F. F. WEAR.

ELECTRIC BONE SAW.

APPLICATION FILED FEB. 7, 1910.

1,168,355. Patented Jan. 18, 1916.

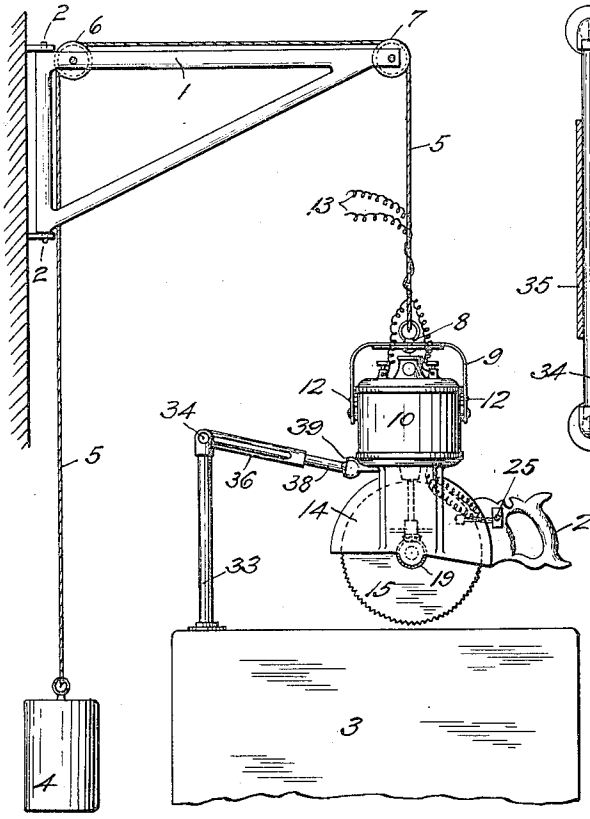


Fig. 1.

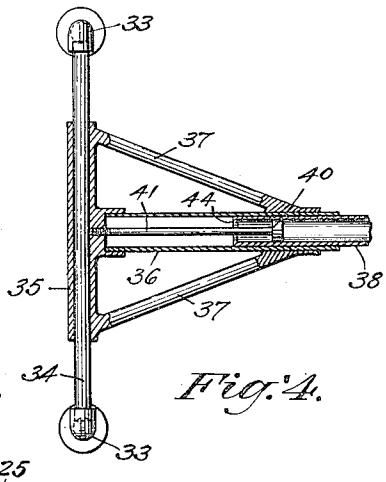


Fig. 4.

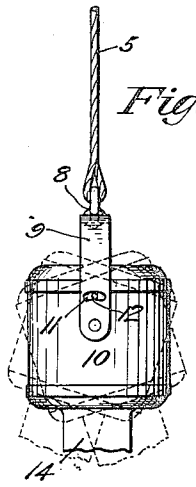


Fig. 5.

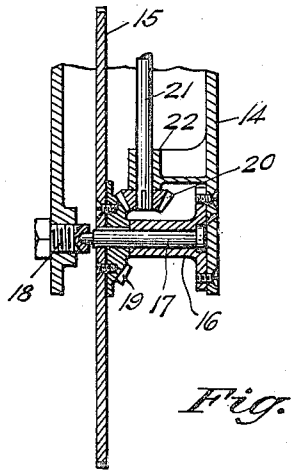


Fig. 2.

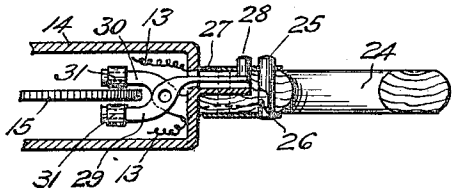


Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK F. WEAR, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO THE ALVEY-FERGUSON COMPANY, OF OAKLEY, CINCINNATI, OHIO, A CORPORATION OF OHIO.

ELECTRIC BONE-SAW.

1,168,355. Specification of Letters Patent. Patented Jan. 18, 1916.

Application filed February 7, 1910. Serial No. 542,505.

To all whom it may concern:

Be it known that I, FRANK F. WEAR, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Electric Bone-Saws, of which the following is a specification.

The object of my invention is to provide a bone saw operated by an electric motor, so counterbalanced and pivoted that the weight of the motor and saw does not cause fatigue to the operator, and pivoted so as to permit the operator sawing in any downward direction and without danger to himself.

