Aug. 28, 1923. 1,466,007

C. J. WALTON

WIRE GRIP

Filed Nov. 28, 1919

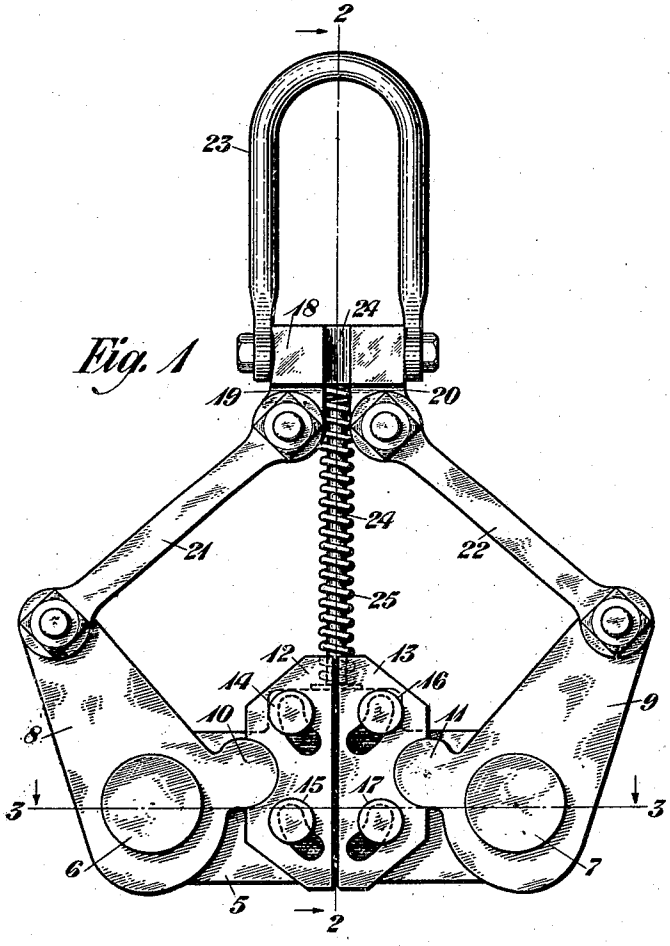


Fig. 1

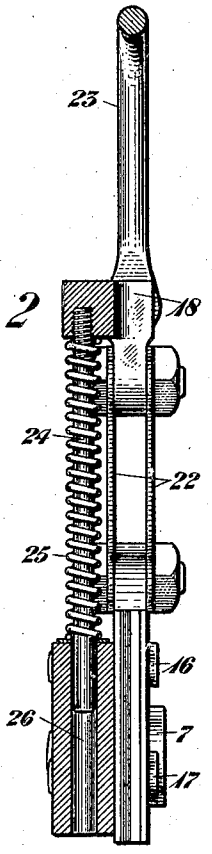


Fig. 2

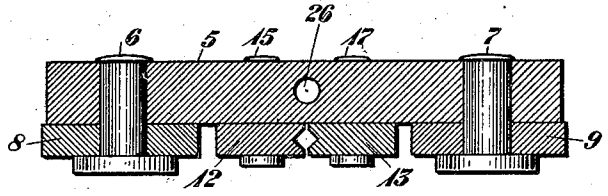


Fig. 3

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Patented Aug. 28, 1923. 1,466,007

UNITED STATES PATENT OFFICE.

CLIFFORD J. WALTON, OF COLLINGSWOOD, NEW JERSEY, ASSIGNOR TO AMERICAN TELEPHONE AND TELEGRAPH COMPANY, A CORPORATION OF NEW YORK.

WIRE GRIP.

Application filed November 28, 1919. Serial No. 341,064.

To all whom it may concern:

Be it known that I, CLIFFORD J. WALTON, a citizen of the United States, residing at Collingswood, in the county of Camden and State of New Jersey, have invented certain Improvements in Wire Grips, of which the following is a specification.

This invention relates to gripping devices for pulling or stringing wires or strands, and which are designed more particularly for use by linemen in connection with electrical line construction.

One of the cardinal objects of the invention consists in the provision of a device of this character whereby increased and effective pulling force may be automatically translated through a system of levers into an increased pressure of the jaws of said device upon a wire or the like. Other and further objects of the invention will hereinafter appear.

In the accompanying drawing, in which is shown one embodiment of the invention, Figure 1 is a front elevation of the improved device; Fig 2 is a vertical section thereof on the line 2—2 of Fig. 1, and Fig. 3 is a longitudinal section of said device on line 3—3 of Fig. 1 looking in the direction of the arrows.

