No. 610,526. Patented Sept. 13, 1898.

H. P. FEISTER.

CARD CUTTING MACHINE.

(Application filed Aug. 17, 1897.)

(No Model.) 2 Sheets—Sheet 1.

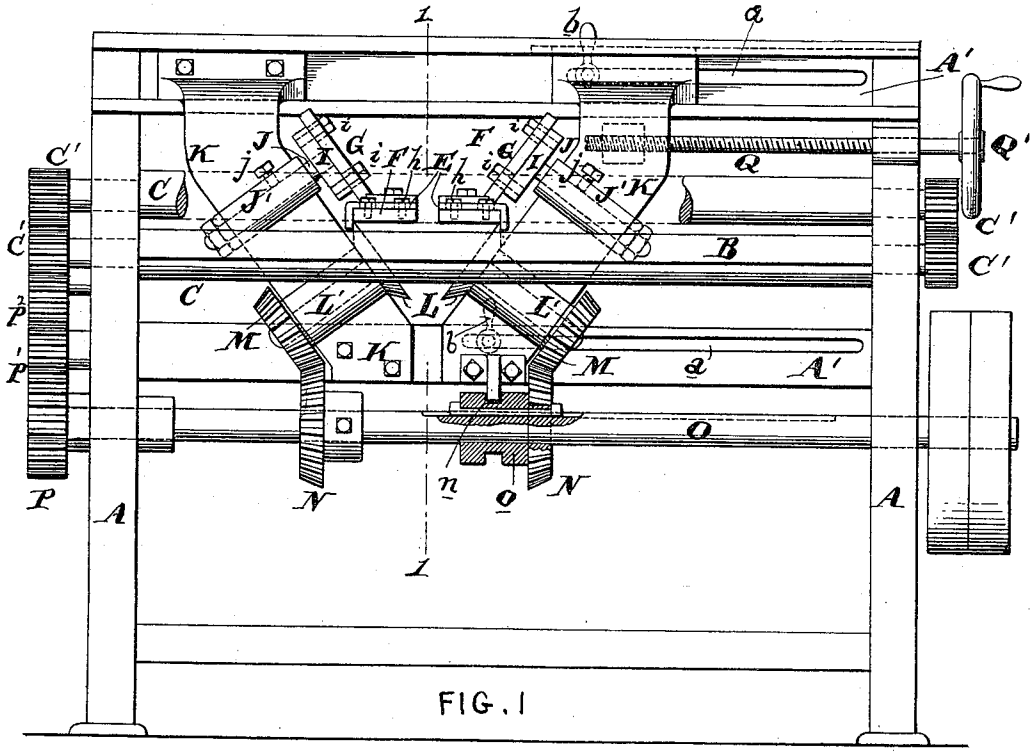


FIG. 1

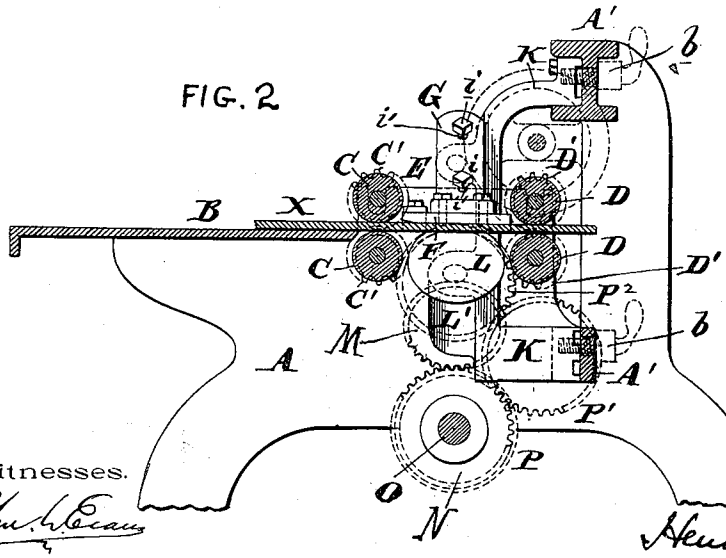


FIG. 2

Witnesses.

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Inventor.

