

(No Model.)

2 Sheets—Sheet 1.

C. W. HOBBS.
MACHINE FOR SCORING CARDBOARD.

No. 569,200.

Patented Oct. 13, 1896.

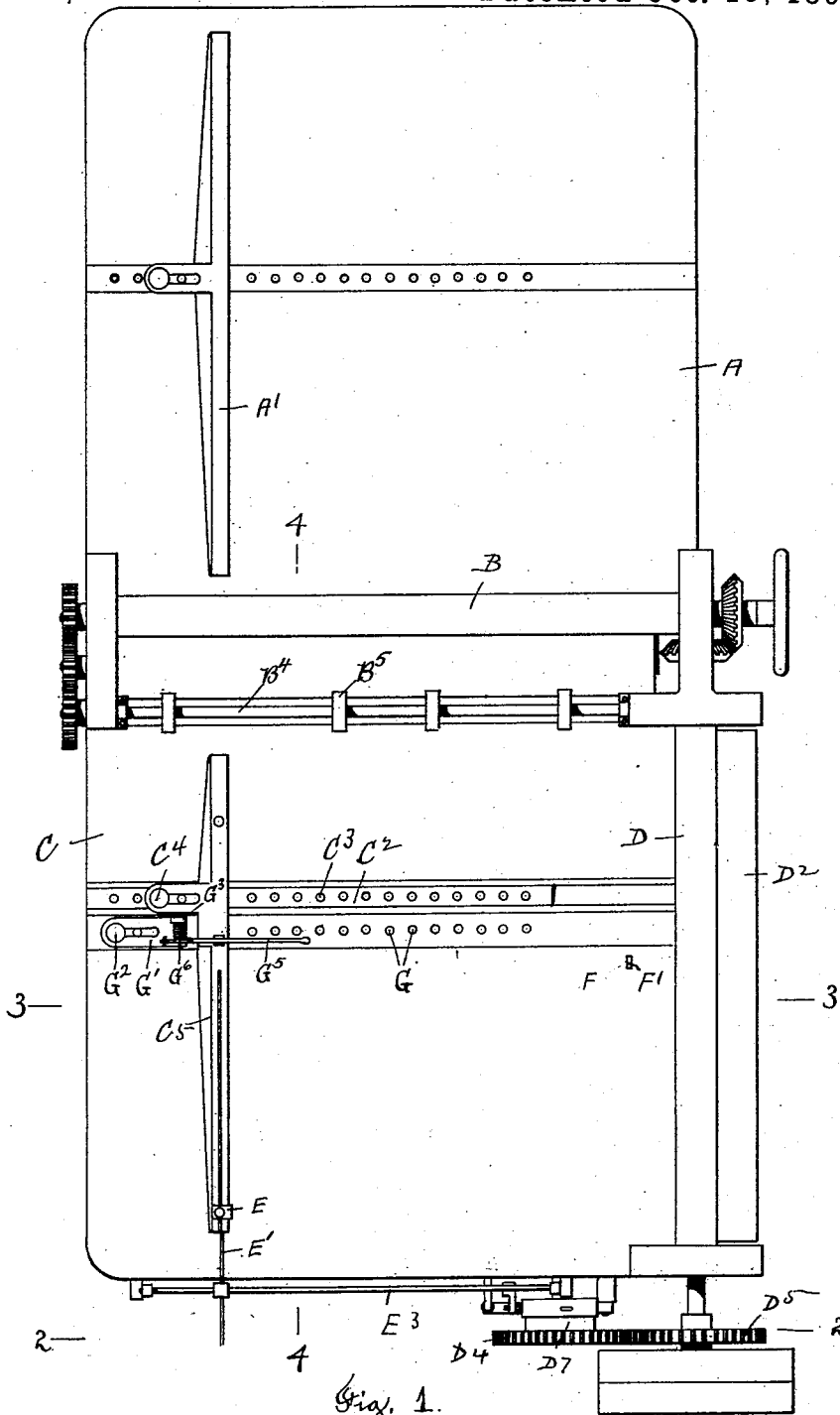


Fig. 1.

