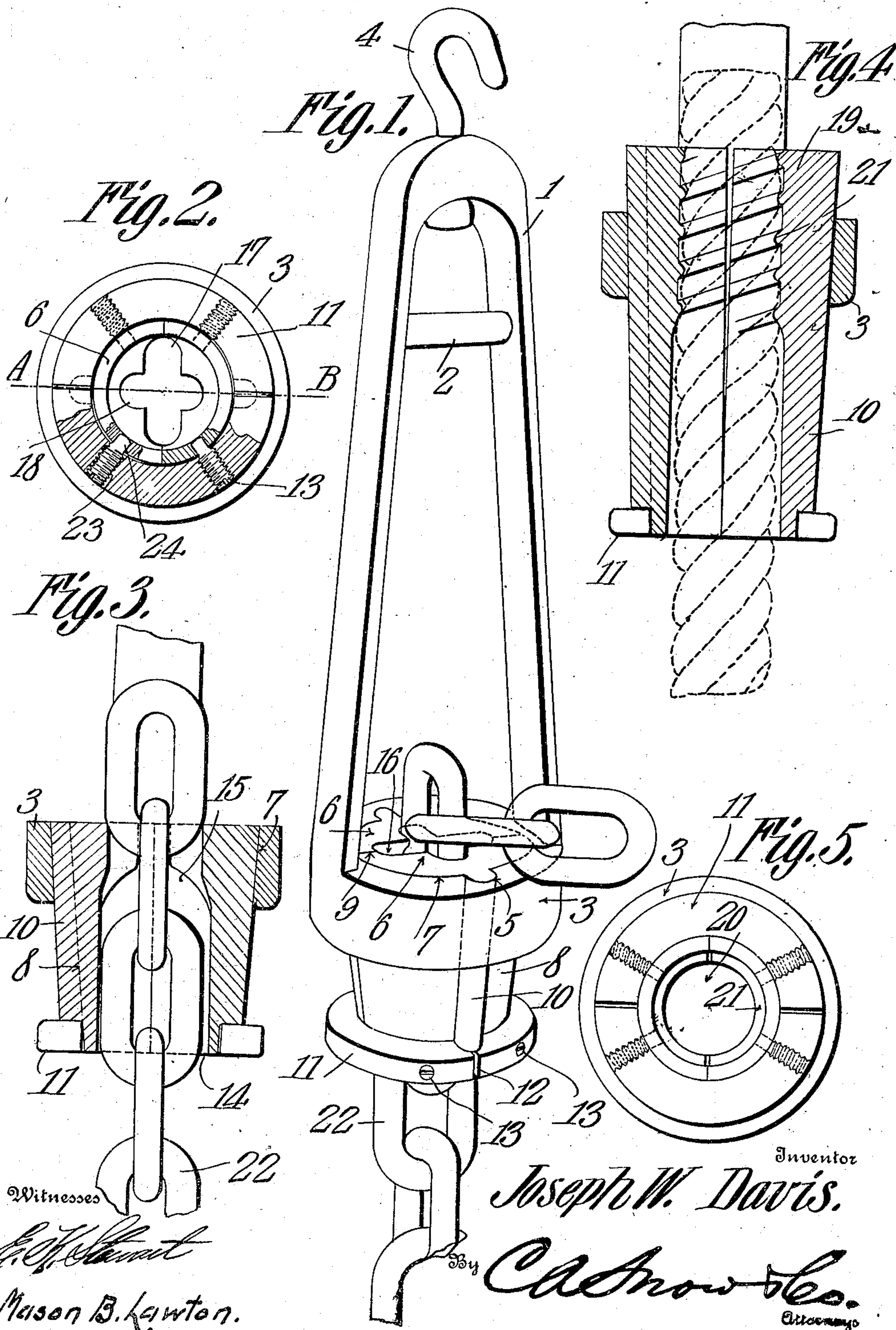


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CHAIN GRIP AND CLEVIS.
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Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH W. DAVIS, OF CONCORDIA, KANSAS.

CHAIN-GRIP AND CLEVIS.

No. 919,699.

Specification of Letters Patent.

Patented April 27, 1909.

