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GRIPPERS FOR DRAWING WIRE AND THE LIKE

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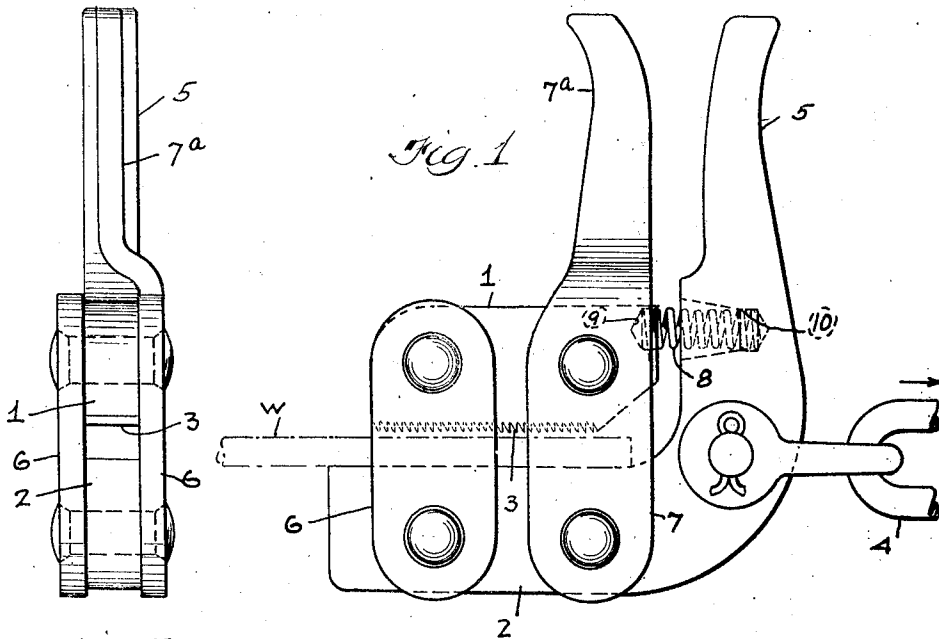


Fig. 3

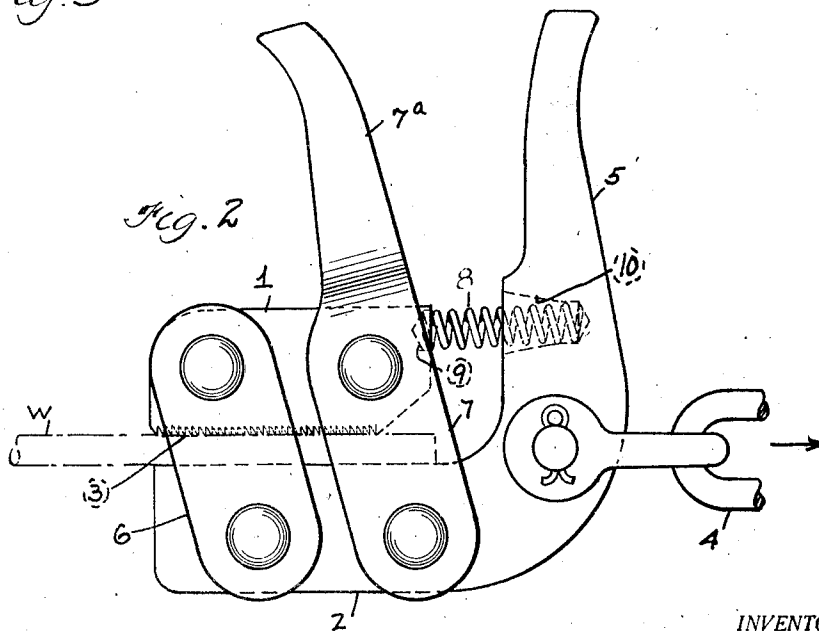


Fig. 2

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GRIPPERS FOR DRAWING WIRE AND THE LIKE.

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In wire drawing mechanism it is necessary to employ some form of pincers or equivalent gripping device for securing the end of the wire or rod to be drawn to the drawing drum or block. Such device is usually attached to the drum through the medium of a short chain so that the end of the wire or rod may be gripped thereby upon being inserted through the adjacent die; then as the drum starts to rotate the chain is wound up so as to pull the gripping device against the drum, followed by the wire, which is coiled upon the drum as it is drawn through the die.