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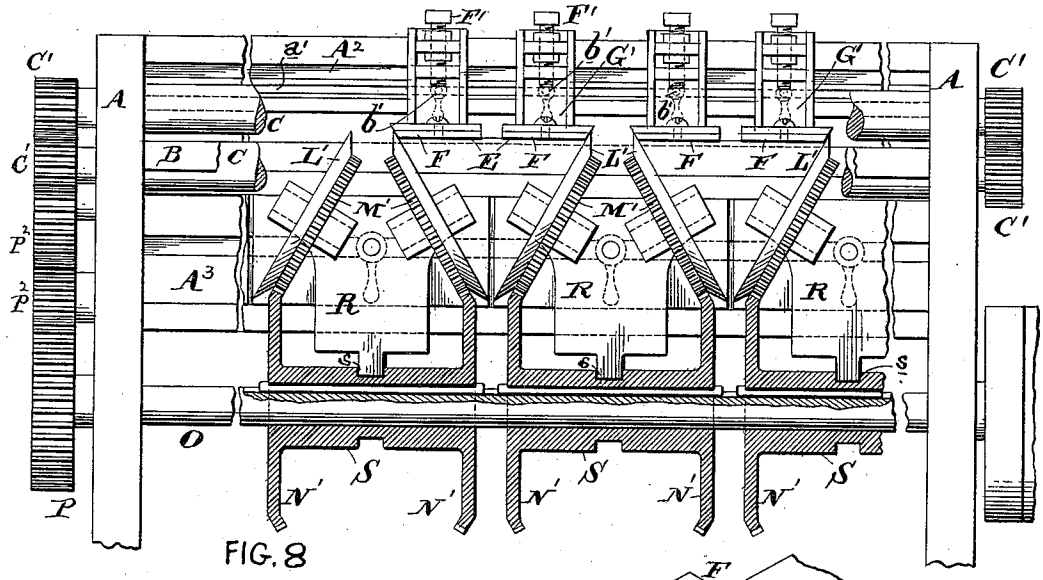


FIG. 8

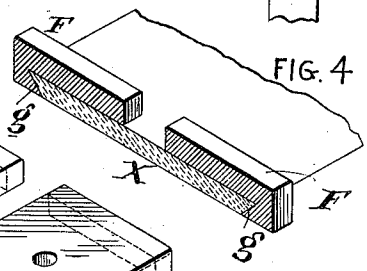


FIG. 4

FIG. 3

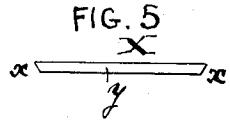


FIG. 5

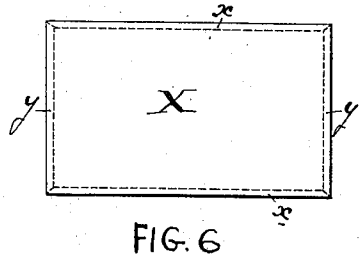


FIG. 6

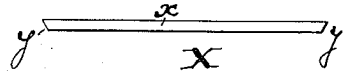


FIG. 7

Witnesses.

Howard Tompkins

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By [illegible]

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UNITED STATES PATENT OFFICE.

HENRY P. FEISTER, OF PHILADELPHIA, PENNSYLVANIA.

CARD-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 610,526, dated September 13, 1898.

Application filed August 17, 1897. Serial No. 648,508. (No model.)

To all whom it may concern:

Be it known that I, HENRY P. FEISTER, of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Card-Cutting Machines, of which the following is a specification.

My invention has reference to card-cutting machines; and it consists of the improvements which are fully set forth in the following specification and are shown in the accompanying drawings.

My invention relates particularly to machines for cutting the side edges of cards or strips and is peculiarly adapted for beveling such side edges.

It is the object of my invention to enable cards or strips to be trimmed or beveled by machinery with rapidity and accuracy and to provide a machine for this purpose which shall be simple in construction, easy to operate, and readily adjustable to suit variations in the width of the cards or strips to be cut.

In carrying out my invention I employ a guide-frame under which the cards or strips are fed and which acts to guide and support and burnish the card during the cutting operations, in combination with rotary cutting-disks having their cutting edges arranged adjacent to the outer sides of the guide-frame and acting in conjunction therewith to trim or bevel the side edges of the cards or strips as they pass under the guide-frame. To permit of adjustment to suit variations in the width of the cards or strips, this guide-frame is composed of two sections having provision for lateral adjustment, which may be accomplished by moving either one or both plates, and the cutters are also provided with provision for lateral adjustment to correspond with the adjustment of the sections of the guide-frame.

My invention also includes a machine having a series of such adjustable guides and cutters, adapted to simultaneously cut a series of cards or strips even when they are of different width. In this case the sheet of cardboard is passed through the machine and simultaneously cut by the several cutters, forming a series of beveled strips, which may be subsequently cut transversely and beveled to form individual cards of the requisite length.

