(No Model.)

C. CROOK.

STRAW BOARD LINING CUTTER MACHINE.

No. 407,467. Patented July 23, 1889.

Fig. 1.

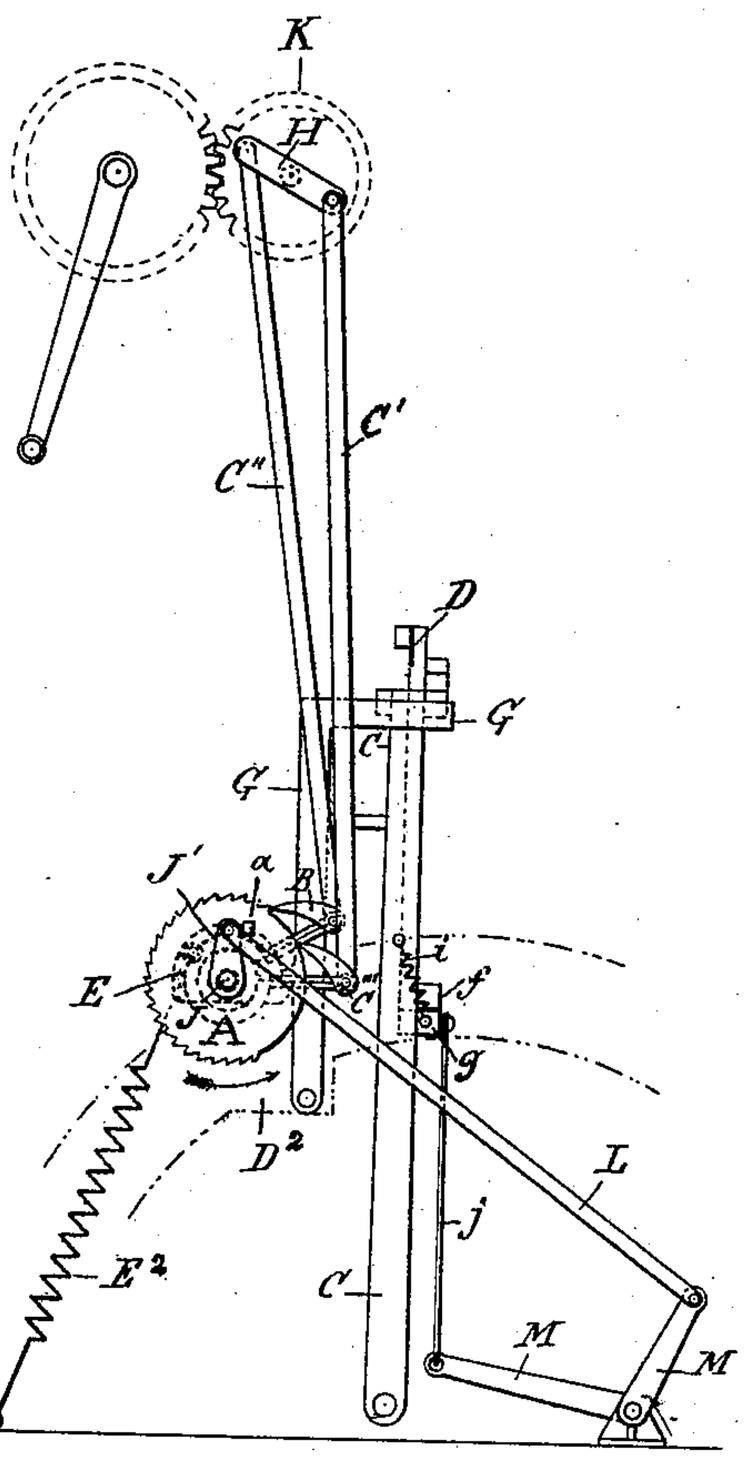


Fig. 3.

