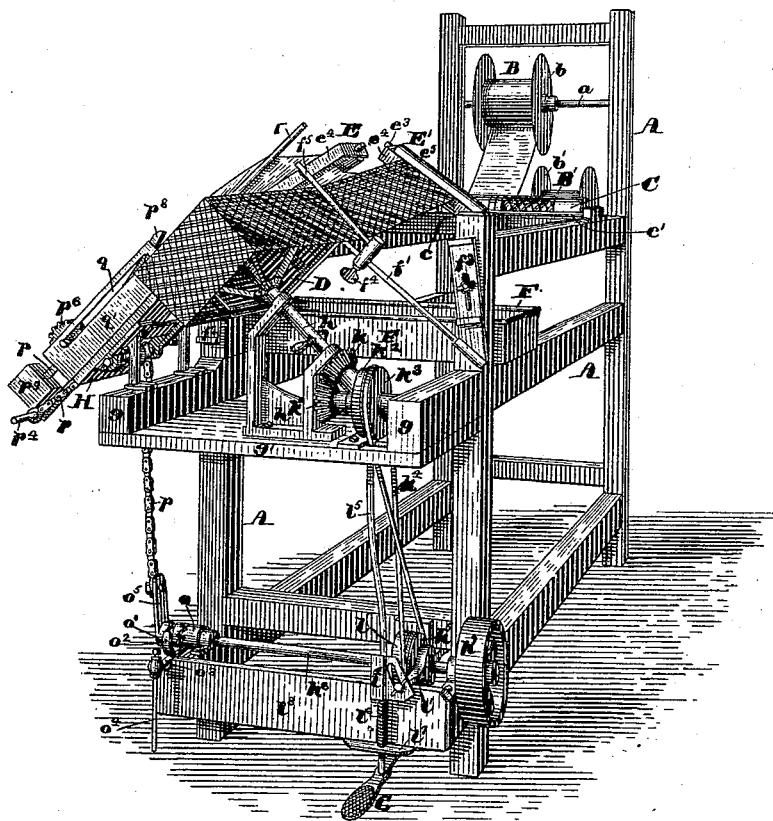
4 Sheets—Sheet 1.

A. M. EASTMAN.

MACHINE FOR COVERING THE EXTERIOR OF PAPER BOXES.

No. 347,999.

Patented Aug. 24, 1886.



*Fig. 1.*

**Witnesses:**

*Walter E. Lombard.*  
*Frank C. Gray.*

**Inventor:**

*Andrew Murray Eastman,*  
*by N. C. Lombard*  
**Attorney.**

(No Model.)

4 Sheets—Sheet 2.

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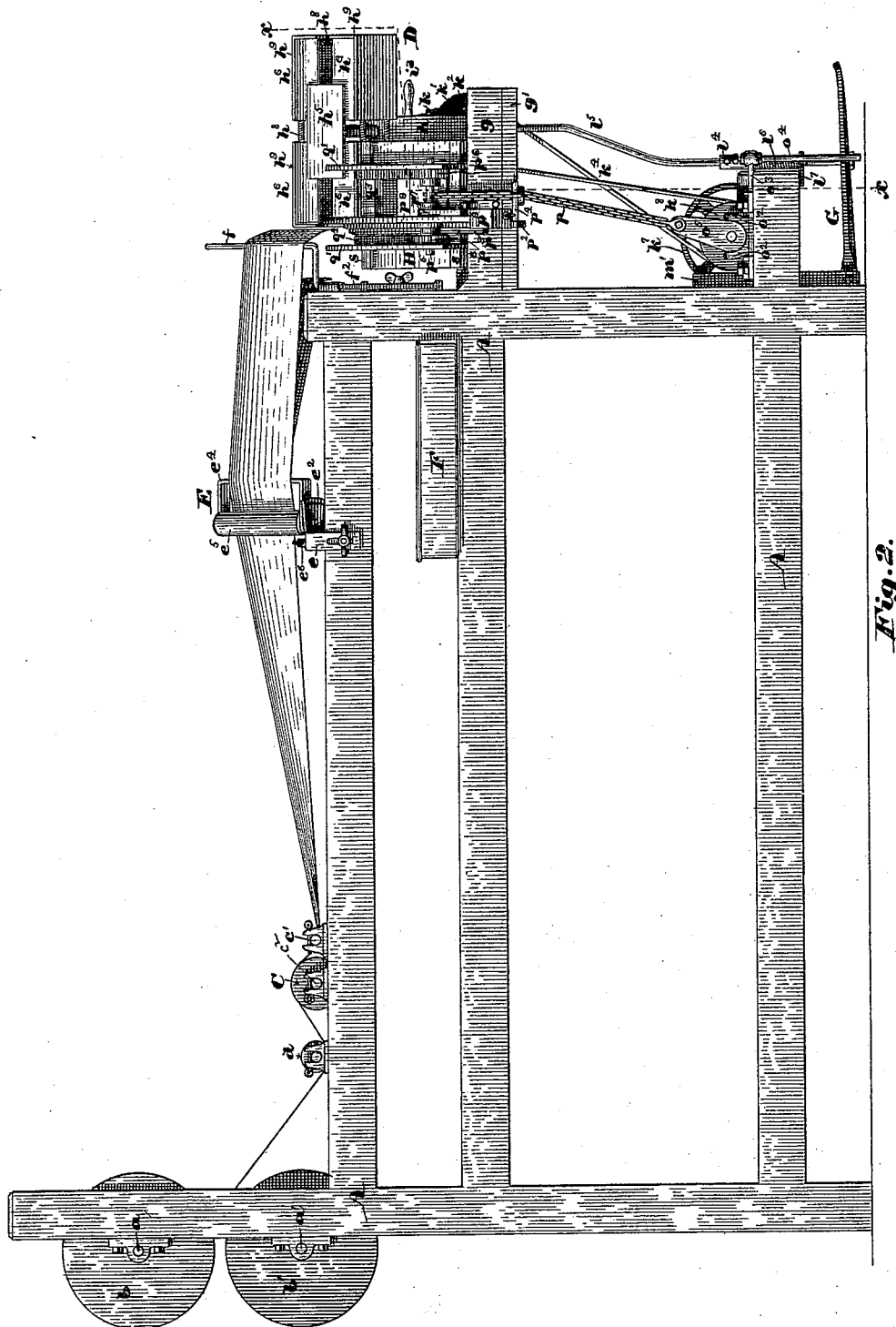


