

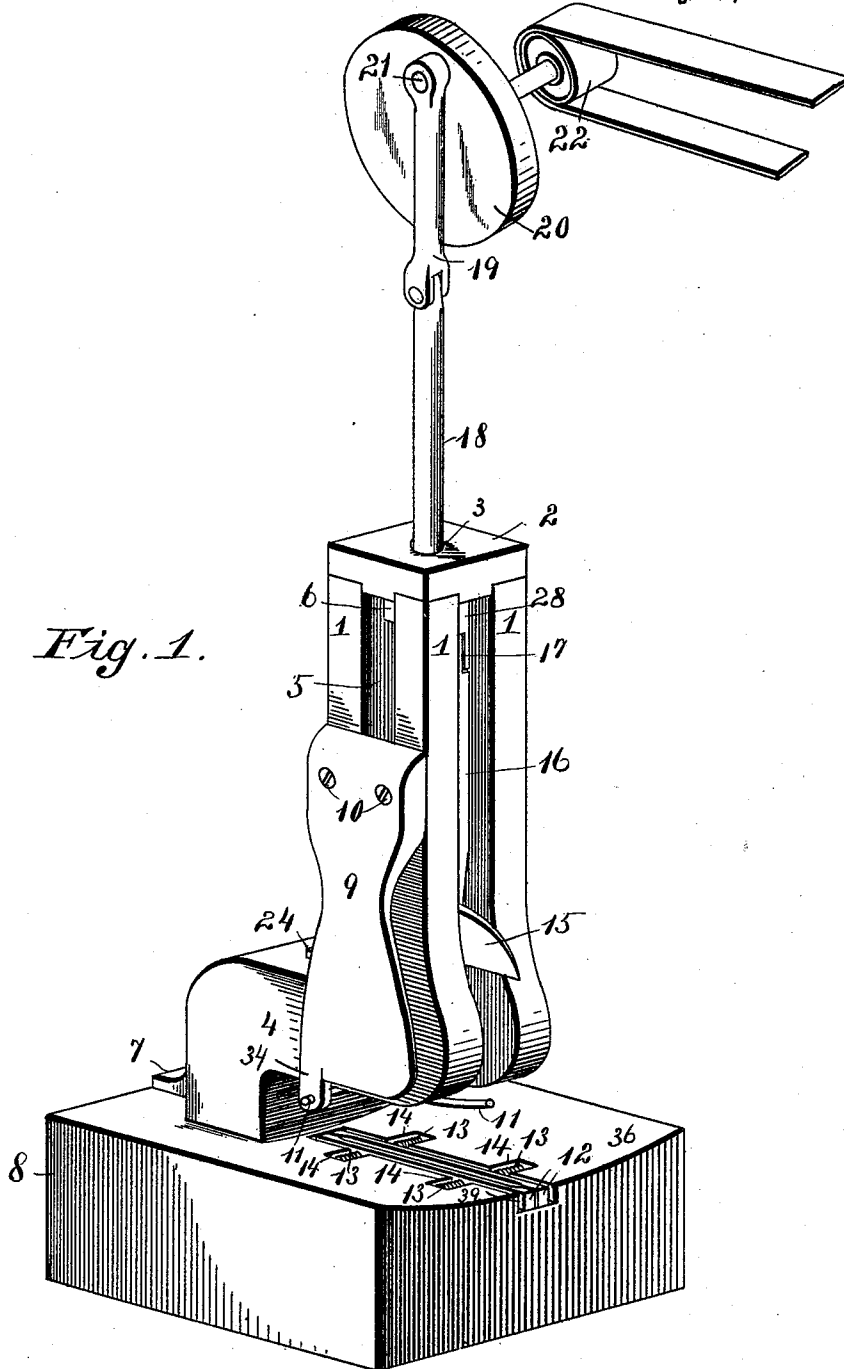
(No Model.)

2 Sheets—Sheet 1.

J. B. ARNETT.
MEAT CUTTER.

No. 496,842.

Patented May 9, 1893.



Witnesses:
F. G. Fischer
H. C. Price.

Inventor:
James B. Arnett
By Bigdon & Bigdon
Attys.

