A. NITTINGER, Jr.

Meat-Chopper.

No. 160,944. Patented March 16, 1875.

FIG. 1.

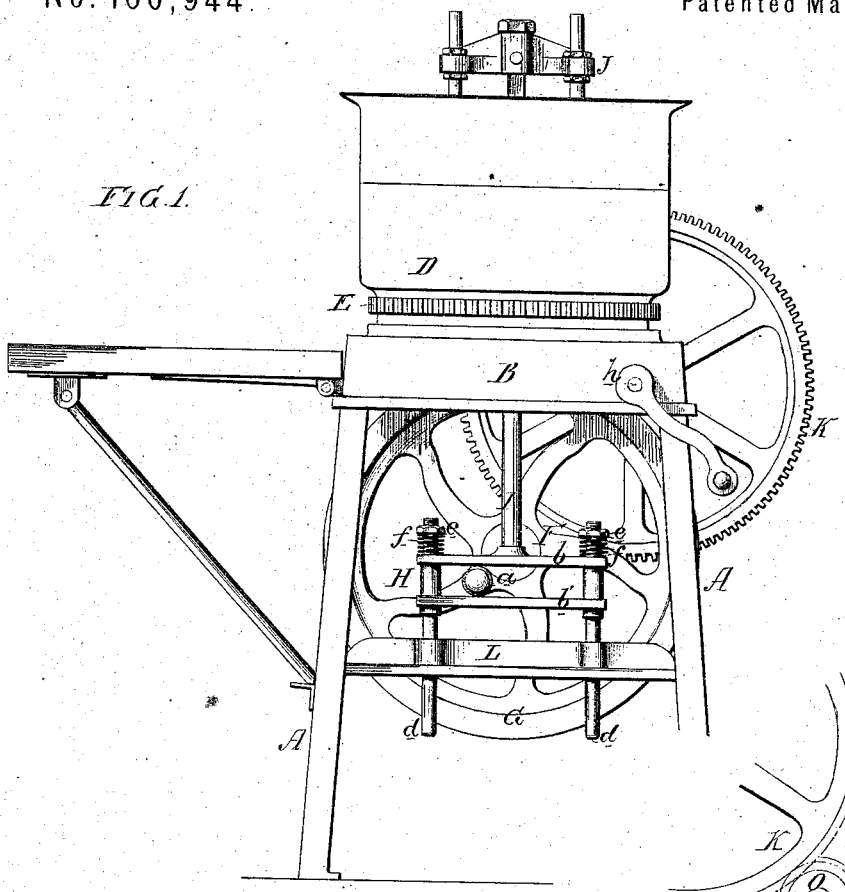


FIG. 3.

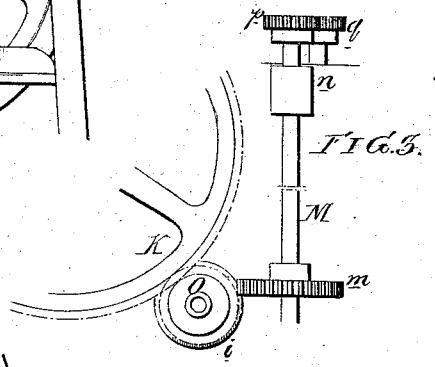


FIG. 2.

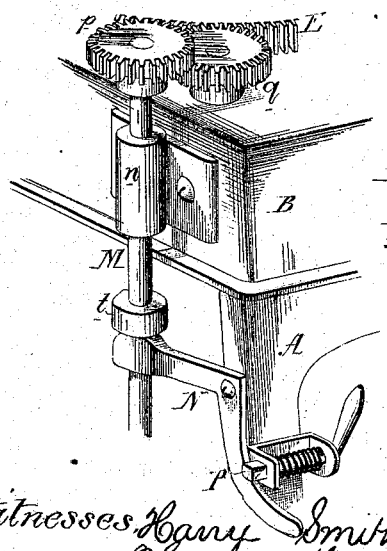


FIG. 4.

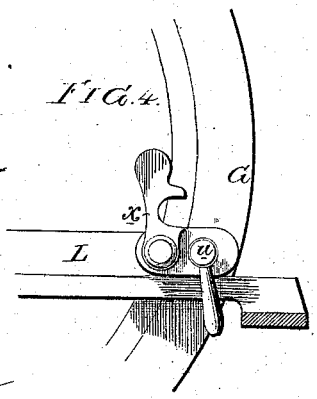
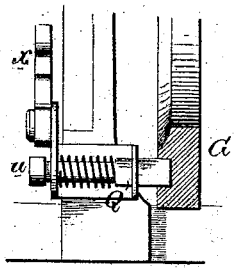


FIG. 5.



Witnesses. Harry Smith
Thomas McIlvain

August Nittinger Jr.
By his Attorneys
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UNITED STATES PATENT OFFICE.

AUGUST NITTINGER, JR., OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MEAT-CHOPPERS.

Specification forming part of Letters Patent No. **160,944**, dated March 16, 1875; application filed February 24, 1875.

