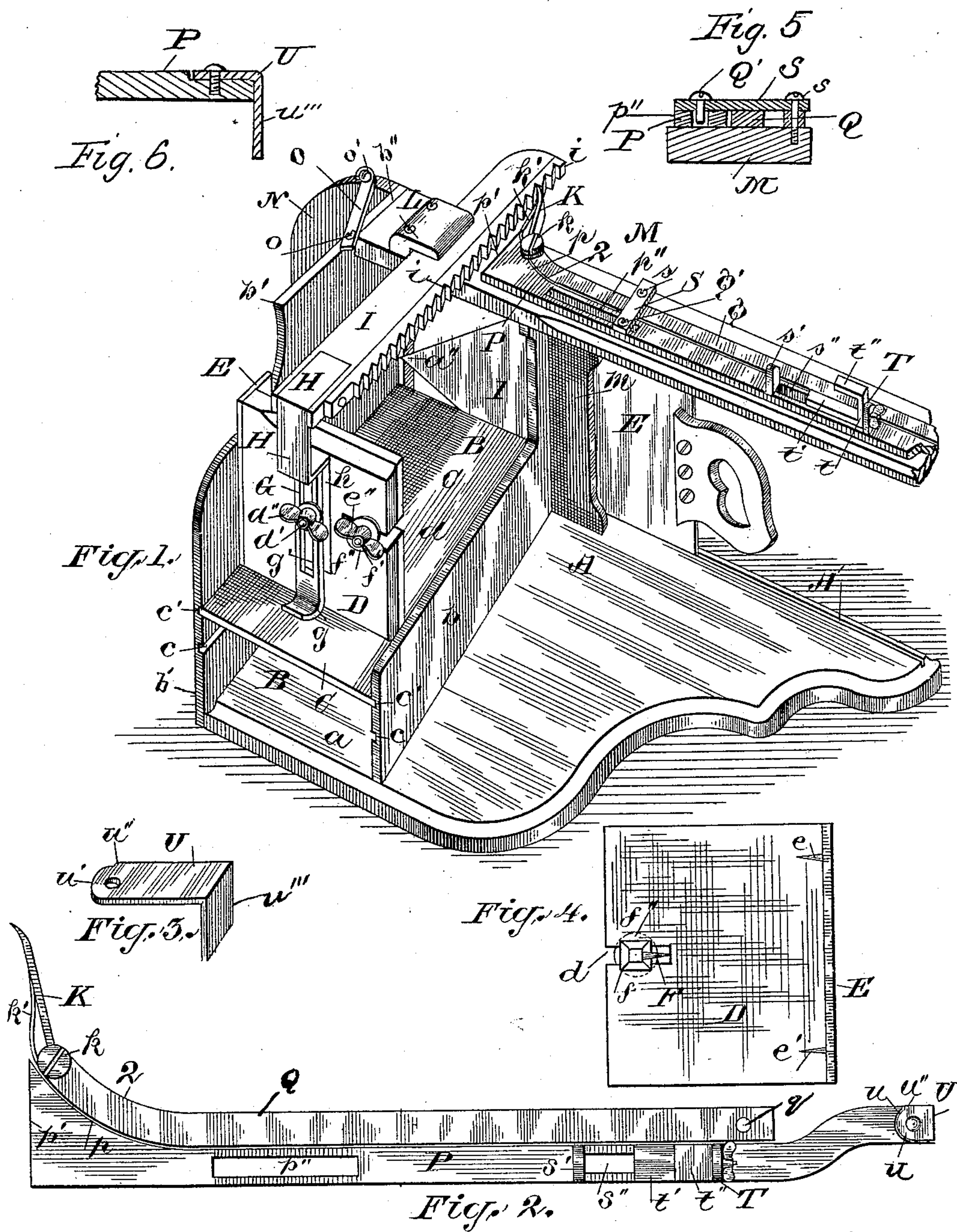


(No Model.)

S. MIRFIELD.
BREAD CUTTING MACHINE.

No. 452,610.

Patented May 19, 1891.



Witnesses.
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UNITED STATES PATENT OFFICE.

SAMUEL MIRFIELD, OF TORONTO, CANADA.

BREAD-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 452,610, dated May 19, 1891.

Application filed December 3, 1890. Serial No. 373,462. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL MIRFIELD, manufacturer, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Bread-Cutting Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

The object of this invention is to construct a bread-cutter which will automatically move the loaf forward and regulate the thickness of the slice to be cut; and it consists, essentially, of the device hereinafter more fully set forth, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my improved bread-cutter. Fig. 2 is a view of the cam and pawl operating levers. Fig. 3 is a view of the stop-block on the end of the cam-lever. Fig. 4 is a view of the end block of the bread-chamber. Fig. 5 is a vertical cross-section on the line $x x$, Fig. 1; and Fig. 6 is a longitudinal section through the stop-block.

