J. H. HUBER.

MEAT-CHOPPERS.

No. 194,302. Patented Aug. 21, 1877.

Fig. 1

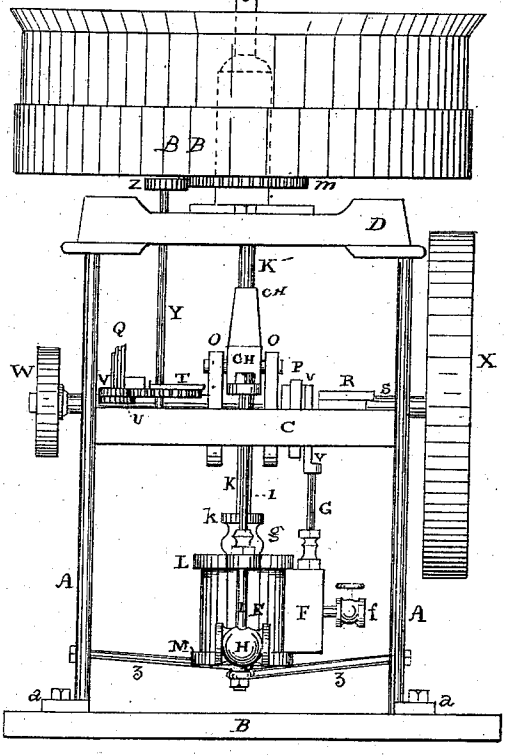
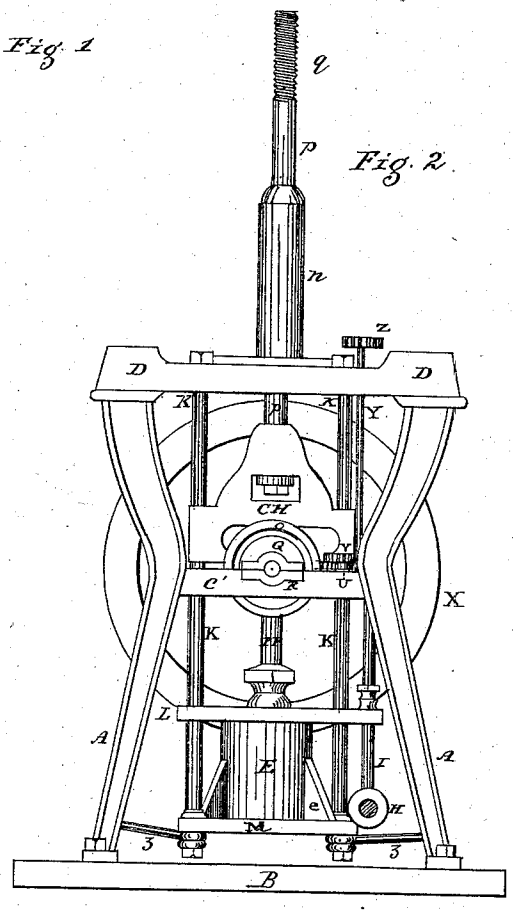


Fig. 2.



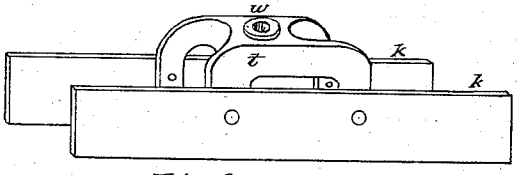


Fig. 3.

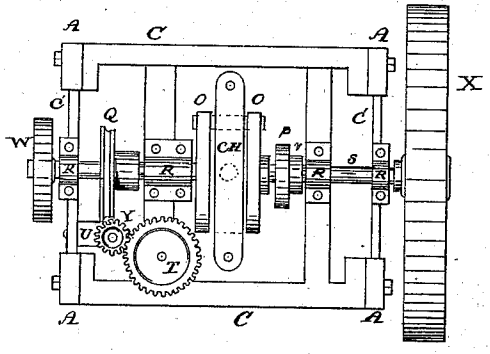


Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MEAT-CHOPPERS.

Specification forming part of Letters Patent No. **194,302**, dated August 21, 1877; application filed April 18, 1877.

To all whom it may concern:

Be it known that I, JOSEPH H. HUBER, of the city of Lancaster, in the State of Pennsylvania, have invented certain Improvements in Meat-Chopping Machines, of which the following is a specification:

This improvement relates to a class of meat-cutters in which the knives operate vertically in a head-block mounted on a reciprocating shaft within a hopper, over and around a revolving block—when operated by steam, having the cylinder, steam-chest, pump, and appliances arranged centrally under the revolving block, so as to exclude all droppings of oil or dirt from the machinery among the meat on the block, arranged as herein more fully set forth.