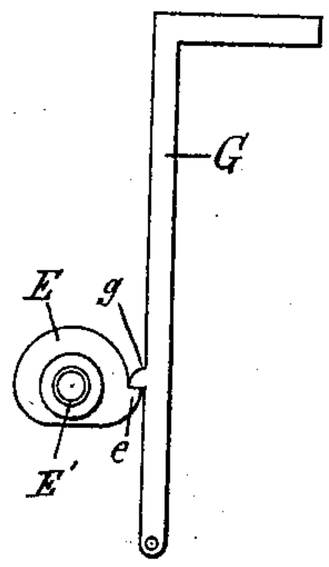
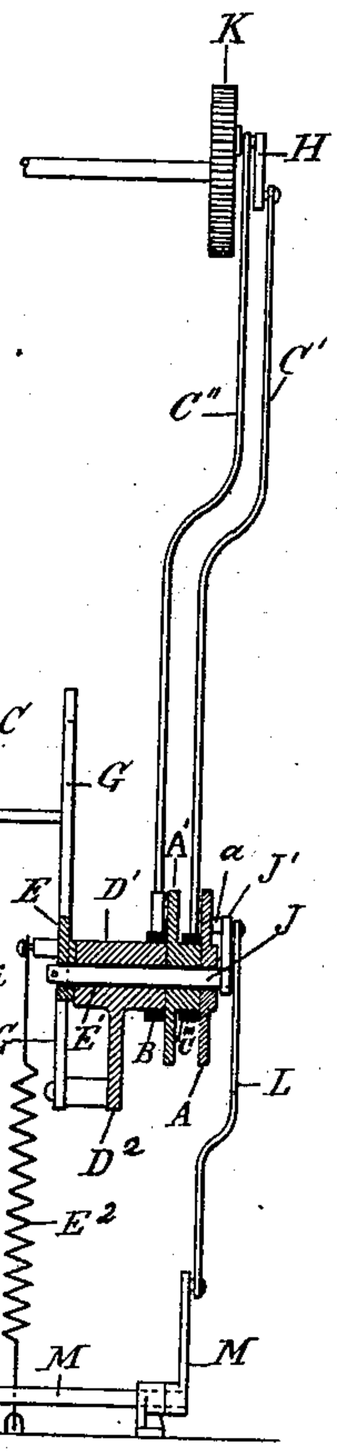


Fig. 2.



WITNESSES:

E. J. Callahan

John J. McElhenney

Chas Crook

INVENTOR

BY L. A. Hill & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES CROOK, OF BROOKLYN, NEW YORK.

STRAW-BOARD-LINING-CUTTER MACHINE.

SPECIFICATION forming part of Letters Patent No. 407,467, dated July 23, 1889.

Application filed October 18, 1888. Serial No. 288,605. (No model.)

To all whom it may concern:

Be it known that I, CHARLES CROOK, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Straw-Board-Lining-Cutter Machines, of which the following is a specification.

My invention relates to the construction of a machine designed to line or face sheets of card-board into any style of white or colored paper, and has special reference to devices adapted to automatically sever the paper lining in lieu of performing this operation manually, as has hitherto been done in machines of this character.

The object of my invention is to provide mechanism by the use of which the web which constitutes the lining material is automatically severed between each sheet of board by the operation of the machine itself, caused by the act of feeding a new sheet to the same; and it consists in the construction and arrangement of parts hereinafter set forth, and is adapted to be used in connection with the straw-board-lining machine patented by A. W. Schlichte on October 5, 1886, No. 350,272.

In the drawings which form a part of this specification, Figure 1 is a front view of my improvement. Fig. 2 is a side view, the main operating portion of the same being shown in section in order to disclose the construction of the parts; and Fig. 3 is a view in detail.

Similar letters refer to similar parts throughout the several views.

Referring again to the drawings, K represents a gear-wheel, which may be rotated by any suitable power, as by another gear operated manually by a crank, as shown. The cross-bar H is rigidly attached at one end to the wheel K, forming a double crank, and there are pivoted to the forward and rear extremities of the bar H, and on opposite sides thereof, two rods C′ and C″, which thereby are caused to move alternately by the rotation of the wheel K. To the two lower extremities of the two rods C′ and C″ are respectively attached by a pivot-joint the pawls B and C‴, which are constructed and applied so as to partially rotate with a reciprocating motion—the pawl C‴ around the hub of the wheel A′ and the pawl B around the tubular hanger or support D′, the depending bracket D^2 from which serves as a means of rigidly securing the tubular hanger D′ to the frame of the machine. A hollow shaft E′, working freely within the hanger D′, (indicated by a solid black line in Fig. 2,) is rigidly attached to the wheels A and A′ in front and to the cam E in the rear.

The two wheels A and A′ are provided upon the greater portion of their periphery with ratchet-teeth, and also have the remaining portion of the same smooth or plain. The shaft or pin J, carrying the arm J′, rigidly attached to the forward extremity of the same, rotates loosely within the hollow shaft E′. The arm J′ is adapted to be carried forward by means of the engagement with the same of the lug or pin *a*, projecting from the face of the ratchet-wheel A, as shown.

