

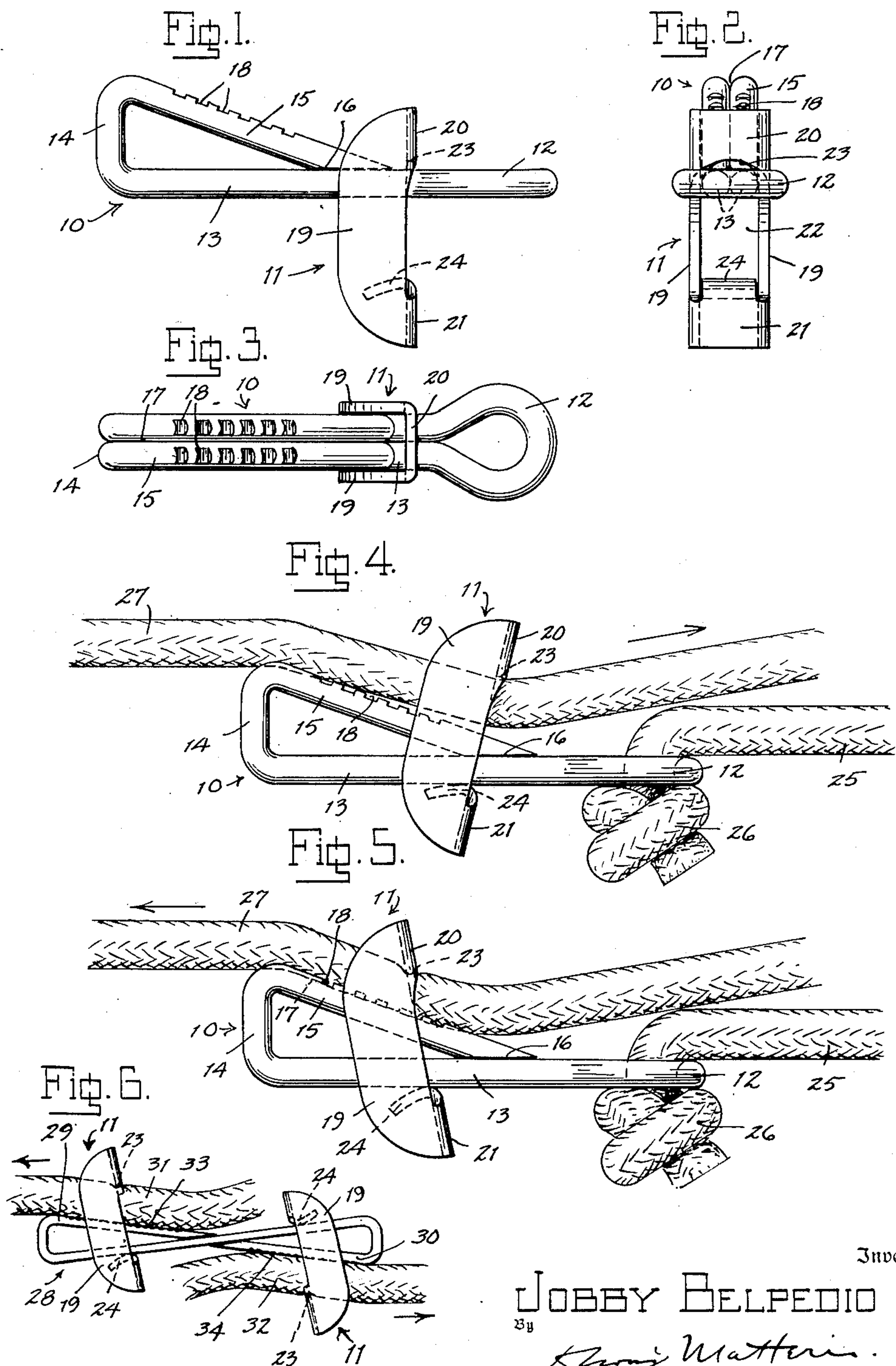
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WEDGE ROPE CLAMP

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WEDGE ROPE CLAMP

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The present invention relates to a gripping device for clothes lines and the like, and has for an object to provide a device of this character of relatively simple construction which may be economically manufactured by mass production automatic machine methods. In particular it is proposed to provide a gripping device in which a wedging member forming part of the device may be formed from a length of wire or strip stock which may be bent into shape in an automatic wire or strip forming and bending machine. It is further proposed to provide a gripping member for cooperation with the wedging member, preferably formed of sheet metal stock, and which may be economically blanked out and formed to shape by automatic machinery.

