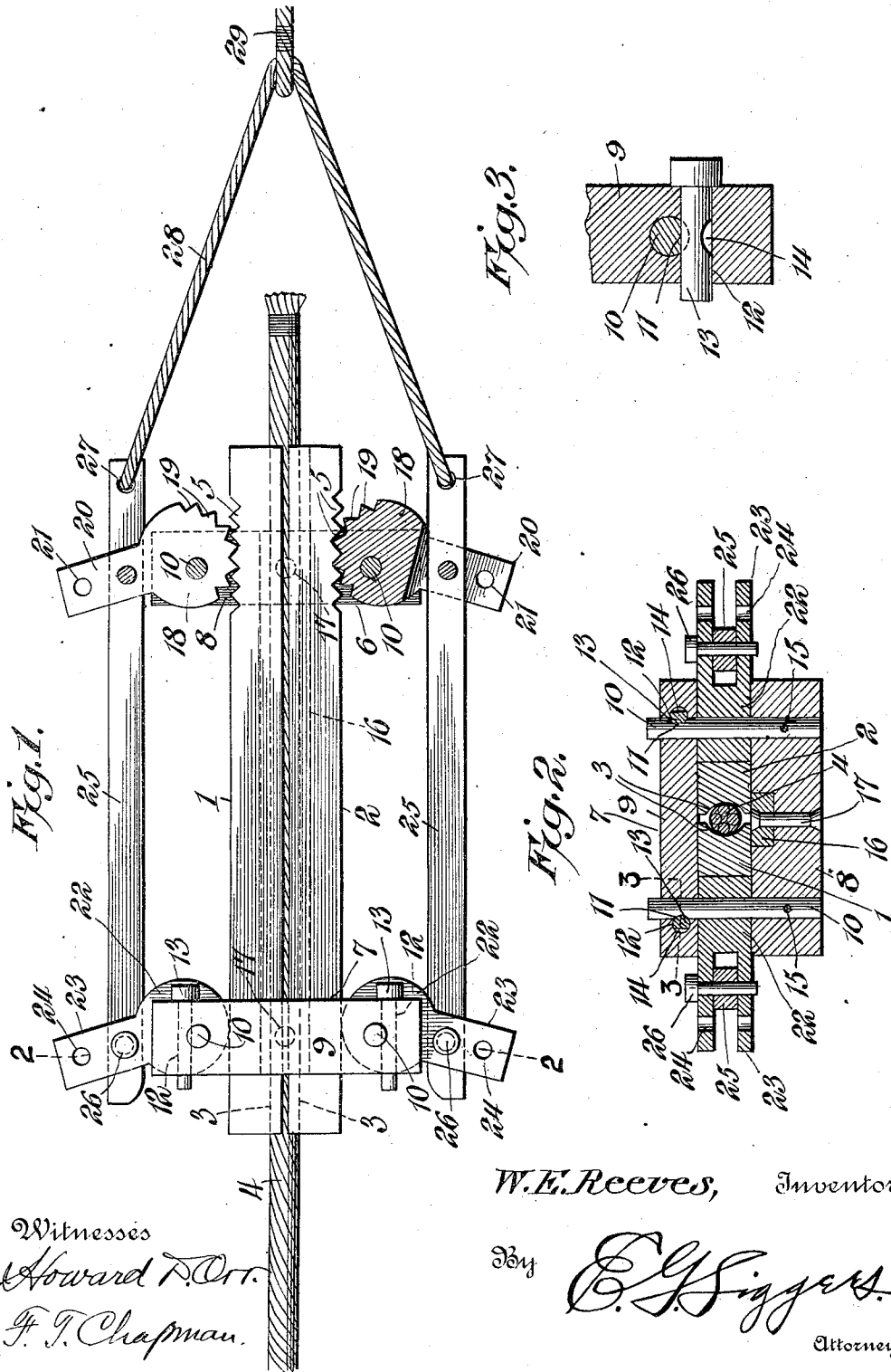


W. E. REEVES.
CABLE CLAMP.
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1,046,330.

Patented Dec. 3, 1912.



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WILLIAM E. REEVES, OF TWISP, WASHINGTON.