Fig. 2.

Witnesses:

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Inventor:

Andrew Murray Eastman.

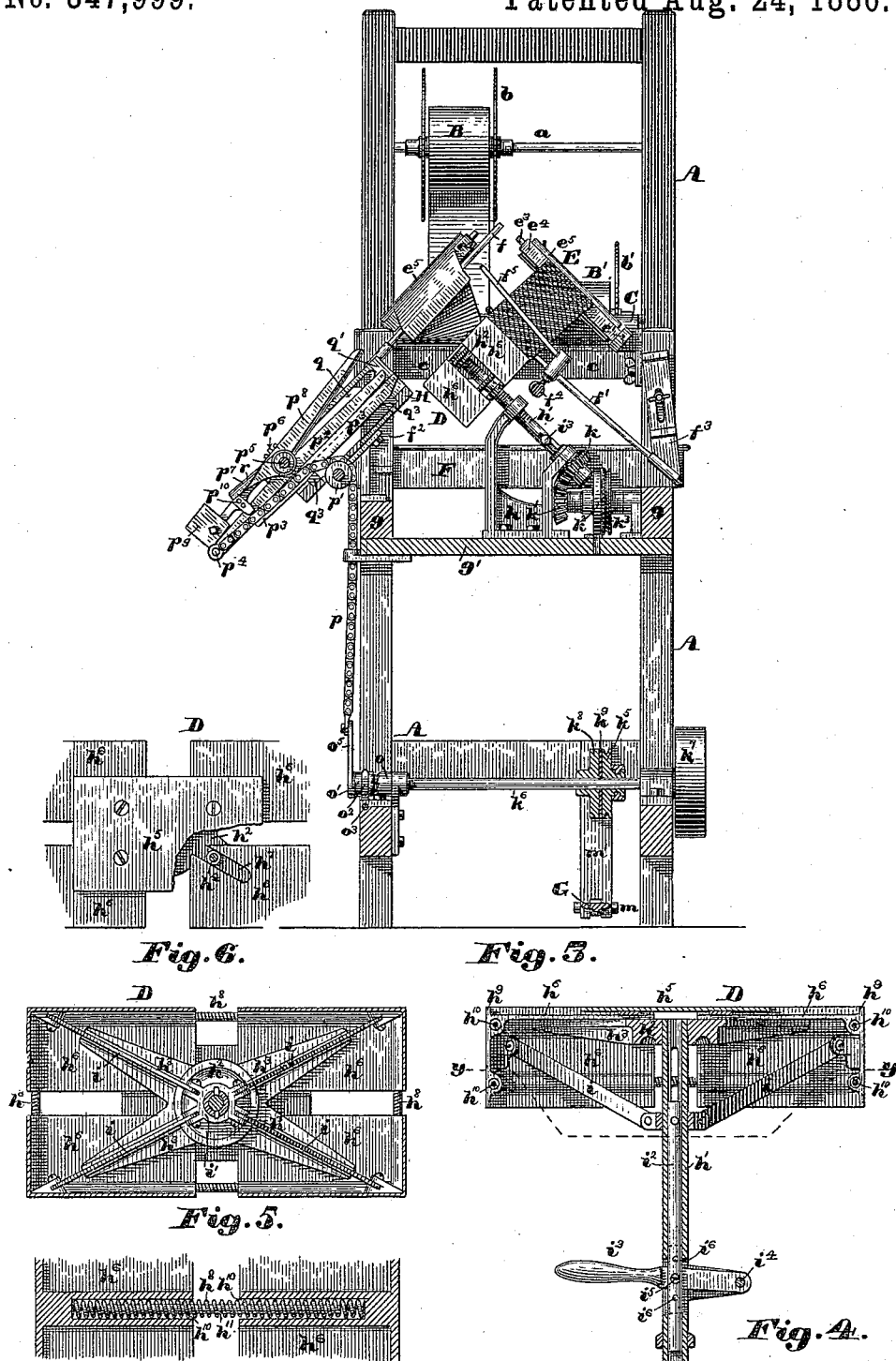
by N. C. Lombard  
Attorney.

