

Oct. 17, 1939.

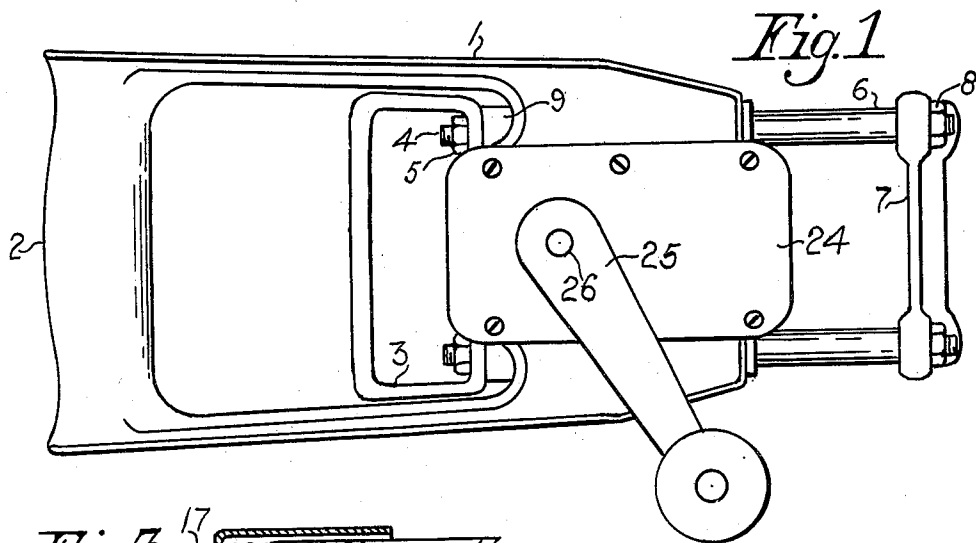
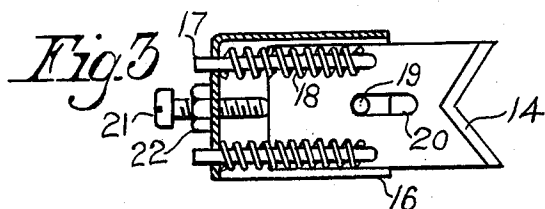
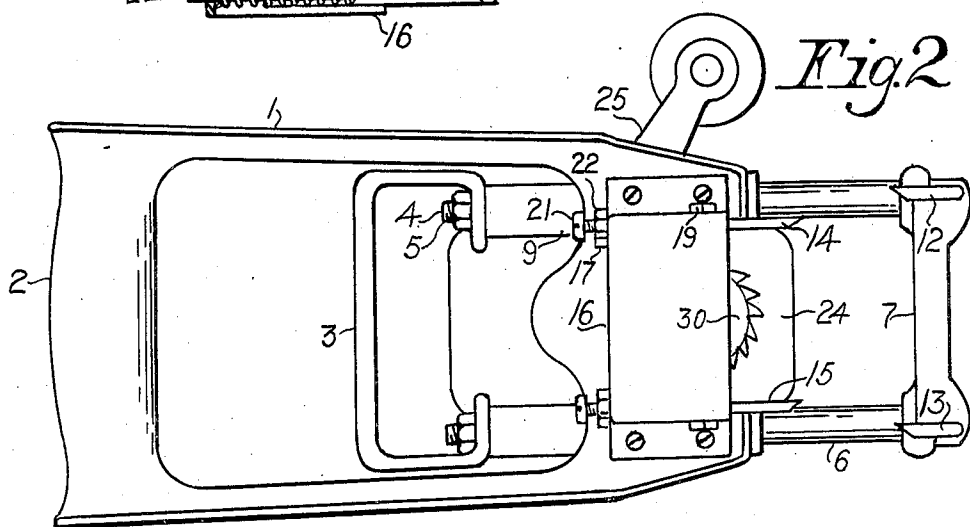
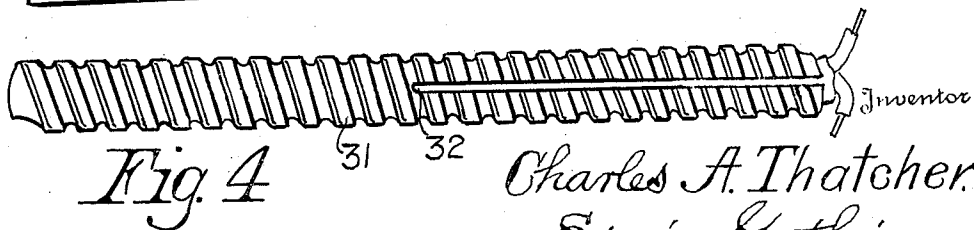
C. A. THATCHER

