J. MILLER,

SAFETY DRIVE FOR MEAT CUTTERS.

APPLICATION FILED MAY 12, 1919.

1,339,273.

Patented May 4, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

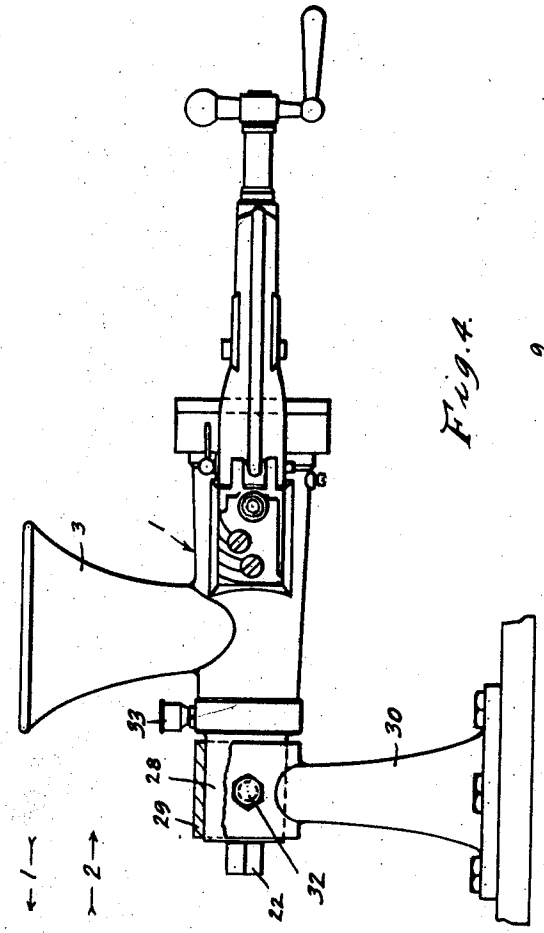


Fig. 4.

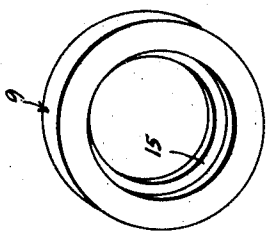
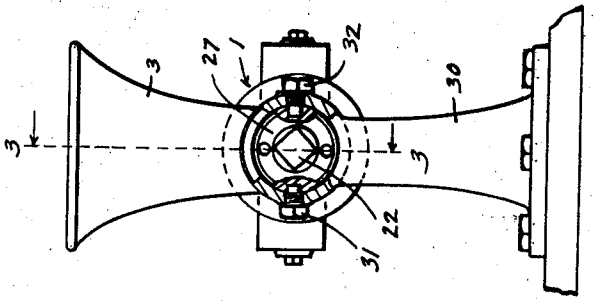


Fig. 2.



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ATTORNEYS.

