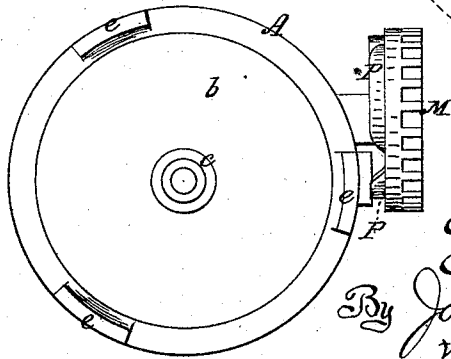
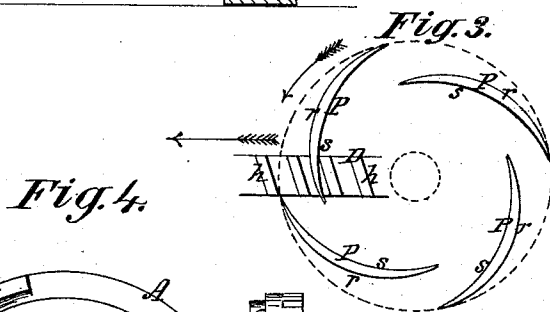
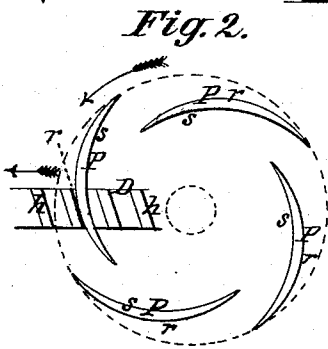
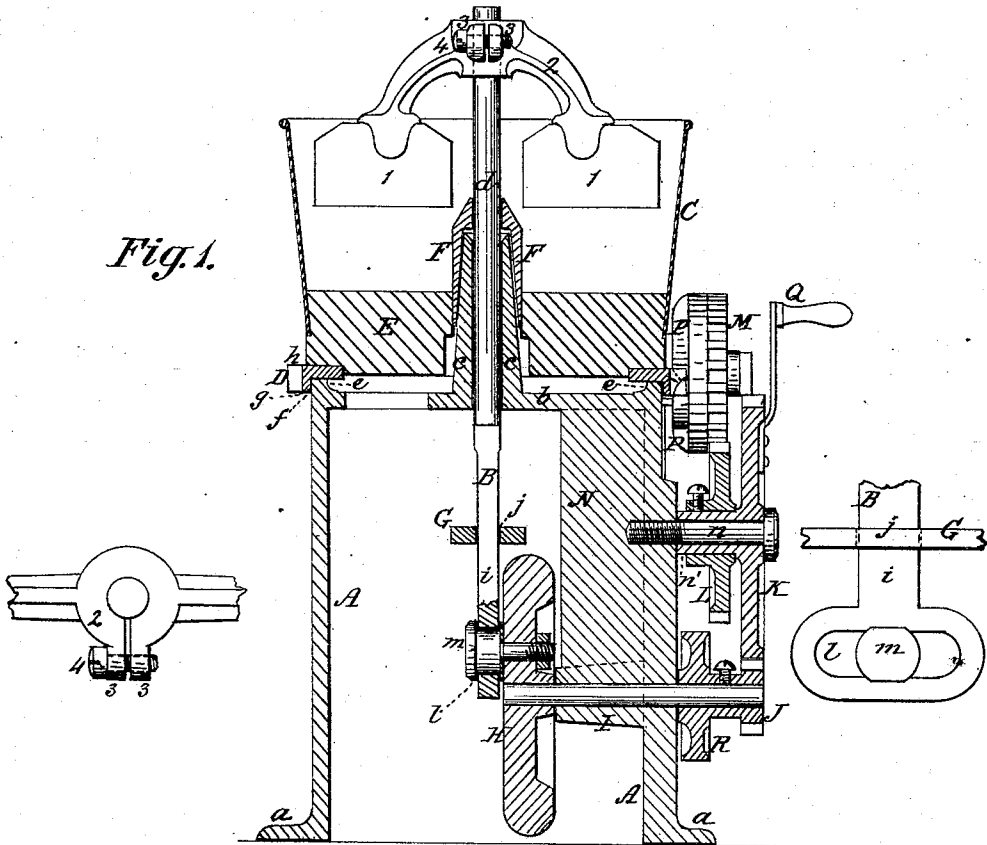


M. L. EDWARDS & N. A. MORLAN.

Meat-Choppers.

No. 157,164.

Patented Nov. 24, 1874.



Attest:
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UNITED STATES PATENT OFFICE

MARTIN L. EDWARDS AND NEWBERRY A. MORLAN, OF SALEM, OHIO.

IMPROVEMENT IN MEAT-CHOPPERS.

Specification forming part of Letters Patent No. **157,164**, dated November 24, 1874; application filed March 5, 1874.

To all whom it may concern:

Be it known that we, MARTIN L. EDWARDS and NEWBERRY A. MORLAN, of Salem, in the county of Columbiana and State of Ohio, have jointly invented certain new and useful Improvements in Meat and Vegetable Choppers, of which the following is a specification:

In this machine, the meat-tub, in which the meat and vegetables are put to be chopped, has an intermittent rotary movement, and the chopping-knife is carried by a vertically-reciprocating shaft passing through the meat-tub.

