G. & C. A. JUENGST.

Meat-Chopper.

No. 209,970. Patented Nov. 19, 1878.

Fig. 1.

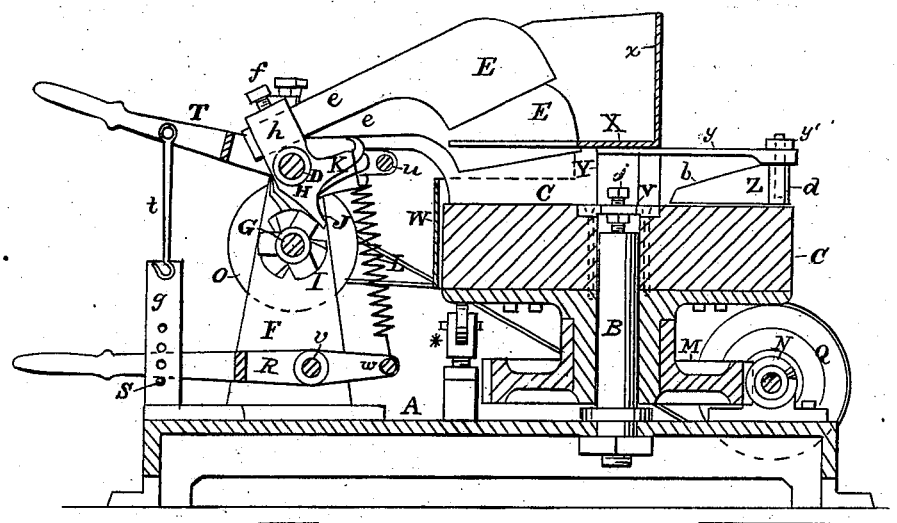


Fig. 2.

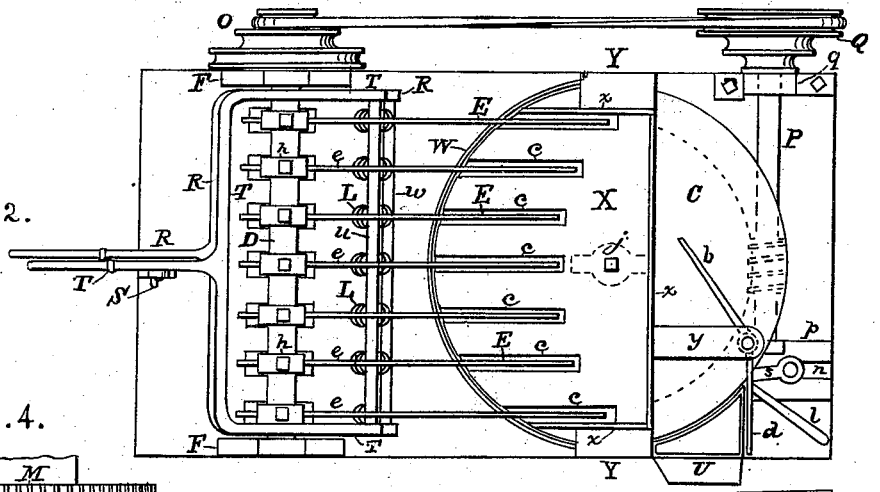


Fig. 4.

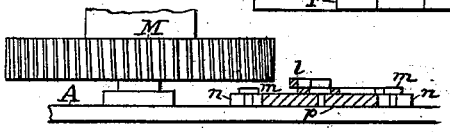


Fig. 3.

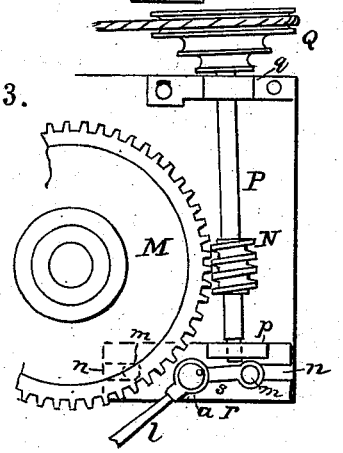
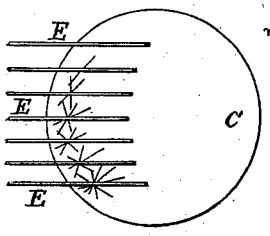


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE JUENGST AND CHARLES A. JUENGST, OF NEW YORK, N. Y., ASSIGNORS OF ONE-HALF THEIR RIGHT TO CHARLES BERNHARD, OF SAME PLACE.

IMPROVEMENT IN MEAT-CHOPPERS.

Specification forming part of Letters Patent No. **209,970**, dated November 19, 1878; application filed June 3, 1878.

To all whom it may concern:

Be it known that we, GEORGE JUENGST and CHARLES A. JUENGST, both of the city, county, and State of New York, have invented certain new and useful Improvements in Meat-Chopping Machines, which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a vertical longitudinal section of a machine with our improvements. Fig. 2 is a top view of the same. Fig. 3 shows, in plan, the feed-gear detached, the same being represented as disengaged. Fig. 4 is a sectional side view of same. Fig. 5 is a diagram, illustrating the strokes of the cutting-blades.

A designates the bed of the machine, on the central forward part of which is secured a strong vertical stud, B, on which the circular meat-block C is pivoted in a horizontal position.

D designates a horizontal stationary shaft, arranged across the rear part of the machine, and supported by the standards F, said shaft D forming the fulcrum of the chopping-knives E. In the same standards F, and below the shaft D, is placed the driving-shaft G of the machine, with proper bearings in said standards.