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**Fig. 7.**  
**Witnesses:**  
*Walter O. Squibard.*  
*Frank C. Gray.*

**Fig. 3.**  
**Fig. 4.**  
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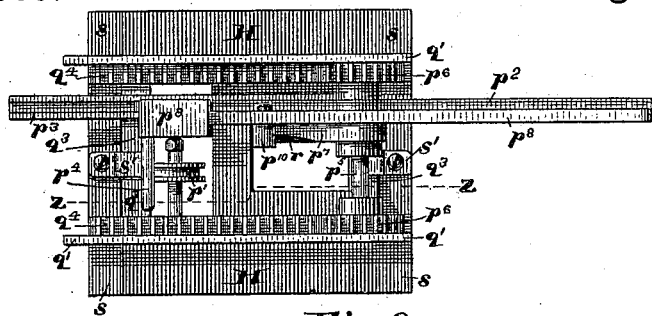


Fig. 8.

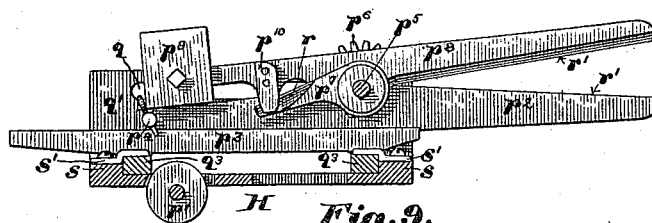


Fig. 9.

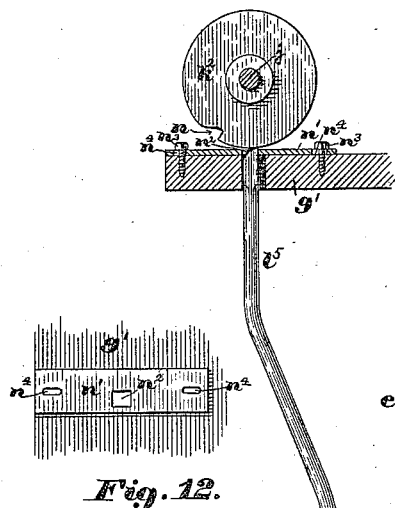


Fig. 12.

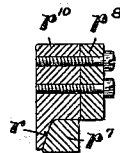


Fig. 10.

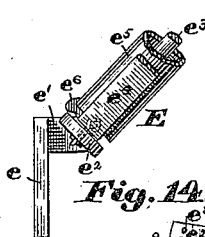


Fig. 14.

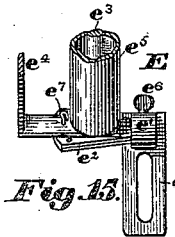


Fig. 15.

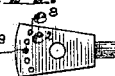


Fig. 16.

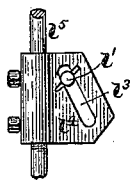


Fig. 13.

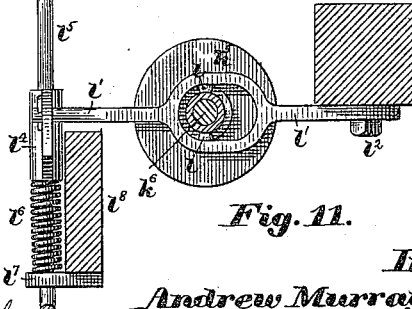


Fig. 11.

Witnesses:

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Inventor:

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# UNITED STATES PATENT OFFICE.

ANDREW MURRAY EASTMAN, OF MILFORD, MASSACHUSETTS, ASSIGNOR TO  
THOMAS C. EASTMAN, OF SAME PLACE.

## MACHINE FOR COVERING THE EXTERIOR OF PAPER BOXES.

SPECIFICATION forming part of Letters Patent No. 347,999, dated August 24, 1886.

Application filed June 8, 1885. Serial No. 167,951. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW MURRAY EASTMAN, of Milford, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Machines for Covering the Exteriors of Paper Boxes, of which the following, taken in connection with the accompanying drawings, is a specification.

Heretofore in the manufacture of paper boxes by machinery the process of covering has been accomplished by the use of two machines—one upon which the sides of the box are covered and a second upon the bottom of the box or the top of the cover is overlaid with the paper.