My invention includes certain features in the construction of the guide-plate and in the means for supporting and adjusting it and in the combination therewith of the cutters, all of which are hereinafter specified in the claims.

Figure 1 is a front elevation of a card-beveling machine embodying my invention, with parts broken away and in section. Fig. 2 is a longitudinal vertical sectional view of the same on line 1 1 of Fig. 1. Fig. 3 is a perspective view, enlarged, of the detached card-guiding clamps. Fig. 4 is a transverse sectional view of the same on the line 2 2 of Fig. 3. Figs. 5, 6, and 7 are respectively an end, plan, and side view of the beveled card; and Fig. 8 is a front elevation, with part in section, of a machine embodying my invention and illustrating a modification thereof.

A A are the side frames of the machine, between which is located a table B, upon which the cardboard to be cut or beveled is fed.

C C are a pair of feeding-rollers located at the rear of the table or in an opening therein in front of the cutters and one above and one below the table, so that the card as it travels over the table will pass between them.

D D are a second pair of feed-rollers located in the rear of the cutters to receive the card as it passes from them.

The rollers C C and D D may be made of any convenient material and may, if desired, be faced with rubber, felt, or other suitable material.

The shafts of the rollers C C and D D are journaled in suitable bearings in the side frames A A and are geared together by gears C′ C′ and D′ D′, respectively, by which they are driven.

E is a guide for the cardboard as it passes over the cutters, and is located in the rear of the feeding-rollers C C. This guide may be of any convenient construction. I prefer, however, to construct it, as shown, of two frames F F, carried by brackets G G and provided with flanges *f f* on the sides adjacent to the front and with flanges *g g* on the sides adjacent to the rear. The flanges *f f* are preferably formed by angular plates H H, secured to the top of the frames F F by slot-and-screw connections *h*, whereby adjustment to vary the space between the flanges

f f may be obtained. When the cards are to be beveled by the cutters, the flanges *g g* at the rear of the frames F F are beveled to correspond with the bevel imparted to the card by the cutters.

To enable the frames F F to be adjusted vertically and also laterally to a slight extent, I prefer to make the brackets G G, which carry them, adjustable. For this purpose I have shown the brackets G G secured to heads I of bars J by slot *i'* and screw-connections *i* and the bars J carried in sleeves J' of brackets K, carried by the main frame. The slot-and-screw connections *i* permit the brackets and frames F F to be raised and lowered to a slight extent, and lateral adjustment may be obtained by moving the bars J in the sleeves J', in which they may be secured by set-screws *j*.

L L are the cutters, which are preferably disks carried on spindles journaled in sleeves L' of the brackets K. For beveling the cards the disks are arranged in angular positions, as shown, so that their cutting edges will act at an angle upon the edges of the cards. The disks are so disposed that their cutting edges act upon the edges of the cards between the flanges *f* and *g* of the guide-frames F F.

Power is imparted to the cutter-spindles by means of gears M carried thereby and receiving power from gears N on the power-shaft O, which may be driven in any suitable manner.

Power may be imparted from the shaft O to the feeding-rollers C C and D D from a gear P carried thereby through intermediate gears P' P^2.

I shall now explain the operation of the machine so far as it has been described. The cardboard strip X is fed over the table B between the feeding-rollers C C and under the guide E, passing between the flanges *f f* of the frames F F, which are adjusted to suit the width of the card. The frames F F support the card firmly while it is being fed under them, and the cutting-disks L L act upon the side edges of the card as it passes beyond the flanges *f f* and cut it. The cut portion of the card passes between the flanges *g g* at the rear of the frames F F, and guide it to the rolls D D. The side edges *x x* of the card or strip are thus beveled. The strip may then be cut transversely into cards of the desired length, and these cards may then be arranged transversely and fed in succession between the rollers C C and under the guide E, when the cutters L L will act as before to cut the end edges *y y*. As the edges of the card are cut between the rotary cutters L and the edges of the guide-plate E, in contact with which the edges of the card are pressed by the action of the cutters, the guide-plate adjacent to the edges performs a burnishing action upon the cut or beveled edge of the card and prevents the displacing of the material so as to form an uneven or irregular cut edge, and the side edges of the guide E coact as cutting edges with blades of the rotary cutters L.

