

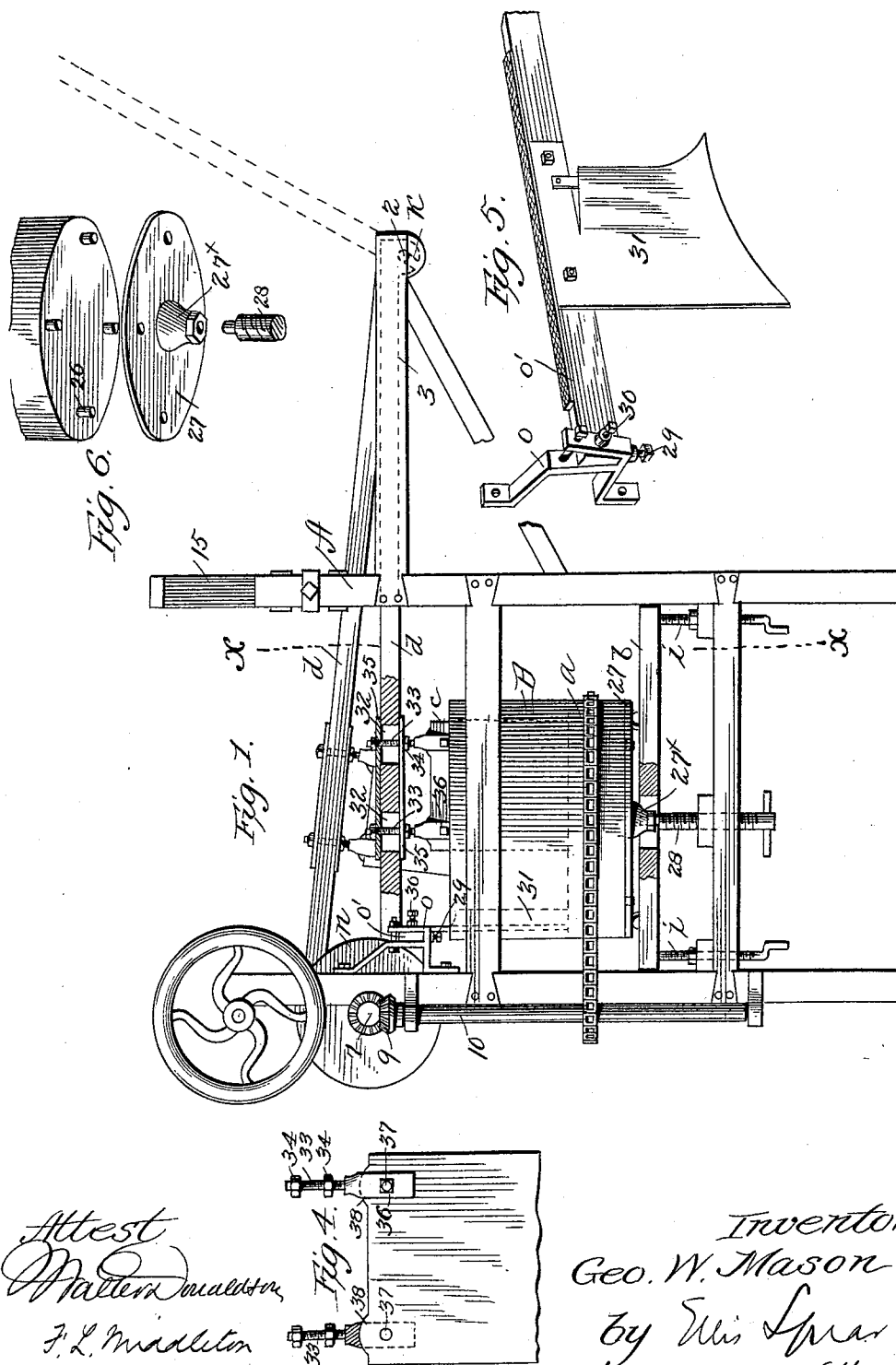
(No Model.)

2 Sheets—Sheet 1.

G. W. MASON.
CHOPPING MACHINE.

No. 481,766.

Patented Aug. 30, 1892.



