Feb. 2, 1960 D. J. DAUGHERTY 2,923,508

CLAMP-ON CABLE HANGER

Filed May 18, 1955 2 Sheets-Sheet 1

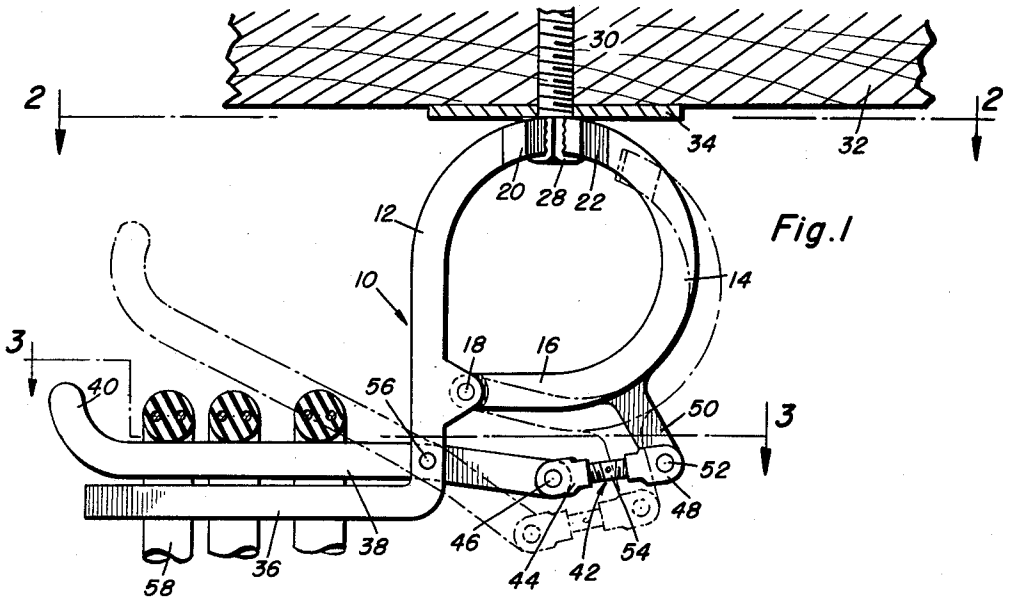


Fig. 1

Fig. 2

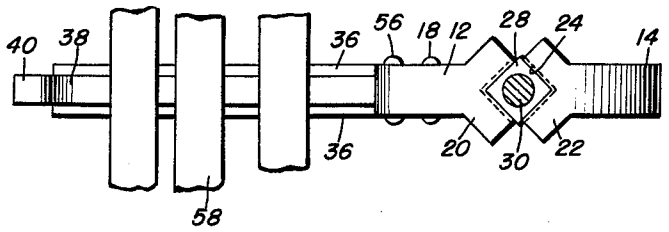
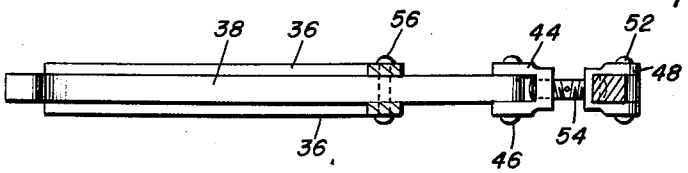


Fig. 3



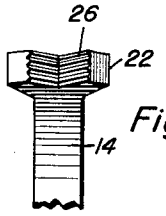


Fig. 4

Dallas J. Daugherty
INVENTOR.

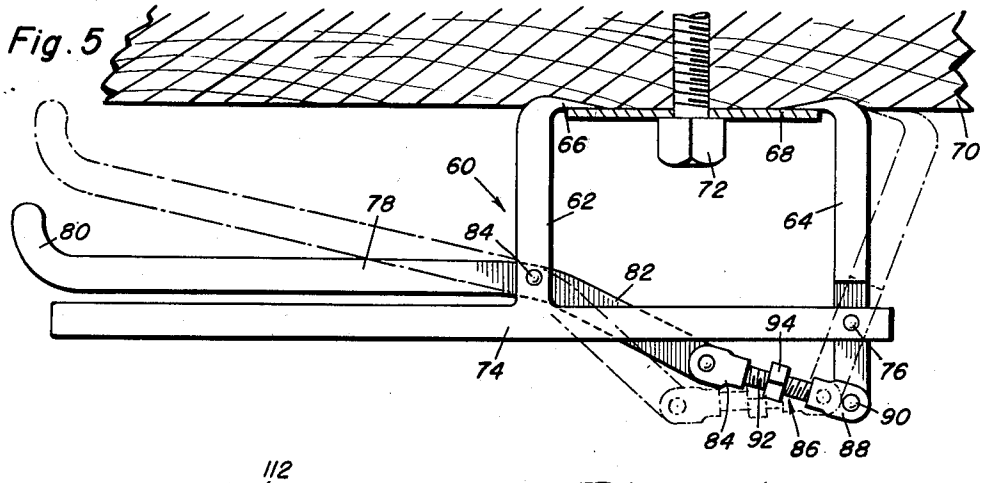
BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Feb. 2, 1960 D. J. DAUGHERTY 2,923,508

