

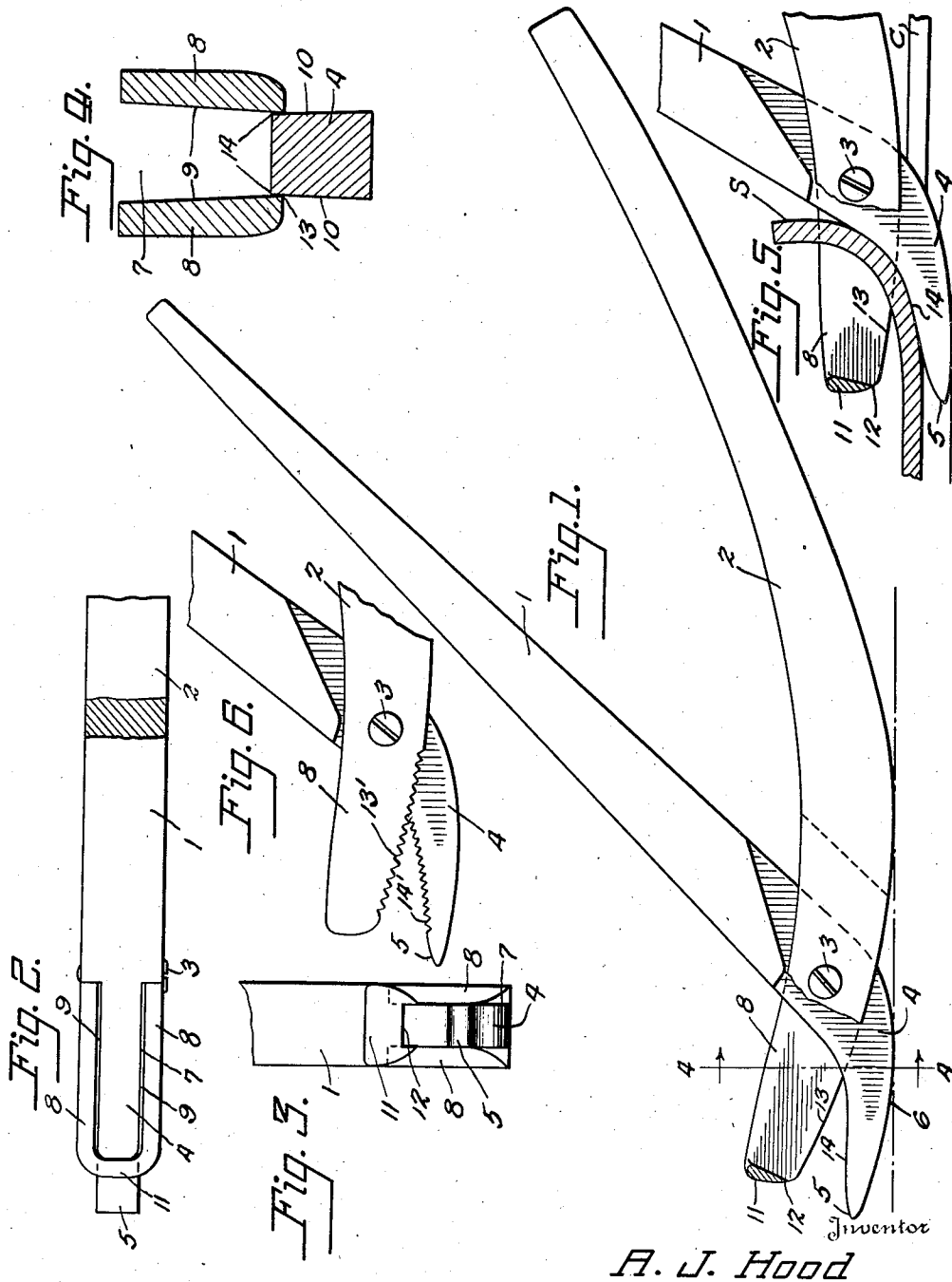
Aug. 29, 1944.

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2,357,197

SHEARING DEVICE

Filed Nov. 20, 1943



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UNITED STATES PATENT OFFICE

2,357,197

SHEARING DEVICE

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Application November 20, 1943, Serial No. 511,145

4 Claims. (Cl. 30—258)

This invention relates to a shearing device, and more particularly to a surgical cast cutter, and is particularly designed for the removal of a plaster cast from a limb or other member. It is equally adaptable, however, for use in removing other material or sheets in similar situations wherein the space for introduction of the cutter is limited and it is important to avoid undue pressure or strains either on the material being cut or on the surface supporting the material.

One of the objects of the invention is to provide a cast cutter of the shears type which cuts a channel of appreciable width through the cast or other material, whereby it may be readily pushed forward after each snip without binding or lifting the adjacent edges.

Another object of the invention is to provide a cast cutter which may be employed to sever the material of the cast by the removal of a continuous ribbon or by the removal of a series of successive pieces.

Another object of the invention is the provision of a scissors-type cast cutter of the type described, in which the upper jaw is formed with a discharge chamber of upwardly-flanged shape, whereby the cutaway portions of the cast are readily ejected.

