

J. H. SCHMIDT.
SLICING MACHINE.
APPLICATION FILED AUG. 4, 1914.

1,151,405.

Patented Aug. 24, 1915.

2 SHEETS—SHEET 1.

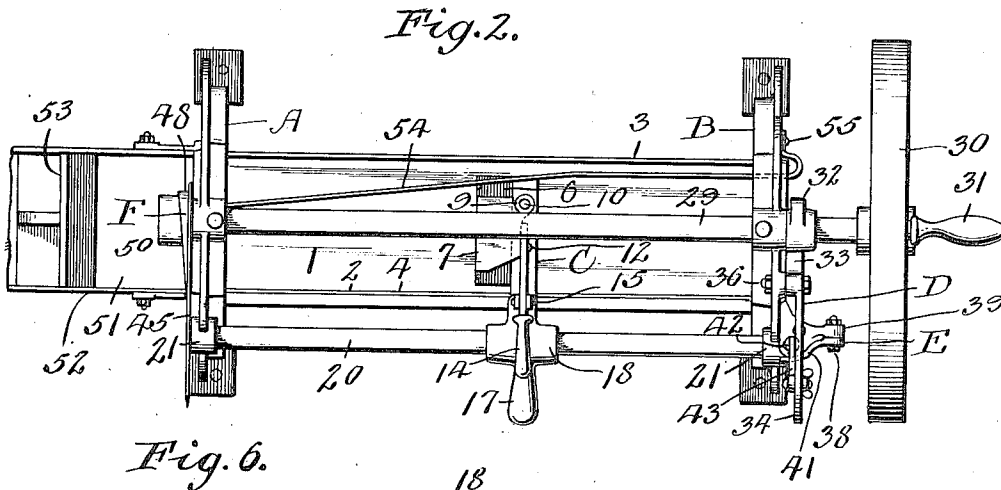
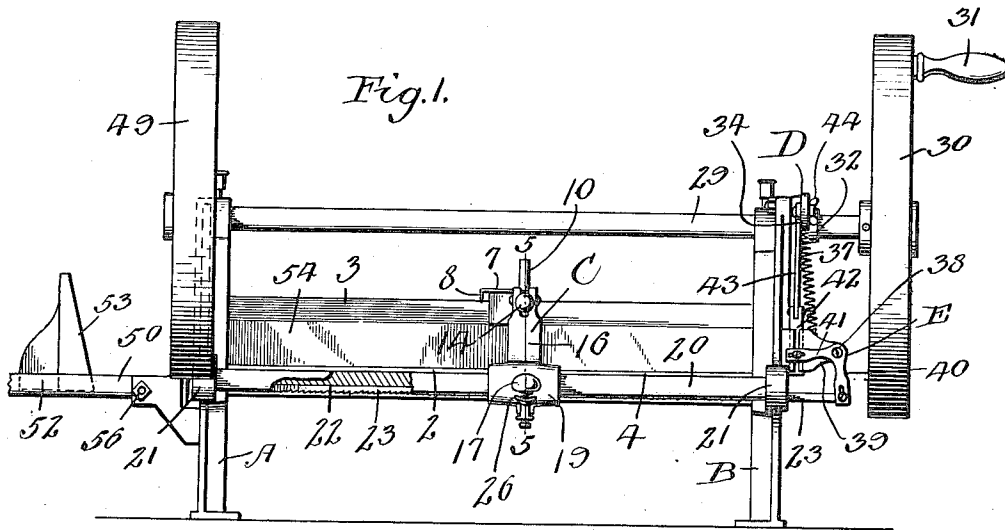
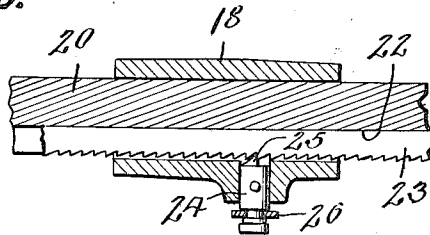


Fig. 6.



Witnesses

W. H. Schmitt
R. M. Smith

Inventor

J. H. Schmidt

By *Victor J. Evans*

Attorney

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2 SHEETS—SHEET 2.

Fig. 3.