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Filed May 18, 1955 2 Sheets-Sheet 2

Fig. 5



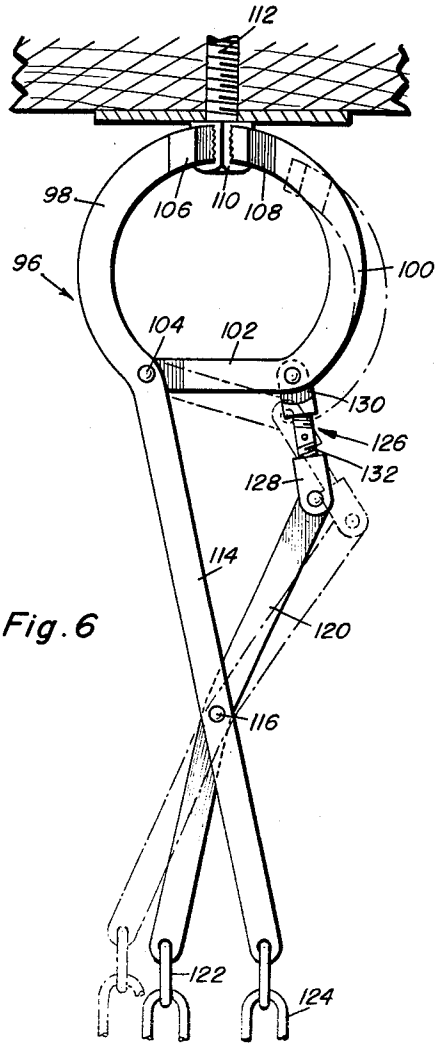


Fig. 6

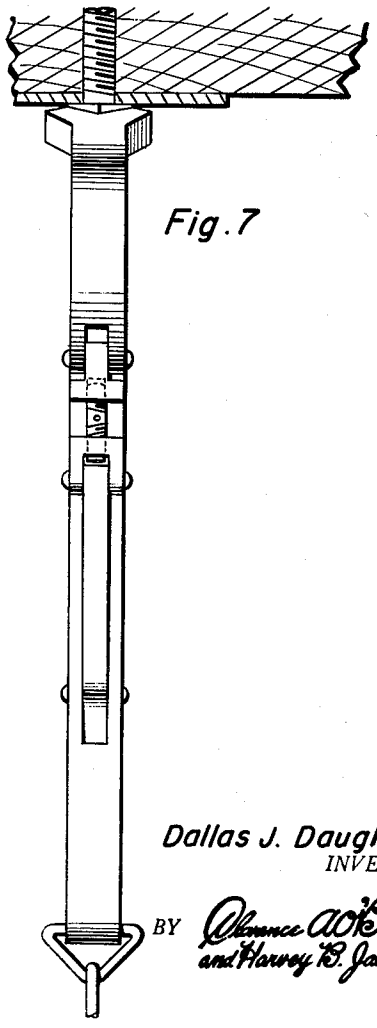


Fig. 7

Dallas J. Daugherty
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

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2,923,508

CLAMP-ON CABLE HANGER

Dallas J. Daugherty, Weston, W. Va.

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6 Claims. (Cl. 248—58)

This invention generally relates to a supporting device for cables, and more specifically provides a clamp-on type of cable hanger especially adapted for use in mines wherein it is desirable to support various cables in suspended relation from the roof bolts normally employed in mine construction.

An object of the present invention is to provide a cable hanger which is readily supported from a roof bolt wherein the weight of the supported cable tends to actuate the cable support, thereby securely positioning the same on its support.

