2 Sheets—Sheet 1

M. J. STEIN.
Meat-Chopper.

No. 202,600. Patented April 16, 1878.

Fig. 1.

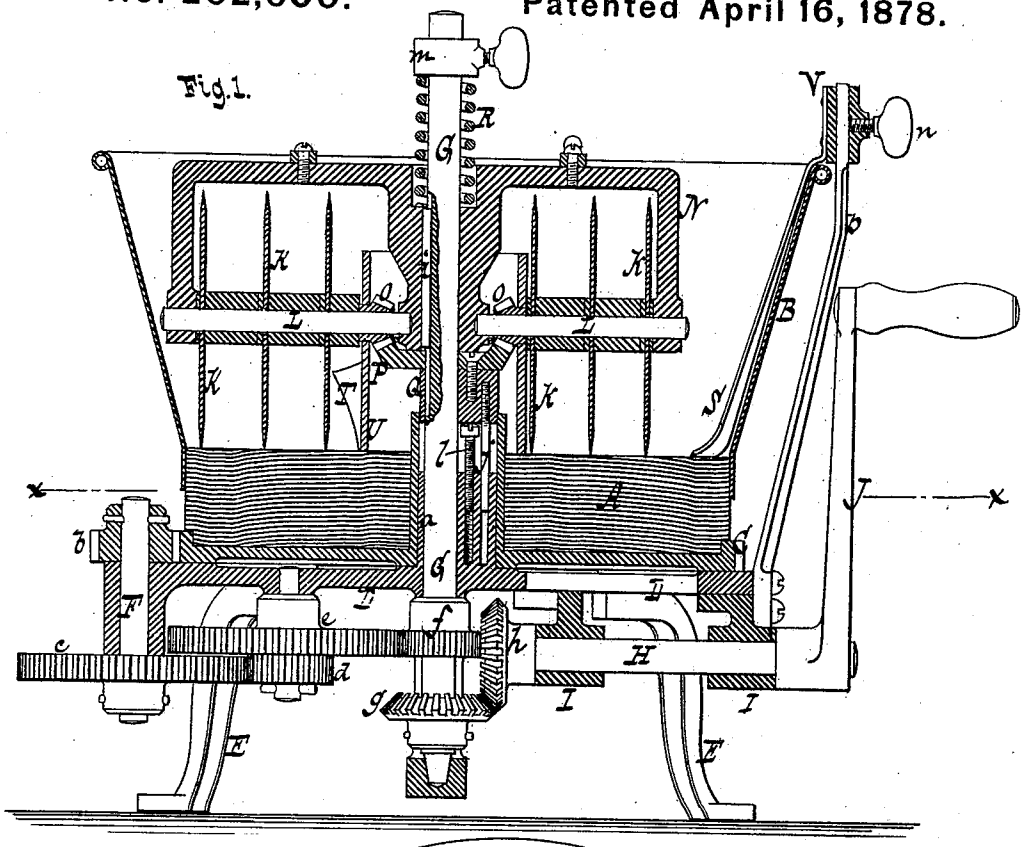
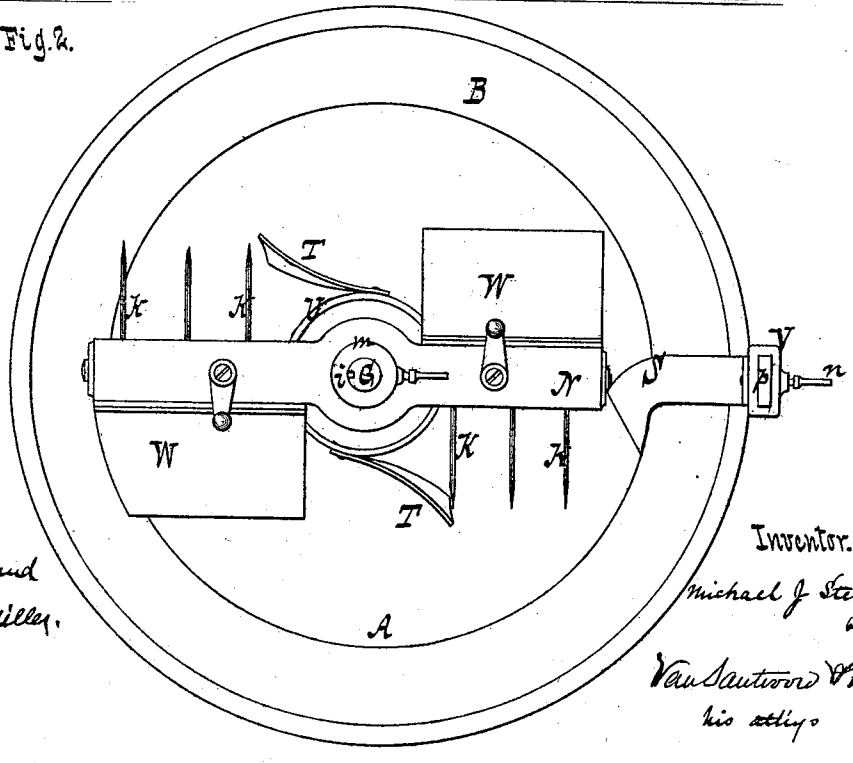


Fig. 2.