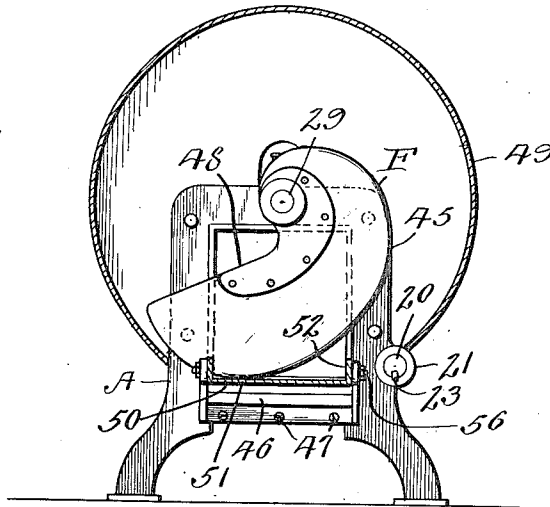


Fig. 4.

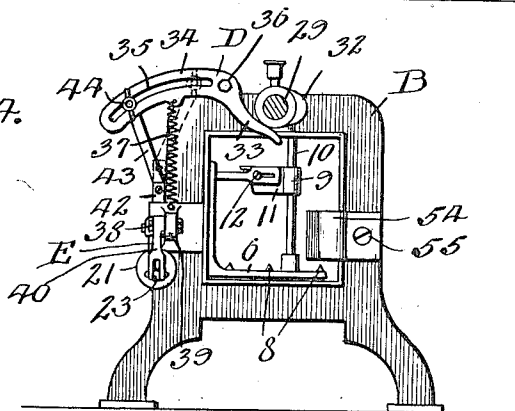
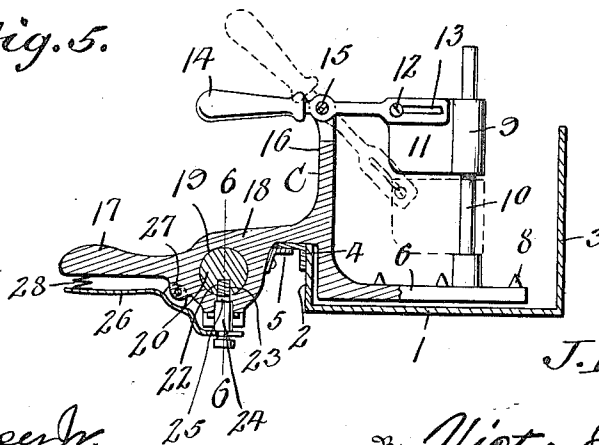


Fig. 5.



Witnesses

W. H. Schuler Jr.
R. M. Smith.

Inventor

J. H. Schmidt

By

Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

JOSUA HERMANN SCHMIDT, OF YONKERS, NEW YORK.

SLICING-MACHINE.

1,151,405.

Specification of Letters Patent.

Patented Aug. 24, 1915.

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To all whom it may concern:

Be it known that I, JOSUA H. SCHMIDT, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented new and useful Improvements in Slicing-Machines, of which the following is a specification.

This invention relates to slicing machines and while it will hereinafter be described as a bread slicing machine, it will be apparent as the description proceeds that the machine is equally well adapted for slicing any material in the form of a loaf or bar such, for example, as Bologna sausage, ham, tongue, etc.

The object of the present invention is to produce a slicing machine of the character referred to which is operated automatically as to the feeding and slicing mechanism thereof, the machine being actuated primarily by a rotary shaft to which motion may be imparted either by power or hand, the feed of the machine being adjustable so that it may be adapted to cut slices of any thickness, say from one-eighth of an inch to one inch in thickness, more or less as may be desired.

A further object of the invention is to provide feeding mechanism of such a character that the step by step movement of the feeder head hereinafter described will be arrested in time to prevent the feeder head from coming in contact with the slicing cutter.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, as herein described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a front elevation partly in section of a slicing machine embodying the present invention. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation partly in section of the machine, showing the slicing cutter in elevation. Fig. 4 is an elevation of the opposite end of the machine omitting the adjacent wheel and showing the rotary shaft in cross section. Fig. 5 is an enlarged vertical cross section on the line 5—5 of Fig. 1. Fig. 6 is a detail vertical longitudinal section on the line 6—6 of Fig. 5 enlarged.

