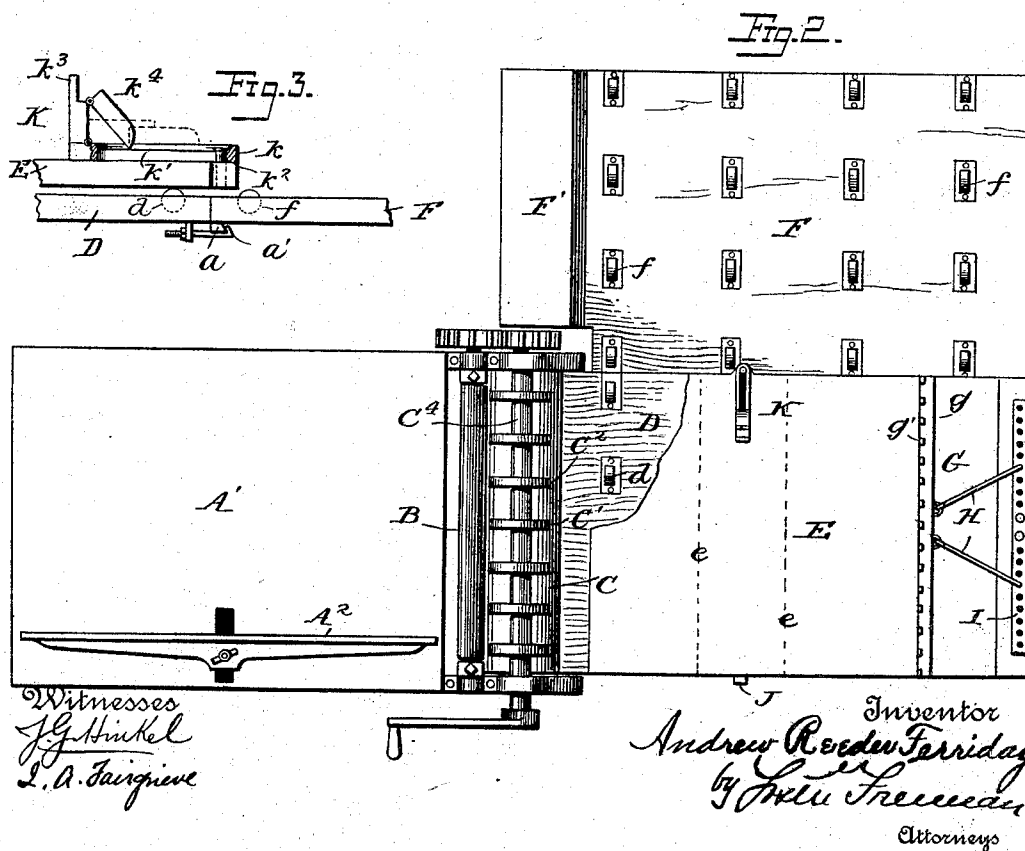
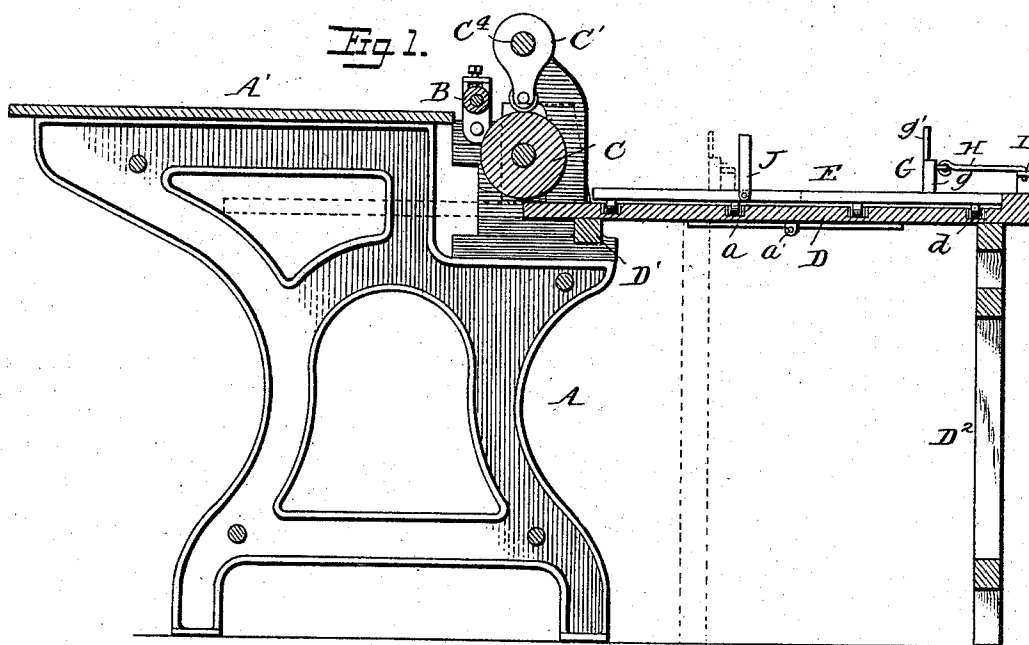