The time and labor wasted in the removal of the box from one machine after the sides have been covered to the second machine causes a great disadvantage, which is entirely overcome by my present invention, which consists in a machine containing certain novel features of construction and arrangements of parts by which the sides and bottom of a box, or the side and top of a cover, may be overlaid with paper without removing the box from the form, all as will be fully understood by reference to the description of the drawings and to the claims to be hereinafter given.

Of the drawings, Figure 1 represents a perspective view of a machine embodying my invention, looking at the front or operating end thereof. Fig. 2 represents a side elevation of the same. Fig. 3 represents a transverse sectional elevation of the same, looking toward the rear of the machine, the cutting-plane being on line *x x* on Fig. 2. Fig. 4 represents a central longitudinal sectional elevation through the box form or block and its operating device. Fig. 5 represents a sectional plan of the same, the cutting-plane being on line *y y* on Fig. 4. Figs. 6 and 7 represent details of construction of the same, which will be more fully described further along in the specification. Fig. 8 represents a plan of the cutting-off device. Fig. 9 represents a sectional elevation of the same, the cutting-plane being on line *z z* on Fig. 8. Fig. 10 represents a section through the upper shear-blade of the same, and the cam-lever by which it is operated.

Fig. 11 represents a section through various portions of the frame, showing in elevation the device for stopping the form at the end of its revolution. Figs. 12 and 13 represent details of construction of the same, which will be further described subsequently. Figs. 14, 15, and 16 represent details of construction of the paste-scraping device, which will be fully described further on. Figs. 4, 5, 8, 9, 11, 12, 13, 14, 15, and 16 are drawn to an enlarged scale, while Figs. 6, 7, and 10 are drawn to a still larger scale.

In Fig. 1 the box is represented to be upon the form with the paper pasted thereon before the cutting-off has been completed, while in the remaining views the paper is represented as having been cut off and the box removed from the form.

In the drawings, A represents the frame of the machine, upon the rear end of which are mounted the shafts *a a'* in suitable bearings, said shafts *a a'* having secured thereto respectively the spools *b b'*, each carrying a roll of paper, B B', the strip of paper composing the upper roll, B, being used to cover the tops of the covers and the bottoms of the boxes, while the paper composing the lower roll, B', is used for the sides of the same.

Immediately in front of the rolls B B' and between the upper side rails of the frame A is secured a paste trough or box, *c*, which is partially filled with paste or any other suitable adhesive material, into which the paste-roll C is partly submerged, so that as it revolves about the axis of the shaft *c'*, mounted upon the upper side rails of the frame A, the entire periphery of said roll is covered with a thin film of paste, which is transferred to the under side of the strips of paper as they pass over the said roll after having passed beneath the small roll *d*, which intervenes between said paste-roll C and the spools *b b'*. In order that either strip of paper may move independently of or without in any way interfering with the other, the rolls C and *d* are each divided transversely into two parts, so that either part may revolve upon its shaft without moving its fellow. Directly in front of the center of the paste-roll is mounted in bearings on said upper rail a small shaft, *c'*, under which the

paper passes on its way from the paste-roll C to the scrapers E E', which are secured to said upper rail of the frame by suitable feet. The paste-scraping device E or E' consists of a foot, *e*, by which it is adjustably secured to said top rail of the frame, and from which projects a lug, *e'*, at right angles thereto. This lug *e'* is provided with a suitable bearing, in which is mounted the arm *e''*, in which is fixed at right angles thereto the stud *e'''*, upon which is mounted the U shaped bar *e''''* and the roll *e'''''* between the arms of said bar. The arm *e''* may be secured by the thumb screw *e''''*, so that the roll *e'''''* will be at any desired angle with the top of said machine for the purpose of properly directing the paper to the form D. The arm *e''*, moreover, is provided with a number of apertures, *e''''*, corresponding in size to and at the same distance from the center of the stud *e'''* as a single hole in the lower arm of the scraper-bar *e''''*, by which, with the pin *e''''''*, the said bar may be secured at any desired angle, so that the paper in passing from beneath the roll *e'''''* over the top of the bar *e''''* will be drawn over at a greater or less angle, according to the consistency of the paste and the quantity thereof it is desired to have remain upon the paper, all as is shown in Figs. 14, 15, and 16. All the paste which drops from the bars *e''''*, after having been scraped from the strip of paper, is caught by the dripping-pan F, resting on the central side rails of the frame.

