

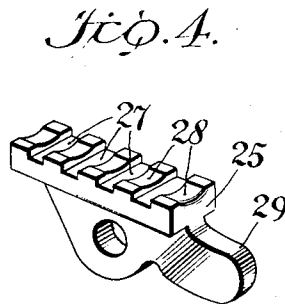
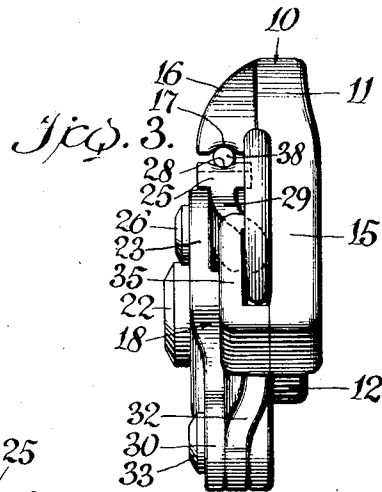
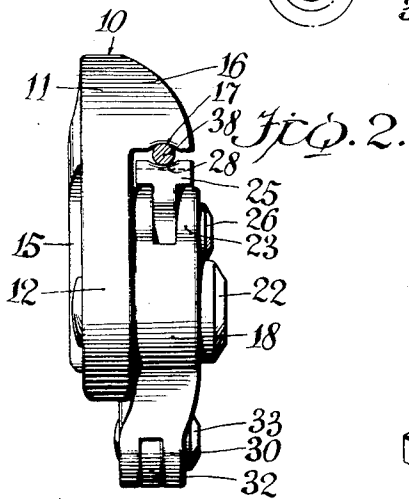
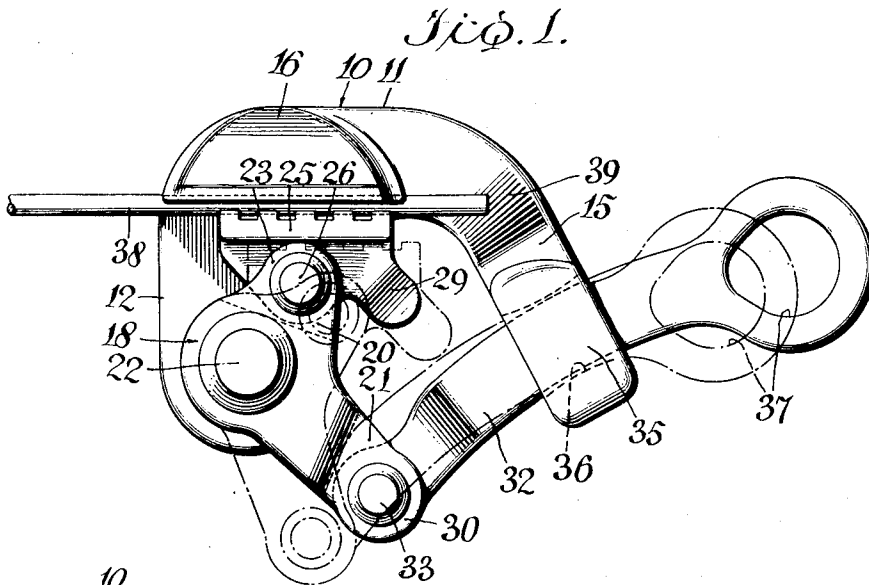
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WIRE GRIP

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WIRE GRIP

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6 Claims. (Cl. 24-132)

This invention relates to devices for handling wires or the like, and it has particular relation to a wire grip adapted for firmly engaging wires which are to be stretched or otherwise manipulated.

One object of the invention is to provide an improved serviceable and efficient wire grip adapted to be employed in gripping and stretching or otherwise handling wires of various sizes.

Another object of the invention is to provide a wire grip in which a material length of the wire to be gripped is engaged, thereby preventing binding or kinking of the wire at or about the location of its gripping surface and without injury to, or mutilation of, wires of the insulated type.

