

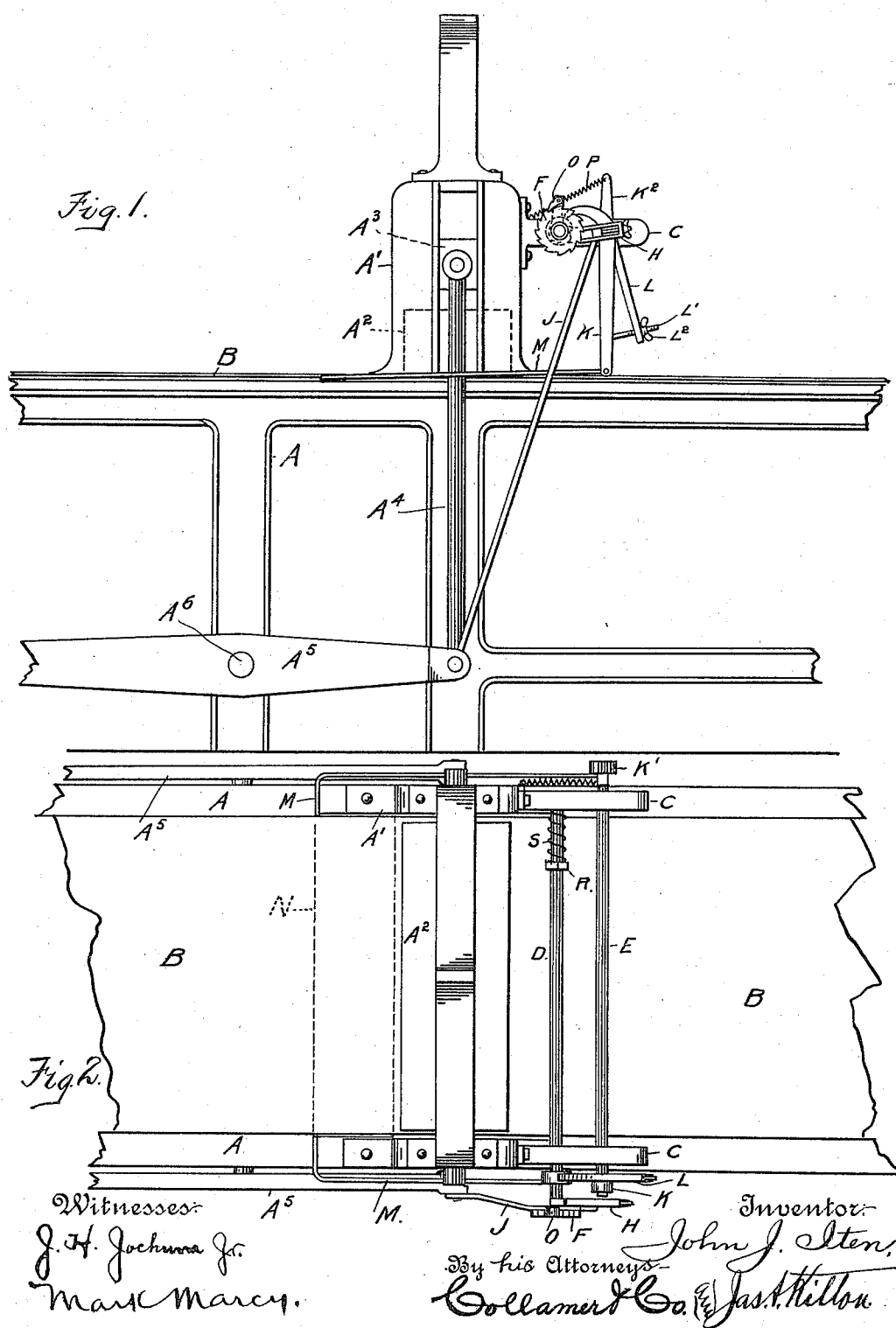
(No Model.)

2 Sheets—Sheet 1.

J. J. ITEN.
MACHINE FOR CUTTING CRACKERS.

No. 579,540.

Patented Mar. 23, 1897.



(No Model.)

2 Sheets—Sheet 2.

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MACHINE FOR CUTTING CRACKERS.

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Fig. 6.

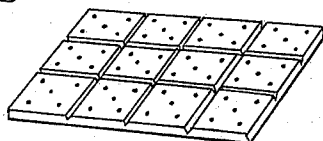


Fig. 4.

