Feb. 9, 1971 R. C. HALLEN 3,561,285

ACTUATING LEVER FOR WINCH HOIST

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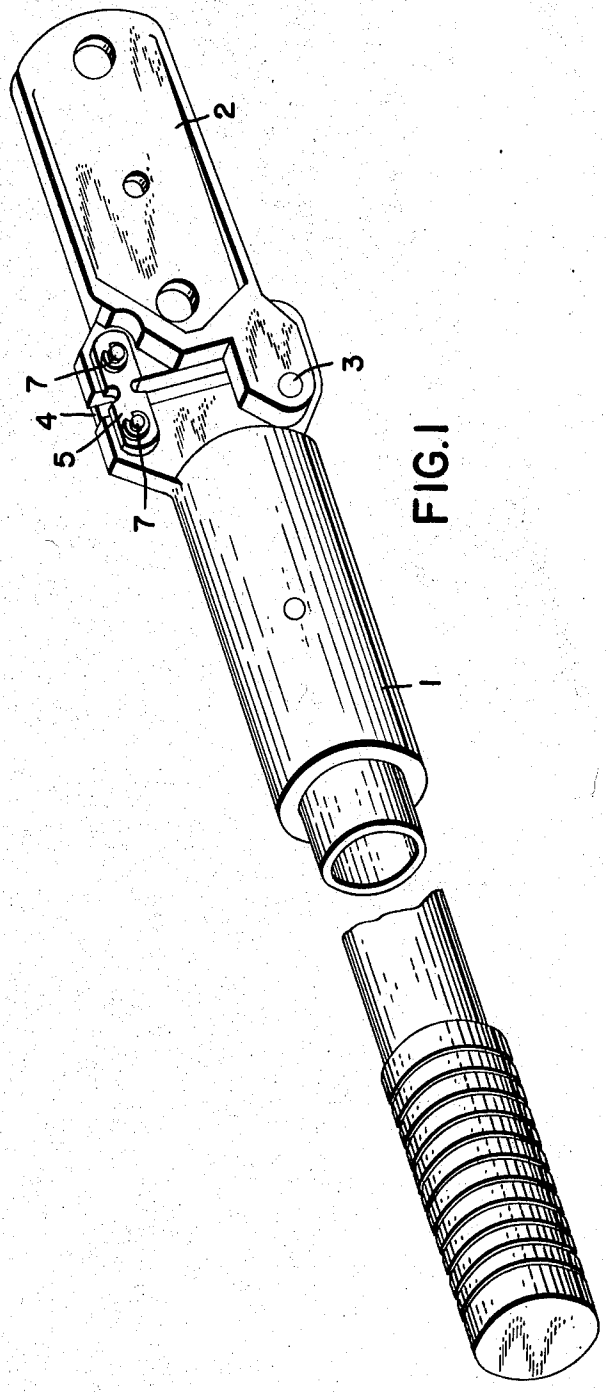