CABLE-CLAMP.

1,046,330.

Specification of Letters Patent.

Patented Dec. 3, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM E. REEVES, a citizen of the United States, residing at Twisp, in the county of Okanogan and State of Washington, have invented a new and useful Cable-Clamp, of which the following is a specification.

This invention has reference to improvements in cable clamps, and is designed to provide a means whereby a cable, preferably a steel cable or rope, is tightly clamped for tractive or other purposes so long as a pulling force is exerted, but which will readily unclamp or ungrip the cable on the release of such force, so that the device may be used as a take up. Furthermore, the clamp or gripper is useful as a means for temporarily uniting contiguous ends of two cables, so that the effective length of the cables is thereby increased.

The invention comprises two cable gripping jaws supported by spaced heads, each of which carry cam members, which latter in turn are united on opposite sides of the gripping jaws, so as to act in unison under the exertion of an applied force, such force tending to grip the cable in proportion to the amount of such force. The construction is such that on the cessation of such force the rope or cable may be readily moved in the direction of its length through the grip or clamp to any desired extent and in either direction. This is particularly useful where it is desirable to take up slack, as in the drawing of a load toward some fixed point at which latter place the power is located.

The invention will be best understood from a consideration of the following detailed description, taken in connection with the accompanying drawings forming a part of this specification, with the understanding, however, that while the drawings disclose a practical embodiment of the invention the latter is susceptible of various changes and modifications without material departure from the principles of the invention.

In the drawings:—Figure 1 is a plan view with some parts omitted and other parts in section of a clamp or grip embodying the present invention. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 2 on a larger scale than Fig. 2.

Referring to the drawings, there are shown two elongated gripping jaws, 1, 2, respectively, each jaw being formed on the edge facing the other jaw with a groove or depression 3 designed to engage the corresponding side of a cable 4, which latter may be a rope or cable of any construction, but the clamp of the present invention is particularly adaptable for steel ropes or cables, and in the following description the member 4 will be considered as a steel rope, without, however, limiting the use of the invention to such particular type of rope or cable.

The inner and outer edges of the elongated jaws 1 and 2 are substantially parallel one to the other, and the length of the jaws may be several times the thickness and width of the jaws. In the showing of the drawings the jaws are approximately square in cross section, but this does not preclude the formation of the jaws of other cross sectional shapes since the function of the jaws is to effectually grip the rope 4 throughout a sufficiently extended length of the rope to produce the necessary frictional engagement without bringing such pressure at any one point as to injure the rope. Throughout the greater portion of the edge of each jaw 1 and 2 remote from the gripping face or groove 3, the jaw is plane, but at one end each jaw is formed on the edge remote from the groove 3, and which may, therefore, be called the outer edge, with a longitudinal series of teeth 5, either of V form, as indicated in the drawings, or of any other suitable shape.

The jaws 1 and 2 near their ends are embraced by suitable heads 6, 7, respectively, indicated in the drawings as each made up of a block 8 of sufficient length to extend laterally beyond the outer edge of both jaws when assembled, and a plate 9, the block 8 and plate 9 being connected together by rods 10 on opposite sides of the jaws 1 and 2, so as to inclose these jaws between the block 8 and plate 9, the said block and plate being separated by the thickness of the jaws. In order to render the plate 9 readily removable, each pin 10 is formed near the end where traversing the plate 9 with a notch 11 and the plate 9 is provided with traversing passages 12 each extending to one side of the longitudinal axis of the respective passage

provided for the pin or rod 10 and a headed pin 13 is lodged in the passage 12, said pin having a cut away portion 14 which may be moved into matching relation to the notch 11, but when the pin 13 is turned on its longitudinal axis the cut away portion or notch 14 is moved out of coincidence with the notch 11 and, therefore, the pin 13 is then in locking relation to the respective pin 10, so that the plate 9 is then made fast to the pin 10 wherefore it cannot move longitudinally thereof. Of course, any suitable fastening means for holding the pins 13 against longitudinal movement may be employed. Each pin 10 is made fast to the block 8 by a traversing pin 15 or in any other suitable manner. The two blocks 8 are secured together by a reach 16 which in turn is secured to the respective blocks 8 by pins or rivets 17 or in any other suitable manner.

