

W. W. MITCHELL.
MEAT CHOPPER.
APPLICATION FILED APR. 12, 1911.

1,021,000.

Patented Mar. 26, 1912.

2 SHEETS-SHEET 1.

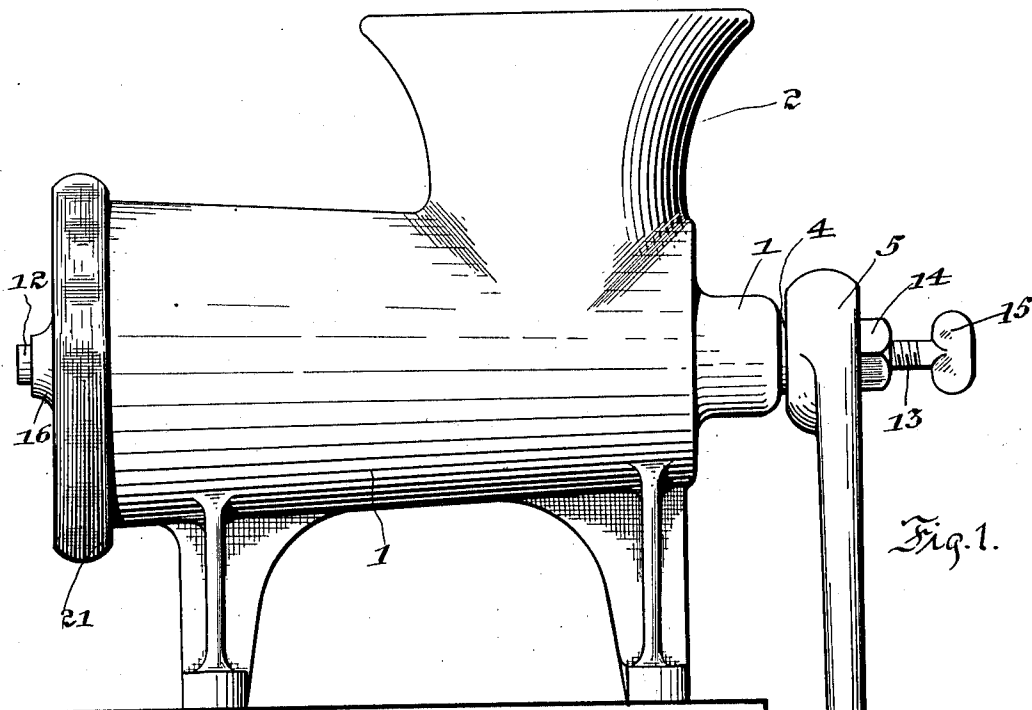


Fig. 1.

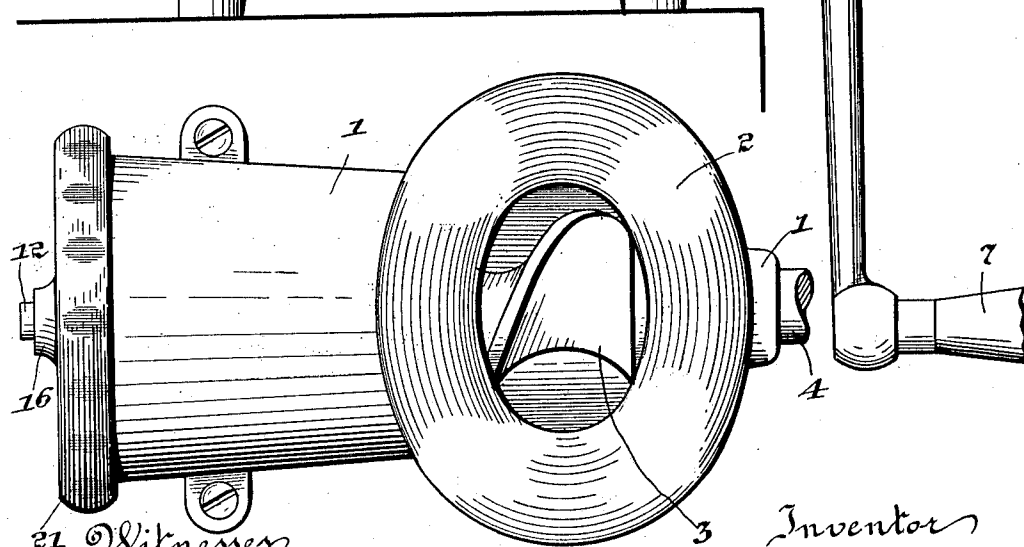


Fig. 2.