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To all whom it may concern:

Be it known that I, JOSEPH W. DAVIS, a citizen of the United States, residing at Concordia, in the county of Cloud and State of Kansas, have invented a new and useful Chain-Grip and Clevis, of which the following is a specification.

The objects of the invention are, the provision in a merchantable form, of a device of the class above mentioned, which shall be inexpensive to manufacture, facile in operation and devoid of complicated parts, other and further objects being made manifest hereinafter as the description of the invention progresses.

The invention consists in the novel construction and arrangement of parts hereinafter described, delineated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that divers changes in the form, proportions, size and minor details of the structure may be made within the scope of the claims, without departing from the spirit or sacrificing any of the advantages of the invention.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In the accompanying drawings, Figure 1 is a perspective of my invention; Fig. 2 is a bottom plan thereof, parts of the ring 11 being broken away better to illustrate the structure; Fig. 3 is a longitudinal section on the line A—B of Fig. 2; Fig. 4 is a longitudinal section of a modified form of clamping member; Fig. 5 is a bottom plan of the detail shown in Fig. 4.

In carrying out my invention, I provide a U-shaped body member 1, having near its upper end, a transversely disposed brace 2; and being provided at its upper end with a swivel which may take the form of the hook 4. An annular member 3 is fashioned integral with the lower ends of the body member 1 and disposed substantially normal to the said body member. The annular member 3 has a conoidal inner face 7 provided with elementally disposed channels 5 placed about ninety degrees from the points where the body member 1 merges into the annular member 3.

The clamping member comprises jaws 6 having a conoidal outer face 8 arranged to register with the inner conoidal face 7 of the member 3, the jaws 6 being slidably mounted in the member 3. The jaws 6 have straight coöperating faces 9, and the outer surface 8 bears outstanding ribs 10 arranged to register in the channels 5, and disposed about ninety degrees from the faces 9. These ribs 10 do not extend to the bottom or the jaws 6, and between their lower ends and the lower end of the jaws 6 is disposed a ring 11, diametrically split as shown at 12, the splitting plane being substantially at right angles to the faces 9 of the jaws 6. Upon each side of the split 12 are located pivots 13 passing through the split ring 11 and entering the lower ends of the jaws 6, the apertures in the ends of the jaws arranged for the reception of the ends of the pivots 13 being of such a size as to allow the jaws 6 to have a slight pivotal movement in the ring 11. The pivots 13 preferably comprise a threaded portion 23 arranged to engage the ring 11, and a smooth terminal 24 arranged to engage the jaws 6. The upper faces of the ends of the split ring 11 are arranged to engage the lower ends of the ribs 10, as shown in Fig. 1. The ring 11 is of such a diameter that it will engage the bottom of the member 3 when the jaws 6 are slid upward within said member 3.

The clamping member is provided with an axial chamber 14 in its bottom, terminating at its upper portion in a reduced or dome-like terminal 15. The upper end of the clamping member has a cruciform axial opening 16, communicating with the chamber 14 as shown in Fig. 3; the axial chamber 14 and the cruciform opening 16 being symmetrically disposed with respect to the plane of the faces 9 of the jaws 6. This cruciform opening consists of a longer portion 17 symmetrically divided by the plane of the faces 9, and a shorter portion 18; disposed at right angles to the portion 17; the ends of the portion 18 extending into the jaws 6.

In Figs. 4 and 5 I have shown a modified form of clamping member in which the jaws 19 are adapted to engage a rope, instead of a chain, as shown in Figs. 1, 2 and 3. The cruciform opening of Figs. 1, 2 and 3 is replaced with a circular opening 20, having in-

wardly projecting ribs 21, which if desired, may assume a sinuous path about the inner face of the opening 20, as shown.

In operation, the jaws 6 are forced upward within the annular member 3, separating the faces 9, the ribs 10, moving in the channels 5, serving to guide the jaws 6 in their upward movement. As the jaws 6 open, they pivot upon the members 13 in the ring 11, the ring 11 being split at 12 each of the portions thereof have a slight movement upon the members 13 which prevents the jaws 6 from binding in their pivotal movement. This pivotal movement should be but slight, and the lower ends of the ribs 10, engaging the ends of the split ring 11 at 12, serve to keep the portions of the ring 11 in position and to prevent extreme movement in the ring 11. The ring 11, engaging the lower face of the annular member 3, prevents the jaws 6 from passing upward out of the ring 3.