The respective pins 10 of the head 6 each carry a cam block 18 between the laterally extended ends of the block 8 and plate 9, being supported by the latter and movable about the respective pin 10 as a pivot. Each block 18 is formed with teeth 19 matching the teeth 5 of the respective jaws 1 and 2, and each cam block or head 18 is formed with a laterally projecting arm 20 having passages 21 therethrough.

The head 7 carries cam blocks 22 like the cam blocks 18 except that they have smooth peripheries. Each cam block 22 is mounted on a respective pin 10 and is provided with an extension 23 like the extension 20 of the blocks 18, and these extensions 23 are each provided with passages 24 like the passages 21 of the blocks 18. The extensions or arms 20 and 23 of the blocks 18 and 22 engaging the same clamp strip or jaw are connected together by a link 25 by means of headed pins 26 passing through an appropriate one of the holes 21 or 24, as the case may be, in the respective arms 20 and 23. The links 25 extend beyond the arms 21 and are there formed with eyes 27 for the reception of a rope or cable 28 which may be in the form of a loop, to which is applied a draft means 29.

The elongated clamping jaws 1 and 2 are not made fast to either head 6 or 7 but are free to slide in the direction of their length through said heads. The engagement, however, of the teeth 19 of the blocks 18 with the teeth 5 of the jaws 1 and 2 prevent any movement of these jaws except such as is participated in by the rotative movement of the heads 18 about their supporting pins 10.

When the jaws 1 and 2 are moved in a direction toward the rope 28 the heads 18 and 22 are rotated about their supporting pins 10 in a direction to move away from

the jaws, so that the latter may spread apart and release the rope or cable 4 and this rope or cable 4 may then be moved freely lengthwise of the jaws 1 and 2 to any desired extent. When, however, power is applied to the rope 28, the links 25 are moved in a direction to turn the heads 18 and 22 on their pivot pins 10 in a manner to force the jaws 1 and 2 toward each other and at the same time in a direction away from the rope 28, so that these jaws are brought into gripping relation to the rope 4 to clamp the same between them against movement, and this clamping force becomes greater as force is applied to the rope 28, wherefore the exertion of force to move the rope 4 in the same direction as the rope 28 only serves to grip the rope 4 more tightly between the jaws 1 and 2. It is to be observed that there is no frictional movement between the heads 18 and 22 and the jaws 1 and 2, but a rolling action occurs between the heads 18 and 22 and the respective jaws 1 and 2. When the pull on the rope 28 is released, the jaws 1 and 2 are readily moved lengthwise in a direction to cause movement of the heads 18 rotatively to carry the links 25 in a direction away from those ends of the links to which the rope 28 is connected, and this will tend to release the jaws 1 and 2 from the compressive action of the cam heads engaging them. Moreover, the links 25 cause like motions of both the heads 18 and 22 with relation to the respective jaw, so that the jaws are forced toward each other or released from pressure simultaneously at both ends. If greater compressive action on the jaws is desired, the links 25 are moved to the outer ends of the arms or projections 20 and 23, but if so great a compression is not desirable or not needed, then the links 25 are secured to the projections 20 and 23 nearer to the heads 18 and 22.

The several parts are made readily separable for convenience of packing and transportation, and since there is little if any danger of the parts becoming loosened or dropping out when the device is in operation, special fastening means for the locking and other pins are not found necessary, but this does not preclude the use of such locking means if desirable.

What is claimed is:—

A rope or cable gripping clamp comprising elongated gripping jaws, pairs of guide members for the jaws spaced apart a distance less than the length of the jaws, a reach connecting the pairs of guide members, cams at the opposite ends of each pair of guide members in position to engage the outside edges of the gripping jaws to force them one toward the other, pivot-pins for the cam constituting the connections for the

members of each pair of guide members, and the cams constituting the spacing members for the guide members, and connecting means for the cam members engaging the same jaw for causing simultaneous movement of such cam members.

as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM E. REEVES.

Witnesses:

EARL E. McFADDEN,

FRANCIS M. LEWIS.

In testimony, that I claim the foregoing

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."