A number of chopping-knives, E, is held by said shaft D, the knives being arranged parallel with each other and with equal distances between them, so that they extend a suitable distance over the rotary block C, as shown in the drawings. Each of the knives is provided with a loose sleeve, H, which is on the shaft D, and is provided with a loop, *h*, into which the shank *e* of the knife is fitted and secured by a set-screw, *f*. Each sleeve H has also a downward projection, J, and a short arm, K, projecting forward, for the purposes hereinafter stated.

On the driving-shaft G, and under each knife E, is secured a cam, I, having several raised or projecting portions, (three being shown,) to impinge against the projection J on the sleeve H, and thus raise a knife. These cams are so arranged on the shaft G that the chopping-knives are raised in regular succession, and not simultaneously, less power being required in this way.

R designates a bifurcated lever, the prongs of which have a pivotal connection with the standards F by means of a cross-rod, *v*, the forward extremities of the prongs being connected by another rod, *w*. A number of springs, L, connect the rod *w* with the arms K on the sleeves H, so that as the knives E are released by the revolving cams the springs, contracting, bring them down with force to the block C. The lever R is adjustably secured in position by means of a vertical plate, *g*, fixed to the rear part of the bed A, and provided with holes to receive a pin, S. Thus, by setting the rear end of the lever higher or lower the force of the springs L is increased or diminished.

Another bifurcated lever, T, has a pivotal connection with the stationary shaft D, the prongs of said lever being connected by a rod, *u*, crossing under the shanks of the knives E, so that by a movement of lever T the knives may be raised out of engagement with the cams I on the driving-shaft G. This mode of instantly stopping the operation of the knives is convenient occasionally for the purpose of clearing or charging the block. The handle of lever T is provided with a pivoted hooked rod, *t*, for securing said lever, when raised, to the vertical plate *g*.

The rotary block C is constructed with a hub on its under side, on which hub is a worm-gear wheel, M, with which a worm, N, on a shaft, P, engages. The driving-shaft G and shaft P, being each provided with a cone-pulley, O and Q, as shown, the required motion is transmitted to the block C by means of the endless band passing about O and Q.

To provide for convenience in turning the block for clearing and charging the same, the worm N is made adjustable to and from the wheel M. The shaft P has the bearing-boxes *p* and *q*, the latter being permanently secured to the bed A, while the box *p* is provided with shifting-gear, by which the shaft P may be moved and the worm N withdrawn from engagement with wheel M. The foot-plate of

box *p* has a slot, *n*, at each end, and a stud, *m*, through each slot holds the box to the bed A and guides the plate in the shifting movement. A hand-lever, *l*, is pivoted to the foot-plate *r* at *a*, and has an eccentric head, connecting by means of a link, *s*, with the outer stud, *m*, fixed to the bed A. A movement of lever *l* forward or backward causes corresponding movement of the foot-plate, thus effecting a movement of the shaft P, with worm N, to or from the wheel M, to engage or disengage these parts.

The working-face of the block C, being of wood, soon wears away, so that the chopping-knives strike the surface imperfectly, and thus a vertical adjustment of the block becomes desirable. For such purpose the block is provided with a central plate, V, with a vertical step-screw, *j*, entering the stud B, so that by setting the screw *j* the block C is readily raised and adjusted at the required level.

W indicates a guard or shield fixed to the uprights Y and extending about the rear part of the block C, on which the knives E strike, the object being to prevent the meat falling from the block. Another guard or shield, X, extending across and above the block C, is supported by and fixed to the posts Y. This shield X extends rearward as far as the periphery of block C, and has the slots *c*, to admit the knives to the block. It serves to remove from the knives the meat that adheres to them and return it to the block. The shield X has also a vertical part, *x*, which extends across in front of knives E and along the sides of the outer knives, as shown in Fig. 2, thus forming an additional guard, which is intended to prevent accidental contact with the knives during the operation of the machine.

To the base of the guard X is fixed a bracket, *y*, to which is coupled a scraper, Z, having two wings, *b* and *d*, constructed to act on the front part of the working-face of the block C. The scraper is coupled at the angle formed by the two wings *b* and *d* to the bracket *y* by any suitable means, so that it may be tightened against the bracket or loosened in position, the fastening, as shown in the drawing, being effected by means of a screw-nut, *y'*, on the upper end of the bolt which connects the scraper with the bracket. The scraper, with the two wings forming an obtuse angle, may be set so that the meat on the rotating block is driven toward the center of the surface and carried under the knives; or the scraper may be set in position to remove the meat entirely from the block and discharge the same into the spout U, near one of the posts Y, as shown in Fig. 2.

Fig. 5 illustrates the diverse strokes of the several chopping-knives after one passage under them of the meat on the rotating block C. It will be observed that each knife makes a stroke which is at an angle with the stroke immediately preceding, so that by feeding slowly, the proper number of choppers being employed, the meat is rapidly chopped fine by being once passed under them.

In large machines, one or more supporting friction-rollers are employed under the rear portion of the block, to sustain the block under the choppers, as shown at the * in Fig. 1.

We claim as our invention—

1. The pivoted rotary block C, provided with the shield X, consisting of the horizontal part, having slots *c* to admit the knives, and the vertical part extending across in front of and about the knives E, said shield being fixed to the side posts Y, as and for the purposes described.

2. The adjustable pivoted lever R, with rod *w* and springs L, in combination with the sleeves H, having arms K, and provided with loops to hold the knives, as and for the purposes described.

3. The pivoted lever T, provided with a catch, and having rod *u*, in combination with the chopping-knives E, connecting with shaft D, substantially as set forth.

4. The rotary block C, provided with the scraper Z, having two diverse wings, *b* and *d*, coupled to the bracket *y* at the angle formed by said wings, and provided with suitable means for adjusting it to the bracket, substantially as and for the purposes described.

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CHARLES A. JUENGST.

In presence of—
JOHN F. RYAN,
R. BOEKLEN.