Similar characters of reference indicate corresponding parts throughout the several figures.

Referring to the construction shown, 5 represents the body or main member of the device which is in the form of a bar. Journaled at either end of the bar 5, by means of pins 6 and 7, are actuating levers 8 and 9. Formed on the inner surfaces, and angularly disposed with respect to the axes of the levers 8 and 9, are shown the lugs 10 and 11. The lugs 10 and 11 cooperate with bearing surfaces provided in the sides of jaws 12 and 13, each of said jaws being in the present instance illustrated as of semi-hexagonal form. The jaws are adapted to move in a substantially vertical direction in cam-slots provided therein for this purpose, which slots cooperate with studs 14, 15 and 16, 17 fixed to the bar 5. The opposing faces of said jaws may be of any desirable form, and always remain parallel to each other, but move in the same direction in such a manner that there is no relative change in the longitudinal positions of the jaws to each other or of either to the material gripped. The jaws exert an even pressure upon the wire or strand throughout the length of the jaws and avoid cutting or bending of said wire or strand and also afford an effective gripping surface. 18 designates a head provided with depending arms 19 and 20. Pairs of connecting links 21 and 22 are bolted through apertures provided in the upper portions of the jaws 8 and 9 and depending arms 19 and 20. Bolted to the head 18 is shown a draft loop 23 to which may be attached a rope for the purpose of applying pulling force to the device. A recess 24 may be provided in the head 18 in alinement with the gripping surfaces of the jaws 12 and 13 for the purpose of seating a portion of strand or wire which may extend upward beyond said jaws. Threaded at its upper extremity to the rearwardly extending portion of the head 18 is a spindle 24 which carries spring 25. The lower extremity of said spindle is adapted to slide within an opening 26 extending vertically through member 5, when the device is depressed for the reception of a wire or strand, while the spring 25 may be seated upon the upper surface of the said member 5.

Normally the jaws of the device are maintained in closed position by means of spring 25. In the operation of the device the head 18 is depressed, thereby causing the actuating members 8 and 9, through the medium of links 21 and 22, to turn about pins 6 and 7, the upper portions of said actuating levers traveling in a direction opposite to each other. The turning of said actuating levers in the manner indicated translates an upward movement to the lugs 10 and 11, and said lugs revolving in the bearing surfaces of the jaws 12 and 13 cause them to move upwardly and to spread, so that the wire may be inserted therebetween. The head is then released, so that spring 25 causes the jaws to move into engagement with the wire.

The pressure of the jaws on the wire is augmented when tension is exerted on the draft loop 23, owing to the action of levers 8 and 9, and the amount of this pressure increases with every increase in the pull on the loop. By this means a very effective gripping device is provided.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what it is desired to secure by Letters Patent is:

1. A gripping device comprising a body member, a pair of jaws mounted thereon, pivotal bearings in said jaws, actuating levers mounted on said body member independently of said jaws, lugs associated with said actuating levers and engaging the pivotal bearings in said jaws for causing the opening and closing thereof, and means independent of the lugs for determining the movement of the jaws with respect to the body member.

2. A gripping device comprising a body member, a pair of jaws movably mounted thereon provided with parallel co-acting gripping surfaces and having gripping and releasing positions, pivotal bearing surfaces in each jaw, actuating levers mounted on said body member independently of said jaws, and lugs associated with said actuating members and engaging said pivotal bearing surfaces for causing said jaws to move into said gripping and releasing positions.

3. A device comprising jaws provided with gripping surfaces, pivotal bearings in said jaws, actuating levers cooperating therewith, lugs associated with the said actuating levers for engaging said pivotal bearings and causing said jaws when actuated to move without relative change in the positions of said gripping surfaces with respect to each other, and means independent of the lugs for determining the movement of the jaws with respect to the body member.

4. A gripping device comprising a body member, a pair of jaws movably mounted thereon, each of said jaws being provided with parallel coacting surfaces adapted to move in the same direction and without relative change in their longitudinal positions with respect to each other, pivotal bearings formed in said jaws, actuating levers mounted on said body member independently of said jaws, lugs associated with said actuating levers and journaled in the pivotal surfaces of said jaws for moving them into gripping and releasing positions, and means independent of the lugs for determining the movement of the jaws with respect to the body member.

In testimony whereof, I have signed my name to this specification this eighteenth day of November, 1919.

CLIFFORD J. WALTON.