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Emma Kester

Inventor
Clarence W. Hobbs.
By his Attorney Rufus B. Fowler.

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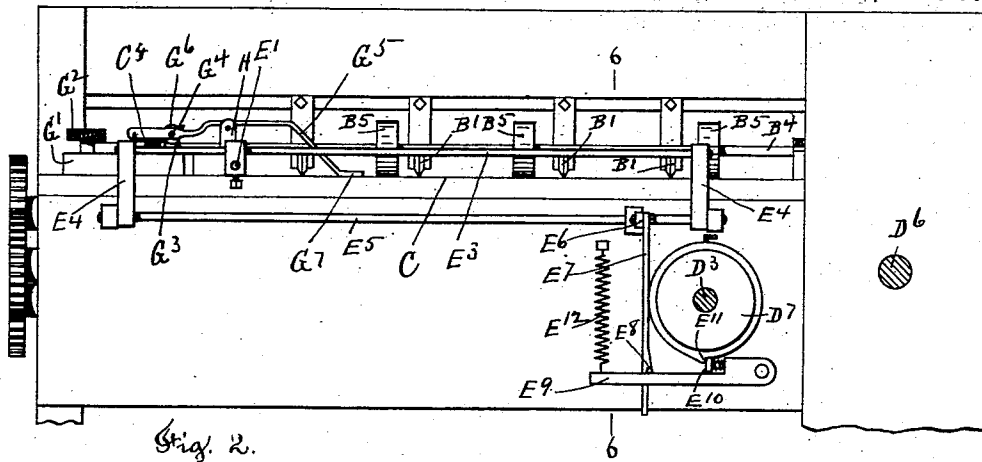


Fig. 2.

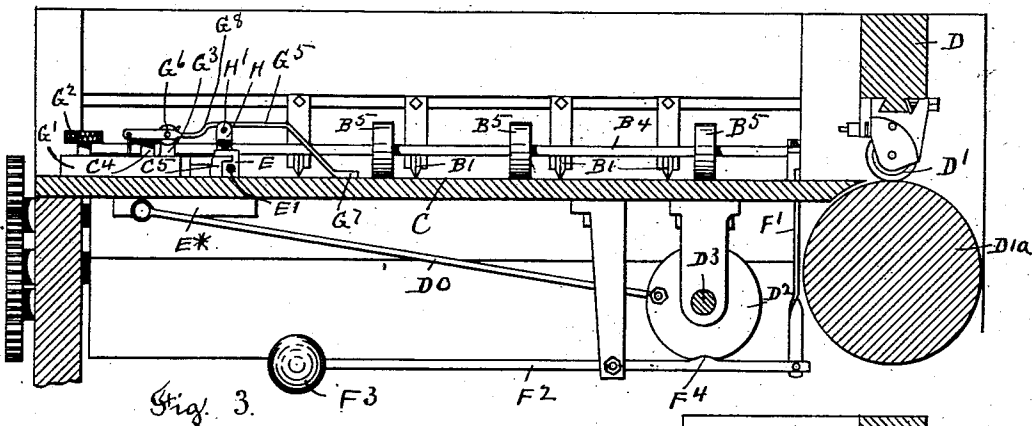


Fig. 3.

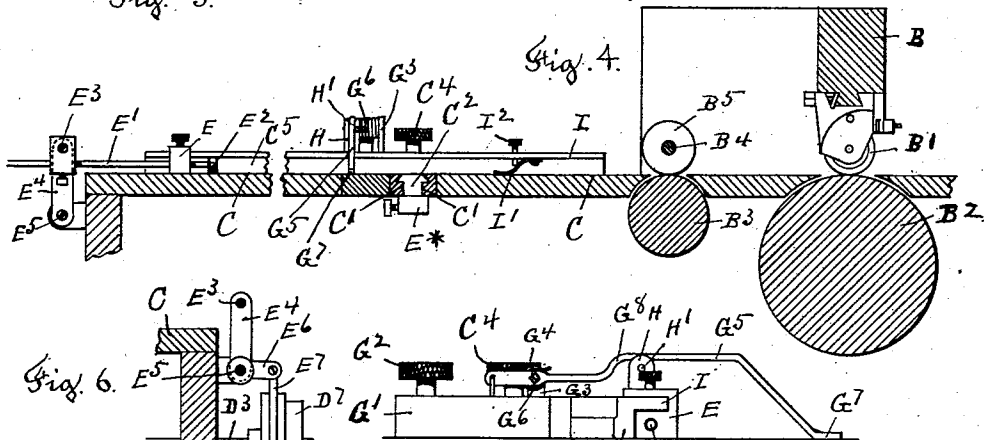


Fig. 4.