(No Model.)

A. R. FERRIDAY.
RECEIVING AND BREAKING TABLE.

No. 535,281.

Patented Mar. 5, 1895.



UNITED STATES PATENT OFFICE.

ANDREW REEDER FERRIDAY, OF HARRISBURG, PENNSYLVANIA.

RECEIVING AND BREAKING TABLE.

SPECIFICATION forming part of Letters Patent No. 535,281, dated March 5, 1895.

Application filed May 26, 1894. Serial No. 512,547. (No model.)

To all whom it may concern:

Be it known that I, ANDREW REEDER FERRIDAY, a citizen of the United States, residing at Harrisburg, Dauphin county, State of Pennsylvania, have invented certain new and useful Improvements in Receiving and Breaking Tables, of which the following is a specification.

My invention relates to receiving and breaking tables for paper box scoring and cutting machines and the like, and it has for its object to provide means whereby the cut and scored sheets of paper, paste-board or similar material may be conveniently received and removed from the receiving table to the breaking table, and broken and piled in a rapid and convenient manner, and to these ends my invention consists in the various features of construction and arrangement of parts hereinafter set forth.

In the accompanying drawings, in which I have illustrated the preferred embodiment of my invention, Figure 1, is a side view, partly in section, of an ordinary cutting and scoring machine having my improved receiving and breaking table connected therewith. Fig. 2, is a plan view of the same; and Fig. 3, is an enlarged detail view.

In the construction of boxes and the like out of paste-board or similar material, it is common to pass the large sheets of paper through a cutting or scoring machine, wherein the sheet is scored on the lines of the folds of the boxes or other articles to be made therefrom, and are practically cut into portions to form the boxes. These sheets of paste-board (and I will use the term board or paste-board as generic and covering any well-known equivalent, and the term box or boxes as covering any and all articles of similar character) are relatively heavy, depending of course, upon the character of the box, and they are intended to form several boxes more or less, according to the size of the box when finished.

In order to prevent the too rapid dulling or wearing of the cutters, the boards are not cut clear through, but a slight portion of the material is left integral, which has to be "broken" in order to separate the box blanks from the main sheet, and this is usually accomplished by hand, by bending the board

on the cut lines and breaking the parts as under. This breaking operation occupies about as much time as the cutting and scoring operation, and it has been usual with this class of machines to feed a certain number of sheets to the cutting and scoring device and then for the operator to break the sheets into the box blanks, and of course, meanwhile the cutting and scoring machine is practically idle or running without doing useful work, and it is one of the objects of my invention to provide a convenient arrangement whereby the operation of cutting and scoring can be practically continuous, while the operation of breaking is simultaneously being performed.

