

(No Model.)

3 Sheets—Sheet 1.

C. S. FOWLER & L. A. ROCKWELL.
CRACKER MACHINE.

No. 498,641.

Patented May 30, 1893.

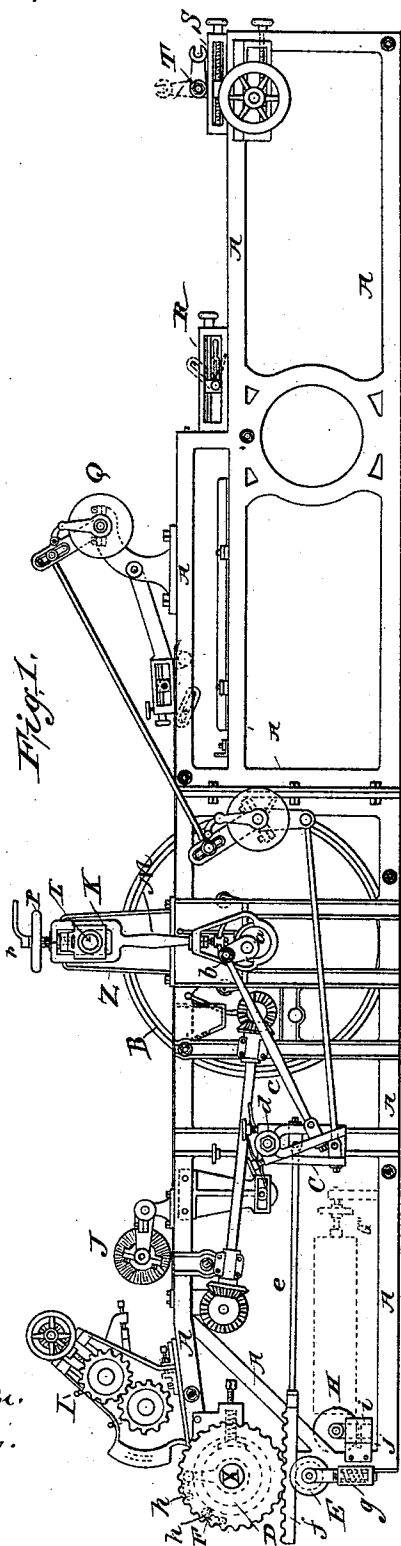


Fig. 1.

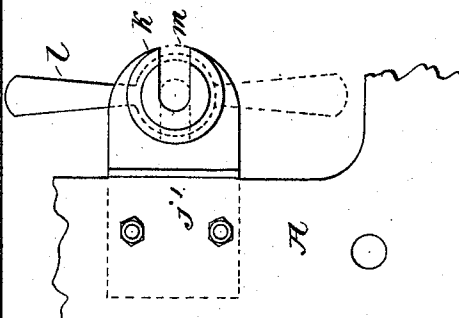


Fig. 3.

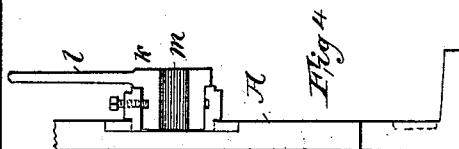


Fig. 4.

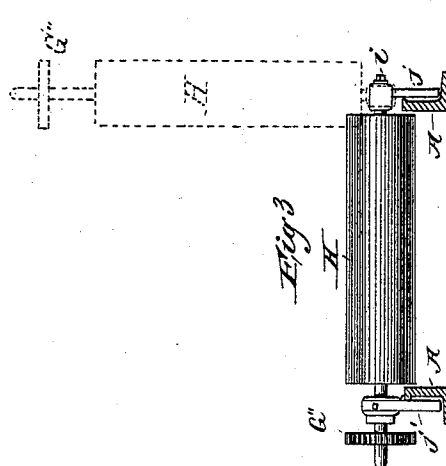


Fig. 5.

