Nov. 11, 1952

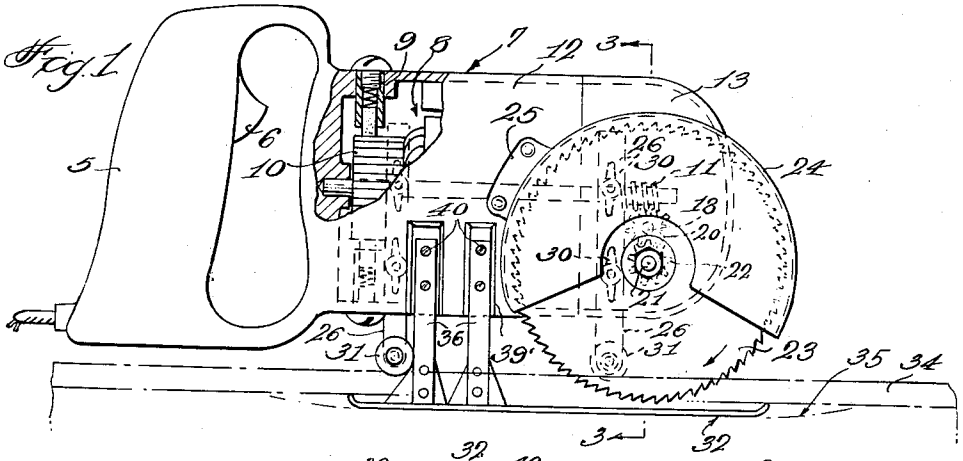
J. A. PICKLES

2,617,186

CAST CUTTER

Filed April 18, 1947

Fig. 1



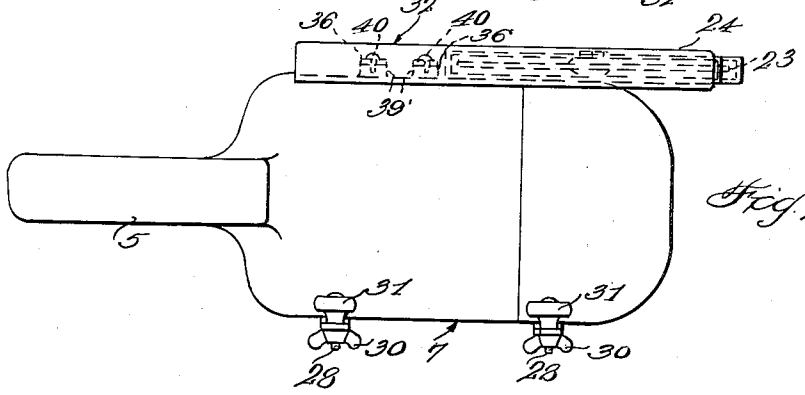


Fig. 2

Fig. 3

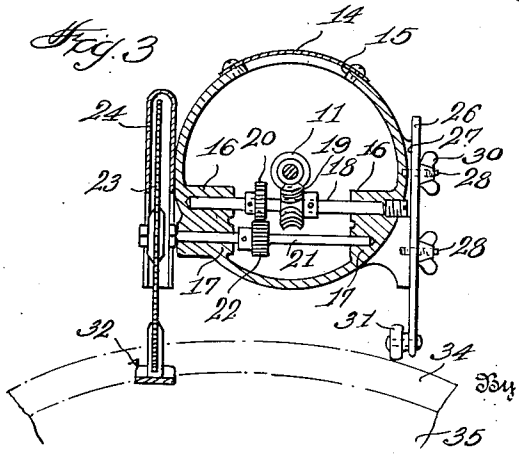
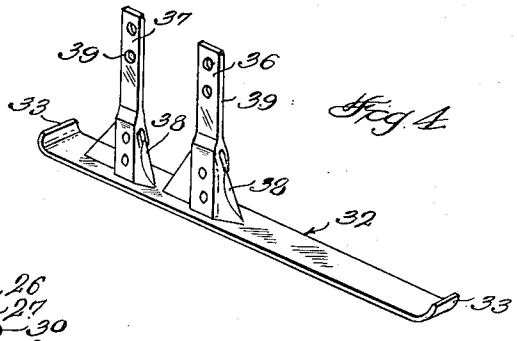


Fig. 4



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2,617,186

CAST CUTTER

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Application April 18, 1947, Serial No. 742,364

1 Claim. (Cl. 30—144)

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This invention relates to improvements to power driven cutters for cutting and removing surgical casts and the like from body members, and one of the primary objects of this invention is to provide a device for these purposes which while quickly and efficiently cutting the cast or other bandage substantially eliminates hurting and injuring the patient.

Another important object of this invention is to provide a device of the character indicated which combines means for the rapid and complete sawing through of the cast or the like, with means for positively preventing contact of the sawing means with the person of the patient from whose body the cast or the like is removed, and with means capable of accurate adjustment to predetermine the clearance of the sawing means from the means preventing contact of the sawing means with the person of the patient.

A further important object of this invention is the provision of a device of the character indicated above which substantially expedites and renders more easy and efficient the removal of plaster casts and like surgical splints or bandages, so as to materially reduce the expenditure of time, physical effort, and skill ordinarily required.