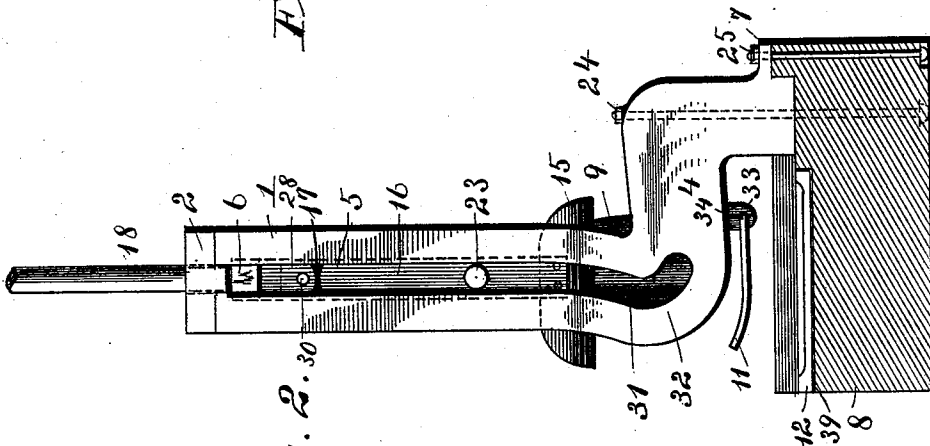
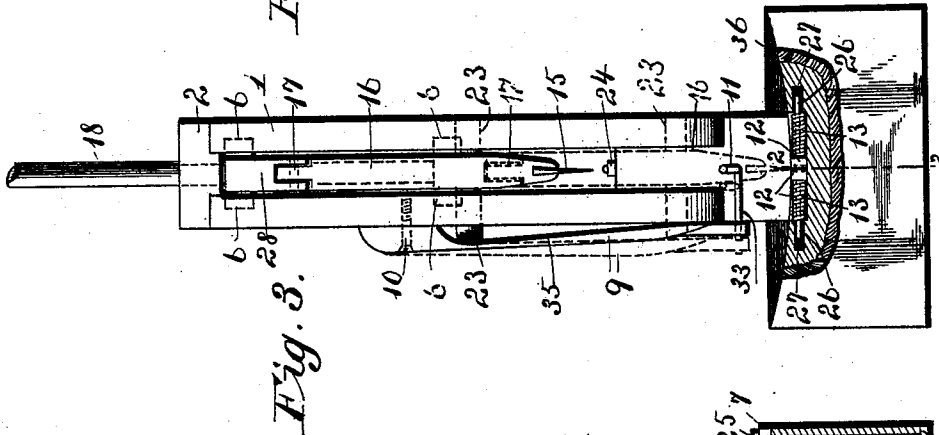
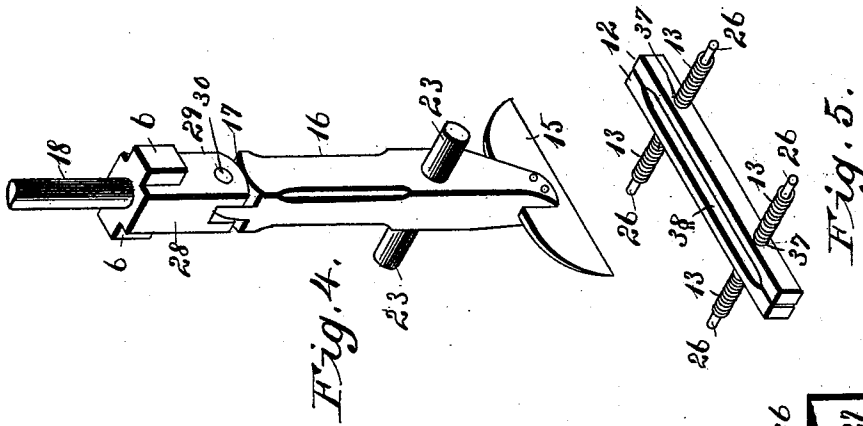
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By Wigdon & Wigdon Attys.

UNITED STATES PATENT OFFICE.

JAMES B. ARNETT, OF KANSAS CITY, KANSAS.