To adapt the guide and cutters to cards of various sizes, I provide them with means for adjustment. In the construction shown in Figs. 1 and 2 this is accomplished by making one of the brackets K, which carries one of the guide-frames F and cutters L, adjustable. This bracket K is guided in transverse frames A' A' between the side frames A. Any suitable means may be employed for making this adjustment and for securing the adjustable bracket K in adjusted position. For this purpose I have shown the guide-frames A' A' provided with longitudinal slots *a* and the heads of the brackets K with clamping-screws *b*, extending through the slots and engaging the bracket-heads. By means of these clamping-screws *b* the bracket K and the guide-plate and cutter which it carries may be adjusted laterally. The gear-wheel N, which engages the gear-wheel M of the adjustable bracket, is keyed to the shaft O so as to slide longitudinally thereon, and a finger *n* on the adjustable bracket K engages a grooved sleeve *o* on the gear-wheel N, so that the gear-wheel N is moved laterally on the shaft O to preserve its driving connection with the gear-wheel M on the adjustable bracket K when the bracket is adjusted.

The adjustable bracket may be moved in any suitable manner. For this purpose I have shown an adjusting-screw Q sleeved in one of the side frames A and engaging the adjustable bracket K, so that by the rotation of the screw Q through a hand-wheel Q' or in any other manner the adjustable bracket K and the parts which it carries may be adjusted laterally. If desired, both brackets K may be made adjustable.

In the modification shown in Fig. 8 I have illustrated my invention applied to a machine for simultaneously cutting several strips or cards. In this construction I employ a series of guides E, one for each strip or card and each composed of two frames F F, as in the former construction described; but I have shown each frame F carried by a frame G', laterally adjustable upon guides of a transverse guide-frame A^2 between the side frames A A and screwed in adjusted position by a slot *a'* and clamping-screws *b'*. The single sheet of cardboard is fed to all of the cutters simultaneously, so as to be divided into several strips having beveled sides. These strips are subsequently cut transversely to their length by being passed again to the several cutters simultaneously in the same machine or in a second machine. In this manner I am enabled to produce in a cheap and expeditious manner cards having all four edges beveled. This manner of converting a whole sheet of card-stock simultaneously into stripping and then subdividing the strips by feeding them sidewise to a gang of cutters is an important use of my invention. The plates F may be adjusted vertically by the

adjusting-screws F′. One cutter L′ of each pair and the adjacent cutter L′ of the next pair are journaled in a common bracket R, which is adjustable transversely on a transverse guide frame or bar A^3, and the corresponding gears N′ on the shaft O, which rotate the cutters L′ through the gears M′, are connected by a grooved sleeve S, which engages a tongue or lug *s* on the bracket R, so that by moving the brackets R laterally the two adjacent cutters of any two adjacent pairs of cutters may be appropriately adjusted with reference to the two other cutters, and thus any or all of the cutters may be adjusted to suit a card or strip of any width and the machine as a whole may be adjusted to simultaneously cut strips of different widths.

The details of construction shown may be varied without departing from the invention.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a card-cutting machine, the combination of a stationary guide, in contact with which the card to be cut is fed, having its opposite sides formed to constitute stationary cutting edges, and rotating cutters having their cutting edges arranged to act in conjunction with the stationary cutting edges formed by the opposite sides of the guide to simultaneously cut the opposite sides or edges of the card as it travels in contact with said guide.

2. In a card-cutting machine, the combination of a stationary guide, in contact with which the card to be cut is fed, provided upon its opposite sides with projections, between which the opposite sides or edges of the card are received and guided, as the card travels in contact with said guide, and cutters to cut the edges of the card as it travels in contact with said guide.

3. In a card-cutting machine, the combination of a stationary guide, in contact with which the card to be cut is fed, provided upon its opposite sides with projections, located both at the front and rear, between which the opposite sides or edges of the card are received and guided, as the card travels in contact with said guide, and cutters to cut the edges of the card as it travels in contact with said guide, located on each side between the projections of the guide.

4. In a card-cutting machine, the combination of a guide-frame under which the card to be cut passes composed of sections having provision for lateral adjustment with respect to each other, cutters arranged adjacent to said guide for cutting the edges of the card while it is passing under said guide-frame and having provision for lateral adjustment to correspond with the adjustment of the sections of the guide-frame, and feeding devices for feeding the card under said guide-frame.

5. In a card-cutting machine, the combination of a guide-frame under which the card to be cut passes, provided on its sides adjacent to the front with depending projections between which the card travels, and with depending and internally-beveled projections adjacent to the rear, and cutters having their cutting edges arranged at an angle so as to cut the edges of the card on a bevel and located on each side between the projections at the front and rear, whereby the beveled edges of the card will pass from said cutters between the beveled projections at the rear of the guide-frame.