Other important objects of the present invention will reside in the simplicity of construction of the cable support, its ease and dependability of use, adaptation for its specific purpose and its relatively inexpensive manufacturing cost.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view of the cable hanger of the present invention attached to a roof bolt in supporting position for holding a plurality of cables;

Figure 2 is a plan sectional view taken substantially upon a plane passing along section line 2—2 of Figure 1 illustrating the association of the gripping jaws and the bolt head;

Figure 3 is a plan sectional view taken substantially upon a plane passing along section line 3—3 of Figure 1 illustrating the specific construction of the jaw actuating mechanism;

Figure 4 is an enlarged view showing the construction of one of the V-shaped gripping jaws;

Figure 5 is a side elevational view similar to Figure 1 illustrating a modified form of the cable hanger of the present invention;

Figure 6 is a side elevational view similar to Figures 1 and 5 illustrating another modified form of cable hanger where the hanger is dependent from the supporting bolts; and

Figure 7 is an end elevational view of the construction of Figure 6 showing further details thereof.

Referring now to the drawings, it will be seen that the numeral **10** generally designates the cable hanger of the present invention as illustrated in Figures 1–4. The cable hanger includes a first jaw member **12** and a second jaw member **14**, each of which is arcuated, and a horizontal portion **16** of the second jaw member **14** is pivotally secured to the first jaw member **12** by a pivot pin **18**. The upper ends of the jaw members **12** and **14** terminate in inwardly facing V-shaped gripping jaws **20** and **22**, respectively. Each of the jaws **20** and **22** is provided with a V-shaped facing surface **24** having a plurality of horizontal serrations or grooves **26** therein for securely gripping the head **28** of a roof bolt **30** mounted in the roof **32** of a mine or in any other desired position. Also, a suitable washer **34** is provided between the head **28** and the threaded portion **30** of the bolt. The V-shaped surfaces **24** of the jaws **20** and **22** on the jaw members **12** and **14** securely grip the bolt head **28** for supporting the same in suspended relation thereon.

The lower end of the first jaw member **12** depends below the pivotal connecting pin **18** and terminates in a laterally extending portion **36**. Pivotally secured to the first jaw member **12** between the pivot pin **18** and the laterally extending portion **36** is an elongated support member **38** having an upturned outer end **40** and an inner end pivotally connected to a turnbuckle generally designated by the numeral **42** and including a first end portion **44** pivotally secured to the support member **40** by a pivot pin **46** and a second end member **48** pivotally secured to a projecting lug **50** on the second jaw **14** by a pivot pin **52**. A double and oppositely threaded member **54** interconnects the ends **44** and **48** of the turnbuckle **42** wherein adjustment of the threaded member **54** will move the end members **44** and **48** inwardly and outwardly. The support member **38** is pivoted to the portion of the jaw member **12** immediately above the lateral extension **36** by a pivot pin **56** wherein downward movement of the free end of the support member **38** will cause movement of the second jaw **14** towards the first jaw member **12**, thereby causing the jaws **20** and **22** to be urged together for secure clamping engagement with the bolt head **28** whereby a plurality of cables **58** mounted on the support member **38** will be supported. It will be noted that the laterally extending portion **36** of the jaw member **12** is constructed of spaced members for receiving the support members **38** therebetween. The weight of the cable **58** acts to increase the clamping engagement of the jaws **20** and **22** with the bolt head **28** wherein the more weight added onto the support **38** will increase the clamping action of the cable hanger **10**.

Referring now specifically to the modified form of the invention illustrated in Figure 5, it will be seen that the numeral **60** generally designates a modified form of the invention including a pair of generally vertically disposed jaw members **62** and **64** which are provided with inturned pointed upper ends **66** which are adapted to engage between a washer **68** and the roof or supporting surface **70** wherein the washer **68** is secured thereto by a suitable fastening bolt **72**. At the lower end of the first jaw member **62**, an elongated member **74** is provided which extends to both sides of the jaw member **62**. Adjacent the outer end of the elongated member **74** is pivotally attached the second jaw **64** by a pivot pin **76**. Pivotally secured to the jaw **62** above the member **74** is an elongated support member **78** having an upturned free end **80** and an angulated portion **82** adjacent the other end thereof and on the opposite side of the pivotal connection **84** to the jaw member **62**. The end of the angulated portion **82** is pivotally connected to one end **84** of a turnbuckle generally designated by the numeral **86** and the other end of the turnbuckle **86** is designated by the numeral **88** and pivotally connected to the lower end of the jaw **54** by pivot pin **90** in spaced relation to the pivot pin **76**. A central threaded member **92** is provided on the turnbuckle **86** together with a polygonal portion **94** adapted for receiving a suitable wrench for rotation thereof whereby the effective length of the support member **78** may be adjusted, thereby adjusting the clamping characteristics of the pointed ends **66** on the jaw members **62** and **64** whereby cables may be supported on the horizontal surface of the support members **78**.

