May 23, 1933. B. THANE 1,910,937

WIRE GRIPPING DEVICE

Filed March 1, 1932

Fig. 1.

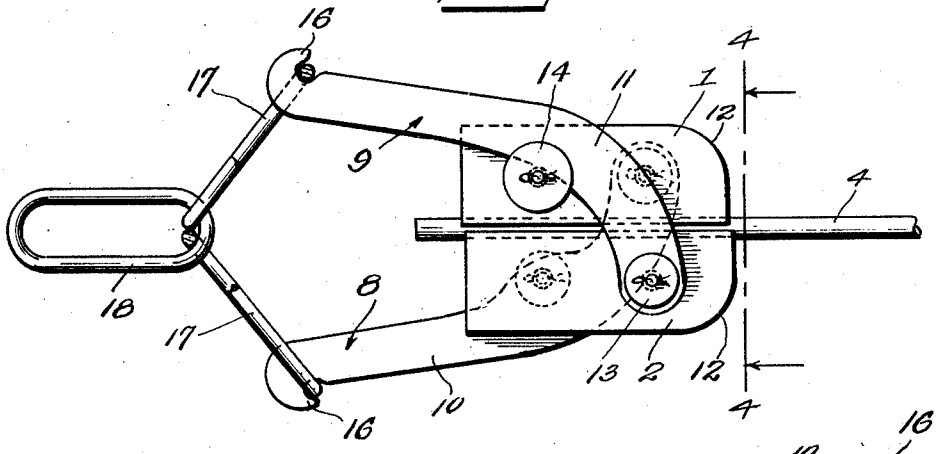


Fig. 2.

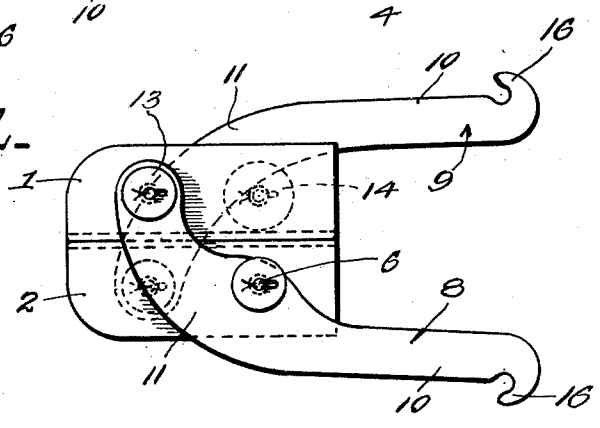


Fig. 3.

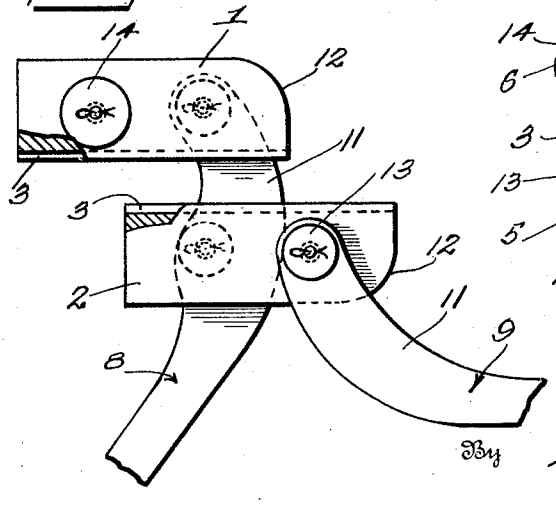
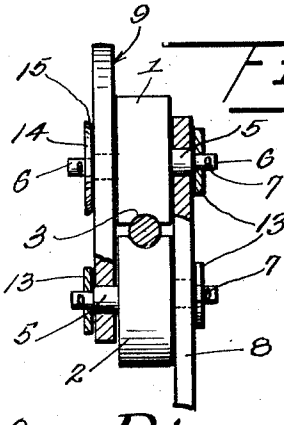


Fig. 4.



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UNITED STATES PATENT OFFICE

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WIRE GRIPPING DEVICE

Application filed March 1, 1932. Serial No. 596,136.