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2 Sheets—Sheet 2.

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Fig.3.

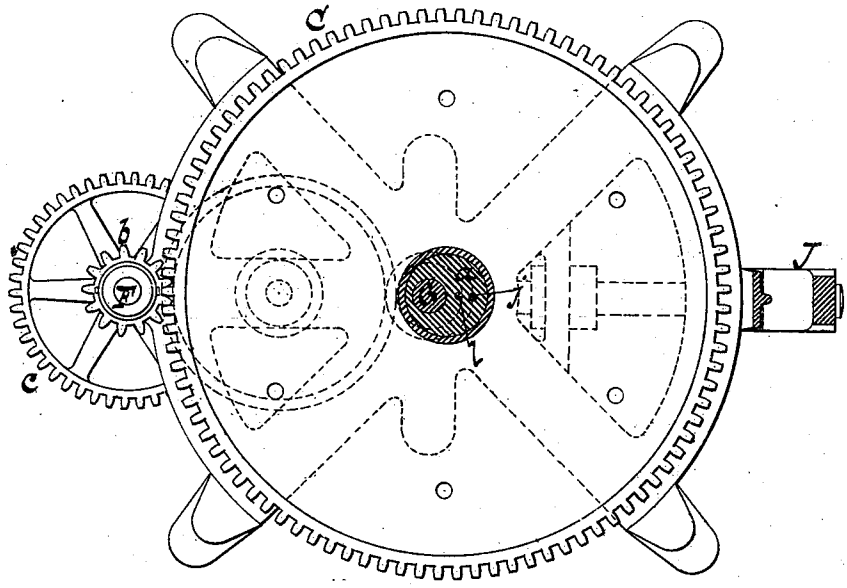
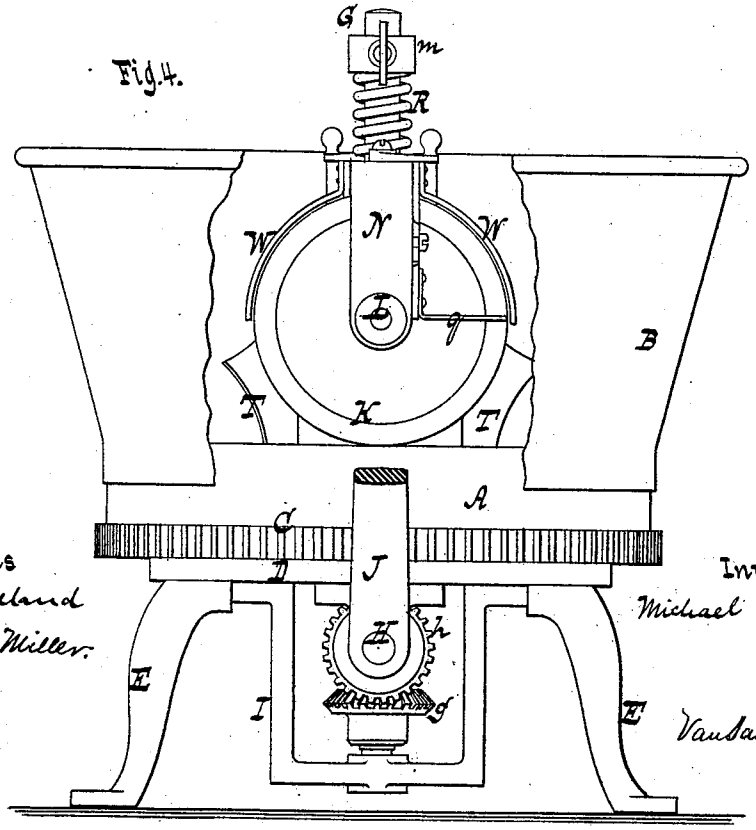


Fig.4.



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UNITED STATES PATENT OFFICE.

MICHAEL J. STEIN, OF NEW YORK, N. Y.

IMPROVEMENT IN MEAT-CHOPPERS.

Specification forming part of Letters Patent No. **202,600**, dated April 16, 1878; application filed December 28, 1877.

To all whom it may concern:

Be it known that I, MICHAEL J. STEIN, of the city, county, and State of New York, have invented a new and useful Improvement in Meat-Choppers, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a vertical central section of a machine containing my improvement. Fig. 2 is a plan or top view thereof. Fig. 3 is a horizontal section of the same in the line *x x*, Fig. 1. Fig. 4 is a side elevation, partly in section.

Similar letters indicate corresponding parts.

My invention relates to the combination, in a meat-cutter, of a rotary chop-block mounted upon a stationary axis, eccentrically through which extends a vertical spindle, carrying a frame or yoke, in which are mounted two horizontal series of rotary circular cutters, the shafts of which are rotated by gear-connection with said spindle, in virtue of which there arises perpetual change of relative positions laterally of the cutters and the cutter-block, which prevents the cutters from following continually the same circular track around the axis of the block, so that the upper surface of said block is worn away evenly.