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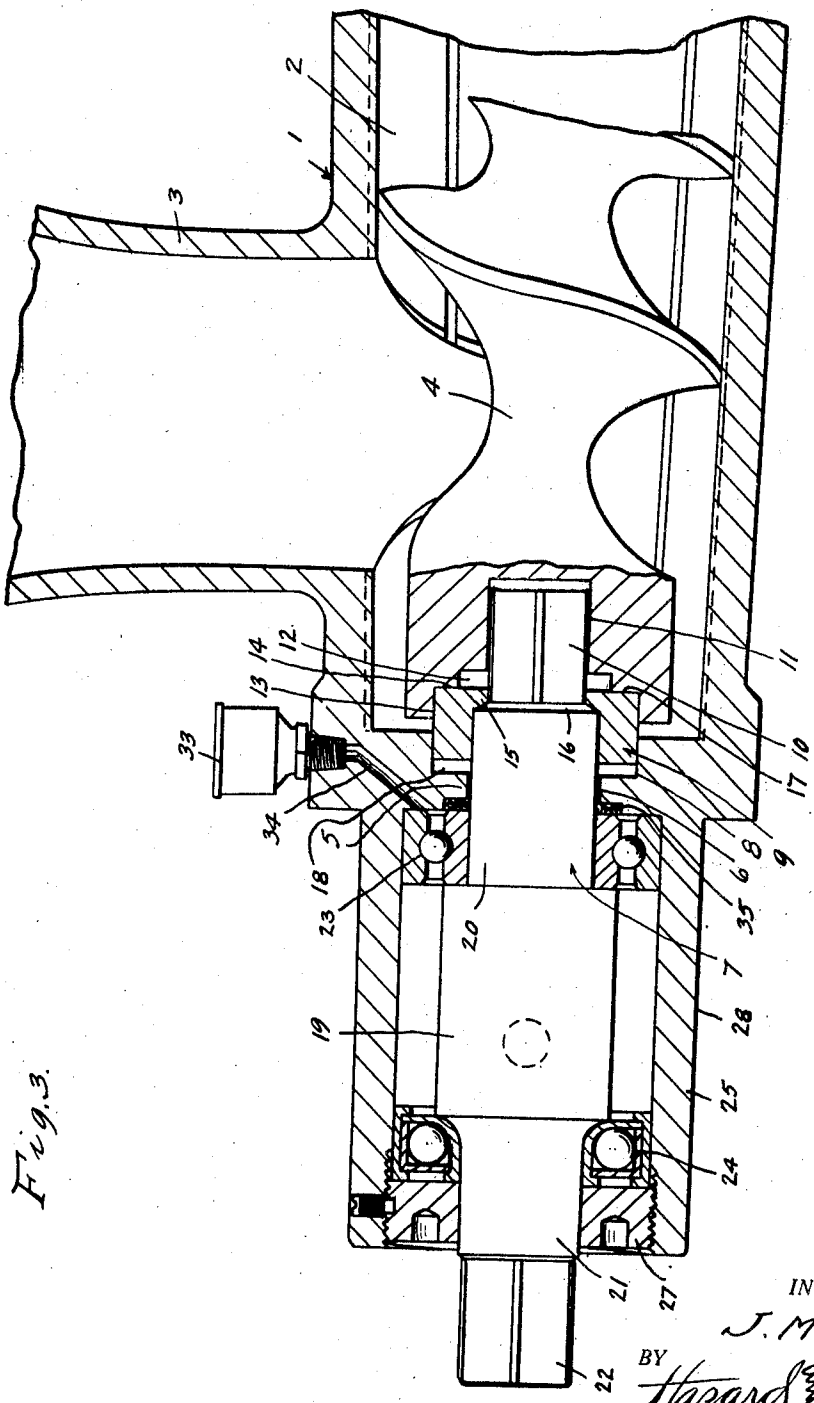


Fig. 3.

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UNITED STATES PATENT OFFICE.

JULIUS MILLER, OF LOS ANGELES, CALIFORNIA.

SAFETY-DRIVE FOR MEAT-CUTTERS.

1,339,273. Specification of Letters Patent. Patented May 4, 1920.

Application filed May 12, 1919. Serial No. 296,719.

To all whom it may concern:

Be it known that I, JULIUS MILLER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Safety-Drives for Meat-Cutters, of which the following is a specification.

My invention relates to meat cutters and consists of the novel features herein shown, described and claimed.

One of the leading features of my present invention is a safety device which will break when the cutter becomes clogged, and which may be readily removed thereby avoiding the danger of breaking an expensive part of the cutter.

Another object of my invention is to construct a meat cutter in which the bearings are so arranged that the lubricating oil is prevented from coming in contact with the meat.

Figure 1 is a side elevation of a meat cutter to which my invention relates, the view being taken looking in the direction indicated by the arrow 1 in Fig. 2, parts being broken away and shown in section.

Fig. 2 is an end elevation as seen looking in the direction indicated by the arrow 2 in Fig. 1, parts being broken away and shown in section.

Fig. 3 is an enlarged fragmentary sectional detail on a plane parallel with Fig. 1 and on the line 3—3 of Fig. 2 and looking in the direction indicated by the arrows and showing my safety device for connecting the screw to the operating shaft.