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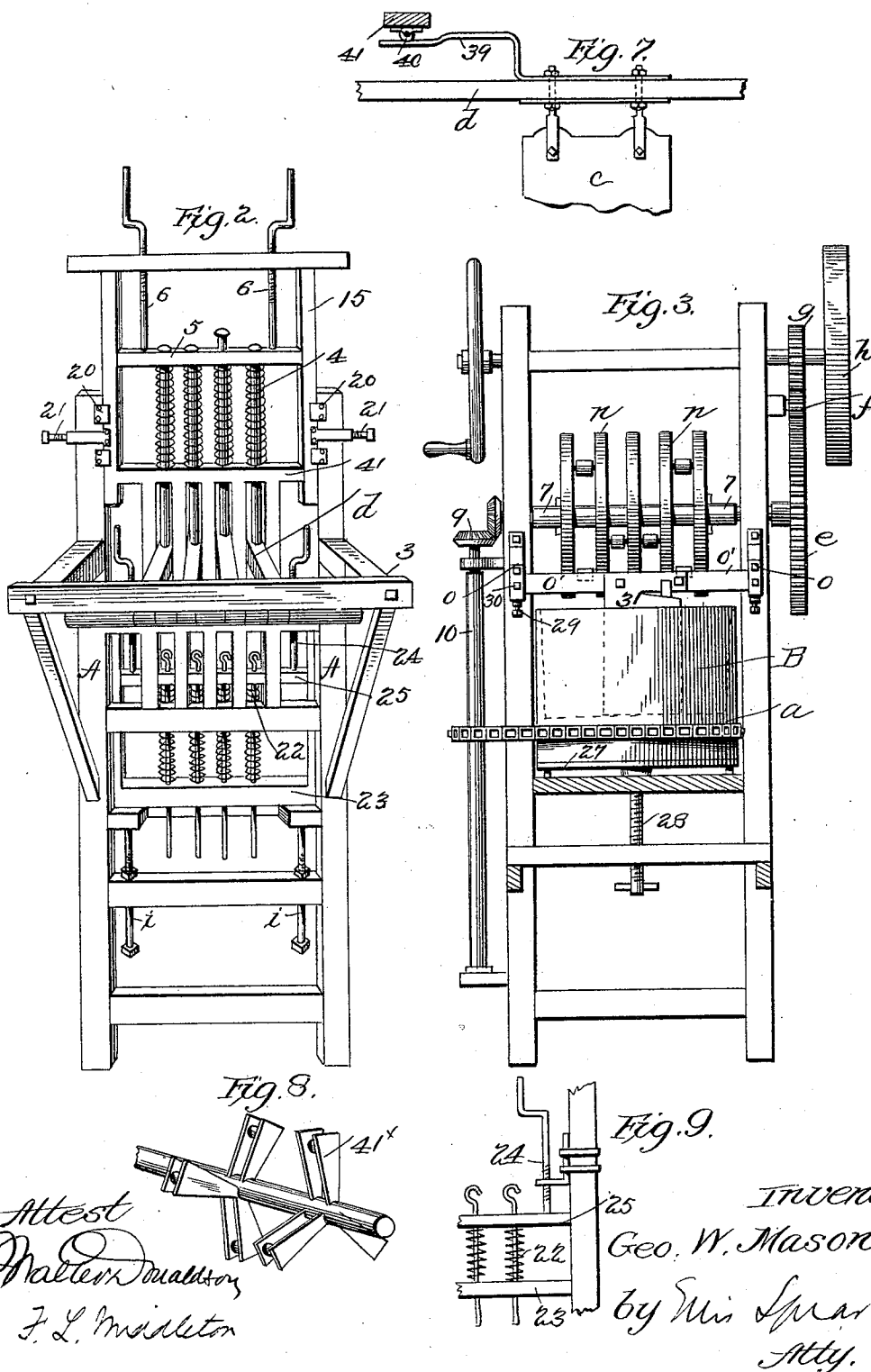
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UNITED STATES PATENT OFFICE.

GEORGE W. MASON, OF SHARON, PENNSYLVANIA.

CHOPPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 481,766, dated August 30, 1892.

Application filed December 4, 1891. Serial No. 414,028. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MASON, a citizen of the United States of America, residing at Sharon, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Chopping-Machines, of which the following is a specification.

My invention is a meat-chopping machine, and is intended to reduce meat or other material to a finely-divided condition.

In the accompanying drawings, Figure 1 is a side elevation of the apparatus, partly in section. Fig. 2 is an end view. Fig. 3 is a view of a section on line *xx* of Fig. 1, with parts omitted. Figs. 4, 5, 6, 7, 8, and 9 are views of details.

It will be understood that while I describe the machine as a meat-chopper, it may be used to cut up any other kind of material when this is found desirable.

The working parts are supported upon ordinary framework consisting of uprights and cross-pieces sufficient to give the necessary strength to the structure.

The meat-chopping block is arranged in the form of a receptacle, as shown at B, having a thicker lower portion *a*, which serves to sustain the impact of the knives. This block is supported upon an adjustable table *b*, which is provided with adjusting-screws supporting the same and adapted to raise or lower it, as desired, these adjusting-screws being shown at *i*.

Between the adjustable table *b* and the bottom of the block or receptacle B, I interpose antifriction balls or rollers, or any suitable rolling means which will permit of the rotation of the block during the operation of the machine, so as to present different parts of the block and the material carried thereby to the action of the knives.

The cutters consist of blades *c*, which are adjustably connected to horizontal bars *d*, and these bars are reciprocated to provide the necessary movement to the knives. These bars extend to the rear of the machine and have slotted ends, as shown at K, which permit them to be slipped over a rod 2, that serves as a bearing for the bars at this end, this rod being supported by a bracket 3, extending from the rear of the machine. Each of the

bars *d* is under spring-tension, as shown at 4, which shows a spring encircling a spindle, the lower end of which bears on one of the bars *d*, and the other end of the spring bears against a cross-bar 5, which is adjusted to increase and diminish the tension of the springs by screws 6.