FIG. 1

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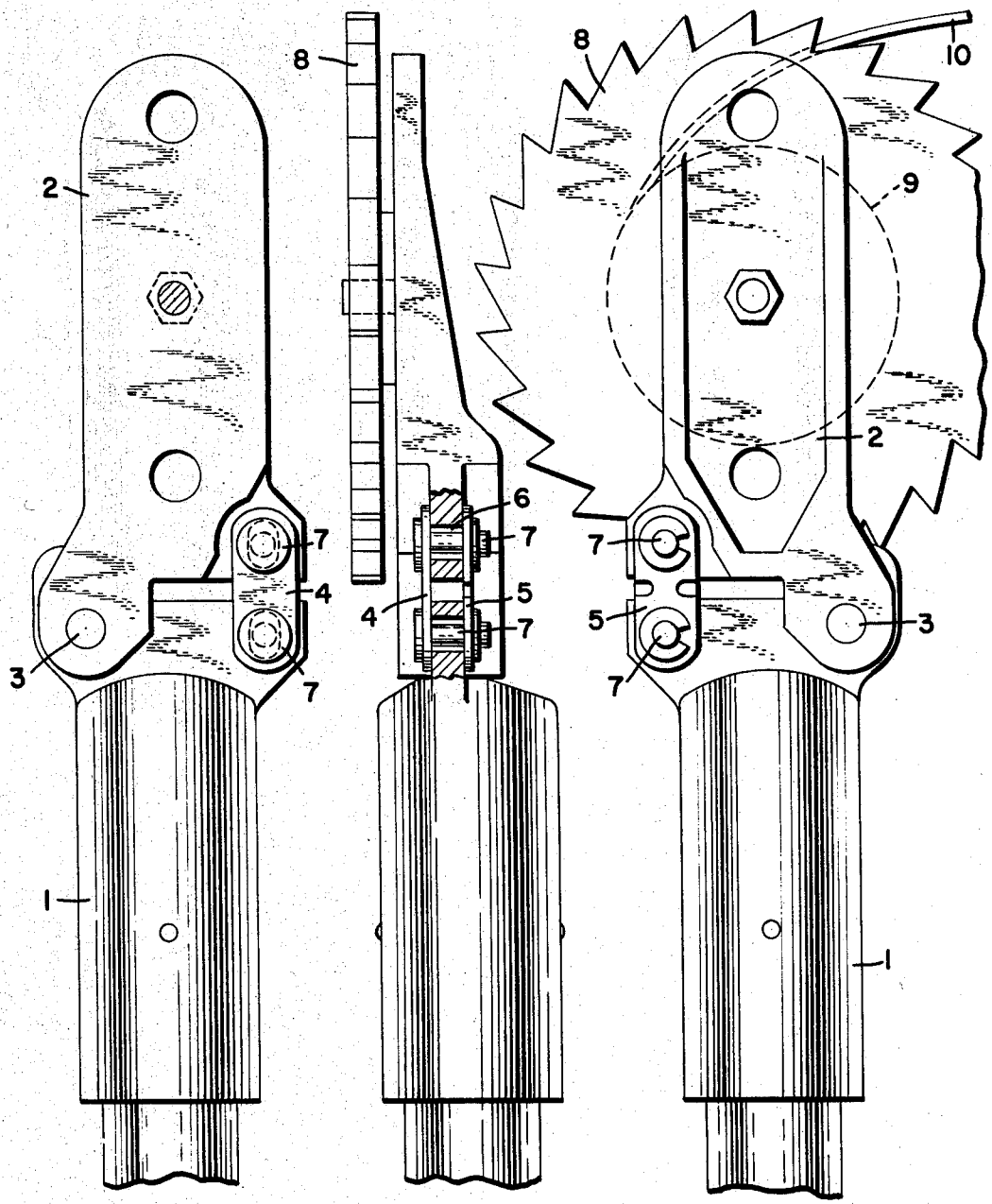


FIG.2 FIG.3 FIG.4

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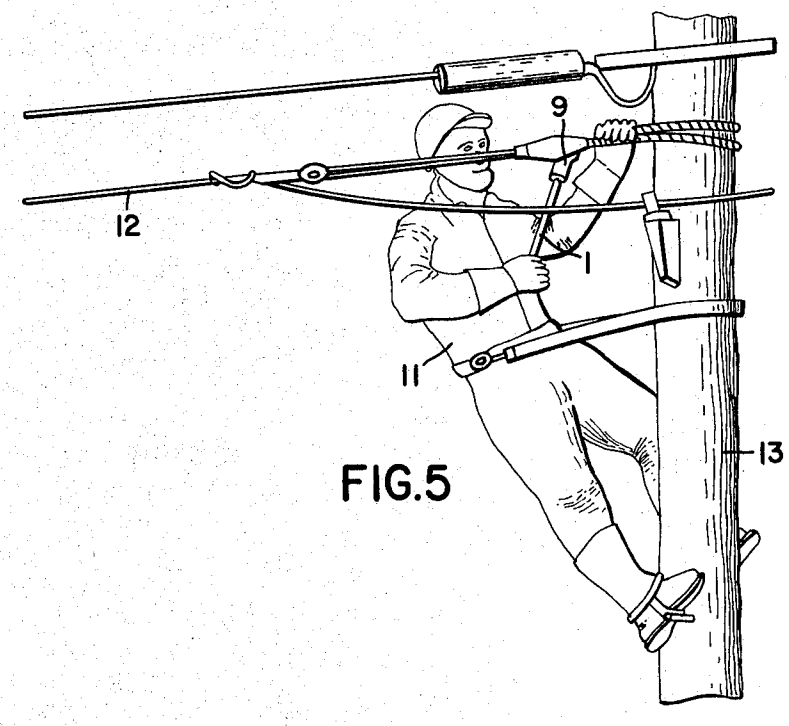