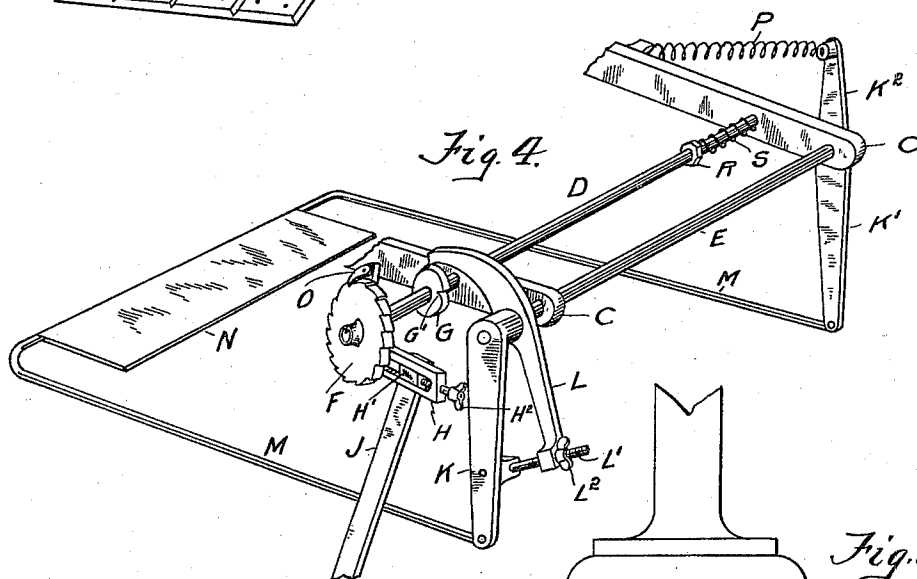


Fig. 3.

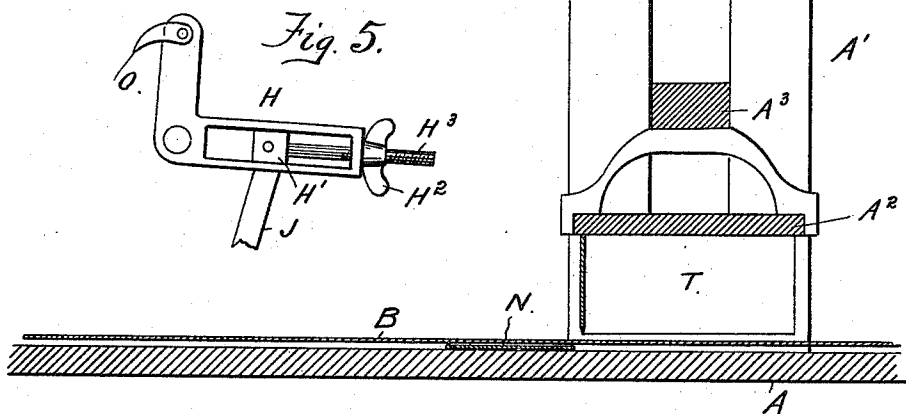
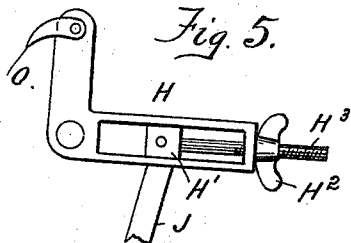


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN J. ITEN, OF DENVER, COLORADO.

MACHINE FOR CUTTING CRACKERS.

SPECIFICATION forming part of Letters Patent No. 579,540, dated March 23, 1897.

Application filed October 22, 1896. Serial No. 609,710. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. ITEN, a citizen of the United States, and a resident of Denver, Arapahoe county, State of Colorado, have
5 invented certain new and useful Improvements in Machines for Cutting Crackers; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with
10 claims particularly specifying the novelty.

This invention relates to cracker-machines and the like, and more particularly to that class thereof which scores and cuts the cracker-blank at the proper points; and the object of
15 the same is to produce certain improvements in machines of this character.

To this end the invention consists in a machine adapted to score the blank passing along an apron and at proper intervals to cut said
20 blank entirely through, as well as in the details of construction by which these ideas are carried out, all as hereinafter described, and as illustrated in the accompanying drawings, wherein—

25 Figure 1 is a side elevation of the scoring and cutting machinery complete and a portion of the table which carries the apron. Fig. 2 is a plan view thereof. Fig. 3 is a central longitudinal section. Fig. 4 is a perspective
30 detail of the improved mechanism complete. Fig. 5 is an enlarged side elevation of the feed-pawl and its adjustable connection with the link. Fig. 6 is a perspective detail of the finished article.