Fig. 4 is a perspective of the safety device.

Referring to the drawings in detail, the main casting 1 has a screw chamber 2 leading to the cutter and a hopper 3 leading to the opposite end of the chamber 2 from the cutter, and the feed screw 4 is mounted in the chamber 2. The feed end of the chamber 2 is closed by a web 5 having an opening 6 to receive the inner end of the operating shaft 7. An enlargement 8 extends from the chamber 2 to the opening 6, and the safety device 9 fits in the enlargement 8. The squared end 10 of the operating shaft 7 fits in a squared opening 11 in the end of the screw 4. An enlargement 12 is formed in the end of the screw 4 outside of the squared opening 11, preferably the enlargement 12 is circular. A second enlargement 13 is formed outside of the enlargement 12, thereby producing a shoulder 14 between the enlargements 13 and 12.

The safety device 9 fits in the enlargement 13 against the shoulder 14 and has a flange 15 fitting against the shoulder 16 upon the end of the operating shaft 7 around the squared end 10.

The pressure of the meat cutter against the screw 4 exerts the pressure of the shoulder 14 against the end face 17 of the safety device outside of the plane of the periphery of the operating shaft 7, and this pressure is communicated to the operating shaft 7 by the flange 15, and the flange 15 bears against the shoulder 16, so that when the meat cutter becomes clogged and there is unusual pressure against the screw 4 the flange 15 may break and pass into the enlargement 12. The enlargement 8 is longer than the normal length of the safety device 9 thereby producing a clearance space 18, and when the flange 15 breaks the body of the safety device may move into the clearance space 18 thereby allowing the screw 4 to retreat from the cutter plate and pass the obstruction without breaking an expensive part of the machine; then the screw may be removed, the safety device 9 removed and a new safety device applied.

The operating shaft 7 has a central enlarged portion 19, a reduced portion 20 extending through the opening 6, a reduced portion 21 extending from the other end of the enlargement 19, and a wrench seat portion 22 extending outwardly from the reduced portion 21. A ball bearing construction 23 fits around the reduced portion 20 and holds the reduced portion 20 in a central position in the opening 6. A thrust ball bearing 24 fits around the reduced portion 21. An extension casing 25 extends from the main casting 1 at the opposite side of the web 5 from the chamber 2, and the operating shaft 7 with the ball bearings 23 and 24 are mounted in the chamber 26 of this extension casing. A plug 27 in screwed into the end of the casing to back up the thrust bearing 24.

The thrust bearing 24 sustains the breaking strain when the cutter becomes clogged sufficiently to break the flange 15. The periphery 28 of the extension casing 25 is finished to fit in the socket 29 of the support-

ing bracket 30, and set screws 31 and 32 are tapped through the wall of the socket 29 into the extension casing 25, so as to support the machine as shown in Fig. 1.

An oil cup 33 is tapped into the periphery of the main casting 1 in the plane of the web 5, and the oil passage 34 leads from the oil cup to the ball bearing 23 and into the chamber of the extension casing 25.

A flat washer 35 is placed around the portion 20 against the end of the inner member of the ball bearing 23 and recessed into the outer face of the web 5 to hold the oil from passing through the opening 6 to the chamber in which the meat is fed to the grinding mechanism.

Various changes may be made without departing from the spirit of my invention as claimed.

I claim:

1. The combination with a feed screw for operating a meat cutter and an operating shaft, the feed screw being slidingly connected to the operating shaft, of a safety device mounted upon the operating shaft and backing up the feed screw, and having a flange adapted to be broken when the cutter is clogged sufficiently to press the feed screw toward the shaft.

2. The combination with a feed screw for operating a meat cutter and an operating shaft slidingly connected to the feed screw, of a safety device for holding the feed screw from sliding upon the operating shaft and adapted to break when the cutter is clogged.

In testimony whereof I have signed my name to this specification.

JULIUS MILLER.