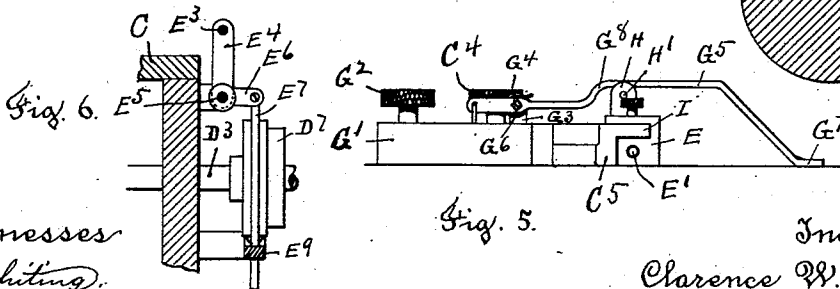


Fig. 5.

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UNITED STATES PATENT OFFICE.

CLARENCE W. HOBBS, OF WORCESTER, MASSACHUSETTS.

MACHINE FOR SCORING CARDBOARD.

SPECIFICATION forming part of Letters Patent No. 569,200, dated October 13, 1896.

Application filed September 14, 1894. Serial No. 523,314. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE W. HOBBS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Machines for Scoring Cardboard, of which the following is a specification, accompanied by drawings forming a part of the same and representing a scoring-machine embodying my invention, in which—

Figure 1 represents a plan view of the machine. Fig. 2 is an end view, a portion of the mechanism having been removed, on line 2 2, Fig. 1. Fig. 3 is a sectional view on line 3 3, Fig. 1. Fig. 4 is a sectional view on line 4 4, Fig. 1. Fig. 5 is a detached and side view of the elastic finger by which the cardboard is fulcrumed in order to cause it to be squared by the advancing cross-feed; and Fig. 6 is a sectional view on line 6 6, Fig. 2, showing a side view of the clutching mechanism.

Similar letters refer to similar parts in the different figures.

My present invention relates to certain improvements in a double-scoring machine or one containing two sets of scoring mechanisms placed at right angles to each other with connected operating mechanism by which a sheet of cardboard is automatically scored in two directions at right angles to each other.

Referring to the drawings, A denotes a feed-table upon which the sheet of cardboard is presented to the first of said scoring-knives, and A' represents a side gage along which the cardboard is fed in a straight line to the scoring-knives.

B represents a cutter-bar carrying upon its under side a set of rotating scoring-knives B' and a coöperating roller B², (represented in Fig. 4,) the cutter-bar B and roller B² being shown in sectional view.

The cutter-bar, rotating knives, and roller B² are constructed and operate in the usual and well-known manner common in machines of this class.

In the rear of the roller B² is placed a feed-roller B³ and shaft B⁴, carrying a series of feed-rollers B⁵, acting with the roller B³ to carry the cardboard forward and deliver it upon the second feed-table C. The feed-table C is provided with ways C', in which

moves a sliding bar C², having a series of holes C³ to receive an attaching-screw C⁴, by which a reciprocating bar C⁵ is adjustably attached to the sliding bar C², forming the cross-feed by which the sheet of cardboard which has been delivered upon the second feed-table C is moved forward toward the second scoring mechanism, consisting of the cutter-bar D, having the rotating cutters D' suspended beneath it, and a roller D^a, as represented in sectional view in Fig. 3, the scoring mechanism being a duplicate of the first.