Like letters and figures of reference refer to like parts throughout the specification and drawings.

In the drawings, A represents the table of the machine, to the upper side of which is secured a bread-chamber B. This bread-chamber consists of a bottom a , two side pieces b b' , and a movable end block D.

On the inner faces of the side pieces b b' are formed grooves $c c'$ to receive a secondary bottom C. The object of this secondary bottom is to bring the center of the different-sized loaves opposite the point of the knife E, so as to equalize the force of the thrust in cutting the same.

The movable end block D consists of a rectangular-shaped piece of wood having a slot d extending inward from one side. The opposite side of this end block D is provided with a metallic plate E, overlapping the inner face of the said block D.

Secured to the metallic plate E and extending inward therefrom, with their axes parallel to the face of the end block, are two forks $e e'$ to enter and securely hold the loaf in position.

In the slot d is secured a removable fork F, having a shoulder f to overlap the said slot, and a shank f' , extending through the said

slot and the washer f'' . On the end of the shank f' is a thumb-screw e'' . The object of this construction is to permit the removal of the fork F before the bread is placed in the chamber B, and after it has been placed in the said chamber to put the said fork into it as far as it will go and then to tighten the thumb-screw e'' on the end of the shank f' until the shoulder f is pressed so tightly against the inner face of the end block D that the fork F will be immovable, thus making the loaf perfectly rigid while the operation of slicing is going on.

The rear face of the end block D is fitted with an adjustable traveling foot G, which consists of a piece of metal rectangular in shape having a curled end g to travel along the bottom of the chamber B, and a slot g' in its body, through which extends a threaded bolt d' from the end block D. On the end of the bolt d' is a butterfly thumb-screw d'' , which may be screwed tightly against the body of the foot G for the purpose of securely holding the foot G in the desired position. The object of this adjustable foot G is to support and steady the end block D in its movements in the chamber B.

Rigidly connected to the end block D by a U-shaped bracket H, having a downwardly-extending arm h , is a slide I, having ratchet-teeth i cut on one of its side faces to engage with a pawl K. This slide I passes freely through a guide L, formed on the top of the beam M. This beam M is parallel to the top of the table A and is supported on the front end b'' of the side piece b' and by a standard m , resting on the top of the said table.

In the under side of the beam M near the front edge is a groove or guide for the knife E, and a corresponding groove A' is formed in the front edge of the table A, vertically under the groove in the beam M. This groove A' , it might be stated, is outside the plane of the front edge of the secondary bottom C, so that the knife E may be freely moved from end to end of the said grooves or guides. At that end of the table where the bread-chamber is situated and opposite the end of the groove A' is hinged a sheath N for the reception of the point of the knife E to prevent any possibility of any one getting cut or the point of the knife injured when in operation.

A hook O, one end of which is pivoted at *o* to the top of the side piece *b'* and the other encircling a pin *o'* in the top of the sheath N, holds the said sheath firmly in place to in-
 5 case the point of the knife. By releasing the hook O from the pin *o'* and swinging the sheath N back against the outer side of the side piece *b'* the bread-cutter will occupy
 10 considerable less space when packed away than it would if the sheath were rigid in its open position. On the top of the beam M is a lever P, having a cam *p* at the end *p'* next the slide I and on the side adjoining the
 15 pawl-carrying lever Q.

At a suitable distance from the end *p'* is a slot *p''*, and through this slot *p''* extends a guide-pin Q', on the top of which is fastened a cross-bar S, the opposite end of this cross-
 20 bar being fastened to the top of a pin *s* on the other side of the beam M. The guide-pin Q' extends into the slot at the rear end thereof, and, as the beam M is given a longitudinal movement, acts to keep the same in a straight
 25 line or prevent lateral displacement. The cross-bar S also acts as a keeper for the pawl-carrying lever, the pin *s* being passed through the extreme outer end thereof, so as to allow
 30 movement of said lever upon its pivot, so that the pawl may properly engage the teeth of the slide I. A stop-block *s'* is located on the lever P a suitable distance behind the slot *p''*, while behind the block *s'* is a second slot *s''*, corresponding in size and shape with the
 35 slot *p''*.

A pin T, having an enlarged head, extends through the slot *s''*, and pivoted to this head is a reversible gage *t*, having a long bar *t'* and
 40 a short bar *t''*.