MEAT-CUTTER.

SPECIFICATION forming part of Letters Patent No. 496,842, dated May 9, 1893.

Application filed August 12, 1892. Serial No. 442,893. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. ARNETT, of Kansas City, Wyandotte county, Kansas, have invented certain new and useful Improvements in Hog and Mess-Pork Choppers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of hereof.

My invention relates to meat cutters, and consists in the novel combination, construction and arrangement of parts hereinafter set forth and designated in the claims.

The object of my invention is to provide an improved machine for use in large packing-houses, especially, but which may of course be used in other locations, for cutting-up hogs in preparing salt and mess pork for market, and for cutting-up other animals, such as sheep, calves and beeves.

In the drawings, Figure 1 is a perspective-view of an improved meat-cutting or chopping machine, embodying my invention. Fig. 2 is a sectional side-elevation of same, with parts broken away, the section being taken on line 2—2, Fig. 3. Fig. 3 is a front view of same, with parts broken away. Fig. 4 is a detail-view, in perspective, of a reciprocating-knife and its mountings, made use of in carrying out the invention, and, Fig. 5 is a detail-view in perspective, of yielding jaws located in the cutting-block and constituting a knife-slot therein.

1 indicates four vertical guide-bars, disposed in a relatively-rectangular position, with their upper ends covered and secured in position by a rectangular-cap 2 having a central vertical passage 3, and their lower ends secured to or cast integral with a bracket 4, so as to form four vertical slots 5 in the vertical frame of the machine. The frame-bracket 4 is provided with a base-portion 7, which is secured to the cutting-block 8 preferably by means of suitable through-bolts 24 and 25 passed vertically through both base-portion and said block. The base-portion 7 of the frame-bracket is located upon the upper face of the cutting-block 8, at a point adjacent the rear side thereof, so as to leave a comparatively wide surface in front of it, upon which the halves or other large portions of hogs and other animals may be manipulated during the

cutting-up operation. The base-portion of said bracket rises vertically from the cutting-block for some distance, and it is then extended forward some distance, so as to form a horizontal-portion which overhangs the cutting-surface of the cutting-block, and to the forward end of which the vertical guide-bars 1 are secured. Such an arrangement disposes the reciprocating-knife and its connections in position directly above such cutting-surface, and provides the necessary space between the overhanging-portion of the frame-bracket and said cutting-surface, in which the large pieces of meat to be divided may be located, turned and otherwise manipulated while the knife reciprocates in operation.

Disposed within the vertical-space between the bars 1, and guided thereby in vertical movement, is a cross-head 28 having guide-lugs 6 on two opposite sides. This cross-head is secured to the lower end of a rod 18, which extends upward through the passage 3 in cap 2.

Reciprocating-movement may be imparted to the cross-head 28 by any known means, but I prefer to use the devices which are here shown for the purpose. These consist of a revoluble-disk 20 properly mounted on a shaft and fitted with a wrist-pin 21, and a connecting-rod 19 having its upper end engaging said wrist-pin and its lower end loosely-connected to the upper end of said rod 18, so that when said disk is revolved continuously in either direction by means of a belt-pulley 22 and a belt (or by other means) a reciprocating movement will thereby be imparted to said rod 18 and said cross-head. The bearings for the shaft upon which the disk 20 is mounted, being unimportant details capable of being constructed by an ordinary mechanic, need not be shown or described herein.

16 indicates a second cross-head, mounted to reciprocate and rock in the space between the guide-bars 1 directly beneath the cross-head 28. The upper end of the cross-head 16 is pivotally secured to the lower-portion of the cross-head 28 by means of a pin 29, or other known form of connection, and the contiguous ends of both cross-heads are provided with rounded-portions 30 and 17, for a purpose hereinafter stated. Projecting from op-

posite sides of the lower cross-head 16, at some distance from its lower end are lugs or pins 23, which slide up and down, and rock, in the lower portion of the opposite guiding-slots 5 which have the peculiar configuration now to be described. At a point adjacent the lower limit of movement of the lower cross-head 16 the opposite slots in which the pins or lugs 23 are mounted, are provided with an outward-curve, or a forward-curve, 31, and with an inward or backward-curve 32 immediately below the curve 31, for a purpose stated farther on.