A special feature of our invention consists in the combination, with the hopper provided with oblique circumferential cogs, a wheel, placed tangentially with said hopper, and having eccentrics upon its inner face and cogs upon its circumference, the former to engage with the inclined cogs to effect the feed of the hopper, and the latter with intermediate driving-gear for the knife, whereby the feed of the tub is effected by a combined cam and cogged wheel standing at a tangent to the hopper, and gearing at different points with the oblique cogs of the hopper, and the knife-driving gear mounted upon the side of the base. A vertically-split knife-head is also employed, in combination with a clamp-screw and the knife-shaft, whereby the knife-head is clamped in place, and can be more readily adjusted and removed when desired.

In the accompanying drawings, Figure 1 represents a vertical section of a machine embracing our invention; Fig. 2, a view of the curved ribs, showing one of them acting upon the tub-gear to make the feed; Fig. 3, a similar view, showing the inner side of the curved rib acting as a stop against the teeth of the gear to arrest and hold the tub before the outer acting side of said rib strikes against the cog to make the feed; and Fig. 4, a top view of the bed-case and the feed-wheel.

The supporting-case A is a cylindrical cast-iron bed, with a base-flange, *a*, by which to bolt it in place, and a top plate, *b*, from which a hollow conical stem, *c*, rises for the bearing of the cylindrical portion *d* of the knife-shaft B, while from the annular rim of said bed-case four or more segments, *e*, rise to form seats, upon which the meat-tub C rests, and by which it is held in position by means of a horizontal

gear-wheel, D, a recess, *f*, in the under side whereof forms an annular shoulder, *g*, which incloses the segment-seats *e*, as shown in Fig. 1. The gear D is bolted to the under side of the tub-block E, and the cogs *h* of its feed-wheel are inclined from a vertical line, for a purpose to be presently described. The knives 1 are carried by an arched head, 2, which fits over the shaft, and the head is split on one side of the bearing, with each split side formed into an ear, 3, through which a clamp-screw, 4, passes. When the head 2 is placed upon the shaft at the proper height, it is clamped firmly, and may be readily adjusted or removed when desired, the split bearing-gears 3 opening and closing upon the shaft as the clamp-screw 4 is turned. The meat-block E has a central sleeve, F, which projects within the tub and fits over the knife-shaft, the lower portion *i* of which is made flat, and passes through an oblong opening, *j*, in a horizontal bar, G, fixed across the inner side of the bed-case, while the lower end of the knife-shaft has a horizontal oblong opening, *l*, within which works a wrist-pin, *m*, provided with a loose collar on the side of a balance-wheel, H, whose shaft has its bearing in a rib, I, cast upon the inner side of the bed-case. This shaft passes through said bed-case, and carries a pinion, J, on its outer end, which matches with a cog-wheel, K, on a bearing, *n*, fixed in the side of the bed-case. Upon a sleeve, *n'*, of this wheel K, a smaller gear-wheel, L, is fixed, which gears with a cog-wheel, M, mounted upon a bearing-bracket at the top of the bed-case, and this gearing imparts a reciprocating motion to the knife-shaft through the wrist-pin connection. The two lower bearings are further braced by a vertical rib, N, on the inner side of the bed-case, and this rib, with the bearing-rib I, the knife-shaft bearing, and the tub guide-seat segments *e* are integral with the bed. The upper cog M has upon its inner face, in the example shown, four eccentric ribs, P, which are placed to take into the inclined cogs *h* of the tub-gear wheel D, to give an intermittent movement to the meat-tub by the bearing of the outer side *r* of one rib at a time against the inclined side of the cog. These four eccentric ribs P correspond in number with the vibrations of the knife-shaft, and are arranged

to move the block while the knives are elevated, leaving it at rest when they strike upon the surface, thus preventing any scraping of their cutting-edges or lateral pressure upon the shaft connections or bearings. This stop of the meat-tub is effected by means of the inner side *s* of each rib catching over the cog and preventing the momentum of the tub from carrying it forward until the outer side *r* of said rib, as it turns, comes in contact with the forward cog and moves the tub, the space between the ends of these ribs causing the stop end of one to enter between the cogs while the acting end of the other rib is leaving the cogs, as shown in Figs. 2 and 3. By this means the ribs serve to both feed and stop the tub at the proper time. The tub can be turned in either direction with the same results. The cog-wheel K has a crank-handle, Q, by which to operate the machine; but in machines arranged to be run by power only a band-wheel, R, is placed on the balance-wheel shaft, and a cog-wheel made to engage with the wheel L.

If desirable, the balance-wheel may be placed

on the outer side of the case, and a crank on the inner end of the horizontal shaft.

The meat-tub can be easily lifted from its connection with the feed-ribs, as the wheel which carries them stands tangential to the meat-tub gear-wheel.

We claim—

1. In combination with the hopper C, provided with oblique circumferential cogs D, the wheel M, having the eccentrics P upon its inner side and cogs upon its circumference, the former to engage with the inclined cogs *h* for imparting an intermittent rotation to the hopper, and the latter with intermediate driving-gear for the knife, substantially as and for the purpose set forth.

2. The split knife-head 2, in combination with the clamp-screw 4 and the knife-shaft, as and for the purpose stated.

MARTIN L. EDWARDS.
NEWBERRY A. MORLAN.

Witnesses:

D. M. CAREY,
LUCIEN L. GILBERT.