Figures 6 and 7 generally illustrate another modified form of the present invention as generally designated by the numeral 96. The cable hanger 96 generally includes a first arcuate jaw member 98 and a second arcuate jaw member 100 wherein the second arcuate jaw member is provided with a horizontal portion 102 pivotally attached to the jaw member 98 by pivot pin 104. The upper ends of the jaw members 98 and 100 are provided with jaws 106 and 108 that receive and engage the headed portion 110 of the bolt 112 for clamping the cable hanger 98 thereto. Extending from the first jaw 98 in generally depending relation is an elongated offset member 114. Pivotally secured by pivot pin 116 adjacent the center of the member 114 is an elongated support arm 120. The elongated support arm 120 is provided with a flexible support member 122 at the lower end thereof and the lower end of the member 114 is also provided with a flexible support member 124 for supporting a suitable load. Extending between the upper end of the support member 120 and the juncture between the arcuate jaw member 100 and the horizontal portion 102 thereof is a turnbuckle generally designated by the numeral 126 which includes a first end portion 128 and a second end portion 130 that are movably interconnected by a double and oppositely threaded portion 132 which forms a turnbuckle whereby the adjustment of the turnbuckle 126 will permit the clamping characteristics of the jaw members 98 and 100 to be adjusted as desired or as may be necessary for supporting a desired load.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be restored to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A cable support comprising a first and second vertically disposed jaw member, an inwardly extending pointed end portion on the upper end of each jaw member, said first jaw member having a horizontally disposed elongated rigid member rigid with the lower end thereof, the free end of the elongated rigid member being pivotally attached of the second jaw intermediate the ends thereof, an elongated support member pivotally supported from said first jaw above the rigid member and extending laterally to each side thereof, one free end portion of the support member having an upturned end forming a generally horizontal support for a cable, the other end of the support member being angulated downwardly in crossed relation to the elongated rigid member, and a link pivotally interconnecting the lower end of the second jaw and the said other end of the support member below the rigid member whereby the weight of a cable on the horizontal support member will cause inward movement of the upper end of the second jaw member about the pivotal connection between the second jaw member the end of the elongated rigid member for urging the pointed end portions into clamping engagement with an overhead support.

2. The combination of claim 1 wherein said link is longitudinally adjustable for varying the initial position of the second jaw member in relation to the first jaw member and positioning the support member in generally horizontal position.

3. A cable support comprising a first jaw member of generally U-shaped construction and a second jaw member of generally U-shaped construction, each jaw member having gripping means on the free ends thereof, means pivotally interconnecting the jaws in spaced relation to the gripping means, an elongated member rigid with said first jaw, a rigid support member pivotally supported from said first jaw member and crossing said elongated member, means on said support rigid member for supporting a cable, the other end of said support member being articulately connected to the second jaw member in spaced relation to the pivot means interconnecting said jaw members whereby the weight of the supported cable will urge the gripping means inwardly for clamping engagement with a support.

4. The combination of claim 3 wherein a longitudinally adjustable turnbuckle articulately interconnects the support member and the second jaw member for varying the relative position of the gripping means.

5. A cable support comprising a first jaw having an elongated member rigid therewith and forming a continuation thereof, a second jaw pivotally connected to said first jaw, said jaws having inwardly facing free ends for selectively gripping a support, an elongated support member pivotally supported from said first jaw and extending in crossed relation to the elongated member rigid with the first jaw, means pivotally interconnecting one end of the support member and the second jaw for moving the jaws in relation to each in response to pivotal movement of the support member, and means on the other end of the support member adapted to supportingly engage a cable with the weight of the cable serving to urge the free ends of the jaws towards each other, said means interconnecting the one end of the support member and the second jaw including means for varying the effective length of the support member thereby adjusting the position of the support member and second jaw.

6. The structure as defined in claim 5 wherein each of said jaws is generally arcuated and provided with a V-shaped gripping jaw for engagement with a polygonal bolt head, said jaws having a plurality of horizontal serrations for gripping the bolt head.

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