C. W. & J. T. KEMPER.

CLAMP.

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1,271,912.

Patented July 9, 1918.

Fig. 1.

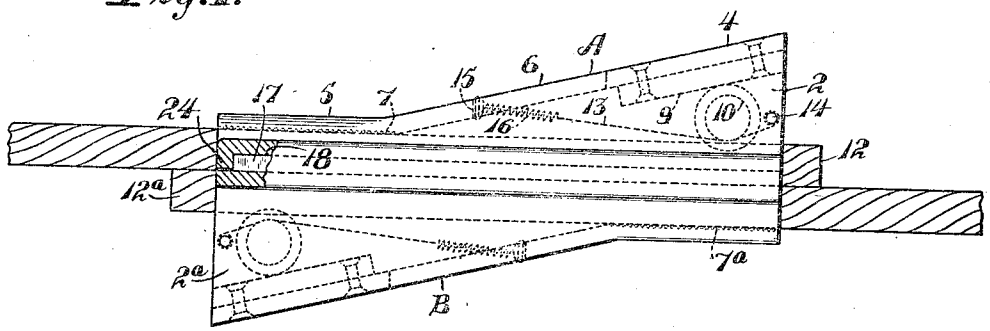


Fig. 2.

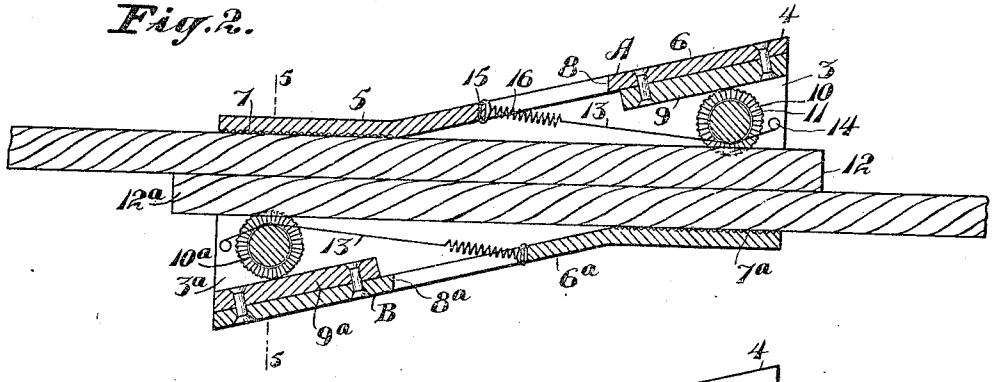


Fig. 3.

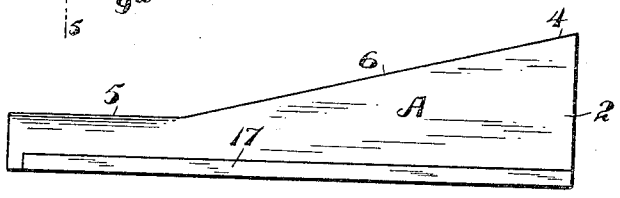


Fig. 4.

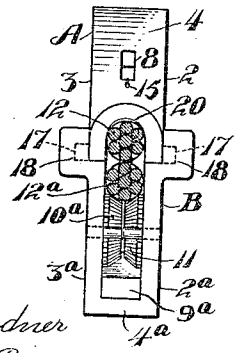


Fig. 5.

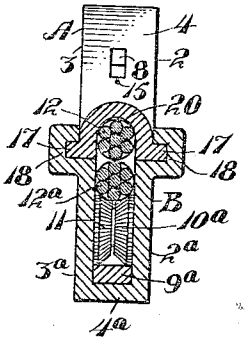
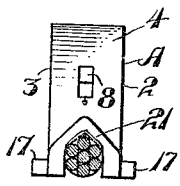


Fig. 6.



WITNESSES:

F. C. Fliedner

Julius C. Bencach.

INVENTORS:—

Charles W. Kemper.

John T. Kemper.

BY Strong & Townsend

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES W. KEMPER AND JOHN T. KEMPER, OF OAKLAND, CALIFORNIA.

CLAMP.

1,271,912. Specification of Letters Patent. Patented July 9, 1918.

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To all whom it may concern:

Be it known that we, CHARLES W. KEMPER and JOHN T. KEMPER, citizens of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Clamps, of which the following is a specification.