2,176,646

ROTARY CUTTER FOR ELECTRICAL CABLE ARMOR

Filed Dec. 4, 1937

2 Sheets-Sheet 1



Inventor
Charles A. Thatcher
By Edwin Guthrie

Attorney

Oct. 17, 1939.

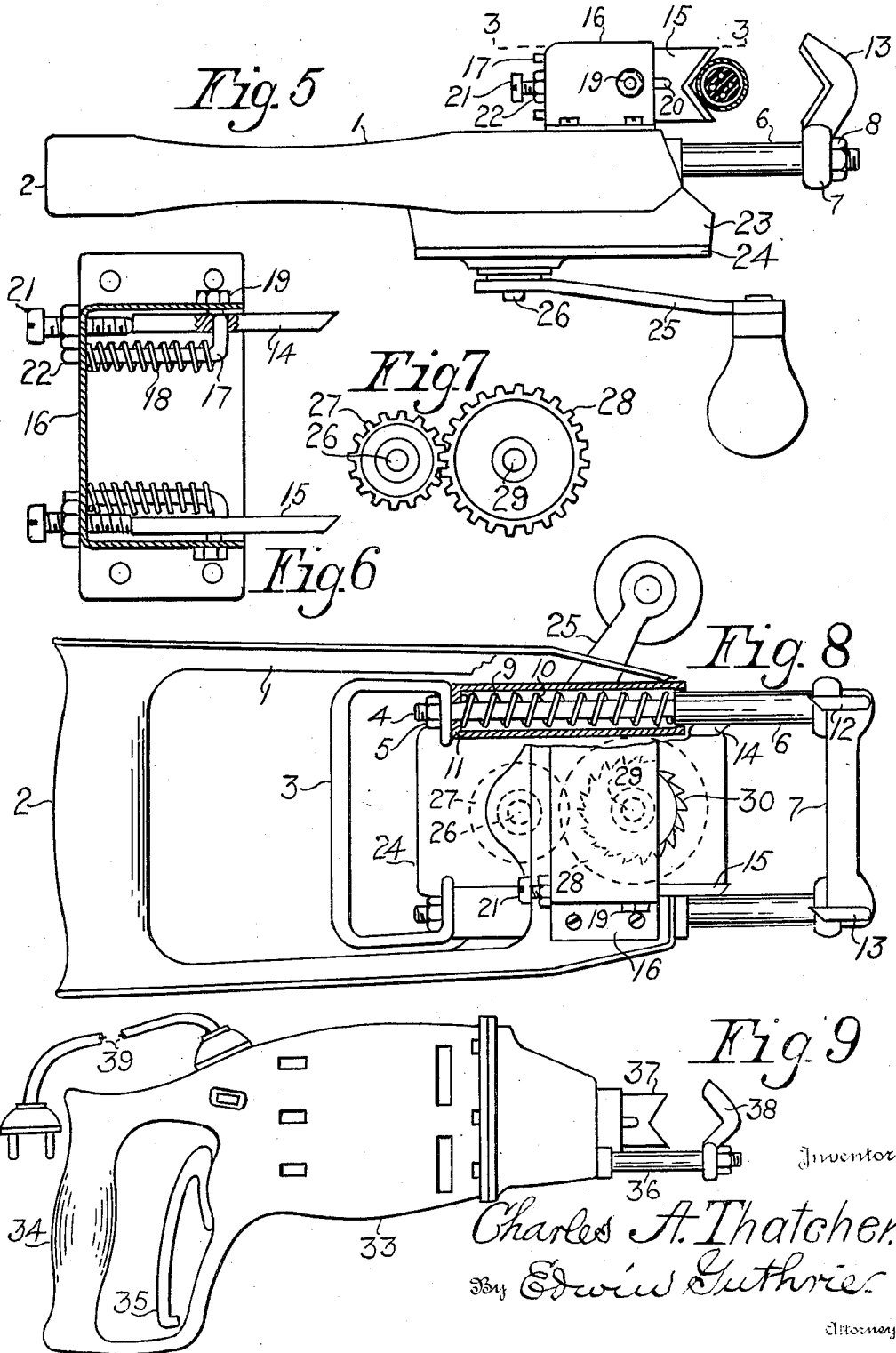
C. A. THATCHER

2,176,646

ROTARY CUTTER FOR ELECTRICAL CABLE ARMOR

Filed Dec. 4, 1937

2 Sheets-Sheet 2



Inventor
Charles A. Thatcher
By Edwin Guthrie

Attorney

UNITED STATES PATENT OFFICE

2,176,646

ROTARY CUTTER FOR ELECTRICAL CABLE
ARMOR

Charles A. Thatcher, Medford, Oreg.

Application December 4, 1937, Serial No. 178,183

3 Claims. (Cl. 29—69)

This invention relates to rotary cutters adapted to cut metal articles of a tubular character, and a particular use of the invention is to cut and permit the removal at any point of a desired length or the armor which is spirally wound on electric cables or conductors for external protection.

It is an object of this invention to produce a hand tool having special construction whereby a cable may be clamped at any portion of its length and a cut made longitudinally through the armor, in order that the armor may be removed without distorting the ends of the cut, and without disturbing or injuring the insulation of the cable or the conductors therein embedded.

Drawings illustrating this invention accompany and form a part of this application, and Fig. 1 represents a bottom plan view showing all parts assembled.

Fig. 2 is a top view showing the cutter, and indicating the positions of the gears for rotating the cutter.