The device is intended for the cutting up of shank bones and such heavy sawing as butchers have heretofore been compelled to do with a hand saw. In providing a saw for the trade it is estimated that in sawing the larger bones, as loin steak bones, round, chuck, shin and shanks of beef, a saving of time and labor to the extent of 60% is effected without in any way impairing the safety of the operator.

In the accompanying drawing, Figure 1 is a side view of the saw in position for use; Fig. 2 is an enlarged vertical sectional view through the shaft of the saw; Fig. 3 is a horizontal section through the rear edge of the saw; Fig. 4 is a horizontal section through the bracket; Fig. 5 is a side view of the motor.

Referring to the drawing, 1 represents a bracket pivoted on a vertical axis in bearings 2 so as to swing in an arc of a circle large enough to extend over the cutting block 3 below. The counter-balance weight 4 is attached to a cable 5 which travels over pulleys 6 and 7 pivoted at the rear and front ends of said bracket, and is attached by a swivel joint 8 to a bail 9, in which is suspended an electric motor 10. Said bail is formed with slots 11 engaged by pins 12 extending from the casing of the motor, limiting the swinging movement of the motor in said bail. Flexible wires 13 connect the motor with the source of supply of electricity.

Formed in one piece with the motor casing, and extended downward therefrom is a shield 14 having sides overlapping the saw 15, to one of which is screwed a bearing 16 for a shaft 17, the other end of which is contained in a bearing 18 screwed into the other side of the shield. Said shaft is keyed to a bevel gear 19 which is secured to the circular saw 15. Said bevel gear 19 meshes with a bevel pinion 30 on the motor shaft 21 and has a bearing 22 extending inward on the side of the shield. Rotary motion is thus communicated to the saw from the rotary motion of the motor shaft at a reduced speed.

The shield has front and rear extensions of a reduced width and having an outer circular edge, and to the rear extension is secured a handle 24. Extending transversely through said handle is a push button 25, which when pressed in from the left closes the electric circuit through the wires 13 and between a metallic terminal 26 and a plate 27 at the side of the handle and when pushed in from the right opens said circuit. Another push button 28 extending inward from the right hand side of the handle is connected to a lever 29 which is pivoted upon an arm 30, said lever and arm being bent to extend on opposite sides of the edge of the saw and carrying rollers 31 so that when said push button is pushed in it acts as a brake, the saw being gripped between the rollers. It is conveniently arranged with reference to the electric push button 25 so that both can be pushed in at the right at the same time; the one to stop the motor and the other to brake the saw.

To control the motion of the motor there are secured upon the meat block, standards 33 connected at the top by a rod 34 upon which can slide horizontally a tube 35 from the middle of which extends at right angles a tube 36 said latter being braced by diagonal braces 37. Within the tube 36 slides a tube 38, which is connected at its outer end by a ball and socket joint 39 to the motor casing. The outward movement of said tube 38 is limited by a head 40 on a rod 41 secured at the end to said tube 35, and the inner tube has a neck 44 surrounding said stem to engage said head. By this means the motor is permitted to have a vertical motion and also to move sidewise but it is directed at all times in the same general direction.

I claim:—

1. A portable motor and a saw carried and driven thereby, a pivoted crane, a counterbalanced flexible connection running over the crane for suspending said motor, means

for guiding the travel of said motor and saw comprising a guide rod lying in a chord of the arc of swing of the crane, means slidable longitudinally of said rod and rotatable about the axis thereof and telescopic means at an angle to said slidable means and connected thereto and to the motor.

2. A portable motor and a saw carried and driven thereby, a pivoted crane, a counterbalanced flexible connection running over the crane for suspending said motor, means for guiding the travel of said motor and saw comprising a guide rod lying in a chord of the arc of swing of the crane, means slidable longitudinally of said rod and rotatable about the axis thereof and telescopic means fixed at an angle to said slidable means and connected thereto and to the motor.

3. A portable motor and a saw carried and driven thereby, a pivoted crane, a counterbalanced flexible connection running over the crane for suspending said motor, means for guiding the travel of said motor and saw comprising a guide rod lying in a chord of the arc of swing of the crane, means slidable longitudinally of said rod and rotatable about the axis thereof and telescopic means fixed at an angle to said slidable means and connected thereto and universally jointed to the motor to permit inclination of the saw about a vertical plane.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK F. WEAR.

Witnesses:
F. M. WRIGHT,
D. B. RICHARDS.