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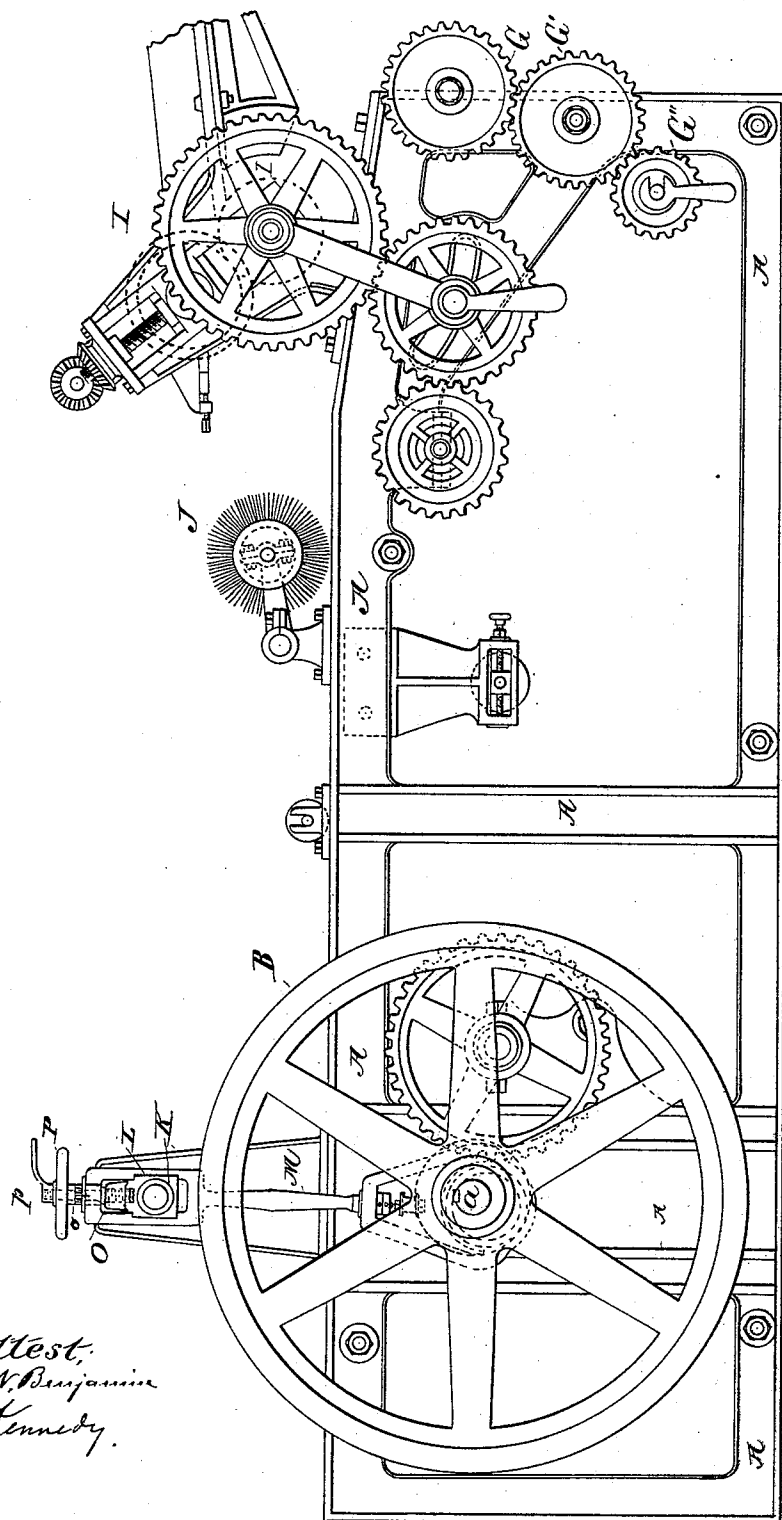
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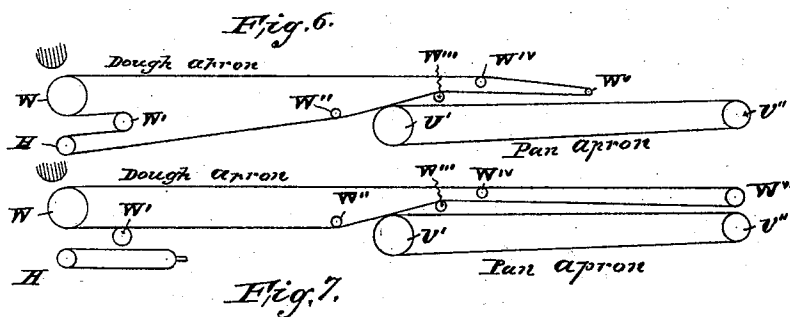
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UNITED STATES PATENT OFFICE.