Still another object of the invention is the provision of a scissors-type cast cutter in which the curvature of the bottom part of the instrument, including the under face of the lower jaw and the under face of the lower handle, is such that the lower jaw may be slipped between the cast and limb with the jaws fully open and pushed in parallel with the limb without discomfort to the patient caused by undue pressure of the instrument against the flesh.

Other objects will more particularly appear in the course of the following description.

The invention consists in the novel construction, arrangement, and combinations of parts hereinafter more particularly described and claimed.

One sheet of drawings accompanies this specification as part thereof, in which like reference characters indicate like parts throughout.

Figure 1 is a side elevation of the improved shearing device partly broken away to disclose details of the jaw structure;

Figure 2 is a fragmentary plan view of the instrument;

Figure 3 is a fragmentary end view of the instrument;

Figure 4 is a cross-section taken on line 4—4 of Figure 1;

Figure 5 is a fragmentary view of the cutter partially broken away in operation on a cast;

Figure 6 is a fragmentary side elevation of the jaws, illustrating a modified cutting edge.

Referring to the drawing, the improved shearing device comprises two members 1 and 2, each of which provides handle and jaw parts, respectively, for the cutter, the two parts being associated by a pivot screw 3.

The member 1 has its forward or jaw portion 4 of reduced width and the under and upper faces of this jaw portion are curved in the same direction with respect to the handle part 1 and inclined together to form a tapering toe member terminating in a thin point 5 adapted to be readily introduced beneath a cast with relatively slight compression of the flesh.

The reduced jaw portion 4 is proportioned to pass through a longitudinal slot 7 provided in the jaw portion of the member 2, the slot 7 having its forward end curved so that the jaw portion of the member 2 comprises an U-shaped part having sides 8—8 connected at their forward ends by a portion 11. The sides 8—8 have their inner walls 9—9 flared upwardly (see Figure 4) so as to provide clearance for the jaw member 4 of member 1 and also ample clearance for the escape of the severed ribbon. The outer side walls of the portions 8—8 may be inclined inwardly or left in their full width as desired, the lower inner edges 13 of these portions forming shearing edges adapted to coact shearingly with the outer top side edges 14 of the jaw member 4, as is also illustrated in Figure 4. The side walls 10—10 of the jaw member 4 are preferably inclined inwardly to provide clearance for the jaw member or such portions of this member as enter the slot 7.

The forward portion 11 connecting the sides 8—8 of the slotted jaw member is formed to provide a downwardly directed transverse cutting edge 12, this cutting edge 12 being spaced above the cutting edges 13 of the side portions 8—8, as is well illustrated in Figures 1 and 5.

The jaw member 4 is preferably constructed longer than the jaw member 8, so that the toe 5 of jaw 4 projects beyond the forward portion 11 of the jaw 8.

If desired, the lower edges of the side portions of the jaw 8 may be serrated as indicated at 13' of Figure 6, and the upper face of the jaw 4 may be similarly serrated if desired, as indicated at 14'.

The handle part 2, the forward end of which is slotted to provide the jaw 8, is curved toward

the handle 1, which curvature, in conjunction with the curvature of the jaw 4 associated with handle 1, brings the under face of the jaw 4 into alignment with the under face of the handle 2 when the instrument is fully open, as illustrated in Figure 1, thus permitting the introduction of the toe 5 beneath the cast with the instrument fully open without any pressure upon the flesh by the handle 2.

In operation, the toe 5 will be introduced beneath the cast and by partially closing the handles 1 and 2 the upper face 14 of the jaw member 4 will progressively shear, in cooperation with the under face of the side portions 8-8 of the slotted jaw, a ribbon-like strip S from the casting C, and by a repetition of this partial operation of the handles it will be apparent that this strip can be cut continuously as far as desired. At any time, however, the pressing of handles 1 and 2 together fully will bring the transverse cutting edge 12 into operation, thus severing the strip S transversely. By this construction, it will be observed that where desired a plurality of short sections of the cast may be removed and the direction of the toe 5 may be changed so that it is possible, by a succession of short cuts, to remove particular portions of a cast or other material, if desired.

Having thus described my invention, I claim:

1. Shearing device comprising pivoted members providing handle and jaw parts, the jaw part of one member slotted to form a U-shaped

cutting edge, the jaw part of the other member arranged to partially enter the slot of the slotted jaw part, and having an upper face adapted to shearingly cooperate successively with parts of the U-shaped cutting edge.

2. The device of claim 1 in which the medial jaw part which partially enters the slotted jaw part is longer than said slotted jaw part and has a tapered forward end adapted to enter a restricted space.

3. The device of claim 1 in which the side portions of the U-shaped cutting edge of the slotted jaw part lie in a common curved surface, and the forward part of said cutting edge between the side portions is spaced above the side cutting edges.

4. Shearing device for removing plaster casts and the like from the body comprising pivoted members providing handle and jaw parts, the jaw part of one member slotted to form a U-shaped cutting edge, the jaw part of the other member arranged to partially enter the slot of the slotted jaw part and extend beyond the forward curved end of the slot with its upper face adapted to shearingly cooperate successively with parts of the U-shaped cutting edge, the slotted member jaw and handle formed on a continuous curve upon which the tool as a whole can be rocked and the jaw part of the other member curved to conform with the curve of the slotted jaw part.

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