To the front end of the machine and on either side thereof are secured the paper supporting arms *f f'*, by which the strips of paper are guided to the form D, said arms being mounted upon suitable feet, *f'' f'''*, provided with slots, by which and suitable thumb-screws they are secured to the front legs of the frame in such a manner that the said arms may be adjusted to any desired angle or height. These arms *f f'* also serve to hold the ends of the strips of paper when they have been cut or broken off in a position in which they may readily be grasped to repeat the operation of covering upon a succeeding box. The central horizontal side rails extend some distance beyond the front uprights of the frame, as shown at *g g*, and to the under sides of these extensions is secured the shelf *g'*, upon which is mounted the form D, which consists of a stand, *h*, firmly secured to the shelf *g'*, and provided with suitable bearings, in which the tubular shaft *h'* may be mounted parallel to the front of the machine and at about an angle of forty-five degrees with said shelf *g'*, all as shown in Figs. 1, 2, and 3. To the outer or upper end of this tubular shaft is firmly secured the support *h''*, having four arms, *h''' h''''*, each of which is provided with a raised boss, *h''''''*, against which is firmly screwed the plate *h''''''''*, as shown in Fig. 6, between which and said support *h''* are placed the upper plate of the four corner-sections *h'''' h'''''' h'''''''' h'''''''''*, each of which is provided with a diagonal slot, *h''''''''''*, by which said corner-section is guided toward and from the center of said form. Each side of the corner-pieces

*h'''' h'''''' h'''''''' h'''''''''* is provided with two holes therein parallel to the top surface of said corner-pieces, and the holes *h'''''' h''''''''* of one corner-piece *h''''* being directly opposite to those of the corner-piece adjoining it. These holes extend for nearly the whole length of the sides of the corner-pieces, and within them are placed long coiled springs *h''''*, one end of which enters the hole of one corner-piece, while the other end enters the hole directly opposite the corner-piece adjoining, said springs serving to force the said corner-pieces as far as possible from the center of said form, so that at all times they will tend to have the greatest perimeter. The corner-pieces *h'''' h'''''' h'''''''' h'''''''''* are provided upon their outer edges with a rib, *h''''''*, extending to the same height as the upper surface of the plate *h''''''''*.

In order to stiffen the form D and cause the corner-sections *h'''' h'''''' h'''''''' h'''''''''* to move toward and from each other, a rod, *h''''''*, is placed within each of the coiled springs *h''''* of a length equal to the length of said spring minus the distance between said corner-pieces.

To the inside of each of the corner-pieces *h''''* is pivoted a toggle-link, *i*, of a length somewhat greater than the distance from said pivot to the tubular shaft *h'*, upon which shaft is mounted a four-armed collar, *i'*, to which the other ends of the links *i i i i* are pivoted, and which is connected by a suitable pin passing through slots in said tubular shaft to a rod, *i''*, mounted within said tubular shaft *h'* in such a manner that it can be reciprocated therein by the handle *i'''*, pivoted at *i''* to a stand secured to said tubular shaft *h'* for the purpose of compressing the springs *h'''' h''''''* when it is desired to place a box upon the form or remove one therefrom. The handle *i'''* passes through slots in both the tubular shaft *h'* and the rod *i''*, but is only connected to the rod by a screw, *i''''*, which may be removed and the handle *i'''* slipped along in the slot in said rod and connected by the same screw at another point, as at *i''''''*, for the purpose of regulating the size of the form D. By these adjustments a large number of sizes and slightly-varying forms of boxes may be covered upon the same form; but when an extreme size or radically different form of box is desired to be covered it will be necessary to place upon the machine a larger, smaller, or differently-shaped form, as the case may be.

The construction and working of the form D will be readily understood by reference to Figs. 4, 5, 6, and 7.

To the lower end of the tubular shaft *h'* is firmly secured the bevel gear-wheel *k*, by which the form D is rotated about its axis, motion being imparted thereto for the purpose by the bevel gear-wheel *k'*, mounted, together with the cam-disk *k''* and pulley *k'''*, upon a short horizontal shaft, *j*, which is mounted in suitable bearings on the shelf *g'*. The pulley *k'''* is connected by the cross-belt *k''''* to the loose pulley *k''''''* on the shaft *k''''''*, which is mounted in suitable bearings on the lower horizontal side rails, and

has mounted on the outer end thereof the pulley  $k^7$ , by which said shaft  $k^6$  is continually revolved. The shaft  $k^6$  is also provided with a suitable friction-clutch, preferably composed of the loose pulley  $k^5$  and the disk  $k^8$ , having interposed between them the disk of leather  $k^9$ ; but any other suitable clutch could be used. The loose pulley  $k^5$  is provided with a grooved hub, in which the lugs  $ll$  upon the inner sides of the slotted arm  $l^7$ , pivoted at  $l^2$  to the under side of the front lower cross-rail of the frame, engage in such a manner that the pulley may readily be moved from or against the leather disk  $k^9$ . The outer end of the arm  $l^7$  passes through the slot  $l^8$  in the cam plate  $l^6$ , mounted upon the rod  $l^5$ , the upper end of which passes through the shelf  $g'$  and bears against the periphery of the cam-disk  $k^2$ , said rod being retained in this position by the tension of the spring  $l^9$ , coiled around it between said plate  $l^6$  and the guide-plate  $l^7$ , secured to the under side of the rail  $l^8$ .