A shaft 7 extends across the front of the machine and upon this shaft a gear-wheel *e* is fixed, this gear deriving motion through a pinion *f* and gear *g*, the latter gear being on the end of a driving-shaft, which is rotated by hand or power and is provided with a balance-wheel *h*.

On the shaft 7, between the uprights of the frame, are located a series of wheels or disks *n*, and these have pins projecting from their face near the periphery. One of these disks is provided for each cutter-bar, and the ends of the bars project into the space between the disks. It will thus be seen that as the disks are rotated the pins will come in contact with the ends of the cutter-bars, and this will have the effect of elevating the bars until the pin passes beyond the line of said bar, when it will immediately fall by its own weight and by the tension of its spring. The pins are so arranged in the disks relatively to each other as to make the action of the knives successive.

In order to take up the shock of the cutter-bar and prevent too severe a blow or cut upon the chopping-block, which would soon wear the block out, I extend brackets from the frame, as shown at *o*, supporting a bar *o'*, and thus provide a buffer for these cutter-bars. The opposite end of the shaft 7 has a beveled gear, which, through another bevel-gear, transmits rotary motion to a vertical shaft 10, which, by means of a sprocket-chain and projection on the periphery of the block B, rotates the said block continuously during the operation of the machine.

Having now described the machine generally, I will refer to the details of construction and arrangement. The rear part A of the frame has an upper movable portion 15, which is held adjustably in any position by the set-screws 21. The movable portion is guided by the clips 20. By removing this portion 15 any of the knives or all of them may be thrown back, as indicated in dotted lines of Fig. 1.

Instead of having the plungers 4, the bars *d* may be placed under tension by the springs and hooked rods 22, located below the bars *d* in the frame 23. The tension of these springs is regulated by the screws 24 and the cross-bar 25. The rotary block, as in Fig. 6, has pins 26 on its lower face, adapted to holes in a plate 27. This plate carries a stud 27^x, which is provided with a socket to receive the reduced end of the screw 28, which is adjusted vertically with the table and block, so as always to engage the socket-stud and thus furnish a journal for the block about which it may revolve. The buffer-bar *o'* is held adjustably in the brackets *o* by set-screws 29 30, and its position may be regulated accurately. It has a strip of buffing material along its upper edge. A deflector 31 is attached to the bar and depends into the block or tub, and it is so shaped as to cause the meat or material being chopped to be constantly turned inward toward the center of rotation.

The knives are adjustable across the block, for which purpose the bars *d* are provided with slots 32, through which extend the screw-clamping rods 33, held by the upper and lower nuts 34 and plates 35. The knives are also intended to be tilted, so that the wear of the cutting-edge may be regulated by adjustment, and in order to do this either end of the knife may be raised or lowered by loosening the nuts 34 and adjusting the clamping-rods 33 with the yokes 36, attached thereto and pivotally connected with the knife by the single bolt 37. The knife is provided on its upper edge with the round bearing-edge 38, against which the interior of the yoke bears, as shown in Fig. 4, and this bearing remains constant in all the adjustments of the knife.

Instead of the springs and plungers 4, the bars *d* may have leaf-springs 39, as in Fig. 7, which are combined with antifriction-rolls 40 on the cross-bar 41 of the movable frame 15.

Instead of the disks *n*, carrying the elevating-rolls, arms 41^x may be substituted, as in Fig. 8, to accomplish this purpose.

I claim as my invention—

1. In combination, the chopping-block, the supporting-frame, the pivoted bars carrying

the knives, the means for operating the said bars upward, and the vertically adjustable and removable frame 15, arranged to slide in ways on the main frame and carrying the tension means and guides for the bars, which pass through the guides and are pressed upon by the tension means, substantially as described.

2. In combination, the chopping-block, the main frame, the bars *d*, pivoted thereto and having slots 32 extending longitudinally thereof, the knives, the supporting-bolts for said knives passing through slots in the bars and having yokes secured to the knives, whereby the knives may be adjusted across the chopping-block, each of said knives having a rounded bearing 38 to bear upon the yoke, substantially as described.

3. In combination, the main frame, the knife-bars, with operating means, the chopping-block, with means for rotating it, the table *b*, having rollers upon which the chopping-block rests, the means for vertically adjusting said table, the central bearing 27^x on the block, and the pivot-screw 28, vertically adjustable centrally through the table *b* to engage the bearing on the block, substantially as described.

4. In combination, in a meat-chopper, the knife-bars, with operating means therefor, the main frame, the chopping-block, with means for rotating it, the central pivot 28, the central bearing 27^x, and the plate 27, detachably connected with the lower end of the chopping-block and carrying the said pivot, substantially as described.

5. In combination, in a meat-chopper, of the knife having the curved bearing 38 on its upper edge, the means for supporting the knife pivoted at the center from which the curve of said bearing is struck, said means having a bearing in engagement with the curved edge to sustain the thrust of the knife, substantially as described.

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

GEORGE W. MASON.

Witnesses:

G. W. SHILLING,
A. W. WILLIAMS.