While the invention is especially useful as a device for gripping and tightening clothes lines it will find many other uses, such for instance as a securing and tightening device for various guy or tie lines, halyards and shrouds for boats, etc.

With the above and other objects in view, embodiments of the invention are shown in the accompanying drawings, and these embodiments will be hereinafter more fully described with reference thereto, and the invention will be finally pointed out in the claims.

In the drawings:

Fig. 1 is a side elevation of the gripping device, according to one illustrated embodiment of the invention.

Fig. 2 is an end elevation, as seen from the right in Fig. 1.

Fig. 3 is a top plan view.

Fig. 4 is a side elevation showing the device secured to the end of a piece of rope and having a length of rope engaged therewith, the parts being in position to allow the rope to be drawn therethrough in the direction indicated by the arrow.

Fig. 5 is a similar view of the device in its gripping position brought about by pulling upon the rope in the direction indicated by the arrow.

Fig. 6 is a side elevation, on a reduced scale, of a modified form of the invention in which gripping means are provided for two ends of rope pulling in opposite directions.

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

Referring to the drawings, and more particularly to Figs. 1 to 5 thereof, the gripping device, according to the illustrated exemplary embodiment of the invention shown therein, comprises a wedging body member, indicated generally as

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10, and an apertured gripping member cooperatively engaged therewith, and indicated generally as 11.

The body member 10 is formed from a length of round wire stock bent to shape, and comprises an eye loop portion 12 formed by bending the wire into loop form at its central point, a horizontal base portion 13 formed by straight portions of the two wire legs extending from the two converging sides of the eye loop 12 in contacting parallel relation with each other, a vertical supporting portion 14 formed by bending the wire legs upwardly from the ends of the base portion 13, and an inclined wedging portion 15 formed by bending the ends of the wire legs in rearwardly and downwardly inclined relation with their terminal ends beveled, as at 16, and engaged with the upper surface of the base portion 13 at a point forwardly of the eye loop portion 12.

The wire stock is preferably of circular cross section, which results in providing a longitudinal groove 17 extending along the wedging portion 15 in which the rope may fit to align it with the wedging portion and to increase the holding effect of the clamp, as will presently more fully appear. The upper surfaces of the wedging portion 15 are preferably provided with a series of notches 18 also for the purpose of increasing the holding effect. The inclination of the wedging portion 15 is preferably about 20° with respect to the horizontal base portion 13, but it will be understood that this may be varied within permissible limits to obtain substantially the same holding effect in cooperation with the gripping member.

The gripping member 11 is preferably formed of sheet metal bent into substantially U-shape channel form comprising a pair of spaced parallel side wing portions 19—19, and upper and lower vertically spaced transverse face portions 20 and 21 connected between the upper and lower end portions of the wing portions, an opening 22 of generally rectangular shape being thus provided in which the wedging member is engaged. The wing portions 19 slideably engage the sides of the base and wedging portions 13 and 15 of the wedging body member so that relative tilting of the gripping member is prevented. The upper edge of the opening 22 formed by the lower edge of the transverse face portion 20 is concavely curved, as at 23, to substantially conform to the surface of the rope engaged with the device, this edge being sharply cut at a right angle to the face of the portion 20 and providing a relatively narrow sharp edged gripping structure, which will tightly press into and grip the rope without, however, cutting or damaging it. The lower end of