When the chain 22 is introduced into the chamber 14, the end of the chain will be guided by the reduced terminal 15 into the cruciform opening 16. The jaws 6 are then pushed downward into the position shown in Fig. 1, the portion 18 of the cruciform opening 16 engaging one of the links of the chain 22, as shown in Fig. 3.

When it is desired to free the chain 22 from the action of the jaws 6, the jaws 6 are shoved upward, whereupon the said chain 22 will be freed. The lateral movement of the jaws 6 is in the line A—B of Fig. 2, hence the portion 18 of the cruciform opening 16 is made shorter and the gripping action is imposed upon it, but since the jaws 6 have no lateral movement at right angles to the line A—B, the portion 17 of the cruciform opening 16 is made of such a length that the chain may readily move through it at all times, the portion 17 having no part in the gripping action.

It will be seen that when the chain 22 is drawn upon, the jaws 6 will be held together, the bearing of the faces 9 upon each other increasing with the pull upon the chain 22, the conoidal, cooperating faces 7 and 8 forcing the jaws 6 together.

The device is of wide application; it may be used in logging operations, fence building, and in all work where a firm yet easily adjustable grip upon a chain or rope is called for.

In the following claims, I have employed the word "elementally" to describe the position of the channels 5 in the annular member 3, and, since the use of the above mentioned term, unaccompanied by explanation, may tend to make my claims vague and uncertain, I consider it proper to state that the conoidal bore or inner face of the annular member 3 may be considered to be generated by an inclined straight line moving in a circular orbit, the position of this line at any instant being

denominated an "element" of the surface so generated.

What is claimed is:—

1. In a device of the class described, an annular member having a conoidal inner face and being provided with channels elementally disposed therein; slidably mounted in the annular member, cooperating jaws having a conoidal outer surface arranged to register with the inner face of the annular member; ribs outstanding from the jaws and arranged to register with the channels in the annular member; a ring pivotally attached to the lower ends of the jaws and arranged to engage the lower face of the annular member.

2. In a device of the class described, an annular member having a conoidal inner face; slidably mounted in the annular member, cooperating jaws having a conoidal outer surface arranged to register with the inner face of the annular member; a ring pivotally attached to the lower ends of the jaws and arranged to engage the lower face of the annular member.

3. In a device of the class described, a ring; a clamping member comprising a pair of jaws having straight inner cooperating faces and being pivoted in the ring for movement at right angles to the plane of the inner faces, the said clamping member having a cruciform axial opening symmetrically disposed with respect to the plane of the inner faces of the jaws, the said opening comprising a longer portion longitudinally divided by the plane of the jaw faces, and a shorter portion transversely divided by said plane.

4. In a device of the class described, a clamping member comprising a pair of jaws having straight inner cooperating faces, the said clamping member having in its bottom an axial chamber with a reduced upper terminal, and being provided in its top with an axial, cruciform opening communicating with the axial chamber, the axial chamber and the cruciform opening being disposed symmetrically with respect to the plane of the inner faces of the jaws.

5. In a device of the class described, an annular member having a conoidal inner face; slidably mounted in the annular member, jaws having straight inner cooperating faces and being provided with a conoidal outer surface arranged to register with the inner face of the annular member; a ring diametrically split and pivoted to the lower end of the jaws upon each side of the openings thus formed, the splitting plane being substantially at right angles to the plane of the inner faces of the jaws, and the ring being arranged to engage the lower face of the annular member.

6. In a device of the class described, an annular member having elementally dis-

posed channels in its inner face; a pair of
coöperating jaws slidably mounted in the
annular member; ribs carried by the jaws
and arranged to register with the channels in
5 the annular member; a diametrically split
ring pivoted to the lower end of the jaws, the
upper faces of the ends of the split ring being
arranged to engage the ends of the ribs.

In testimony that I claim the foregoing as
my own, I have hereto affixed my signature
in the presence of two witnesses.

JOSEPH W. DAVIS.

Witnesses:

R. A. SHORE,
E. C. WHITCHER.