A lug E* extends downward from the sliding bar C² and is connected by a link D⁰ with a rotating crank-wheel D², carried upon a shaft D³, which is driven by the gears D⁴ D⁵ from the driving-shaft D⁶ through a clutching mechanism D⁷, by which the driving power is connected with the shaft D³ to produce one complete revolution of the shaft and then automatically disengage itself.

The clutching mechanism being of a well-known form of construction and having been shown and described in detail in United States Letters Patent No. 260,394, dated July 4, 1882, I have not deemed it necessary in the present application to show or describe the same in detail.

To the reciprocating feeding-bar C⁵ is adjustably attached a stop E, arranged in the path of the advancing cardboard and designed to limit its forward movement over the table C. Sliding in the stop E is a rod E', provided with a head E², against which the advancing edge of the cardboard strikes, sliding the rod E'. The rod E' is connected with a rod E³, held in the free ends of arms E⁴ E⁴, which are attached to a rocking shaft E⁵, journaled in bearings attached to the end of the bed C. Projecting horizontally from the rocking shaft E⁵ is an arm E⁶, to which is pivoted a rod E⁷, provided with a shoulder E⁸, overhanging a lever E⁹, pivoted to the framework of the machine and provided with a shoulder E¹⁰, which is held against a shoulder E¹¹ on the rotating clutch by means of a spring E¹². As the advancing edge of the cardboard strikes the head E² the rod E' is moved forward, rocking the shaft E⁵ and depressing the rod E⁷, so the shoulder E⁸ will depress the lever E⁹ and carry the shoulder E¹⁰ out of the path of the shoulder E¹¹, there-

by allowing the clutching mechanism to connect the shaft D³ with the driving power and cause it to make one complete revolution, rotating the crank-wheel D² and carrying the reciprocating bar C⁵ forward, pushing the cardboard on the table C between the roller and rotating cutters of the second scoring mechanism.

The table C is provided with a hole F to receive the upper end of a sliding bar F', carried by one end of a pivoted lever F², having at its opposite end a counterweight F³, by which the bar is held in its raised position with its upper end projecting through the hole in the table C, as represented in Fig. 3.

The rotating crank-wheel D² is provided with a cam-surface, which allows the counterweight F³ to raise the bar F' in the position shown in Fig. 3 when the reciprocating bar C⁵ is in its farthest position from the second scoring mechanism, allowing the upper end of the bar F' to project through the table and form a stop, between which and the reciprocating bar C⁵ the cardboard is entered, the bar F' holding the cardboard from displacement. As the crank-wheel D² is rotated its face acts against a spur F⁴ on the pivoted lever F², serving to depress the bar F' and withdraw its upper end below the surface of the table to allow the sheet of cardboard to be advanced toward the second scoring mechanism by the forward movement of the reciprocating bar C⁵, the bar F' being held down until the bar C⁵ is moved back to its normal position.

The table C is provided with a series of holes G, allowing the stand G' to be adjustably attached to the table by means of a binding-screw G². The stand G' carries a post G³, supporting a horizontal stud G⁴, on which is pivoted a bent finger G⁵, and around the stud G⁴ is coiled a torsional spring G⁶, having its tension applied to the finger G⁵ to carry its free end G⁷ down into contact with the upper surface of the cardboard lying upon the table C, so the tension of the torsional spring will cause the end G⁷ of the finger to exert a pressure upon the surface of the cardboard nearly midway between its opposite ends and form a fulcrum about which the cardboard can rotate in order to bring its rear edge squarely against the face of the reciprocating bar C⁵ as the bar moves forward to advance the cardboard toward the second scoring mechanism.

The finger G⁵ is bent at G⁸, forming a cam-surface, and the reciprocating bar C⁵ carries a post H, having a horizontal stud H' extending beneath the finger G⁵, so as to slide beneath the bent section G⁸ and raise the finger G⁵ above the table C as the reciprocating bar C⁵ moves back to allow a sheet of cardboard from the first scoring mechanism to pass beneath the end G⁷ of the finger.