The operation of cutting and scoring requires skilled and expensive labor, while the operation of breaking can be performed equally well by unskilled labor, and by means of my arrangement I am enabled to secure a much larger output from a machine, at little extra expense.

With this general statement of the purposes and objects of my invention, I will now proceed to describe the embodiment thereof shown in the drawings.

I have illustrated a typical form of cutting and scoring machine, comprising a frame A, having a feed-board A', generally provided with a side guide A², on which the sheets are placed, and from which they are fed to the feed-roller B, and thence are passed over a roller C, and between this roller and a series of cutting or scoring knives C', C². These knives are usually mounted in yoke pieces or clamps, by means of which they are supported upon a shaft or rod C⁴, above the roller C, and the rod C⁴ can be adjusted to and from the roller C, to suit the various sizes of boxes, and the parts that are to be scored or cut, respectively.

The scored or cut sheets are usually delivered upon a receiving table at the rear of the cutting devices, and I have shown a table D, the forward end of which is supported upon suitable bearings D', in the frame of the cutter, and the outer end is supported by legs or feet D², and the table is adapted to slide to and from the frame, its end projecting under the roller C, as indicated in dotted lines, Fig. 1, in order that it will conveniently

receive sheets of various sizes. As before intimated, these sheets being relatively of considerable weight soon accumulate on the receiving board into a pile of such weight as to be inconvenient for handling manually, and in order to avoid the necessity of doing this, I provide what I term "carrying" tables E, which are supported upon the receiving tables D, and actually receive the cut and scored sheets. These carrying tables are preferably as wide as the receiving table, but are of various lengths, as indicated by the dotted lines *e—e*, Fig. 2, so as to conveniently fit the receiving table, whether it is moved outward to its farthest position, or moved inward toward the cutters.

The receiving table D, is provided with a series of anti-friction rolls or similar devices *d*, which are preferably fitted in mortises or recesses in the face of the table in several transverse rows, as shown in Fig. 2, and serve to support the carrying table E, and to furnish a ready means by which the carrying table may be moved from the receiving table onto the breaking table F, which is arranged alongside of the receiving table, as herein set forth.

The breaking table F, is provided with similar anti-friction devices or rolls *f*, and is supported upon suitable legs, and is arranged adjacent the receiving table, and is provided with suitable means by which it can be adjustably connected thereto, so as to permit the receiving table to be adjusted with relation to the cutting rollers, and while various means may be used, I have shown a cleat *a*, arranged along the under side of the breaking table and near the edge adjacent the receiving table, and a clamp *a'*, on the receiving table, adapted to engage the cleat or bar *a*, at any point, and connect the two tables together. The breaking table is also preferably provided with an elevated portion or platform *F'*, at its forward end, on which the broken blanks may be piled ready for removal.

Mounted on the rear end of the receiving table is an adjustable stop device G, and this is shown in the present instance in the form of a gate or stop, having a bar *g*, and a series of pins or fingers *g'* extending vertically therefrom, and these may be made of wood or similar material, properly connected to the bar by dove-tailing or otherwise, and this gate or stop is provided with two arms or bars H, which are pivotally connected thereto, the free ends of which can be adjusted in a rack or plate I, mounted at the outer end of the table. It will be seen that by moving the rods or bars H and attaching their outer ends, which are preferably bent to form hooks to different openings in this plate I, the gate or stop G, will be adjusted and held at various distances from the end of the table, so as to be in the best position to receive the sheets of board as they are delivered from the cut-

ting rollers, and to pile or deposit them on the carrying table. This gate or stop, presenting fingers or bars at its upper portion, will receive the sheets as they are thrown or discharged under a considerable speed from the cutters, and will yield to a greater or less extent under the blow of the sheets, but will cause them to fall upon the carrying table, or the sheets already delivered thereon in a regular and even pile, and while this gate or stop is exceedingly simple in its construction, I have found it very satisfactory in operation, capable of adjustment to suit the requirements, and not liable to get out of order.