Another object of the invention is to provide a wire grip which is light and simple in construction, thus facilitating its manual operation in conjunction with wires above the ground, and which is further advantageous because it will not catch or lock upon wires when it is being removed therefrom.

In the drawing:

Fig. 1 is a side elevation of a wire grip embodying the invention;

Fig. 2 is a front elevation of the wire grip;

Fig. 3 is a rear elevation of the wire grip; and

Fig. 4 is a perspective of one of the jaw members of the wire grip.

One form of wire grip 10 embodying the invention comprising a housing or frame 11 having a body portion 12 and an arm 15 forming with the body a substantially U-shaped configuration. Adjacent the junction of the body 12 and arm 15 a laterally extending oblong jaw 16 is integrally formed and is provided with a grooved face 17 which can be of any desired cross sectional form, such as arcuate or V-shaped.

A bell crank 18 formed with a shorter arm 20 and a longer arm 21 is pivoted upon a fulcrum pin 22 that is rigidly carried adjacent the outer extremity of the body 12 opposite the face of the jaw 16, and the shorter arm 20 has a bifurcated portion 23 for receiving an oblong jaw 25 that is pivotally carried upon a pin 26 secured in the bifurcated portion of the arm. In order to insure efficient gripping action between the jaws 16 and 25, a plurality of transverse grooves 27 are formed in the face of the jaw 25 which also is grooved longitudinally, as indicated at 28, to provide the desired arcuate, V-shaped, or other desired cross-sectional contour. One end portion of the pivoted jaw 25 is provided with a lug 29 extending integrally at an angle therefrom. The grooved

portions 17 and 28 are arranged in opposed relation and are movable toward and away from each other by pivoting the bell crank.

The outer end of the longer arm 21 has a bifurcated portion 30 for receiving the end of a curved link or handle 32 that is pivotally mounted upon a pin 33 carried in the bifurcated portion 30. A bracket 35 is formed integrally or rigidly upon the side of the arm 15 adjacent its outer end to provide a guide 36 for receiving and guiding the shank of the handle 32. One end of the handle 32 extending outwardly from the arm 15 is provided with an eye 37 formed therein and adapted to receive a tool, or other mechanical element, or it can be grasped directly by an operator to manipulate the grip.

By moving the handle 32 inwardly to pivot the bell crank 18 in a clockwise direction, as viewed in Fig. 1, the lug 29 contacts the surface of the handle and is stopped. In striking the handle 32 the lug functions automatically to dispose the grooved face of the jaw 25 substantially parallel to the face of the jaw 16. This arrangement facilitates the insertion of a wire 38 between the jaws. As soon as the pivoted jaw 25 moves toward the jaw 19 and against the wire by drawing the handle 32 outwardly to turn the bell crank in a counter-clockwise direction, the wire is firmly gripped and the pulling force upon the wire through the handle may be applied to any degree without danger of the wire slipping from between the jaws. This action is insured because of the fact that the ratio between the bell crank arms 21 and 20 is approximately two to one.

The relationship of the short arm 20 of the bell crank, together with the jaw 25, to the clamping face 17 of the jaw 16 is such that the jaw 25 contacts the jaw 16, when the bell crank is turned in a counter-clockwise direction, at a position in which the pin 26 is outside a line drawn from the axis of the pin 22 at right angles to the face of the jaw 16.

In designing the wire grip described, particular attention has been directed to the desirability of arranging the structural elements in such manner that the section of the handle 32 including the eye 37 shall remain disposed substantially in alinement with the working face of the movable jaw 25, even while the grip is being adjusted and operated. The curvature of the handle 32 and the arc of movement of its pivotal connection 33, together with the shape and location of the guide 36, are so coordinated as to produce this result. The axis of

the wire 38 in its clamped position is thus disposed in a direction toward the eye 37, although there is ample space to accommodate the wire without distorting it, as a result of the offsetting, as indicated at 39, of the arm 15 between the bracket 35 and the jaw 16. Therefore, the wire will not be bent or kinked when a pulling load is applied to the eye 37 for stretching the wire, and the pulling action will always be substantially axially of the wire.