Witnesses

W. G. Smith

B. G. Richards

Inventor

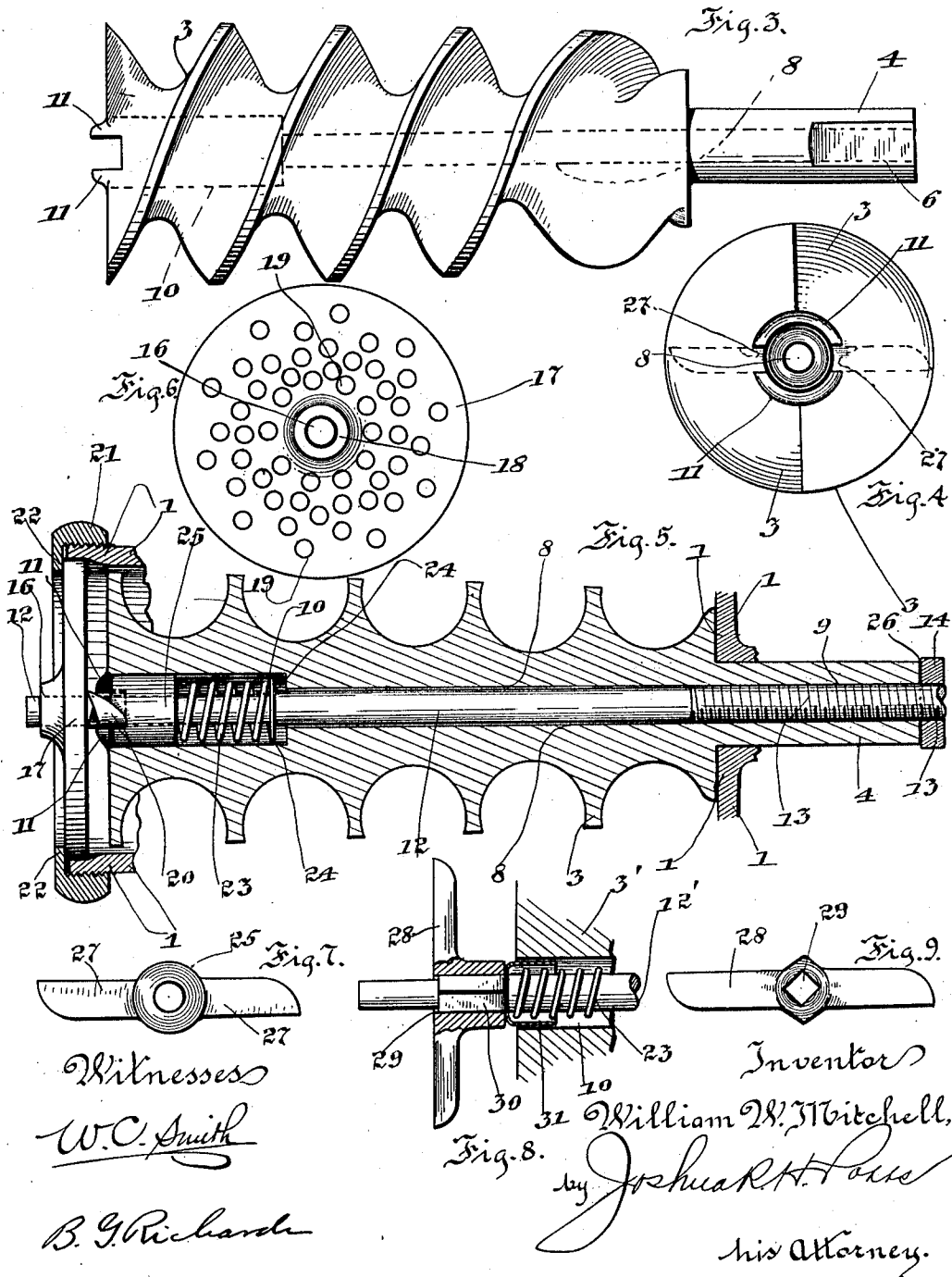
William W. Mitchell

by Joshua R. H. Talle
his Attorney

W. W. MITCHELL.
MEAT CHOPPER.
APPLICATION FILED APR. 12, 1911.

1,021,000.

Patented Mar. 26, 1912.
2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

WILLIAM W. MITCHELL, OF CHICAGO, ILLINOIS.

MEAT-CHOPPER.

1,021,000.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed April 12, 1911. Serial No. 620,538.

To all whom it may concern:

Be it known that I, WILLIAM W. MITCHELL, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Meat-Choppers, of which the following is a specification.

My invention relates to improvements in meat-choppers of that class in which a rotary cutter is provided, the object of the invention being to provide a meat-chopper of this character which shall be simple of construction and efficient in operation.

A further object of my invention is to provide such a construction in a meat-chopper that the cutting knives thereof will be automatically maintained in close contact regardless of the wear of the device.

Other objects will appear hereinafter.

With these objects in view, my invention consists in the novel construction and arrangement of parts as will be hereinafter fully described and more particularly pointed out in the appended claim.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification and in which,

Figure 1 is a side elevation of a meat-chopper embodying my invention. Fig. 2 is a top plan view of the meat-chopper, the handle thereof being broken away. Fig. 3 is a side elevation showing a feed-screw employed in the meat-chopper. Fig. 4 is an end elevation of said feed-screw. Fig. 5 is a longitudinal section showing the constructional details of the feed-screw and a portion of the meat-chopper casing. Fig. 6 is a detail view showing a stationary cutter employed in the device. Fig. 7 is an elevation of the preferred form of rotary cutter employed, and Figs. 8 and 9 are detail views showing a modified form of rotary cutter and the means for mounting the same.