CHARLES S. FOWLER, OF BROOKLYN, AND LUCIUS A. ROCKWELL, OF NEW YORK, N. Y.

CRACKER-MACHINE.

SPECIFICATION forming part of Letters Patent No. 498,641, dated May 30, 1893.

Application filed February 14, 1893. Serial No. 462,266. (No model.)

To all whom it may concern:

Be it known that we, CHARLES S. FOWLER, a resident of Brooklyn, Kings county, and LUCIUS A. ROCKWELL, a resident of New York, county of New York, State of New York, citizens of the United States, have invented certain new and useful Improvements in Cracker-Machines, of which the following is a specification.

Our invention relates to that class of cracker cutting machines known as "convertible," which may be arranged to cut biscuits, place them on pans and remove the scrap, and are readily changed when required, so as to simply cut the biscuits, leaving them on the apron to be removed by a peel in the hands of the workman, such a machine being shown in our Patent No. 288,989, dated November 27, 1883, and consists in certain improvements, which add to the convenience of handling and working the machine.

In the accompanying drawings: Figure 1 is a side elevation of the entire machine and showing the dough feeding mechanism at the left. Fig. 2 is a side view of the opposite side, but only showing half of the length of the machine. Fig. 3 is a detail in plan view of one of the convertible apron rollers, showing the same in two positions. Figs. 4 and 5 are details showing the locking device for the roller shown in Fig. 3. Figs. 6 and 7 are diagrammatic views of the two positions of the dough apron.

Same letters indicate similar parts in the different drawings.

A is the framework of the machine, on which the moving parts are mounted.

B is the main wheel, connected by a belt to a source of power not shown. This wheel is keyed to the eccentric shaft *a*, the other end of which carries the crank *b*, (Fig. 1,) which gives motion to the rock arm C by means of the pitman *c*.

The rock arm C, Fig. 1, is pivoted at *d* to the frame of the machine and is provided with separate crank rods, making part thereof, and all turning upon *d* as a pivot, for each crank rod attached thereto. By means of this construction, each of the several crank rods, when working, will travel back and forth, as nearly

as possible at right angles with that part of the rock arm, to which it is attached, thus securing the longest possible stroke and most direct action. The connecting rod *e* communicates motion to the geared wheel D by means of the rack *f*, which is held in position by the friction roller E, which is mounted on the spring bearing *g*, this construction preventing the rack from binding in the gear wheel by reason of vibratory motion of the rack. The shaft X, on which the gear wheel D is loosely mounted, carries also a ratchet wheel F rigidly secured to the shaft and driven by the pawls *h—h*, carried by said wheel D. Said shaft X also carries one of the rollers, around which the endless apron for carrying the dough runs, as heretofore explained, and has keyed to its outer end a gear wheel G, Fig. 2, which meshes with another gear wheel G', which is mounted on a stud in the frame A, and with this, wheel G' meshes, when the convertible apron roller H, Figs. 1 and 3, is in position for use.

The shaft, on which the roller H is mounted is supported at one end only by a swivel joint in a bracket *j*, fastened to the framework, as shown in Fig. 1. The roller H can therefore be swung out of gear into the position shown in dotted lines in Figs. 1 and 3, whenever it is desired to rearrange the dough carrying apron. The other end of the shaft of roller H is provided with a locking device, by which it is held in gear with the wheel G', when in position for use, as before stated. This locking device, which is shown in detail in Figs. 4 and 5, consists of a slotted bracket *j'*, fastened to the framework A, and a loose slotted collar *k*, mounted in said bracket and turned by means of the handle *l*. When it is desired to use the convertible roller H, the shaft is swung into the position shown in full lines, Fig. 3, and rests in the slot *m* of the bracket *j'*. The handle *l* is then in the upper position shown in Fig. 5. By turning the handle down into the lower position, the collar *k* is revolved and thus closes the slot *m* and prevents the removal of the shaft.