the opening 22 is formed by a lip 24 bent inwardly from the upper edge of the lower transverse face portion 21, and is convexly curved to provide a rounded bearing surface for pivotal fulcrum engagement with the lower surface of the base portion 13 of the wedge member. The height of the opening 22 is preferably such that by turning the gripping member substantially 90° from its operative position as seen in Fig. 2 it will slip over the eye loop 12, thus eliminating any forming operation for the purpose of assembling the two parts of the device, the assembly being carried out simply by slipping the gripping member over the eye loop and turning it into its operative position as seen in Fig. 2. In this position the eye loop will retain the gripping member against disengagement in one direction while it is retained against disengagement in the other direction due to the height of the wide end of the body member being greater than the height of the opening 22.

In operation an end of rope, cable or the like 25 is engaged through the eye loop 12 and is knotted, as at 26, to secure the device to the end of the rope. Another end of rope 27 is threaded through the opening between the upper inclined surface of the wedging portion 15 and the upper edge of the opening 22, the wing portions 19 providing convenient guide means for facilitating threading the rope through the opening. As the rope is pulled in the direction indicated by the arrow in Fig. 4 the gripping member 11 swings toward the right, thus increasing the space between the wedging surface and the gripping edge 23 and enabling the rope to be pulled freely through the device. During this operation it will be seen that the rope is guided through its engagement in the groove 17 provided longitudinally along the wedging portion. Upon pulling the rope in the direction indicated by the arrow in Fig. 5 the gripping member swings to the left through fulcrum engagement of the lip 24 with the base portion 13 causing the edge 23 to press into gripping engagement with the upper surface of the rope thus compressing and clamping of the rope with respect to the wedging portion, this clamping action becoming greater as the pull is increased and the gripping member is swung toward the wedging portion 15.

In Fig. 6 there is shown a modified form of the invention in which a wedging member, indicated generally as 28, is formed of a length of flat rectangular cross-section strip stock bent into two substantially triangularly shaped end loops 29 and 30, one loop having an upper inclined wedging portion and the other loop having a lower inclined portion. A pair of gripping members 11—11 are respectively engaged upon the two loop portions for engagement by rope end portions 31 and 32 which are gripped by the device by outward pulling in opposite directions as indicated by the arrows. The inclined wedging surfaces of the loop portions 29 and 30 are preferably transversely notched, as at 33 and 34, for the purpose of increasing the gripping effect on the rope.

I have illustrated and described preferred and satisfactory embodiments of the invention, but it will be understood that changes may be made

therein, within the spirit and scope thereof, as defined in the appended claims.

What is claimed is:

1. In a gripping device for clothes lines, or the like, a wedge member consisting of a length of wire of circular cross-section and including an eye loop portion at one end constituting the central portion of said length of wire and a longitudinally disposed wedging portion of generally triangular shape diverging from said eye loop portion, one longitudinal side of which comprises a pair of longitudinal parallel contacting portions of said length of wire in lateral side-by-side relation extending from said eye loop portion, the other longitudinal side of which comprises another pair of longitudinal parallel contacting portions of said length of wire in lateral side-by-side relation and connected to said one longitudinal side by a transverse connecting portion constituting the wide end of said wedge, said connecting portion comprising still another pair of parallel longitudinal contacting portions of said length of wire in side-by-side relation, said longitudinal sides constituting respectively a gripping part and a bearing part each having a longitudinal rope seating groove the sides of which consist of the divergent adjacent surfaces of the pairs of circular cross-section wire portions constituting said sides, and a gripping member having a rectangular opening slidably engaged by said wedge member, one end of said opening having a transverse portion opposed to one of said longitudinal sides and the other end of said opening having a second transverse portion opposed to the other of said longitudinal sides.

2. The invention as defined in claim 1 further characterized in that said wedge member includes parallel side portions defining the sides of said opening, a transverse portion connecting said side portions at one end and defining one end of said opening, and a transverse portion connecting said side portions at the other end and defining the other end of said opening.

3. The invention as defined in claim 1 further characterized in that said eye loop portion is of greater diameter than the width of said opening and of less diameter than the height of said opening.

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