This invention relates to a clamp.

One of the objects of the present invention is to provide a simple, substantial, cheaply manufactured clamp whereby rope ends may be effectively secured and prevented from accidentally separating when subjected to longitudinal strains, and particularly to construct the clamp in such a manner that it is self-locking when a pull is exerted and also easily released or quickly applied when required. Further objects will hereinafter appear.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings in which—

Figure 1 is a side elevation, showing the application and use of the clamp.

Fig. 2 is a similar view, showing the clamp in section.

Fig. 3 is a side elevation of one half of the clamp.

Fig. 4 is an end view of Fig. 2.

Fig. 5 is a cross section on line 5—5 of Fig. 2.

Fig. 6 is an end view of one of the clamp sections, showing a modification of same.

Referring to the drawings in detail, A and B indicate in general a pair of coöperating clamp members, whereby rope ends and like devices may be effectively secured and prevented from accidentally separating irrespective of the amount of strain that may be longitudinally exerted thereon. The clamp section A consists of two side members 2 and 3 which are united by a bottom section 4. This bottom section is straight at one end, as indicated at 5, while the major portion is inclined, as at 6. Formed on the interior side of the straight section is a plurality of corrugations 7, and formed in the inclined section is a slot 8.

Suitably secured on the inner face of the inclined bottom section near one end by rivets or otherwise is a reinforcing plate 9, and adapted to be supported by said reinforcing plate is a clamping roller 10. This roller is provided with a concaved or V-shaped face 11 which is also corrugated to form a bight when engaging a rope section, such as shown at 12, and also to prevent slippage with relation to the plate 9. The roller 10 rests upon the plate 9 and is just wide enough to travel freely between the side sections 2 and 3.

For the purpose of preventing the roller from being accidentally displaced or falling out of the clamp when the rope ends are removed a wire 13 is provided. This wire is secured at one end to a pin 14 and at the opposite end in a perforation 15; a coil section 16 being formed on the wire to hold the wire sufficiently taut to prevent too free a movement of the roller. The clamp consisting of the bottom section 4 and the side sections 2 and 3 in reality forms a channel-shaped member adapted to receive the rope end 12, and the upper edges of the side sections are bent outwardy, as shown in Fig. 5, to form projecting flanges 17 which are adapted to be received by channels 18 formed in the upper face of the clamp section B. This clamp section is also channel-shaped in cross section and consists of side sections 2^a and 3^a which are united by a bottom section 4^a, this bottom section being corrugated, as at 7^a and inclined, as at 6^a, to permit the formation of a slot 8^a and also to form a support for a plate 9^a which supports a roller 10^a similar in shape and construction to the roller previously described. The clamps, in other words, are identical in construction except that one is provided with channels 18 while the opposite clamp is provided with flanges 17.

The clamps are adapted to be interlocked with relation to each other by sliding the section A endwise into the section B. A pair of rope ends, such as indicated at 12 and 12^a, when inserted will be engaged by the rollers 10 and 10^a and as these in turn engage the plates 9 and 9^a it can readily be seen that the rollers will bite into the rope ends and thoroughly clamp the same against the corrugated inner faces 7 and 7^a. It can also be seen that any longitudinal pull exerted on either rope will only cause the clamps or the rollers mounted therein to exert a greater pressure, thereby more effectively securing the rope ends as the strain is increased. The wires 13 securing the rollers are only taut enough to prevent the same from accidentally falling out and will

not interfere with their free rolling movement on the plates 9 and 9ª when the rope ends are inserted or while the clamps are being brought together to secure the same.

The clamp sections are preferably stamped and folded over heavy sheet iron or steel material and may be cheaply manufactured. The corrugated sections 7 and 7ª may be round in shape, as shown at 20 in Figs. 4 and 5, to conform to the outer contour of the rope, or they may be V-shaped, as shown at 21 in Fig. 6.

The supporting plates 9 and 9ª are an important feature as they distribute the roller pressure evenly over a comparatively large surface of the inclined bottom sections, in this manner permitting the clamps to be made of comparatively thin material. The channel-shaped clamp section B is preferably closed at one end by providing stop pins or turning the metal over the ends, as shown at 24, to prevent the clamp section A from pulling through the channel section or moving out of alinement with same when applied as shown in Fig. 1.