As the reciprocating bar C⁵ moves forward the stud H' moves away from the bent section G⁸ and allows the finger to be carried

down by the tension of the torsional spring until its end G⁷ bears upon the upper surface of the cardboard, so as to furnish a frictional resistance at the end of the finger, serving as a fulcrum about which the cardboard can be slightly rocked in order to bring its rear edge square with the advancing edge of the reciprocating bar C⁵, as already described, so the sheet of cardboard will be advanced toward the second scoring mechanism in a line at right angles with the scored lines made by the first scoring mechanism. The finger G⁵ is made long enough so the reciprocating movement of the bar C⁵ will take place wholly beneath the finger, and as the bar C⁵ moves back to its normal position the stud H' will again move beneath the bent section G⁸, raising the free end of the finger sufficiently above the surface of the table C to allow the succeeding sheet of cardboard to enter between the end of the finger and the surface of the table.

The reciprocating bar C⁵ is provided with an overhanging lip I, beneath which the edge of the advancing cardboard passes, and to the lip I is attached an elastic bent blade I', having its free end bearing lightly upon the surface of the table C, and as the cardboard is moved onto the table C its edge passes beneath the free end of the elastic blade I', thereby producing a frictional resistance upon the surface of the cardboard sufficient to restrain its momentum.

An adjusting-screw I² is held in the lip I, bearing against the top of the elastic blade, for the purpose of varying the pressure upon the cardboard. The extreme tip of the free end of the elastic blade I' rests upon the surface of the cardboard, and as the cardboard is moved forward upon the table C it will raise the elastic blade I' and pass beneath it and the surface of the table, but any reverse movement of the cardboard caused by a rebound of the cardboard or from any other cause will be checked by the engagement of the free end of the elastic blade with the surface of the cardboard.

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

1. In a machine for scoring cardboard the combination with a table, a reciprocating bar by which a sheet of cardboard is pushed along said table, mechanism by which a sheet of cardboard is fed upon said table in front of said reciprocating bar, actuating mechanism by which said bar is reciprocated, a clutching mechanism by which said actuating mechanism is connected with the driving power, a yielding stop placed in the path of the advancing sheet of cardboard as it is fed upon the table in front of said reciprocating bar, said yielding stop being operatively connected with said clutching mechanism, whereby the reciprocating-bar-actuating mechanism is automatically connected with the driving power by the forward movement of the cardboard, substantially as described.

2. In a machine for scoring cardboard the combination of a table upon which the cardboard is fed to a scoring mechanism, of a reciprocating bar by which the cardboard is advanced to the scoring mechanism, a pivoted finger extending over said reciprocating bar and a spring with its tension supplied to said finger to press it downward, said finger having a cam-surface arranged to be acted upon by the reciprocating bar, whereby said finger is raised.

3. In a machine for scoring cardboard, the combination of a table upon which the cardboard is fed to a scoring mechanism, of a reciprocating bar by which the sheet of cardboard is advanced toward the scoring mechanism, and an elastic blade having one end attached to said reciprocating bar and having its free end pressing against the surface of the table, substantially as described.

4. In a machine for scoring cardboard, the combination with a table, a scoring mechanism, a reciprocating bar by which the cardboard is moved toward said scoring mechanism, a stop, as E^2 arranged in the path of the sheet of cardboard as it is fed in front of said reciprocating bar, and a stop-bar as F' projecting above the surface of said table be-

tween said reciprocating bar and said scoring mechanism and means for depressing said stop-bar below the surface of the table, substantially as described.

5. In a machine for scoring cardboard, the combination with a scoring mechanism and a table upon which the cardboard is supported and a reciprocating bar by which the cardboard is pushed toward said scoring mechanism, of actuating mechanism by which said reciprocating bar is moved, said actuating mechanism comprising a clutch by which it is operatively connected with a driving part of the machine, a stop E adjustably attached to said reciprocating bar, a sliding rod E' provided with a head E^2 placed in the path of the advancing cardboard as it is placed before said reciprocating bar, whereby the advancing cardboard is made to move said sliding rod, and mechanism connecting said sliding rod with said clutch, substantially as described.

Dated this 4th day of July, 1894.

CLARENCE W. HOBBS.

Witnesses:

RUFUS B. FOWLER,
EMMA KESTER.