The slicing machine contemplated in this invention comprises a frame which is made up of the two head frames A and B arranged in spaced relation to each other and connected by a trough comprising the bot-

tom wall 1, front wall 2 and rear wall 3, the front wall 2 being of less height than the rear wall 3 to admit of the back and forth movement of the feeder head which is designated generally at C.

Connected to the top and outside of the front wall 2 is an angle bar 4 forming a supporting guide for the feeder head C, a retaining lip 5 on the feeder head engaging beneath the supporting guide 4 and serving to prevent the feeder head from becoming disengaged or getting out of place. The feeder head comprises a fixed gripping jaw 6 and a movable gripping jaw 7, both of said jaws being provided with teeth or spurs 8 extending toward each other so as to grip the bread or other object between them. The movable jaw 7 is mounted upon a vertically slidable runner 9 which is adapted to be slid upwardly and downwardly on a vertical guide post 10 extending upwardly from the body of the lower stationary jaw 6 as shown in Fig. 5. The runner 9 is provided with a wing or extension 11 carrying a headed pin or stud 12 which is received in a longitudinal slot 13 in a hand operable lever 14 which is fulcrumed at 15 on the upwardly extending arm 16 of the feeder head C, all as shown in said Fig. 5. The operator by grasping the handle of the lever 14 may move the slidable jaw upwardly and downwardly so as to admit and grip the loaf of bread or other object preparatory to starting the machine in its slicing operation.

The feeder head C is provided with a laterally extending handle or grip 17 to enable the feeder head to be moved back to its position to receive a new loaf of bread. This handle 17 is enlarged as shown at 18 and formed with a bore 19 to adapt it to slide lengthwise of a guide rod 20 which is fastened at its opposite ends in lugs 21 on the head frames A and B. In its under side the guide rod 20 is provided with a guide way or groove 22 to receive a reciprocatory rack bar 23 as shown in Figs. 5 and 6, this rack bar being reciprocated back and forth by means to be hereinafter described. Extending through an opening in the bottom of the portion 18 of the feeder head is a spring pressed latch 24 provided with a tooth 25 adapted to engage the teeth of the rack bar 23 as clearly indicated in Fig. 6. The latch 24 has associated therewith a latch operating and releasing lever 26 best illustrated in Fig. 6, said lever being pivotally

mounted at 27 on the handle or grip 17, a spring 28 being interposed between the parts 17 and 26 for the purpose of maintaining the tooth 25 of the latch 24 in engagement with the teeth of the rack bar 23 while permitting the latch to recede and snap over the teeth of the rack bar as the latter is drawn back preparatory to a new working stroke as will hereinafter appear.

29 represents a rotary operating shaft provided at one end with an operating wheel 30 shown as having a handle 31 for turning the same although it will of course be apparent that the machine may be driven by power applied in any convenient way to the shaft 29. In the preferred embodiment of the feeding mechanism, the shaft 29 has fast thereon a cam 32 which coöperates with the arm 33 of a lever designated generally at D, the other arm 34 of said lever being arcuate in shape and provided with a longitudinal slot 35. The lever is fulcrumed at 36 on the head frame B as shown in Fig. 4 and the arm 33 is maintained in working engagement with the cam 32 by means of a contractile spring 37 one extremity of which is attached to the arm 34 of the lever D and the other end attached to a fixed point on the head frame B.

E designates a bell crank lever which is pivotally mounted at 38 on an extension 39 of the head frame B, one arm 40 of said lever having a jointed connection with the adjacent end of the reciprocatory rack bar 23. The other arm 41 of said lever has a jointed connection with a vertical plunger rod 42 and this plunger rod has pivotally connected thereto one extremity of a connecting rod or link 43 the other extremity of which is adjustably connected to the arm 34 of the lever D by means of a thumb nut 44. By loosening the thumb nut 44, the upper end of the rod or link 43 may be adjusted toward and away from the fulcrum point 36 of the operating lever D thereby increasing or diminishing the throw of the plunger rod 42 and correspondingly varying the throw of the rack bar 23 and the feeder head C. This provides for regulating the thickness of the slices and under the proportions of the parts as illustrated in the accompanying drawings the slices may vary from approximately one-eighth of an inch to one inch in thickness.