FIG.5

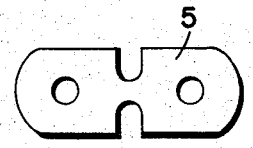


FIG.6

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ACTUATING LEVER FOR WINCH HOIST

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Int. Cl. G05g 1/04

U.S. Cl. 74—524 2 Claims

ABSTRACT OF THE DISCLOSURE

An actuating lever for a ratchet operated winch hoist, the lever having a frangible link interposed between the handle and the pivot center, in parallel with another similar link which is not frangible but has lost motion at its end connections.

SUMMARY OF THE INVENTION

The invention consists of an actuating lever for a ratchet operated winch hoist for exerting a pulling force on any kind of a flexible strand or wire, either on the ground, on board a ship, on a telephone pole, or any other location. The lever consists of two articulated halves with a pair of parallel links connecting the two halves at a distance from their articulated junction, one of the links being readily frangible while the other link has lost motion at one or both of its end connections so that, if the frangible link breaks, the remaining link will still keep the two articulated lever halves sufficiently coordinated to permit limited continued operation of the ratchet mechanism.

BRIEF DESCRIPTION OF THE DRAWINGS

The character of the invention, however, may be best understood by reference to one of its structural forms, as illustrated by the accompanying drawings, in which:

FIG. 1 is a perspective view of an actuating lever embodying the principles of the present invention,

FIG. 2 is a back view of a portion of the lever,

FIG. 3 is a side view of the lever,

FIG. 4 is a front view of FIG. 1,

FIG. 5 shows the lever in use with a winch, and

FIG. 6 is a plan view of the frangible link.

The lever consists of a handle section **1** articulated to an inner section **2** by means of a pivot bolt **3**. At a short distance from the pivot bolt, the articulated handle sections are also connected by a pair of parallel links **4** and **5**. The link **5** is rendered easily frangible by a central weakened portion, whereas the link **4** is not easily frangible but is given a limited amount of lost motion at its ends by providing slightly enlarged holes **6** in the handle sections for the links connecting pins **7** to pass through. When the link **5** breaks, the link **4** will still keep the two handle sections sufficiently coordinated to permit limited operation of the ratchet mechanism **8** of the winch hoist **9** for drawing in the belt or cable **10**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In a preferred embodiment of the present invention, the actuating lever has an insulated reversible fiberglass

safety handle for electrical work. The actuating lever is particularly useful when it is combined with a winch hoist for pulling and installing electrical cable between poles. The winch hoist is hooked onto a pole and a nylon web strap mounted on a spool attached to the ratchet wheel of the hoist is extended and hooked onto the end of a cable that is to be drawn from one pole to another or from the ground to a pole. In FIG. 5, an operator **11** is shown using the lever **1** on the hoist **9** to pull the cable **10** and to tighten a line **12** associated with a power pole **13**.

In order to prevent damage to the cable being drawn or to the winch mechanism, there is a maximum amount of tension which should be applied to the cable. The frangible link in the actuating lever prevents the application of excessive stresses on the cable being drawn. Frangible links of various thickness and depths of central weakened portions are available to correspond to the maximum tensions desired for particular rated capacity of winch or cables being drawn.

It is obvious that minor changes may be made in the form and construction of the invention without departing from the material spirit thereof. It is not, however, desired to confine the invention to the exact form herein shown and described, but it is desired to include all such as properly come within the scope claimed.

The invention having been thus described, what is claimed as new and desired to be secured by Letters Patent is:

1. A lever consisting of two articulated halves for operating the ratchet mechanism of a winch hoist, the lever halves being pivotally connected to each other by a pivot means and also by a pair of links at a short distance from the pivot means, one of the links being easily frangible while the other link is not so easily frangible, and link-connecting pins passing through slightly enlarged holes in the handle sections to permit slight pivotal movement of the two halves after the link has broken.

2. A lever, comprising:

(a) a first half adapted to be connected to a torque load,

(b) a second half adapted to be grasped by an operator,

(c) means joining the two halves to permit relative angular movement therebetween,

(d) a frangible link joining the two halves along a line spaced from the means, and

(e) means limiting relative angular movement between the halves to a small amount when the frangible link breaks.

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U.S. Cl. X.R.

74—584