The preferred form of construction of my invention as illustrated in the accompanying drawings comprises a casing 1 having a hopper 2 leading to the interior of said casing as shown in Fig. 2. Rotatably mounted in the casing 1 and formed substantially co-extensive therewith is a multiple thread feed-screw 3 one end thereof being in open communication with the hopper 2. The feed-screw 3 is provided with a longitudinal projection 4 on which a crank 5 is mounted,

said crank being provided with an aperture corresponding with the shape of the projection 4 which is provided with a flat portion 6 for a purpose which will be understood by those skilled in the art. The crank 5 carries a handle 7 by means of which the device is manually operated. The feed-screw 3 is provided with a longitudinal bore 8 having a threaded portion 9 at one end and the enlargement 10 at the other. Two diametrically opposite projections 11 are provided in the end of the feed-screw 3 adjacent the enlarged bore 10, these projections serving to hold a rotary cutter as will be presently described. An axial rod 12 is provided in the bore 8 the length thereof being such as to project from each end of the feed-screw 3. The rod 12 is provided with a threaded portion 13 which is screwed into the threaded portion 9 of the bore 8, the threaded portion 13 also carrying a check-nut 14 which engages the end of the projection 4 as illustrated in Fig. 5. The threaded end 13 of the rod 12 is provided with a thumb-piece 15 by means of which the rod is readily rotated in either direction. The end of the rod 12 opposite the threaded portion 13 thereof is journaled in an aperture 16 provided in a stationary cutter 17 as indicated by dotted lines in Fig. 5. The central aperture 16 of the stationary cutter 17 extends through the hub 18 of the latter and forms an efficient bearing for the rod 12. A series of perforations 19 are provided in the stationary cutter 17, the inner edges of said perforations serving as stationary cutters for co-operating with the rotary cutter 20.