F designates the slicing cutter having an eccentric shearing cutting edge 45 which works in conjunction with a straight-edged ledger blade 46 fastened at 47 to the head frame A at the point where the material emerges from the trough. The opposite side of the blade is cut away to a point beyond the axis of movement of the blade as shown at 48 so that in one position of the cutter the end of the trough will be left entirely open, this position occurring just as a thrust

or feeding movement is imparted to the feeder head C. A substantially cylindrical casing 49 houses in the blade F so as to prevent accident to a bystander or to the operator himself.

As the slices are formed by the cutter F, they pass beyond the cutter and upon a receiving trough 50 embodying a floor 51 substantially in the same plane with the floor 1 of the trough of the machine. The receiving trough is also provided with the upstanding sides or flanges 52 between which is a sliding abutment 53 preferably inclined as shown in Fig. 1 so that the tops of the slices will fall away from the cutter as the slices are successively pushed upon the receiving trough by the loaf or other object being sliced by the cutter. The loaf or other object is urged toward the front side of the trough by means of a leaf spring 54 which is best illustrated in Fig. 2, said spring being attached at one end as shown at 55 to one of the head frames and having a portion thereof extending longitudinally and obliquely of the trough so as to bear against one side of the loaf or object and keep the same constantly pressed against the front side of the trough.

After a loaf of bread has been completely sliced by the means hereinabove described, the feeder head C is stopped before coming in contact with the cutter E by reason of the length of the rack bar 23, the length thereof being such that when the feeder head C reaches the limit of its movement, the said rack bar will not be able to again reach and coöperate with the latch 24. Therefore, there can be no further advance movement of the feeder head. The operator then grasps the handle 17 and latch releasing lever 26 and slides the feeder head back in position to receive a new loaf whereupon the operation of the machine is resumed. The receiving trough 50 is preferably made detachable from the remainder of the machine by means of a bolt 56 to facilitate storage and shipment.

What I claim is:—

1. In a slicing machine, a trough, a feeder head movable lengthwise of said trough, a rotary slicing cutter operating across the trough, a rotary operating shaft, feeding mechanism actuated by said shaft and operating to impart a step by step movement to said feeder head, said feeding mechanism comprising a reciprocatory rack bar, a spring latch carried by the feeder head and actuated by said rack bar to advance the feeder head, an operating arm actuated by said shaft, and a bell crank lever to which said rack bar is connected, said bell crank lever being connected with said operating arm.

2. In a slicing machine, a trough, a feeder head movable lengthwise of said trough, a

rotary slicing cutter operating across the trough, a rotary operating shaft, feeding mechanism actuated by said shaft and operating to impart a step by step movement to said feeder head, said feeding mechanism comprising a reciprocatory rack bar, a latch carried by the feeder head and engaged by said rack bar to advance the feeder head, an operating arm actuated by said shaft, a bell crank lever to which said rack bar is connected, and a rod connected with said bell crank lever and having an adjustable connection with said operating arm to enable the throw of the rack bar and feeder head to be increased or decreased.

3. In a slicing machine, a trough, a feeder head movable lengthwise of said trough, a rotary slicing cutter operating across one end of the trough, a rotary operating shaft, feeding mechanism actuated by said shaft and operating to impart a step by step motion to said feeder head, said feeding mechanism comprising a reciprocatory rack bar operating in a plane parallel to the path of said feeder head, a latch carried by the feeder head and engaged by said rack bar to advance the feeder head, an operating lever actuated by said shaft, a bell crank lever to which said rack bar is connected, and a rod connected with said bell crank

lever and adjustably connected with said operating arm to enable the throw of the rack bar and feeder head to be increased or decreased.

4. In a slicing machine, a trough, a feeder head movable lengthwise of said trough, a rotary slicing cutter operating across one end of the trough, a rotary operating shaft, feeding mechanism actuated by said shaft and operating to impart a step by step motion to said feeder head, said feeding mechanism comprising a reciprocatory rack bar operating in a plane parallel to the path of said feeder head, a latch carried by the feeder head and engaged by said rack bar to advance the feeder head, an operating lever actuated by a cam on said shaft, a spring operating to hold said lever against the cam, a bell crank lever to which said rack bar is connected, and a rod connected with said bell crank lever and adjustably connected with said operating arm to enable the throw of the rack bar and feeder head to be increased or decreased.

In testimony whereof I affix my signature in presence of two witnesses.

JOSUA HERMANN SCHMIDT.

Witnesses:

WM. A. FEUCHS,

ELEANOR C. PHELAN.