This invention relates to improvements in devices for gripping wire where it is necessary that the same be drawn through a conduit or through a relatively great distance.

The primary object of the present invention is to provide an improved form of grip having a pair of handle members which when drawn together or compressed will operate to clamp a pair of jaw members about a wire and thus firmly hold the same, the clamping action of the jaw members increasing with an increased grip upon the handle members.

Another object of the invention is to provide a wire gripping device of the above described character in which one of the two handle members mentioned may be moved to a position where the clamping jaws may be readily separated and may have a wire led therebetween.

Other objects and advantages of the invention will become apparent as the description of the same proceeds and the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:—

Figure 1 is a view in side elevation of the device embodying the present invention showing the same in clamping position upon a wire;

Figure 2 is a view in elevation of the reverse of the side shown in Figure 1;

Figure 3 is a view in side elevation of the gripping device showing one of the handle members swung to one side with the grip in open position ready to receive a wire therebetween, a portion of the device being in section;

Figure 4 is a view in front elevation of the gripping device, showing parts of the handles thereof in section and showing a gripped wire in section the said wire being sectioned on the line 4—4 of Figure 1.

Referring now more particularly to the drawing wherein like numerals of reference indicate corresponding parts throughout the several views, the numerals 1 and 2 indicate the two gripping jaws of the present wire gripping device, which jaws as shown, are of elongated substantially rectangular contour and are relatively flat as shown in Figure 4. These jaws when in operative position have two longitudinal edges in opposed relation and these opposed edges have formed therein the grooves 3 in which the wire 4 positions.

Each of the jaws 1 and 2 has formed integral therewith a pair of pin members 5 which are positioned upon opposite faces thereof and are longitudinally spaced as shown so that each is adjacent one end of the jaw by which it is carried. Each of these pins has its outer end reduced as indicated at 6 and these outer end portions are transversely apertured for the reception of a cotter key or other holding element 7.

The gripping device has two handle members which are indicated by the numerals 8 and 9 and each of these handle members has a straight rear portion 10 and a curved forward portion 11. Each of the handle members 8 and 9 receives through an aperture in the end of the curved portion thereof the pin 5 of a jaw member which is nearest the forward end of the jaw, the forward end of each jaw being indicated by the rounded corner 12.

The handles as shown, are also placed on opposite sides of the jaws and one of the handles, as for example, the handle 8, has a second aperture therethrough at a point substantially midway of the curved portion 11, for the reception of the pin member 5 which is adjacent the inner end of the jaw next to the one to which the curved forward end thereof is attached, as illustrated in Figure 2. The other handle 9 which is upon the opposite side of the jaws 1 and 2 from the handle 8, while pivotally attached to the pin 5 which is nearest the forward

end of the jaw 2, is not pivotally connected with the pin upon the adjacent side of the other jaw 1 but has the inwardly curved or concave edge of the curved portion thereof passing over and resting on this pin as shown in Figure 1.

Each of the pins 5 has a washer 13 upon its outer reduced portion 6, which is interposed between the adjacent handle member and the cotter key which retains the handles in position. The washer which is mounted on that pin 5 over which the curved portion of the handle 9 passes, is of greater diameter than the other washers as shown in Figure 4 and this washer is indicated by the numeral 14. In addition to being of greater diameter than the washers 13 the washer 14 has its inner edge rounded or baffled as at 15 so as to act to guide the handle 9 to position on the adjacent pin 5 when the handle is swung into place.

The free ends of the straight portions 10 of the handles are notched upon their outer edges to form the outwardly directed hooks 16 so that a pair of links 17 may be readily connected therewith for attachment to a pull cable or rope through the medium of the common connecting link 18.