The carrying tables E, are preferably provided with guides in order to prevent any accidental derangement of the sheets or piles, and while various forms may be used, such for instance, as is shown at J, which is a simple bar or cleat pivoted to the side of the carrying table and adapted to be turned up, as shown in Fig. 1, to form a stop for the sheets or can be turned down, as indicated in dotted lines, I prefer to use the stop K substantially as shown in detail in Fig. 3, which consists of an elongated base piece *k*, having a slot or groove *k'*, lengthwise thereof, the upper edges of which are preferably beveled, and by means of which it can be secured to the face of the carrying table by any suitable device, as a screw *k²*. Pivoted to this base piece, is an upright *k³*, and pivoted on one side of this is another piece *k⁴*, which has a sharp edge adapted to fit in a notch in the upper surface of the base *k*, so that it serves as a brace for the upright *k³*, when in the position shown in Fig. 3, thereby constituting a double jointed upright, and furnishing a substantial stop for the sheets at the sides, and a stop which may be adjusted to and fro on the carrying board, as desired, and when not in use may be folded down, as indicated in dotted lines, Fig. 3, out of the way. One or more of these stops, or stops of other form, may be used, on each of the carrying tables, as desired.

With this general description of the construction of the device, it will be seen that when the receiving table has been adjusted with relation to the size of the boards to be cut, and the breaking table is secured thereto by the clamp or similar means, a carrying table E, of proper size is placed upon the receiving table and the stop or gate G, is adjusted in the most advantageous position, and the stops J and K may be adjusted also in the positions desired, and the cut and scored sheets are received on the carrying table, until a sufficient number have been delivered, when the carrying table is moved laterally from the receiving table to the breaking table, it moving freely over the anti-friction devices in both of these tables, and another carrying table is put in its place. The breaker then manipulates the sheets, breaking them into the blanks on the breaking table, in the usual way and piling them

for instance on the platform F', of the breaking table F, and meanwhile another pile of cut and scored blanks have been received upon the carrying table, resting in position 5 on the receiving table, and this in turn is removed to the breaking table and another carrying table supplied in its place. This operation goes on continuously, until it is necessary to adjust the machine for another 10 sized sheet, or arrange the cutters and scorers for different sized blanks, and it will be seen that the said cutters and scorers can feed the blanks practically continuously to the machine, and the breaker can receive and 15 break the blanks, making the operation practically continuous, thereby saving considerable expense and skilled labor.

My device can be cheaply constructed and is adapted to various cutting and scoring 20 machines now in the market, and it will be seen that the parts are exceedingly simple and cheap of construction and at the same time my invention constitutes a practical device for accomplishing the results desired.

25 It is evident that the details of construction can be varied, and instead of the bars H, being pivotally connected to the gate G, they could, of course, be pivoted to the bar I. Moreover, the carrying tables may be provided with anti-friction devices on their under 30 sides, in addition to or in the place of the anti-friction devices in the receiving and

breaking tables, and the essential features of my invention would be embodied therein.

What I claim is—

35 1. In a cutting and scoring machine, an adjustable table provided with a movable stop comprising a gate, arms loosely connected to said stop or gate, a stationary bar extending across the table at the outer end thereof, and 40 means for connecting the free ends of said arms to different points of the bar, substantially as shown and for the purpose described.

2. The combination with a receiving table, of a stationary bar at its outer end provided 45 with a series of openings, a movable gate mounted on the table, and arms loosely connected to the gate and adapted to engage the openings in the bar, substantially as described

3. In a cutting and scoring machine, an adjustable receiving table having anti-friction 50 devices in its face, a breaking table also having anti-friction devices in its face, means for adjustably connecting the two tables, and carrying tables having guides adapted to be 55 moved from the receiving table to the breaking table, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANDREW REEDER FERRIDAY.

Witnesses:

EUGENE SNYDER,

C. M. McNAUGHTON.