To the lower end of the rod  $l^5$  is secured the treadle  $G$ , pivoted at  $m$  to the pendent arm  $m'$ , secured to the front cross-rail of the frame of the machine. The cam-disk  $k^2$  is provided in its periphery with a notch,  $n$ , somewhat larger than the end of the rod  $l^5$ , said notch  $n$  engaging with the end of said rod  $l^5$  when the form is in a position ready to revolve for the purpose of covering the sides of the box placed upon the said form. After the form  $D$  has made a complete revolution the notch  $n$  again comes to a position above the end of the rod  $l^5$ , when the tension of the spring  $l^9$  will cause the rod  $l^5$  to be raised so that the end thereof will engage with said notch and prevent any further rotation of the form  $D$ , while at the same time the cam-plate  $l^6$  is raised with said rod  $l^5$  so that the arm  $l^7$  is moved away from the said rod, so that the loose pulley  $k^5$  is disengaged from the disks  $k^8$  and  $k^9$ , thus preventing any further motive power being transmitted to the pulley  $k^3$  to cause the form  $D$  to be rotated.

In order that the form may be stopped in a position somewhat inclined to the shelf  $g'$ , the aperture in said shelf, through which said rod  $l^5$  passes, is made somewhat elongated in the direction of the length of the machine, and above this is placed a plate,  $n'$ , in which the hole  $n^2$  nicely fits the squared end of the rod  $l^5$ , for which it forms a bearing. This plate  $n'$  is adjustably secured to the shelf  $g'$  by the screw-bolts  $n^3$   $n^3$  passing through the slots  $n^4$   $n^4$  therein, so that the point at which the notch  $n$  will engage with the end of the rod  $l^5$  may be nicely adjusted from a point on one side of the center of the cam-disk  $k^2$  to a point on the other side of said center, thus allowing the rear end of said form  $D$  to stop at a position at various distances from the shelf  $g'$ , as may be desired, all as shown in Figs. 3, 11, 12, and 13.

Upon the end of the shaft  $k^6$ , opposite to the pulley  $k^7$ , is secured one half,  $o$ , of a clutch, the other half,  $o'$ , of which is loosely mounted upon the end of said shaft and is provided

with an annular groove, with which the forked arms  $o^2$   $o^2$  on the rod  $o^3$ , mounted in suitable bearings on the lower side rail of the frame, engage said rod  $o^3$ , being provided with another arm,  $o^4$ , bent nearly at right angles thereto and reaching nearly to the floor, by the operator moving his foot, against which the clutch  $o$   $o'$  will be engaged, and the arm  $o^5$ , forming a part of the outer half thereof, will be caused to be rotated with said shaft  $k^6$ , by which rotation the chain  $p$ , one end of which is secured to the end of said arm, is caused to be pulled downward over the sheave  $p'$  and cause the blade  $p^2$  to be moved forward in its grooved track  $p^3$ , the opposite end of said chain being secured to the pin  $p^4$ , mounted in the end of said blade  $p^2$ .

In a suitable bearing in the blade  $p^2$  is loosely mounted the shaft  $p^5$ , upon which is firmly secured, so as to revolve therewith, the spur pinions  $p^6$   $p^6$  and the cam-arm  $p^7$ , and said shaft also has loosely mounted thereon the upper blade,  $p^8$ , provided on its outer end with the weight  $p^9$ , and between said weight and the shaft  $p^5$  is secured thereto the cam shoulder or lug  $p^{10}$  on the same side of said blade as the cam-arm  $p^7$  is situated. The ends of the shaft  $p^5$  find suitable bearings therefor in the slots  $q$   $q$ , extending nearly the entire length of the side walls or upright plates,  $q'$   $q'$ , of the frame  $q^3$ , which frame is also provided, just within said side walls,  $q'$   $q'$ , with two racks,  $q^4$   $q^4$ , with which the pinions  $p^6$   $p^6$  engage, which causes the shaft  $p^5$  to rotate about its axis whenever the shear-blade  $p^2$  is moved forward or backward.

The operation of the cutting-off device is as follows: The parts thereof being in the positions shown in Fig. 3, and the paper for the bottom of the box having been attached to the outer end thereof, the operator places his foot against the rod  $o^4$  and presses the lower end thereof to the left, so that the rod  $o^3$  is rotated in its bearings, moving, through the agency of the arms  $o^2$   $o^2$ , the loose half  $o'$  of the clutch into engagement with the fixed half  $o$  thereof, so that the arm  $o^5$  will be moved from its highest to its lowest position, thereby pulling down upon the chain  $p$  and causing the blades  $p^2$   $p^8$  to move forward, one on either side of the paper to be cut, the frame  $q^3$  and the paper being adjusted so as to correspond in inclination. The blades  $p^2$   $p^8$  are so mounted on the shaft  $p^5$  that if at this time by any chance they should come together, owing to their looseness, they would be unable to cut the paper; but when the paper is wholly between said blades  $p^2$   $p^8$  the cam-arm  $p^7$  has almost completed a revolution, and comes into contact with the cam shoulder or lug  $p^{10}$ . The inclined surface  $r$  of the arm  $p^7$  pressing against the inclined surface upon the shoulder  $p^{10}$ , forces the lower ends of the blades  $p^2$   $p^8$  apart, so that as the arm  $p^7$  continues to revolve, and coming in contact with the inner lower side of said shoulder  $p^{10}$ , secured to the blade  $p^8$ , lifts the lower end of that blade, and thereby causes the upper end to move down-