15 indicates a knife having a sharpened lower edge, and mounted upon or secured to the lower end of the lower cross-head 16 so as to extend in a direction at right-angles to that in which the pins or studs 23 project, and reciprocate in the slots 5 which are in the front and rear of the frame.

11 represents a cut-indicator, for indicating to the eye of the operator the exact point upon the meat to be cut at which the knife will strike, in its descending movement. This indicator preferably consists of a piece of iron wire, or metal rod, bent at right-angles, so as to form a shank 33 and this shank fixed in or to a lug 34 depending from the yielding-arm 9, although such indicator may be otherwise arranged by an ordinary mechanic without departing from my invention. The yielding-arm 9 is attached at its upper end to one side of the frame of the machine, so that its lower end will be free and be disposed adjacent the space beneath the overhanging portion of the bracket 4, with its lug 34 projecting downward into a position a little below said overhanging-portion. One of the pins or lugs 23 projects a little beyond the outer surface of the guide-bars 1, on one side of the machine, and is adapted to contact with an incline, or cam-surface, 35, formed upon or secured to the inner-surface of the yielding-arm 9. 10 indicates screws or other fastenings, by means of which said arm is secured in the position above described. The cut-indicator 11 is disposed, and normally rests, in the path of the knife 15, and extends in a direction parallel thereto. The upper-surface of the cutting-block 8 is provided with a curved or dished cutting-surface, so that the rear edge and side edges are in a higher plane than the front edge is. The purpose of this construction is to adapt the block to the contour of the animal being cut up, to as great a degree as possible, in order that shifting around of the animal will not so readily occur without intent on the part of the operator. A further purpose of this is to provide a means whereby the blood and juices contained in the meat being cut will be caused to gravitate to the lowest portion of the cutting-surface of the block, which is the front, and there be disposed of in the most convenient manner.

65 The machine above described may be operated with an ordinary cutting-slot in the block; or, in fact, without a cutting-slot in

the block, although I prefer to use with it what I term a cutting-slot having yielding-sides, which I will now describe.

12 indicates a pair of jaws, normally located with adjacent edges in contact, in a recess 39 formed in the cutting-block centrally of its width and extending in a direction parallel to that in which the knife 15 extends. The upper side of this recess or groove 39 is open, so that all liquids may gravitate therein toward the front of the block, the rear end of said recess or groove being closed, as shown in Figs. 1 and 2. The jaws 12 are mounted to slide upon rods or bars 26, which extend transversely thereof through holes 37 formed therein. Springs of any known kind are arranged to normally retain the contiguous edges of said jaws in contact. Spiral springs may be used for this purpose, as here shown, they being indicated by the numeral 13 and located one upon the projecting ends of each rod 26, and said rods and springs are mounted in short grooves or recesses 14 extending laterally from the central groove 39, in the cutting-block, so that the outer ends of said springs will bear against the outer walls of said transverse-grooves and the inner ends of the springs will be urged against the outer sides of the jaws 12, and retain the inner edges of the latter in contact, and in vertical alignment with the edge of the cutting-knife. This is done, so that when the knife descends to the limit of its downward-movement, its edge will pass between said jaws and slightly separate them.

To provide against any possibility of the edge of the knife not entering between the jaws 12 I bevel or chamfer the contiguous upper corners of each jaw, so as to form a cutting-slot 38, having yielding-walls.

The operation is as follows: Power being communicated to the disk 20 by means of pulley 22 and a belt, or by other known means, the said disk will be rotated, and a reciprocating-movement will be imparted to the rod 18, the upper and lower cross-heads 28 and 16, respectively, and the knife 15. At each stroke the edge of the knife will enter between the jaws 12, separating them a short distance, and as soon as the edge of the knife is removed the springs 13 act, as before stated, and return said jaws to their normal position, which is with adjacent edges in contact. This arrangement forms a very solid "anvil" for the meat being cut, the jaws 12 and the knife acting substantially as male and female dies, clearing the knife of all accumulations adjacent its edge, and permitting a very neat cut to be made at each stroke. The animal to be cut into pieces for mess-pork, salt-pork, &c., is placed transversely of the cutting-block 8, and of the knife 15, in the space beneath the overhanging-portion of the bracket 4, the reciprocating-movement of the knife being comparatively slow, so that ample time will be given the operator to adjust the animal, or meat, beneath the knife before the cut is made. The