Fig. 3 is a sectional view on broken lines 3—3 of Fig. 5.

Fig. 4 is a side view of a portion of an armored electric cable, showing the direction and nature of the cut made by the invention.

Fig. 5 is a side view of all parts of the invention assembled.

Fig. 6 is a transverse sectional view of the jaw housing as in Fig. 5, taken at right angles to that sectional direction.

Fig. 3 and Fig. 6 are drawn full size.

Fig. 7 shows the gears employed to rotate the cutter.

Fig. 8 is a detail plan view from above similar to Fig. 2, with portions broken away to disclose the plunger and the tube and spring therefor.

Fig. 9 is a side view of a modified form of this invention.

Throughout the drawings and description the same number is used to refer to the same part.

Considering the drawings, a frame 1 of suitable shape has a hand grip 2 and a fingers grip 3 movable with respect to the hand grip and arranged to be grasped by the fingers of the hand engaging the hand grip.

A reduced end 4 provided with a nut 5 terminates the plunger 6. There are two plungers one on either side of the frame. The outer ends of the plungers carries a cross bar or device 7 held to the plungers by nuts 8. The larger end portions of the plungers are drawn as connected with the bar 7. In Fig. 8 there is shown one of the plunger tubes 9, encircled by the open coil spring

10. The spring has one end against the shoulder of the plunger and the other end in contact with the end 11 of the tube 10. There are tubes and springs for each of the two plungers.