At the end *u* of the lever-arm P is pivoted
 45 a stop-block U, consisting of an L-shaped piece of metal, the upperside of which is provided with a curved end *u'* and a shoulder *u''* to correspond to the curved portion of the end of the lever P. It will be noticed that
 50 the upper longer side of this stop is pivoted directly to the upper surface of the end of the lever P, while the shorter arm *u'''* extends down below said lever. When it is desired to cut thin slices from the loaf, the long bar
 55 *t'* of the reversible gage *t* is brought into play against the stop-block *s'*, and the pawl K can then only gig the loaf forward a space equal to one tooth *i*, and when it is desired to cut thick slices the short bar *t''* is brought into
 60 play against the stop-block *s'*, and the pawl K can then gig the loaf forward a distance equal to the pitch of two teeth or spaces *i i*. The pawl K is connected to the lever Q by means of a pivot *k* and has attached to it one
 65 end of a spring *k'*, while the other end of the said spring is attached to the pivot *k*. The function of this spring is to bring the pawl back to its normal position after it has been operated by the cam-lever P. The knife
 E consists of a blade *l*, having a diamond point *a''*, both edges of which are sharpened to cut through the loaf by a lateral move-

ment, and slides when in motion along the guides formed in the table and the beam. In cutting the loaf the knife E is drawn back
 70 against the block U, striking the downwardly-projecting arm *u'''* thereof and pulling the said block and lever P as far back as they will go. From this it will be seen that as the lever P is pulled backward the cam *p* oper-
 75 ates on the curved face 2 of the pawl-carrying-lever Q, moving the lever Q and pawl K outward a distance equal to the travel of the cam *p*, thus forcing the slide I and end block D forward the same distance. It will be seen
 80 that as the knife is retracted the pawl K acts upon the teeth of the slide, and giving a lateral movement to said slide will cause the end block thereof to act upon the loaf of bread and force the same forward. The object of
 85 pivoting the stop-block U to the lever-arm P is to permit the said block to be turned aside, so that the knife E may be easily removed.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a bread-cutting machine, a bread-chamber B, fitted with a secondary bottom C, a movable end block D, connected to a slide I by means of a U-shaped bracket H, having a
 90 downwardly-extending arm *h*, and the slide I, having ratchet-teeth *i* cut on its side face, in combination with a pawl K, pivoted to the end of the pawl-carrying lever Q, the cam-lever P, having a slot *p*, the guide-pin Q', the stop-block
 95 *s*, the slot *s'*, and the pin T, and the reversible gage *t*, pivoted to the enlarged head of the pin T, substantially as and for the purpose set forth.

2. In a bread-cutting machine, a bread-chamber provided with a secondary bottom, a movable end block fitted with an adjustable
 105 traveling foot, in combination with suitable mechanism, substantially as described, to automatically move the said end block forward, substantially as and for the purpose set forth.

3. In a bread-cutting machine, the combination of a table A, bread-chamber B, a knife
 110 E, sliding in guides formed in the sides *b b'*, and a sheath N, substantially as and for the purpose set forth.

4. In a bread-cutting machine, the combination of a table, a bread-chamber provided
 115 with a secondary bottom and movable end block fitted with an adjustable traveling foot, two stationary forks, and a removable fork, the said end block suitably connected to the
 120 end of a slide I, having ratchet-teeth cut on its side face, with the pawl K, pivoted to the end of the pawl-carrying lever, fitted with suitable guides, stop-blocks, and gage, substantially as and for the purpose set forth.

5. In a bread-cutting machine, the combination of a bread-chamber, a movable end block
 125 therein, provided at one edge with a plate projecting at right angles thereto, said plate having pins or forks extending inwardly there-
 130 from and at its opposite edge with an inwardly-extending slot, a removable fork fitted in said slot, provided with a shoulder bearing against the inner face of the end block, and

a shank extending through said slot and a thumb-screw upon the end of said shank, substantially as set forth.

5 6 In a bread-cutting machine, the combination of a bread-chamber, an end block therein, a ratchet-slide secured to said end block, a cutting-knife moving in suitable ways in the frame-work, a cam-lever provided upon its outer end with a depending stop adapted
10 to be engaged by the knife as the same is drawn back, and a pawl-carrying lever operated by said cam-lever, substantially as set forth.

15 7. In a bread-cutting machine, the combination of a bread-chamber, an end block therein, a ratchet-slide secured to said end block, a cutting-knife moving in suitable ways in the frame-work, a cam-lever provided with an elongated slot and upon its outer end with
20 a depending stop adapted to be engaged by

the knife as the same is drawn back, a pawl-carrying lever, and a cross-bar above the levers, provided upon one end with a guide-pin extending into the slot of the cam-lever, substantially as set forth.

25 8. In a bread-cutting machine, the combination of a cam-lever provided with an upwardly-extending stop, an elongated slot to the rear of said stop, a pin passing into said slot and provided with an enlarged head, a
30 reversible gage pivoted to said pin and provided with long and short arms, and a stop pivoted to the rear end of the cam-lever and adapted to be engaged by the knife as the same is drawn back, substantially as set forth. 35

Toronto, October 21, 1890.

SAMUEL MIRFIELD.

In presence of—

GEORGE E. LUCAS,
GUSTAVE H. PRIEST.