The accompanying drawing, with the letters of reference marked thereon and a brief description, will enable those skilled in the art to make and use the same.

Figure 1 is a front elevation, with the block and hopper in place. Fig. 2 is a side elevation, with the block, hopper, and knives detached. Fig. 3 illustrates the knives and head with its central female screw. Fig. 4 is a plan view of the intermediate bearings and arrangement of the gear, shafts, crank, cross-head, &c.

The frame-work consists of the corner supports or legs A, provided with a flange or foot, *a*, for bolting them to the floor or base B. The top plate D, supported and firmly secured upon them, has a central column, *n*, through which the shaft *q p* of the knife-head passes, and is guided and held in its vertical reciprocating motions, hereinafter more fully explained.

The central plate or open platform C, with its pendent flanges, also braces the corner-supports A and provides a seat for the bearings for the shafts, boxes, and gearings combined, as shown by Fig. 4. A pair of stout guide-rods, K, are secured by screw-nuts on the upper surface of the top plate D, and to a shelf plate or flange, M, which supports the combined steam-cylinder E, valve-chest F, with its steam-inlet, *f*, and exhaust, (the latter not seen,) and pump H, with their respective rods I G and piston P P. From this lower central plate M stay-rods *z* radiate to the four corner-posts. There is also a plate, L, above the body of the steam-cylinder, to steady the pump and piston-heads *g k*. The piston P P is connected to the cross-head C H. This is confined in its up-and-down motion by the guide-rods K, which pass through the prolonged ends on the lower portion of the cross-head, which has a central open horizontal slot with rounded ends. A crank-pin connects the disks O near their outer edge, one on each side, so that the reciprocal vertical motion of the cross-head imparts a rotary motion to the crank-shafts S, connected centrally with the disks O, as is well understood in mechanics.

In connection with one of the crank-shafts S is a disk, P, having an eccentric groove for a lug or pin connected with the valve-rod band *v*, which band has an open vertical slot through which the shaft passes as the band is drawn up and down by its connection with the eccentric grooved disk, and its rotary motion made reciprocal for actuating the valve-rod G attached to said band.

R shows the boxes for the crank-shaft X, the fly or balance wheel on the one side. On the opposite side of the crank-shaft there is a stagger worm-gear, Q—that is, a portion of the thread is straight, so as not to act on the cogs of a pinion, U, at certain intervals. This pinion is combined with a smaller pinion, V, above it on the same spindle, which latter imparts motion to the cogged wheel T on a vertical shaft, Y, which carries a pinion, Z, at its top above the upper plate D of the machine.

The block B B is provided with a cogged wheel or ring, *m*, centrally affixed to the under side, and with it lifts off and on for cleaning, as it fits closely around the central axis or column *n*. The pinion Z engages with the cogs on the said ring *m*, and imparts its intermittent motion to the revolving block by means of the stagger screw-gear Q and duplicate pinions U V, so arranged that the block is at rest at the time the knives pass through and out of the meat on the block, thus preventing the tendency to scrape, found to be so injurious to the block and edge of the knives, besides a great strain on the gear and power applied. The knife-head can be accurately adjusted on the screw end *q* of the shaft *p*, and held by a jam-nut in place.

I do not claim any special novelty in the

steam-cylinder valve and pump arrangement, with its cross-head and appliances separately considered, but in the arrangement and adaptation of the general construction of a meat-cutting machine, independent of the steam appliances.

I am not aware that a cog-wheel centrally attached under a rotating block operated intermittently by means of a staggered screw-gear and duplicate pinions was ever before known or used as herein set forth.

I am aware, however, that in Patent No. 157,164, November 24, 1874, an intermittent rotation is imparted to the block by means of eccentrics on the inside of a cogged wheel, which eccentrics engage with inclined circumferential cogs. Such an arrangement I disclaim. Nor do I claim imparting an intermittent motion, simply as such; therefore,

What I claim as my improvement in a meat-chopper is—

1. The combination of the supporting-plates M, L, and C with the top D, having a central guide-column, *n*, for the shaft *p*, cross-head C H, and guide-bars K, and the central arrangement of the steam-cylinder and appliances for operating the knives, all substantially as and for the purpose shown and specified.

2. The combination and arrangement of the crank-shaft S, worm-gear Q, double pinion U V, cog-wheel T, and pinion Z, both on the same vertical shaft Y, the whole substantially as and for the purpose set forth.

JOSEPH H. HUBER.

Witnesses:

WM. B. WILEY,

JACOB STAUFFER.