35 In the said drawings the letter A designates a table or stand, at the left of which (and not shown, as it forms no part of the present invention) is located the machine for making the crackers or the like, which are
40 fed in a sheet therefrom onto the flexible sheet or apron B, that moves to the right over the top of the table in the construction here shown.

A' is an upright carried by the table and
45 vertically slotted, so as to form a guide at each side of the table, and in these guides moves a cross-piece A³, carrying a horizontal plate A² on its lower side, which plate in turn supports the gang of knives T.

50 A⁶ is the power-shaft, to which oscillating motion is given from any suitable source of power, (not shown,) and A⁵ is a lever fast on

this shaft and connected, as at A⁴, with one end of the cross-piece, while similar connection is made at the opposite side of the machine—the rear side in Fig. 1. Thus at each
55 movement of the shaft A⁶ the knife T is caused to descend so as to cut partly into the upper side of the cracker-blank, both transversely and laterally thereof, and produce score-lines
60 something after the order shown in Fig. 6. Heretofore, however, it has been necessary for the operator to manually break the scored blank at every, say, eighth score across the
65 same in order to reduce the “cakes” to such size that they will enter the receptacle adapted for them, and the object of the present invention is to avoid this manual labor, and hence dispense with the need for this operator by automatically severing the cracker-
70 blank at predetermined intervals without interrupting the scoring or the progressive step-by-step movement of the blank itself.

Coming now more particularly to the present invention, the letters C C designate two
75 fixed brackets projecting from and supported by the uprights A', and in these brackets are journaled two transverse shafts D and E, which I will term, respectively, the “feed-shaft” and the “plate-shaft.” The former
80 is provided with some suitable friction device to prevent its too-easy rotation, and in the present instance I have shown it as carrying a nut R, between which and one of the brackets C is an expansive spring S, coiled on the
85 shaft. However, any other suitable friction device could be employed. On one extremity of this shaft is fixed a ratchet F, means being provided for removing it and substituting one
90 with a greater or lesser number of teeth, for a purpose to appear below. Adjacent the ratchet F is also fixed on this shaft a cam G, having a notch G' in its periphery.

Connected with the rock-lever A⁵ is a link J, whose other extremity is pivoted in a block
95 H', which is guided longitudinally in a slot in one arm of a bell-crank lever H, that is pivoted at its elbow on the feed-shaft D, while the other end of this bell-crank lever carries the feed-pawl O, that takes into the teeth of
100 ratchet F.

H³ is a screw connected with the block H', passing through the extremity of this arm of the lever H and carrying a thumb-nut H², by

means of which the block may be adjusted toward or from the shaft D, so as to give a greater or lesser movement to the pawl O. However, any other suitable device might be employed for adjusting the length of stroke which this pawl shall have.

The plate-shaft E has fixed thereto two pendent arms K and K', whose lower ends are connected by wires or rods M with a plate N, resting upon the table A beneath the apron B, and one of the arms K' is continued upward, as at K², and connected by a spring P with the bracket C, so that the normal tendency of the spring is to rock the shaft E and its arms and draw the plate beneath the transverse knife T in order that the descent of the knife at a point above the plate N will cause the complete severance of the cracker-blank instead of only scoring it, as otherwise; but the operation of the spring P is prevented by means of the cam-lever L, fixed on the plate-shaft or adjustably mounted thereon, as here shown.

L¹ is a screw pivoted to one arm of the shaft E and passing through one arm of the lever L, and L² is a thumb-nut on this screw, by whose adjustment the lower end of lever L is drawn nearer to or set farther from the arm K, as will be seen. However, any other suitable means of adjusting lever L on the shaft might be employed. The other (here the upper) end of the cam-lever L rests upon the periphery of the cam G and is adapted to enter the notch G' therein at proper moments, this notch being deep enough (or this arm of lever L short enough) to permit the plate-shaft E to rock sufficiently under tension of the spring P to draw the plate N under the knife T, as will be clear.

All parts of this machine are of the desired sizes, shapes, proportions, and materials, and considerable change in the details of construction may be made without departing from the principle of my invention.