operator adjusts the meat in such manner that the indicator 11 rests in the exact spot where he desires a cut made; then the knife descends, the projecting-pin or stud 23 coming into contact with the incline 35 on the yielding-arm 9, as the knife approaches the limit of its downward-movement, and swings the lower end of said arm outward, as shown by dotted lines in Fig. 3, and this withdraws the said indicator from the path of the descending knife so that the knife passes but does not come in contact with the indicator. On the up stroke, as soon as the projecting-end of the pin 23 becomes disengaged from said incline (which it does at a point near the limit of its upward movement) said arm springs back to normal position, placing the indicator again in the path of the knife, and so on.

A "draw-cut" is imparted to the knife in the following manner: As the knife approaches the limit of its downward-movement the pins 23, sliding in the slots 5 between the guide-bars 1 of the frame, first strike the inclined-side of the outward-curve 31 of said slots, and are thereby caused to move a short distance toward the front of the machine, causing the lower cross-head 16 to be rocked or moved in same direction, making a draw cut in that direction. As soon as this has been accomplished, and as the downward-movement of the parts continues, said pins 23 will strike the inclined side 32 of said slots, which, being inclined toward the rear of the machine, will cause the knife to be moved in that direction, making another draw-cut. These movements will be reverse in order, as the knife proceeds to make an up stroke. It will be observed that this draw-cut is brought about while the knife is just approaching the limit of its down-stroke, thereby severing the meat very neatly, without tearing it.

The advantages of a draw-cut are well known, and need not be described. When pressure is brought upon the joint between the upper and lower cross-heads, as it is in cutting, the rounded portion or end 17 of the cross-head 16 will contact with the rounded-end 30 of the cross-head 28, and remove considerable strain from the pivotal-pin 29. The knife, it will be noticed, is so mounted as to be accessible from the front and two sides of the machine, which is a very convenient arrangement in placing and manipulating heavy pieces of meat upon the cutting-block.

I am aware that meat-chopping machines, for use in making sausages, have been fitted with a series of vertically-reciprocating-knives; also that other meat-cutting machines

have been arranged with a single vertically-moving cleaver or knife. But, in all such machines no provision has been made for cutting through the bone contained in the meat, which operation is one to which my improved machine is especially adapted, owing to its peculiar form of frame and cutting-mechanism, being very strong and durable.

What I claim is—

1. In a meat chopper, comprising a chopping block, and a guide-frame, the combination of a vertical reciprocatory knife, guided in said guide-frame, and having laterally projecting guide pins, with an indicator rod, to designate the line of cut of the descending knife, substantially as set forth.

2. In a meat chopper, comprising a chopping block, and a guide-frame, the combination of a vertical reciprocatory knife, guiding said frame, and having laterally projecting guide-pins, with a yielding arm, carried at the side of the vertical guide frame, and an indicator rod, carried by said yielding arm, and adapted to designate the line of cut, and to automatically move from under the descending knife, substantially as described.

3. In a meat chopper, comprising a chopping block, a guide frame vertically erected upon said chopping-block, and having laterally aligned guide-ways or slots 16, terminating at their lower ends in a segmental slot, and a vertically reciprocatory knife, having laterally extending pins engaging said guide-ways 16 and segmental slot, to induce a longitudinal draw-cut to the descending knife, substantially as described.

4. In a meat chopper, the combination of a chopping block, an inverted approximately L-shaped standard supported upon said block, near its rear edge, the horizontal portion thereof, extending forwardly over the center of said block, vertical guide bars supported upon the horizontal portion of the L-shaped standard, a cap at the upper end of said guide-bars, and a vertical reciprocatory knife guided between the guide bars, with spring actuated plates extending parallel and in vertical alignment with the knife, and having beveled upper and inner edges to direct the knife, and arranged longitudinally upon the chopping block, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES B. ARNETT.

Witnesses:

C. R. MEYER,
HARRIET E. PRICE.