From this description it will be apparent that a firm and secure gripping action is insured by the movable jaw 25 moving toward the jaw 16 because the bell crank fulcrum 22 is located ahead of the jaw in its movement in a clockwise direction, and minimum force is necessary to provide this secure and firm gripping action. On the other hand, as soon as the force is relieved, the movable jaw 25 releases the wire without binding, wedging or locking on the wire, or on its insulation, in the event the grip is applied for operation upon an insulated wire.

Since various types of wire are used, the construction of wire grip described has been particularly designed to be applied for efficiently gripping wires, such as bare copper, single or multiple strand; iron or steel, single or multiple strand; aluminum, single or multiple strand; and various types of insulated single or multiple strand.

Although only one form of the invention has been shown and described in detail, it will be apparent to those skilled in the art that the invention is not so limited, but that various changes may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

What is claimed is:

1. A wire grip comprising a body having a stationary jaw adjacent one extremity thereof, a lever having a pair of arms pivoted to the body at a location spaced from the jaw, a movable jaw carried by one of the arms in opposed relation to the stationary jaw, a handle connected to the other arm, and means connected to the body slidably guiding the handle to move the movable jaw toward the stationary jaw.

2. A wire grip comprising a body having a stationary jaw adjacent one extremity thereof, a lever having arms of different lengths, means for pivotally connecting the lever to the body portion at a location spaced from the stationary jaw, a movable jaw connected to the shorter arm of the lever and disposed in opposed relation to the stationary jaw, a handle connected to the other arm, and means connected to the body and slidably guiding the handle to actuate the movable jaw toward the stationary jaw, said jaws being grooved to improve their gripping action.

3. A wire grip comprising a body having a stationary jaw adjacent one extremity thereof, a lever having arms of different lengths, means

for pivotally connecting the lever to the body at a location spaced from the stationary jaw, a movable oblong jaw connected to the shorter arm of the lever and disposed in opposed relation to the stationary jaw, a handle connected to the other arm, means connected to the body and slidably guiding the handle to move the movable jaw toward the stationary jaw, and means on the movable jaw movable therewith to the path of movement of the handle to limit pivotal movement of the lever.

4. A wire grip comprising a body portion having a stationary jaw adjacent one extremity thereof, a lever having arms of different lengths, means for pivotally connecting the lever to the body portion at a location spaced from the stationary jaw, a movable jaw connected to the shorter arm of the lever and disposed in opposed relation to the stationary jaw, a handle connected to the other arm, and means provided on the body and slidably guiding the handle to actuate the movable jaw toward the stationary jaw, the end portion of the handle being substantially in alinement with the gripping face of the movable jaw in various positions of movement of the latter.

5. A wire grip comprising a body portion having a stationary jaw adjacent one extremity thereof, a lever having arms of different lengths, means for pivotally connecting the lever to the body portion at a location spaced from the stationary jaw, a movable jaw connected to the shorter arm of the lever and disposed in opposed relation to the stationary jaw, a handle connected to the other arm, and an extension forming a rigid part of the body and having means slidably guiding the handle to actuate the movable jaw toward the stationary jaw in a gripping action, the end portion of the handle being substantially in alinement with the gripping face of the movable jaw in various positions of movement of the latter, said extension having an offset portion to provide clearance between the jaws and the outer end portion of the handle.

6. A wire grip comprising a body having a stationary jaw adjacent one extremity thereof, a lever having a pair of arms of different length, means for pivotally connecting the lever to the body at a location spaced from the stationary jaw, a movable oblong jaw connected to the shorter arm of the lever and disposed in opposed relation to the stationary jaw, a curved handle connected to the other arm, means connected to the body and slidably guiding the handle to move the movable jaw toward the stationary jaw, said movable jaw having a stop thereon movable into the path of actuation of the handle to limit pivotal movement of the lever and to dispose the movable jaw in parallel relation with the face of the stationary jaw.

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