6. In a card-cutting machine, the combination of a guide-frame under which the card to be cut passes composed of two independent sections having provision for lateral adjustment with respect to one another and provided on their outer sides adjacent to the front with depending projections between which the card travels, and with depending and internally-beveled projections adjacent to the rear, and cutters having their cutting edges arranged at an angle so as to cut the edges of the card on a bevel and located adjacent to said sections on each side between the projections at the front and rear, whereby the beveled edges of the card will pass from said cutters between the beveled projections at the rear of the guide-frame.

7. In a card-cutting machine the combination of a guide-frame, under which the card to be cut passes, composed of two sections having provision for lateral adjustment with respect to one another, cutters having their cutting edges arranged adjacent to the side edges of said sections so as to cut the edges of the card as it passes under said sections, a power-shaft, power-transmitting connections between the power-shaft and the cutters, and means for adjusting the cutters laterally to correspond with the adjustment of guide-frame.

8. In a card-cutting machine, the combination of a guide-frame under which the card to be cut passes, composed of two sections, an adjustable bracket supporting one of said sections, and cutters having cutting edges arranged adjacent to the sides of the sections of the guide-frame, one of said cutters being carried by said adjustable bracket, whereby said section and the corresponding cutter may be simultaneously and correspondingly adjusted.

9. In a card-cutting machine, the combination of a guide-frame under which the card to be cut passes, composed of two sections, an adjustable bracket supporting one of said sections, and cutters having their cutting edges arranged adjacent to the sides of the sections of the guide-frame, one of said cutters being carried by said adjustable bracket, whereby said section and the corresponding cutter may be simultaneously and correspondingly adjusted, a power-shaft, adjustable gearing between the power-shaft and the adjustable cutter, and a connection between

the adjustable bracket and the adjustable gearing, whereby said gearing will be adjusted simultaneously with the adjustment of the guide-frame section and cutter by the movement of the adjustable bracket.

10. In a card-cutting machine, the combination of the longitudinal feeding-rollers, C, C, between which the cards are fed, the guide-frame located in the rear thereof under which the card passes from the guide-rollers C, C, composed of two sections having provision for lateral adjustment, and the cutters having their cutting edges arranged adjacent to the outer side edges of the sections of the guide-frame, and provided with provision for lateral adjustment to correspond with the adjustment of the sections of the guide-frame.

11. In a card-cutting machine, the combination of the longitudinal feeding-rollers C, C, between which the cards are fed, the guide-frame located in the rear thereof under which the card passes from the guide-rollers C, C, composed of two sections having provision for lateral adjustment, the cutters arranged adjacent to the outer edges of the sections of the guide-frame, and having provision for lateral adjustment to correspond with the adjustment of the sections of the guide-frame, and the longitudinal delivering-rollers D, D, located in the rear of the cutters to deliver the cut card.

12. In a card-cutting machine the guide-frame under which the card passes while being cut, composed of the sections F, F, provided with the depending projections *f*, *f*, at the front, and the depending internally-beveled projections *g*, *g*, at the rear, for guiding the card as it passes to and from the cutters.

13. In a card-cutting machine, the combination of a series of guides under which the card passes while being cut, each composed of two sections having provision for lateral adjustment with respect to each other, and a series of cutters arranged in pairs with their cutting edges adjacent to the outer side edges of the sections of the guide-frames, and having provision for lateral adjustment to correspond with the adjustment of the guide-frames.

14. In a card-cutting machine, the combination of a series of guides under which the card passes while being cut, each composed of two sections having provision for lateral adjustment with respect to each other, and a series of cutters arranged in pairs with their cutting edges adjacent to the outer side edges of the sections of the guide-frames, and having provision for lateral adjustment to correspond with the adjustment of the guide-frames, a power-shaft, gearing between the power-shaft and series of cutters, and means for adjusting said gearing simultaneously with the cutters so as not to break the driving connection.

15. In a card-beveling machine, the combination of a flat guide-plate in contact with which the card to be beveled is passed presenting a lateral cutting edge and a burnishing-surface adjacent to the edge, means to feed the card in contact with the guide-plate, and an obliquely-arranged rotating beveling-cutter rotating at an angle to the plate and adapted to operate in conjunction with its lateral edge to trim the card simultaneously with the burnishing action of the guide-plate upon the face of the card adjacent to the edge being beveled.

In testimony of which invention I have hereunto set my hand.

HENRY P. FEISTER.

Witnesses:
BENJ. L. LEHMAN,
CHARLES WANICH.