In the operation of the present wire gripping device, the wire 4 is placed in position between the jaws 1 and 2 by swinging the handle 9 forwardly on its pivot pin 5 which passes through the free end of the curved portion thereof, so that it will not extend across the adjacent grooved edges of the jaws as it is shown in Figure 1 but will be in the position in which it is shown in Figure 3. In this position it will be readily seen that the jaws are entirely free of any connection upon one side and the wire may then be easily laid therebetween to rest upon the underlying curved portion of the handle 8 which is pivotally permanently attached to both jaws. When the handle 9 is swung back and the two handles gripped to be swung together the inner edge of the curved portion of the handle 9 will cam across the rear pin 5 of the jaw 1 and will thus cause the jaws to be firmly forced together as the handles are gripped. While, of course, the gripping device may be used in the hand by grasping the two handles 8 and 9, it is also designed to have a pull chain or line attached thereto through the medium of the link 18 to which the two links 17 are connected.

These two links 17 as previously described are engaged behind the hooked out-turned end portions of the ends 16 of the handles and being connected together upon the longitudinal center of the gripping device they will act to draw the handles inwardly when a pull is applied to the link 18 by which they are joined together.

Having thus described the invention, what is claimed is:—

1. A gripping device of the character described, comprising a pair of opposed jaws, a pair of handles each having one end terminating in a curved portion, a pivotal connection between the free end of the curved portion of each handle and a jaw, the jaws being disposed between the handles and the curved portions of the handles being in crossed relation, connecting means between one of the handles inwardly of the said free end thereof and the jaw adjacent that jaw to which its free end is connected, and means carried by the jaw to which the said free end of the last mentioned handle is connected for engagement by the inwardly curved edge of the curved portion of the other handle for effecting the movement of the jaws together when the free ends of the handles are moved together.

2. A gripping device of the character described, comprising a pair of opposed jaws, a pair of handles each having one end terminating in a curved portion, a pivotal connection between the free end of the curved portion of each handle and a jaw, the jaws being disposed between the handles and the curved portions of the handles being in crossed relation, connecting means between one of the handles inwardly of the said free end thereof and the jaw adjacent that jaw to which its free end is connected, means carried by the jaw to which the said free end of the last mentioned handle is connected for engagement by the inwardly curved edge of the curved portion of the other handle for effecting the movement of the jaws together when the free ends of the handles are moved together, and means at the free ends of the handles for facilitating the coupling of a pull element thereto.

3. A gripping device of the character described comprising a pair of opposed jaws, a pair of handle members each terminating at one end in a curved portion, each of said handle members having the free end of the curved portion pivotally attached to a jaw, the jaws being disposed between the handles and further having the curved portions thereof in crossed relation, a second pivotal connection between the curved portion of one of the handles and the jaw adjacent that to which the free end is connected, a pin member carried by the jaw to which the free end of the curved portion of the last mentioned handle is attached, and disposed upon the opposite side of the jaw therefrom, said pin member being arranged to have the inner edge of the curved portion of the other handle cam thereacross.

4. A gripping device of the character described comprising a pair of opposed jaws, a pair of handle members each terminating at one end in a curved portion, each of said

handle members having the free end of the curved portion pivotally attached to a jaw, the jaws being disposed between the handles and further having the curved portions thereof in crossed relation, a second pivotal connection between the curved portion of one of the handles and the jaw adjacent that to which the free end is connected, a pin member carried by the jaw to which the free end of the curved portion of the last mentioned handle is attached, and disposed upon the opposite side of the jaw therefrom, said pin member being arranged to have the inner edge of the curved portion of the other handle cam thereacross, and hook elements formed at the free ends of the handles for facilitating the attachment of a pulling means thereto.

5. A wire gripping device, comprising a pair of jaws having opposed edges, and a pair of handles disposed on opposite sides of the jaws, each having a curved end extending across one jaw and pivotally attached to the side of the other jaw, one of the handles being also pivotally secured to the jaw across which it extends and the other handle having sliding detachable connection with the jaw over which it extends.

6. A wire gripping device, comprising a pair of jaws having flat sides and opposed gripping edges, a pair of handles having said jaws disposed therebetween, pivotal connecting means between one of the handles and the adjacent side faces of both jaws, a pivotal connection between the other handle and one jaw, and a detachable connection between the said other handle and the other jaw.

In testimony whereof I hereunto affix my signature.

BJARNE THANE.