The clamp is particularly useful in connection with telephone work for securing guy wires and to be used as a temporary clamp while working. However, we wish it understood that it may be used as a rope or cord clamp in general and that it may also be employed to advantage in the adjustment of clothes lines, hammock supports, tent ropes and for many other purposes. We also wish it understood that the materials and finish of the several parts employed may be such as the experience and judgment of the manufacturer may dictate.

Having thus described our invention, what we claim and desire to secure by Letters Patent is—

1. A rope clamp comprising a pair of interlocking clamping sections slidable longitudinally with relation to each other and adapted to receive and inclose a pair of contacting rope ends, and a gripping roller in each clamp section adapted to automatically engage and grip the rope ends when a longitudinal pull is exerted on the rope ends.

2. A rope clamp comprising a pair of interlocking clamping sections slidable longitudinally with relation to each other and adapted to receive and inclose a pair of contacting rope ends, a gripping roller in each clamp section adapted to automatically engage and grip the rope ends when a longitudinal pull is exerted on the rope ends, and means limiting the movement of each clamping roller and securing the same against endwise removal.

3. A rope clamp comprising a pair of interlocking clamping sections slidable longitudinally with relation to each other and adapted to receive and inclose a pair of overlying rope ends, each clamping section being channel-shaped and provided with a bottom section, a portion of which is straight and a portion of which is inclined, and a clamping roller interposed between each rope end and the inclined bottom sections adapted to automatically engage and grip the rope ends when the clamping sections are brought together and also when a longitudinal pull is exerted on the rope.

4. A rope clamp comprising a pair of interlocking clamping sections slidable longitudinally with relation to each other and adapted to receive and inclose a pair of overlying rope ends, each clamping section being channel-shaped and provided with a bottom section, a portion of which is straight and a portion of which is inclined, and a clamping roller interposed between each rope end and the inclined bottom sections adapted to automatically engage and grip the rope ends when the clamping sections are brought together and also when a longitudinal pull is exerted on the rope, the face of said rollers having a contour conforming to the rope.

5. A rope clamp comprising a pair of interlocking clamping sections slidable longitudinally with relation to each other and adapted to receive and inclose a pair of overlying rope ends, each clamping section being channel-shaped and provided with a bottom section, a portion of which is straight and a portion of which is inclined, a clamping roller interposed between each rope end and the inclined bottom sections adapted to automatically engage and grip the rope ends when the clamping sections are brought together and also when a longitudinal pull is exerted on the rope, a bearing plate interposed between each roller and the inclined bottom sections, and a spring passing over each roller adapted to secure the same against accidental removal.

6. The combination with a clamping member of the character described, of a roller having a traveling movement within the clamp, said roller being approximately V-shaped in cross section, and a wire passing over the roller secured to the casing at one end and to a coil spring at the opposite end.

7. A rope clamp comprising a pair of interlocking clamping sections slidable longitudinally with relation to each other and adapted to receive and inclose a pair of overlying rope ends, a gripping roller in each clamp section adapted to automatically engage and grip the rope ends when a longitudinal pull is exerted on the rope ends, and means for limiting the longitudinal movement of one clamp section with relation to the other.

8. The combination with a clamping member of the character described, of a roller having a traveling movement within

the clamp, said roller being approximately V-shaped in cross section and having an annular groove formed at the bottom of the V-formation, said V sides of the roller being corrugated, and a wire passing through the annular groove in the roller secured to the clamp casing at one end and to a coil spring at the opposite end.

9. A rope clamp comprising a pair of clamping sections slidable longitudinally with relation to each other and adapted to receive an inclosing pair of overlying contacting rope ends, said clamping sections being approximately channel-shaped in cross section and each clamp having a bottom section, a portion of which is straight and a portion of which is inclined, corrugations formed in the faces of the straight portions of the bottom sections, a clamping roller interposed between each rope end and the inclined bottom sections adapted to engage and grip the rope ends and force the ropes against the corrugated straight bottom sections, a channel-shaped flange formed on each side of one clamping section, said channel extending from end to end thereof, a flange formed on each side of the opposite clamping section adapted to enter the channels formed in the first named clamping section, said flanges also extending from end to end, and means for retaining the clamping rollers against accidental removal.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

CHARLES W. KEMPER.
JOHN T. KEMPER.

Witnesses:
W. W. HEALEY,
M. E. EWING.

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