I represents the usual receiving trough and feed rollers of the machine with their operat-

ing mechanism. This structure being well known and being similar to that shown in our above named patent, it does not seem necessary to describe it further than to say that it is driven by means of shafts, miter-gear and spur-gears from the main wheel B, as shown.

J represents the brush usually employed on machines of this character and is driven by a belt not shown, which passes over a pulley on the eccentric shaft *a*, between the wheel B and the frame.

L represents the cross-head of usual construction mounted in the upright guides Z of the frame A, to which cross-head the cutters are secured, and which is reciprocated in the usual way by the side eccentric rods M, which are attached to the eccentric shaft *a* by means of eccentric straps, one on either side of the machine. The upper ends of these side rods are made in the form of an open frame to admit the adjustable bearing boxes K, in which the ends of the cross-head L rest, the upper side of these bearing boxes forming a nut with threads, into which the screws O fit, and being securely locked in the top part of the side rods, may be conveniently turned by means of the hand wheel P, thus raising or lowering the cross-head and thereby giving the required pressure to the cutter. In order to secure accuracy of adjustment, the hub of the hand wheel P is provided with index figures and points.

p is a lock nut with handle to prevent possible backing out of the screw stem O, while the machine is at work.

Q represents the scrap removing device and its operating mechanism, which is operated from the main wheel B through the rock arm C and connecting rods and arms. R is the usual journal bearing made adjustable on the frame A and designed to support the knife bar, over which the dough carrying apron travels, when the crackers are to be delivered into pans.

S is an adjustable journal bearing designed to support the dough carrying apron, when the machine is arranged for peeling crackers. Instead of having the journal mounted rigidly on this bearing, as heretofore, we provide the jointed bearings T, which, when in use, occupy the position shown in full lines in Fig. 1, but which can be turned up into the position shown by dotted lines, so that the roller can be introduced or removed with-

out disturbing the adjusting screws in the framework.

When the roller H is in gear, the dough apron is arranged for feeding the crackers into pans carried by the pan apron, as shown in Fig. 6. The dough apron in this case passes around the pulleys or rollers *w*, *w*ⁱ, H, *w*ⁱⁱ, *w*ⁱⁱⁱ, *w*^{iv}, and the knife edge *w*^v. When the roller H is swung out of gear, the dough apron is arranged for peeling, as shown in Fig. 7, and passes over the rollers *w*, *w*ⁱ, *w*ⁱⁱ, *w*ⁱⁱⁱ, *w*^{iv}, and the roller *w*^{xi}. In this latter case, the pan apron, which passes over the rollers *v*ⁱ, *v*ⁱⁱ, is inoperative.

The general operation of our machine will also be readily understood without further explanation.

We claim—

1. In a cracker machine, a swinging roller mounted at one end on a swivel joint and carrying a gear wheel at its other end and locking devices, whereby said gear wheel may be held in gear with other gear, constituting one of the moving parts of the machine, or released therefrom, substantially as described and for the purposes specified.

2. In a cracker machine, a cross-head mounted in an upright guide, with its ends resting in adjustable bearing boxes, side connecting rods, one on either side of the machine, by which said cross-head is reciprocated, adjustable bearing boxes mounted in said connecting rods and movable therein by means of screw threaded stems, the unthreaded portions of which pass through the tops of the side connecting rods, and hand wheels on said stems, by the turning of which, the position of said cross-head may be altered up and down either end independently, substantially as described and for the purposes specified.

3. In a cracker machine, a friction roller, a reciprocating rack supported thereby, a spring bearing, upon which said roller is mounted, and a toothed gear, with which said rack meshes, and against which said rack is held by the pressure of said spring bearing, substantially as shown and described.

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