ward past the blade  $p^2$ . The knife-edges  $r'$   $r'$  on said outer ends are pressed firmly together while passing, so that wet or damp paper may be cut with great facility. The cutting of the paper having been accomplished, the foot of the operator is removed from contact with the arm  $o^1$ , thus allowing the clutch  $o$   $o'$  to become disengaged, and the blades  $p^2$  to regain their normal positions, as shown in Fig. 3, by their preponderance of weight over the chain and other parts.

In order to always cut off the paper used for the bottoms of the boxes at the right point when different lengths of boxes are being covered, it is necessary that the frame  $q^2$  should be made adjustable upon the frame H, which is accomplished by fitting said frame  $q^2$  so that it will readily slide between the ribs or guides  $s$   $s$ , and may be held in any desired position by the clamps  $s'$   $s'$ , the sheave  $p'$  being loosely mounted upon its shaft so as to be moved therewith. The frame H is secured by suitable feet to one of the rails  $g$  at an angle of about forty-five degrees, all as shown in Fig. 3. This same mechanism for cutting off the paper may be repeated, if necessary, on the opposite side of the machine for the purpose of cutting off the paper with which the sides of the box are covered; but for general use in this case I consider it as well to tear off the paper over the edge of the box by the hand of the operator; but for the tops of covers and bottoms of boxes this could not be neatly done, and therefore in such cases the cutting-off mechanism is necessary.

To the supporting-arm  $f'$  is adjustably secured, by the thumb-screw  $f^4$ , the rod  $f^5$ , which passes over the strip of paper B' in order to prevent its being thrown out of place by the rotation of the form D.

The operation is as follows: The parts of the machine and the strips of paper being in the position shown in Figs. 2 and 3, and the end of the rod  $t^5$  entering the notch  $n$  of the cam-wheel  $k^2$ , the operator moves the handle  $i^3$  downward, thereby causing the springs  $h^5$   $h^5$  to be compressed so as to allow the corner-sections  $h^6$   $h^6$  to come together, so that the box may be readily placed thereon, which having been accomplished the operator looses his hold upon the handle  $i^3$ , thus allowing the corner-pieces  $h^6$   $h^6$  to expand, so that the perimeter thereof corresponds with the interior perimeter of the said box. The operator then takes the end of the strip of paper B', and secures it by means of the paste upon its under side to the front edge of the upper side of the box, and then places his foot upon the treadle G and presses down thereon, thereby causing the form D to revolve toward the operator, who, meanwhile, by means of a suitable pad or his hand presses the paper down upon the sides of the box, so that it is firmly secured thereto upon its entire surface. The paper having been wrapped around the entire perimeter of the box, and the form D having

been stopped in the manner already described, the paper secured to the box is severed by the hand of the operator or by a cutting-off device from that remaining, which is held up by the supporting-arm  $f'$  in a position where it may readily be grasped at the commencement of the covering of the next succeeding box. The sides of the box having thus been covered the operator seizes the end of the strip of paper B, and secures the same to the front edge of the bottom of the box, after which he operates the cutting-off device with his foot, as has already been described, and then with his hand or a suitable pad smooths the cut-off portion down upon the bottom of the box, so that said paper will adhere in every part to said bottom. This having been completed, the operator again presses upon the handle  $i^3$ , so as to release all pressure upon the box, so that it may be readily removed, and another placed in position in order to repeat the operation.

It is obvious that a cover may be overlaid with paper in the same manner as is used to cover the box.

The peculiar advantages of a machine of this construction, by which both the sides and the bottom of a box are covered without necessitating the removal thereof from the form, are so perfectly obvious that further comment thereon is deemed entirely unnecessary.

The paper-severing mechanism shown and described but not claimed in this application forms the basis of and is claimed in another application of mine filed May 15, 1886, No. 202,270, the same being a division of this application.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a machine for covering paper boxes, the combination of a box-holding form mounted upon and revoluble with a shaft arranged with its axis at an angle of forty-five degrees (or nearly so) to a perpendicular, and two paper-guides inclined at a similar angle but in opposite directions, substantially as described.

2. In a machine for covering paper boxes, a form composed of four corner-sections, adjustably mounted upon a common center or support secured upon the end of a tube or sleeve inclosing a shaft, to one end of which each of the corner-pieces is connected by radiating links, whereby they are adapted to be moved toward or from each other, in combination with one or more springs arranged between and adapted to force said corner-sections away from each other, and cause them to conform to the inside perimeter of the box placed thereon.

3. In a machine for covering paper boxes, a form composed of four corner-sections and a common central support, so connected that said corner-sections may be moved radially toward and from a common center, a series of springs arranged between and adapted to force



said corner-sections apart, and mechanism, substantially as described, for moving said corner-sections toward each other.