In the operation of the machine, the particles of meat which are severed by the action of the cutters 17 and 20, are forced through the perforations 19 and deposited in a suitable receptacle therefor. The result of the action of the rotary cutter on the interior surface of the stationary cutter 17 is to wear the cutting edges of the cutters, therefore, unless an adjustment is provided the cutting edges of the two cutters will cease to be in close contact. A longitudinal adjustment of the cutter 17 is ordinarily provided, but in this machine is held in a substantially fixed position by means of a retaining nut 21, a flange 22 extending inwardly from the nut 21 engaging the exterior surface of the stationary cutter 17, the periphery of the latter being pressed securely into the end of the casing 1. In order

to maintain the rotary cutter 20 in close contact with the interior surface of the stationary cutter 17, a helical compression spring 23 which surrounds the rod 12 is located in the enlargement 10 of the bore 8, a collar 24 being provided on said rod which one end of the spring 23 abuts. The other end of the spring 23 reacts against the hub 25 of the rotary cutter 20, said hub being mounted for free longitudinal movement on the rod 12. From this construction it is apparent that the cutter 20 will contact with the interior surface of the cutter 17, the pressure of contact being determined by the tension of the spring 23. Means for adjusting the tension of the spring 23 is provided, said means comprising the threaded portion 13 of the rod 12 and the check-nut 14 hereinbefore described. When it is desired to adjust the tension of the spring 23, the check-nut 14 is loosened on the threaded portion 13 of the rod 12, then said rod is turned to effect the desired adjustment, turning in one direction increasing the tension of the spring 23 and in the other direction decreasing the tension of said spring. After the desired adjustment is made, the nut 14 is turned sufficiently to securely lock by frictional contact with the end 26 of the projection 4.

It will be observed that with a given tension of the spring 23, that a constant pressure is maintained between the stationary and rotary cutters, any wear between these cutters being also automatically taken up by said spring. It is understood that the diametrically opposite knives 27 of the rotary cutter 20 are fitted between the projections 11 of the feed-screw 3, thus causing said knives to rotate with the feed-screw when turned by the handle 7.

In the modified form of rotary cutter 28 a square central aperture 29 is provided in which a squared portion 30 of the rod 12' is inserted, said rod being in all other respects the same as the rod 12 of the preferred form. In this form of construction, the projections 11 provided on the feed-screw 3 are not required, hence the inner end of the feed-screw 3' is cut off squarely as shown in Fig. 8, said feed-screw being otherwise the same as feed-screw 3. In order to prevent particles of meat from entering the enlargement 10 in which the

helical spring 23 is located, a sheet metal cap 31 fitting into said enlargement over the spring 23 is provided. The head of the cap 31 abuts the hub 30 of the cutter 28 and is adapted to transmit the pressure of the spring 23 for maintaining a close contact of the rotary cutter 28 with the stationary cutter 17.

A meat-chopper of the construction set forth is simple of construction and highly efficient in operation.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I therefore do not wish to be limited to the precise details of construction as set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

The combination with a casing having a hopper, of a feed screw journaled at the feed end in said casing, an axial rod threaded at one end and extending through said feed screw, said screw being provided with a bore to receive said rod, said bore being threaded at one end to engage the threaded portion of said rod and said rod projecting from both ends of said casing, a stationary cutter provided with a central aperture in which one end of said rod is journaled, a rotary cutter on said rod between said stationary cutter and the adjacent end of said screw, a helical spring surrounding said rod, the end of said screw being provided with a recess to receive the same, a collar on said rod, the inner end of said spring abutting said collar and a cap inclosing the other end of said spring, telescoping within said recess and bearing against said rotary cutter for maintaining the same in close contact with said stationary cutter, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM W. MITCHELL.

Witnesses:

HELEN F. LILLIS,
JOSHUA R. H. POTTS.