To all whom it may concern:

Be it known that I, AUGUST NITTINGER, Jr., of Philadelphia, Pennsylvania, have invented certain Improvements in Meat-Chopping Machines, of which the following is a specification:

My invention relates to improvements in the meat-chopping machine, for which Letters Patent were granted to me on the 24th day of November, 1874; and the objects of my invention are, first, to prevent the imparting of injurious shocks and jars to the machine, and the damaging of the knives, when the latter, during their downward movement, meet with any hard obstructive substances; second, to readily stop and start the chopping-block; and, third, to arrest the movement of the chopping-knives when at the limit of their upward movement. These objects I attain in the manner I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a side view of my improved chopping-machine, and Figs. 2, 3, 4, and 5 detached views of different parts of the machine illustrating my improvements.

The frame-work consists of the table B secured to a suitable stand, A, and on this table revolves the circular rotating chopping-block D, to which is attached the cog-wheel E, referred to hereafter. F is the main shaft adapted to a suitable bearing on the frame A, and to this shaft is secured a fly-wheel, G, from which projects a crank-pin, *a*, having an anti-friction roller adapted to the space between the two bars *b b'* of the cross-head H. The bar *b* is secured to or forms a part of the rod I, which passes through the table B through the block, and carries at its upper end the cross-head J with its adjustable chopping-knives. This rod I, its guides, cross-head, and knives are similar to those described in my aforesaid patent. The lower bar *b'* of the cross-head H is secured to pins *d d*, which pass through, and are guided and steadied by, a cross-bar, L, secured to the stand A, but the upper bar *b* of the cross-head is arranged to slide on the said pins, the latter being furnished at the top with nuts *e*, between which and the bar intervene spiral springs *f*. On turning the shaft F the cross-head H, its rods I, and the knives carried by the same, will reciprocate, but should the knives meet with any unusually hard obstruction before the cross-head H reaches the limit of its downward movement the bar *b* will remain stationary while the bar *b'* and its pins *d d* will yield to the movement of the crank-pin, the springs *f*, however, restoring the bar *b'* to its original position in relation to the bar *b* during the upward movement of the rod I and its knives. It will thus be seen that the yielding bar *b'* permits the crank-pin to move freely in its circular course, whatever may be the obstructions presented to the edges of the knives, thereby preventing the latter from being injured and at the same time obviating the detrimental shocks and jars which would be imparted in the absence of the said yielding bar. A horizontal driving-shaft, *h*, is arranged to revolve in the table B, and one end of this shaft is provided with a handle or driving-pulley, the opposite end having a cog-wheel, K, gearing into a pinion, O, on the above-mentioned main shaft F, which has a worm, *i*, adapted to the worm-wheel *m* on a shaft, M, the latter being arranged to both turn and slide in a bearing, *n*, on the table, and in a like bearing on the frame of the machine. (See Figs. 2 and 3.)

To the upper end of the shaft M is secured a pinion, *p*, gearing into an idler pinion, *q*, which turns on a fixed pin secured to the table, and which gears into the cog-wheel E, above referred to as being connected to the chopping-block. It is important that this block should be readily stopped and started without interfering with the reciprocating movement of the knives, an object which I attain by the device illustrated in Fig. 2. On the shaft M is a collar, *t*, against the under side of which bears one arm of a bell-crank lever, N, hung to the frame A, the other arm being retained by a spring-catch, P, thereby maintaining the pinion *p* out of gear with the pinion *q*, when the rotation of the chopping-block will cease. On drawing back the spring-catch P, however, the bell-crank lever will be released, the shaft M will fall, and the pinion *p* will be depressed into gear with the pinion *q*, and the block D will consequently rotate. It should be understood that this rotation of

the block is intermittent—that is to say, it stops for an instant when the knives reach the limit of their downward movement. This intermittent motion is due to the worm *i*, the thread of which is discontinued for a short distance.

The device illustrated in Figs. 4 and 5 is for the purpose of arresting the knives at a time when they have reached the limit of their upward movement.

A spring-bolt, Q, is arranged to slide in guides on the frame, and the end of the bolt is adapted to a notch made in the side of the rim of the fly-wheel G at such a point that when the bolt is in the notch the fly-wheel will be locked at a time when the knives have reached the limit of their upward movement, so that the block remains stationary, and is exposed for such disposal of the meat as circumstances may require. The bolt may be maintained in a position clear of the fly-wheel by depressing an arm, *x*, hinged to the frame, the head *w* of the bolt bearing against the side of this arm, on elevating which, however, the spring will force the bolt against the rim of the fly-wheel, where it will act as a brake to gradually arrest its movement until it is stopped at its desired point by the bolt entering the notch.

I claim as my invention—

1. The combination, in a meat-chopping machine, having reciprocating knives operated by a crank, of the yielding spring-bar *b*, attached to or forming part of the knife-rod I, with the bar *b'*, secured to the guide-pins *d d*.

2. The combination of the cog-wheel E on the chopping-block, the idler-pinion *q*, and pinion *p* on the shaft M, with the lever N and spring-bolt P, for supporting and releasing the said shaft.

3. The combination of the spring-bolt Q, the retaining and releasing arm *x*, and fly-wheel G, having a notch adapted to the bolt, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUST NITTINGER, JR.

Witnesses:

HUBERT HOWSON,

HARRY SMITH.