The object of the present invention is to provide a gripping device for the purpose in question which will be adapted firmly to seize the end of the wire or rod and yet be capable of easy manual operation in order to open the device as is necessary to engage the same with, and disengage the same from, the rod or wire end. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means thereinafter fully described and particularly pointed out in the claims, the annexed drawing and the following description setting forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—

Fig. 1 is a side elevation of our improved gripper, the same being shown in its open position preparatory to seizing the end of a wire or rod; Fig. 2 is a similar side elevation, but showing the device in its operative position, i. e. gripping such wire or rod end; and Fig. 3 is an end elevation of the device as viewed from the left in Fig. 1.

The gripping means proper comprise essentially two parallel jaws 1 and 2, the one whereof (jaw 1 as shown) is formed with reversely directed teeth or serrations 3. In such case the hereinbefore mentioned chain 4, of which only one end is shown, is attached to the other jaw 2. Such last mentioned jaw is formed with an integral angularly related arm 5 that extends transversely past the adjacent end of jaw 1 and the two jaws are connected together by means of two spaced pairs of links 6 and 7, one of said links 7 being extended alongside

the arm 5 on jaw 2 and having such extended portion 7^a offset so as to lie substantially in the same plane as said arm. A compression spring 8 is interposed between jaw 1 and the arm 5, such jaw being formed with a recess 9 in such arm with an opposed recess 10, in which the respective ends of the spring are received. It will be noted that recess 10 is of flaring form so as to permit spring 8 a certain amount of oscillatory movement in the plane of the device, as is necessary in order to avoid binding when the jaws are reciprocated relatively to each other.

Normally the action of spring 8 is to force the jaw 1 away from arm 5, with the result that the serrated face 3 of said jaw is caused to approach the juxtaposed face of jaw 2. Accordingly, the inserted end W of wire or rod will be pressed between the jaw faces, and upon a pull being exerted on chain 4 the pressure will be accentuated so as to cause the serrations 3 to firmly grip or seize such wire end. In order to open the jaws, i. e. bring them into the position shown in Fig. 1 in order that such wire end may be inserted therebetween, the arm 5 and link extension 7 are brought together by manual pressure, as will be readily understood, and upon release of such pressure the spring 8 automatically forces the jaws into the gripping position shown in Fig. 2.

Due to the fact that the handle 7^a is thus an extension of link 7 it will be noted that it operates as a lever, the fulcrum point of which is the point of pivotal attachment of said link to jaw 2, while the operating arm is approximately twice as long as the working arm, measured by the distance from such pivot point to recess 9. Accordingly, even where, as in a gripper for a rod drawing machine, such gripper requires to be made of heavy and substantial construction, it is still possible to open the jaws without undue effort, while the simplicity of the device insures against its getting out of order.

Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

We therefore particularly point out and distinctly claim as our invention:—

1. In a device for gripping the end of a wire or the like, the combination of a pair of opposed gripping jaws, one of said jaws being formed at one end with an arm extending transversely past the adjacent end of the other jaw, and a lever fulcrumed on the first-mentioned jaw and extending alongside said arm for operating the said other jaw.

2. In a device for gripping the end of a wire or the like, the combination of a pair of opposed gripping jaws, one of said jaws being formed at one end with an arm extending transversely past the adjacent end of the other jaw, and spaced parallel links connecting said jaws together, one of said links being extended alongside said arm.

3. In a device for gripping the end of a wire or the like, the combination of a pair of opposed gripping jaws, one of said jaws being formed at one end with an arm ex-

tending transversely past the adjacent end of the other jaw, a compression spring interposed between the latter and such arm, and spaced parallel links connecting said jaws together, the link next to said arm being extended alongside the latter.

4. In a device for gripping the end of a wire or the like, the combination of a pair of opposed gripping jaws, one of said jaws being formed at one end with an arm extending transversely past the adjacent end of the other jaw, a compression spring interposed between the latter and such arm, and two spaced pairs of links lying on the respective sides of and connecting said jaws together, one of the pair of links next to said arm being extended alongside the latter and having such extended portion offset to lie in plane therewith.

Signed by me this 21st day of July, 1925.

PHILIP V. TIPPET.

Signed by me, this 27th day of July, 1925.

CHARLES P. GARDNER.