In Fig. 2 and Fig. 8, the bar termination carries the spaced jaws 12 and 13, and co-acting jaws 14 and 15 are supported in the stationary housing 16. Guide rods such as rod 17 are connected with the jaws in the housing 16 and each rod is provided with a coil spring 18 whereby the rod is normally pressed from the hand grip end of the frame. A pin 19 through the wall of the housing 16 engages the slot 20 in the jaw 14 and thereby limits the spring pressed movement of the jaw. The adjusting screws 21, with lock nuts 22 limit the retractile or inward movement of the jaws when a clamped cable is pressed between the jaws devices by the operation of the fingers grip 3.

On the lower side of the frame as shown in Fig. 5, is a gear case or housing 23, having a removable bottom plate 24. A crank handle 25 engages a stem or axis 26 and turns a small gear wheel 27, which meshes with and powerfully turns a large gear 28. The axis 29 is the cutter 30 axis or spindle.

In Fig. 4 is shown a piece of electric cable 31 having therein a cut 32 lengthwise, which cut may be of any desired length enabling the spiral portions of the cable to be removed. Like cuts may be made at separated points, or near the end of the cable. As the armor of such cables is usually cut, a hacksaw is used. By the use of the invention herein described, the spiral armor is not twisted or distorted when cut.

It is not intended to limit this invention to the precise shapes and features illustrated in Figs. 2, 5 and 8, as those forms may obviously be changed within the purview of this invention by any skilled mechanic familiar with such devices. Fig. 9 illustrates one modification 33, having the hand grip 34, fingers grip 35, plungers 36, housed jaws 37, and movable clamping jaws 38. In this form of the invention an electric motor may be used to rotate the cutter.

It is held to be within the scope of this invention to arrange the cutter to cut the armor transversely, or in an inclined direction.

The operation of the invention is believed to be readily determined from the drawings. The cable is held in releasable relation by the fingers grip. The adjusting screws set out in Figs. 3 and 6 limit the depth of the cut, which may be made of any length at any point of the cable.

Having now described this invention and the manner of its use, I claim:

1. A rotary cutter of the character described, comprising a frame having a hand grip and a movable fingers grip arranged to be grasped by the fingers of the hand engaging said hand grip, said frame having a stationary jaw supporting device and a movable jaw carrying device connected with the said fingers grip whereby a cable may be clamped between the jaws of the said devices in releasable relation, the jaws of the said stationary device being provided with springs adapted to press said jaws from the said hand grip, means for limiting the said spring pressed movement of said jaws, adjusting screws arranged to limit the retractile movement of the said jaws, a rotary cutter arranged to be pressed into cutting relation with the clamped cable by the said movable jaw device, and means for rotating the cutter.
2. A rotary cutter of the character described, comprising a frame having a hand grip and a movable fingers grip adapted to be grasped by the fingers of the hand engaging the hand grip, said frame having a stationary jaws supporting device, the said device having a plurality of spaced jaws, the said frame having a movable jaws carrying device connected with the said fingers grip where-

by a cable may be clamped between the said jaws devices in releasable relation, said movable jaws device being provided with a plurality of spaced jaws, the jaws of the said stationary device being provided with springs adapted to press said jaws from the said hand grip, means for limiting the spring pressed movement of the said jaws, adjusting screws arranged to limit the retractile movement of the said jaws of the stationary device, a rotary cutter arranged to be pressed into cutting relation with the clamped cable by the said movable jaws device, and means for rotating the cutter.

3. A cutter of the character described, comprising a frame having a hand grip at one end of the frame, a reciprocating fingers grip located within the frame and arranged to be engaged by the fingers of the hand grasping the said hand grip, a clamping jaw connected with the fingers grip and movable therewith, jaws carrying devices borne by the frame and provided with jaws arranged to cooperate with the said clamping jaw, a rotary cutter arranged to project between the jaws, means for rotating the cutter, and said jaws carrying devices being provided with means for adjusting the jaws thereon and limiting the depth of the cut by the cutter.

CHARLES A. THATCHER.