4. In a machine for covering paper boxes, 5 a form composed of four corner-sections and a common central support, so connected that said corner-sections may be moved radially toward and from the axis of said central support, one or more springs interposed between 10 each two of said corner-sections, each spring extending from near the outer side or end of one section to near the outer side or end of the other section.

5. In a machine for covering paper boxes, a 15 form composed of four corner-sections mounted upon a common support and operated by toggle-links, each connected at one end to one of said corner-sections, and at the other to the end of a shaft mounted in a tube or sleeve 20 shaft carrying at one end thereof said common central support, and provided with a longitudinal slot, and an arm extending laterally therefrom, in combination with a handled lever passing through said slot and pivoted at 25 one end to said arm, and also connected to said shaft, for the purpose of reciprocating said shaft within said sleeve, to move said corner-sections toward or from the axis of revolution of said form.

30 6. In a machine for covering paper boxes, as a means of varying the size of the form to adapt it to different-sized boxes, the combination of the central support,  $h^2$ , the sleeve-shaft  $h'$ , provided with suitable slots therein, the 35 corner-sections  $h^6$   $h^6$   $h^6$   $h^6$ , the toggle-links  $i$   $i$   $i$   $i$ , the collar or ring connection  $i'$ , the shaft  $i^2$ , provided with a suitable slot therein, and two or more holes,  $i^3$   $i^3$ , and the removable and interchangeable pin  $i^5$ , all substantially as and 40 for the purposes described.

7. In a machine for covering paper boxes, a form composed of a common central support mounted upon the end of a shaft by which it is revolved, a plate secured to said support at 45 a little distance therefrom, and four corner-sections, each provided on its upper edge with a rib of the same height as the upper surface of said plate, while the upper plate of each of said corner-sections enters between said plate 50 and said central support, and is provided with a diagonal slot to receive a boss on said support by which said corner-section is guided toward and from the center when being operated upon by a suitable toggle mechanism.

55 8. In a machine for covering paper boxes, the combination of a form and mechanism, substantially as described, for imparting thereto a rotary motion, with the disk  $k^2$ , provided with the shoulder  $n$ , the stop-rod  $k^5$ , the spring

$k^6$ , and the treadle  $G$ , the loose pulley  $k^5$ , shaft 60  $k^6$ , belt  $k^4$ , the disk  $k^3$ , the shipper-lever  $L$ , and the slotted cam-plate  $L'$ , all constructed, arranged, and adapted to operate substantially as and for the purposes described.

9. In a machine for covering paper boxes, 65 the combination of a form and mechanism for imparting thereto a rotary motion, with a disk,  $k^2$ , provided with the shoulder  $n$ , the stop-rod  $k^5$ , the spring  $k^6$ , the treadle  $G$ , and the adjustable plate  $n'$ , forming a bearing for the upper 70 end of the rod  $k^5$ .

10. In a machine for covering paper boxes, the combination of a form and its inclined shaft, with the gears  $k$  and  $k'$ , the shaft  $j$ , the pulley  $k^3$ , the disk  $k^2$ , provided with the shoulder 75  $n$ , the rod  $k^5$ , the spring  $k^6$ , the treadle  $G$ , the cam-plate  $L'$ , the shaft  $k^3$ , the fixed disk  $k^3$ , the loose pulley  $k^5$ , the belt  $k^4$ , and the shipper-lever  $L$ .

11. In a machine for covering the exteriors 80 of paper boxes, the combination of a form to hold the box mounted upon and revoluble about an inclined axis, two paper-carrying drums, a pasting apparatus, two inclined guides for directing two webs of paper, and a 85 cutting mechanism for severing one of the webs of paper, whereby the sides, ends, and bottom of the box can be covered without removing it from the form, substantially as described. 90

12. In a machine for covering paper boxes and as a means of regulating the amount of paste upon the paper, the roll  $e^5$ , in combination with the stand  $e$   $e'$ , the axially-adjustable ear  $e^2$ , provided with a series of holes,  $e^3$   $e^3$ , and 95 the  $\sqcap$ -shaped or stirrup-like frame  $e^4$ , provided with a single hole to receive the pin  $e^7$ , by which said frame  $e^4$  is connected to the ear  $e^2$  in any desired position.

13. In a machine for covering paper boxes, 100 the combination of two paper rolls, a paste-trough, two independently-movable paste-rolls, guides for each web of paper inclined at opposite angles, and a revolving box-carrying form arranged with its sides at an angle of 105 about forty-five degrees to a horizontal plane, whereby said machine is adapted to covering the sides and ends and the bottoms of a box without removing it from the form.

In testimony whereof I have signed my name 110 to this specification, in the presence of two subscribing witnesses, on this 5th day of June, A. D. 1885.

ANDREW MURRAY EASTMAN.

Witnesses:

WALTER E. LOMBARD,  
FRANK E. BRAY.