In operation the cracker-blank is formed by the cracker-machine at the left (not shown) and is fed onto the sheet or apron B, which in turn has an intermittent movement toward the right over the table A and plate N. The rock-shaft A⁶ causes the intermittent descent of the gang of knives T, which, while operating upon or over the apron B only, will only score the blank; but when the plate N is brought under the knives at proper intervals the descent of the knives upon the blank as sustained by both apron and plate will cause the complete cutting off of the cracker-blank at this time.

The adjustment in Fig. 5 or its equivalent is for the purpose of causing the pawl O to turn the ratchet F more or less rapidly, so as to regulate the points at which the complete cutting of the blank shall occur. The adjustment L¹ L² is for the purpose of causing the plate N to be moved more or less farther beneath the gang of knives, so that when the cutting of the blank occurs it shall be but a

transverse cut, or it shall also cut longitudinally of the blank, as desired. The adjustment of the nut R is but to tighten or loosen the tension of spring S to adjust the friction on the feed-shaft D, so that the pawl O in its backward movement shall slip over the teeth of the ratchet F without turning it backward. As before stated, however, these forms of adjustment could be replaced by others, or they could be omitted in cheaper grades of machines. The cakes of finished crackers are delivered by the apron B to a suitable receptacle forming no part of the present invention, and hence not illustrated.

What is claimed as new is—

1. In a machine of the character described, the combination with a fixed bed, and a knife moving toward and away from the same; of a flexible sheet over the bed, a plate beneath the sheet, and means for moving the plate beneath the knife at intervals, as and for the purpose set forth.

2. In a machine of the character described, the combination with a fixed bed, and a knife moving toward and away from the same; of an apron moving over the bed and beneath the knife when the latter is raised, a plate beneath the apron, and means for moving the plate beneath the knife at intervals, as and for the purpose set forth.

3. In a machine for treating cracker-blanks and the like, the combination with a table having upright guides, a cross-bar reciprocating vertically therein, and a gang of transverse and longitudinal knives carried by the bar; of an apron moving over the table, a plate beneath the apron, means for moving the plate beneath the knives at intervals, and an adjustment for regulating the distance beneath the gang of knives to which the plate shall be moved, as and for the purpose set forth.

4. In a cutting-machine, the combination with the bed, a knife reciprocating toward the same, and a plate adapted to slide upon the bed and beneath the knife; of a shaft having arms connected with the plate, a spring turning said shaft normally in one direction, a cam-lever connected with the shaft, a notched cam upon whose periphery the tip of said lever bears, and means for turning the cam, as and for the purpose set forth.

5. In a cutting-machine, the combination with the bed, a knife reciprocating toward the same, and a plate adapted to slide upon the bed and beneath the knife; of a shaft, arms fixed thereto and connected at their outer extremities with said plate, a cam-lever mounted on the shaft, means for moving this lever at intervals, a screw pivoted to one arm and passing through said lever, and a nut on the screw against the lever, as and for the purpose set forth.

6. In a cutting-machine, the combination with the reciprocating knife, a plate movable beneath the same, a spring-pressed rock-shaft having arms connected with said plate, and

a cam-lever carried by said shaft; of a second shaft, pawl-and-ratchet mechanism for turning this shaft intermittently in one direction, a tension device thereon, and a notched cam also on this shaft and upon which said lever bears, as and for the purpose set forth.

7. In a cutting-machine, the combination with the reciprocating knife, a plate movable beneath the same, a rock-shaft connected with the plate for moving the latter, and a lever on said shaft; of a feed-shaft, a notched cam thereon beneath said lever, a ratchet fast on this shaft, a bell-crank lever journaled at its elbow on this shaft, a pawl pivoted to one arm thereof and engaging said ratchet, the other arm being slotted, an adjustable block within said slot, and a reciprocating link pivoted in such block, as and for the purpose set forth.

8. In a cutting-machine, the combination with the reciprocating knife, a plate movable

beneath the same, a lever connected with the plate, and a notched cam with whose periphery said lever engages; of a feed-shaft on which the cam is mounted, a ratchet remov- 25
ably attached to the shaft, a bell-crank lever journaled on the shaft adjacent the ratchet and having a pawl at one extremity engaging the ratchet, its other arm being slotted longitudinally, a block guided in the slot, a 30
screw attached to the block, a nut on the screw against a fixed part of the lever-arm, and a reciprocating link connected with said block, as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my signature on this the 19th day of 35
October, A. D. 1896.

JOHN J. ITEN.

Witnesses:

JOHN S. GIBONS,
JOSEPH LEIF.