Other important objects and advantages of this invention will be apparent from the following detailed description and the accompanying drawings, wherein merely for purposes of disclosure, a presently preferred embodiment as set forth.

In the drawings:

Figure 1 is a right hand side elevation of said embodiment partly broken away to show internal structure and showing certain internal parts in dotted lines.

Figure 2 is a bottom plan view.

Figure 3 is a transverse vertical section taken on the line 3—3 of Figure 1, and,

Figure 4 is a front perspective view of the shoe or slide.

Referring in detail to the drawings, the said embodiment of the invention comprises a pistol-grip type of handle 5, including a switch button 6, attached to the rear end of a generally cylindrical housing 7, in the general manner of electric hand-drill construction, the housing 7 containing an electric motor 8 whose removable brush holders 9 are positioned around the armature and commutator 10 at the rear end of the housing as shown in Figure 1, with the armature shaft terminating at its forward end in a worm shaft 11, which extends forwardly beyond the motor case 12 into a preferably hemispherical removable housing portion 13 on the forward end of the housing 7.

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The housing portion 13, which is provided on its top with a removal plate 14 for its inspection and lubricating opening 15, has pairs of upper and lower shaft bearings 16 and 17, respectively, on the opposite sides of its interior. An idler shaft 18 is journaled at its ends in the upper bearings 16 and has fixed thereon a wormwheel 19 meshed with the wormshaft 11 and a pinion 20.

A saw shaft 21 is journaled in the lower bearings 17 and has a fixed gear 22 meshed with the idler shaft pinion 20. The saw shaft 21 extends through the right hand side of the housing portion 13 and has secured thereto a circular saw 23 arranged to turn in the clockwise direction, as indicated by the arrow in Figure 1, with its teeth slanted in the same direction. The upper two-thirds of the saw 23 is enclosed by a guard 24 which is removably connected at 25 to the adjacent side of the housing 7.

On the side of the housing 7 opposite the saw are plate-like legs 26, preferably having notches on their inner sides to cooperate with notches provided on longitudinally spaced bosses 27, the bosses having pairs of upper and lower studs 28 passing through slots, not shown in the legs 26, wing nuts 30 being provided thereon for tightening the legs in place after vertical adjustment thereof so that rollers 31 on the lower ends of the legs are at a proper height with reference to the lower edge of the saw 23 to roll upon the top or outside of the cast or the like while the same is being cut with the saw 23. As shown in Figure 3, the rollers 31 are positioned at the inboard side of the legs 26. The rollers substantially prevent lateral as well as endwise overbalancing and canting of the device in operation and assist in the control of depth of cut of the saw and the pressure upon the patient.

The slide or shoe 32 is in the form of an elongated stiff spring-steel strip of relatively narrow width, having its opposite ends upturned as indicated at 33 to prevent digging of the shoe into the skin of the patient as the shoe is moved in either direction between the cast 34 and the patient's skin 35, as shown in Figures 1 and 2. From the rear third of the shoe rise two bifurcated standards 36 and 37, respectively, between the legs of which can be wedged triangular cutters 38 operating to cut and separate the material of the cast or the like next to the patient's flesh which may not be entirely severed by the passage of the saw 23 in either direction therethrough.

The standards 36 and 37 have their side edges bevelled, as indicated at 39, to slidably conform with bevelled slideways 39' provided on the exterior of the housing 7 behind the saw, in which

slideways the standards may be locked in desired vertical adjustment by means of setscrews **40**. The standards are so adjusted that the shoe always clears the lower edge of the saw **23**.

In operation, the forward end of the shoe is pushed under the cast, and the proper adjustment of the rollers **31** having been made for the thickness of the cast, the saw is engaged with the cast and the motor **8** turned on by means of the switch button **6**, whereupon the device is moved forwardly so as to cut through the cast as desired.

Various modifications and changes are contemplated and may obviously be resorted to without departing from the spirit and scope of the invention as hereinafter defined by the appended claim.

I claim:

A cast cutter comprising a handle-equipped casing, a motor within said casing having a shaft, a transverse saw shaft in said casing and extending through one side thereof, a circular saw on the saw shaft at one side of said casing, means operatively connecting said saw shaft and said motor shaft within the casing, a pair of vertical arms adjustably affixed to that side of the casing opposite to the saw, a roller revolubly mounted at the lower end of each of said arms and adapted to engage the exterior of a cast and to support the cast cutter against tipping, a saw guard affixed to the casing and encompassing a major portion of said saw, said casing having a pair of spaced parallel slideways formed in that side thereof immediately rearwardly of said guard, a standard vertically adjustable in each of said slideways, means for locking said standards in selected positions in said slideways, a yoke formed at the lower end of each of said standards, an elongated shoe extending beneath said standards and said saw, said saw having upturned ends, a pair of triangular blades each having its base portion affixed to said shoe and each having cutting edges extending in a direction parallel to the longitudinal axis of the casing, and means for affixing each of said blades in one of said yokes.

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