In describing the operation of the parts I will refer to the Patent No. 350,272, before mentioned, where it is explained how that after the lining-paper web is in the bite of the rolls the sheets of card-board may be fed in, which operation serves to carry the frame C (holding the knife-frame D) forward. Thereupon the attendant by operating a lever moves a cord *j*, by which action the knife-frame D is caused to sever the paper.

My invention provides for automatically operating the cord *j* whenever the frame C is moved forward by the insertion of the sheet of card-board in the manner following, to wit: The rotation of the gear-wheel K serves to wind up the ratchet-wheels A and A′, attached to the hollow shaft E′, and consequently the cam E, the spiral spring E^2 becoming distended thereby. The ratchet portion of the wheels A A′ and the cam E are so arranged with respect to each other that whenever the wheels are entirely wound up the tooth or pin *g* of the inverted-L-shaped extension G, attached to the frame C, will rest upon the projecting portion or tooth *e* of the cam E. The lower extremity of the upright portion of the extension G may be pivoted to the bracket D^2, attached to the lower portion of the machine, as shown, and may, together with the frame C, be held in a normal or vertical posi-

tion by means of a spring or weight, as shown and described in the patent already referred to. The bar L is pivoted at its upper extremity to the arm J′ and at its lower extremity to the bell-crank M, which operates, through the medium of the cord *j*, the cutting-knife D.

Normally my device is wound up and the parts are in the position shown in the drawings—namely, ready to operate the cutting-knife when set in action by the movement of the frame C in a forward direction—and their automatic operation is as follows, viz: The movement of the frame C forward, caused by the insertion into the machine of a sheet of pasteboard, causes the pin *g* of the bar G to slip off from the tooth *e* of the cam E, and the consequent contraction of the spiral spring E^2 will cause the cam E, hollow shaft E′, and wheels A and A′ to make half a revolution in the direction of the arrow. This partial rotation of the wheel A allows the arm J′, which moves around in front of the pin *a* of the said wheel A, to become freed from the action of the pin *a*, and the bar L (operating the cutting-knife by means of the bell-crank M and cord *j*) is, together with the arm J′, then quickly pulled forward by means of the spring attached to the frame holding the blade, the quick backward-and-forward movement of the bar L thus serving to impart the necessary movement to the cord *j* in order to cause the depression of the knife, and afterward to allow the same to become again raised by the springs *i*, thereby cutting the web of the paper lining as required, after which operation the various parts will, by the rotation of the manual operating-crank, become again wound up, the arm J′ being carried to its normal position by the pin *a* of the wheel A, and the frames C and the cutting-knife D will assume their normal position. Upon the insertion of a new sheet of card-board the automatic operation hereinbefore described will be repeated.

It is obvious that a single wheel A and one pawl alone may be used to accomplish the winding up of my automatic mechanism; but I prefer the use of the double crank on account of the winding being done in a more rapid and even manner.

As it is evident that many slight changes in the construction and relative arrangement of parts might be resorted to without departing from the spirit and scope of my invention, I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described, but that I reserve the right to make such changes, and that

What I claim as new, and desire to secure by Letters Patent, is—

1. In a straw-board-lining-cutter machine, the combination, with the frame C, provided with a web-severing knife D and adapted to be moved by a straw-board, and with the L-shaped extension G, provided with a pin *g*, of the cam E, spring E^2, ratchet-wheel A′, the ratchet-wheel A, provided with a pin *a*, the pawls B and C‴, and arm J′, substantially as shown and described.

2. The combination, with the L-shaped extension G, provided with the pin *g* and with the cam E, spring E^2, ratchet-wheel A′, and the ratchet-wheel A, provided with the pin *a*, the pawls B and C‴, and also with the arm J′, of the cross-bar H, wheel K, and rods C′ and C″, as and for the uses and purpose set forth.

3. The combination, with the frame C and the L-shaped extension G, provided with the pin *g*, of the cam E, spring E^2, ratchet-wheel A′, the ratchet-wheel A, provided with the pin *a* and the pawls B and C‴, arm J′, bar L, bell-crank M, and cord *j*, as and for the uses and purpose set forth.

In testimony of the foregoing specification I do hereby sign the same in the city of New York, county and State of New York, this 6th day of January, A. D. 1888.

CHARLES CROOK.

Witnesses:
GILBERT MCGLOIN,
JOHN HOYER.