In the drawing, the letter A designates the chopping-block of my machine. This block forms the bottom of a pan, B, and is secured to a horizontal cog-wheel, C, which is mounted loosely on a gudgeon, *a*, projecting up from a horizontal or base plate, D, the hub of said cog-wheel being made to embrace this gudgeon. The base-plate D is supported by legs E. The cog-wheel C meshes with a pinion, *b*, secured to a spindle, F, which has its bearing in the base-plate D, and on which is mounted a second cog-wheel, *c*. This cog-wheel *c* gears, through intermediate cog-wheels *d e*, with a wheel, *f*, secured to the main shaft or spindle G. This shaft or spindle G carries also a bevel-wheel, *g*, which meshes with a corresponding wheel, *h*, secured to a driving-shaft, H. This driving-shaft H has its bearings in hangers I I, secured to the base-plate D, and is provided with a winch or handle, J.

When a revolving motion is given to the driving-shaft H such motion is transmitted to the main shaft or spindle G through the bevel-wheels *e*, *d*, *c*, *b*, and C, a revolving motion being thus imparted to said shaft or spindle and to the chopping-block in opposite directions.

The letter K designates the cutters of my machine, having a circular shape and bearing on the surface of the chopping-block A, and L are the cutter-shafts. The cutters K are secured on their shafts L, and the shafts are mounted horizontally and loosely in a yoke or frame, N, which is secured to the vertical shaft or spindle G by means of a feather-key, *i*.

When the vertical shaft or spindle G is revolved, as before stated, the yoke or frame N, and with it the cutter-shafts and cutters, partake of such motion, the cutters being thereby caused to move through a circle over the chopping-block, and in a contrary direction to the direction of rotation of said block.

On the cutter-shafts L are secured bevel-wheels O, which mesh with a circular and beveled rack, P. This rack is secured to a head, Q, which is fitted in the hub of the cog-wheel C, and connected to the gudgeon *a* of the base-plate D by a screw-stem, *j*, so that said head and the rack P are prevented from turning.

The bevel-wheels O travel over the circular rack P when the yoke or frame N, the cutters, and cutter-shafts are revolved by the vertical shaft or spindle G, and by this means a revolving motion is imparted to the cutter-shafts, so that the cutters receive an independent rotary motion on their own axes, besides moving around a vertical axis. The head Q is raised or lowered by the screw-stem *j* and by a set-screw, *l*, located adjacent to said stem. The yoke or frame N partakes of the movement of the head Q, and hence the yoke is thereby rendered vertically adjustable, so that I am enabled to lower the same and bring the knives K to bear on the chopping-block in case the wear of the block renders such a movement necessary.

The vertical shaft or spindle G is arranged eccentrically to the axis of the chopping-block A, by which, during the revolution of the block and cutters, the cutters K are caused to travel over different portions of the block each time a revolution is thereby made around the vertical shaft or spindle. The surface of the chopping-block is thus evenly worn in the action of the cutters K thereon, and the formation of ruts or grooves in such surface is obviated.

On the vertical shaft or spindle G is coiled a spring, R, which is held down by an adjustable collar, *m*, and bears on the yoke or frame N. By the action of this spring R the yoke or frame N is depressed, and thereby the cutters K are caused to bear on the cutting-block A with an elastic or yielding pressure, the yoke or frame being permitted to slide by the feather-key *i*.

For the purpose of deflecting or retaining the meat placed on the chopping-block A in the paths of the cutters K, I employ one or more inwardly-projecting scrapers, S, and outwardly-projecting scrapers T. The scrapers are situated immediately above the surface of the block A, so as to scrape such surface, and they are curved, as seen in Fig. 2. I secure the scrapers T to a cylinder, U, surrounding the mechanism for operating the cutter-shafts L, the primary object of this cylinder being to protect such mechanism from contact with the meat contained on the chopping-block. The scraper S is secured to a slide, V, which is provided with an adjusting-screw, *n*, and supported by a bracket, *p*, rising from the base-plate D.

In order to shield the cutters K, they are covered on one side of the yoke or frame N by caps W, which are secured to said yoke or frame, and carry, also, scrapers *q*, Fig. 4, for cleaning the cutters.

By the caps W any meat adhering to the cutters K is prevented from being thrown out of the machine.

In the example shown the cylinder U is secured to the yoke or frame N, so as to revolve therewith, and hence the outwardly-projecting scrapers T also receive a revolving motion. Said cylinder U forms an important feature of my device.

What I claim as new, and desire to secure by Letters Patent, is—

In a meat-cutter, the combination of the rotary chop-block, a vertical spindle extending eccentrically through the stationary hollow axis, about which said block revolves, and giving motion through intermediate gears to two independently-rotating series of cutters arranged to travel in different paths, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 26th day of December, 1877.

MICHAEL J. STEIN. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.