

(No Model.)

F. B. McKENNEY.
ROPE CLAMP.

No. 464,942.

Patented Dec. 8, 1891.

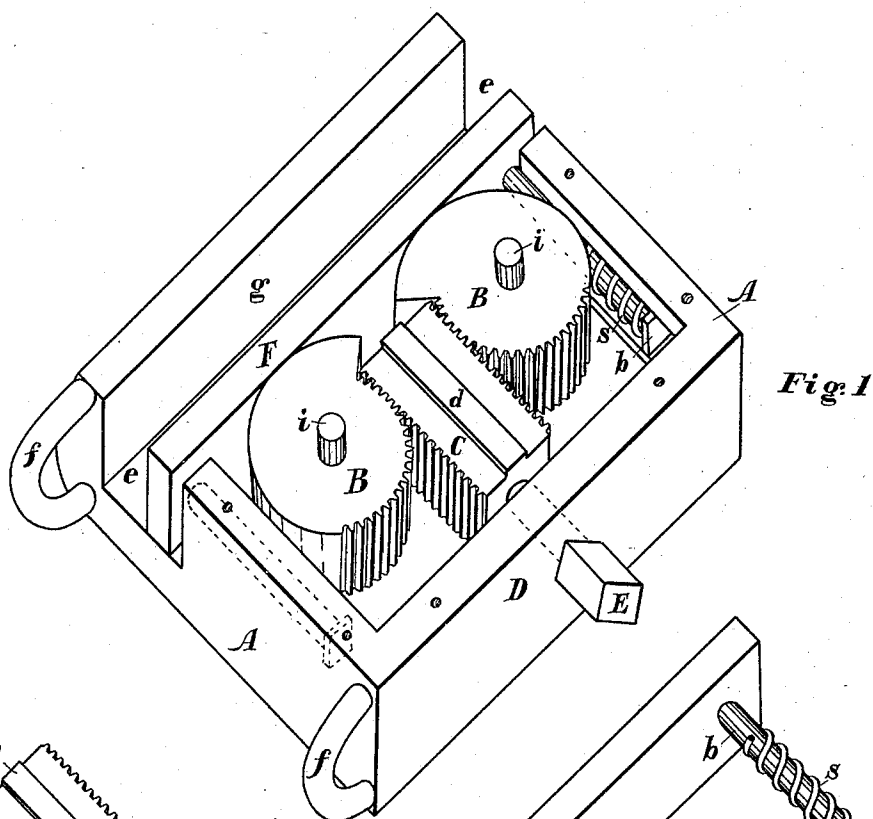


Fig. 1

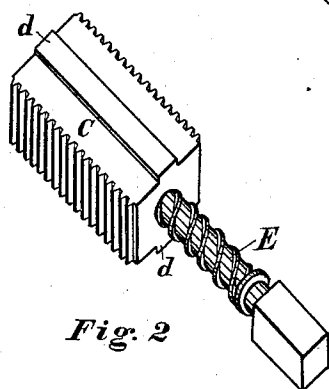


Fig. 2

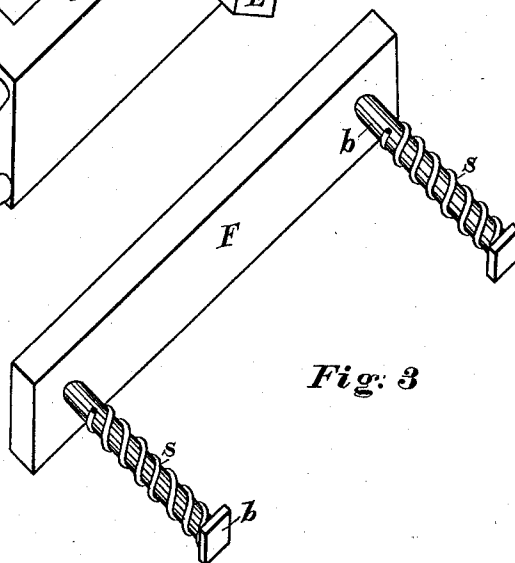


Fig. 3

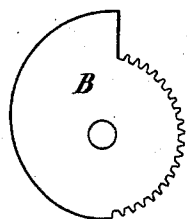


Fig. 4

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UNITED STATES PATENT OFFICE.

FRED B. MCKENNEY, OF LINCOLN, MAINE.

ROPE-CLAMP.

SPECIFICATION forming part of Letters Patent No. 464,942, dated December 8, 1891.

Application filed March 13, 1891. Serial No. 384,943. (No model.)

To all whom it may concern:

Be it known that I, FRED B. MCKENNEY, a citizen of the United States, residing at Lincoln, in the county of Penobscot and State of Maine, have invented a new and useful Rope-Clamp; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a new and useful clamp for various purposes, and is illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents an isometric view of my invention complete. Fig. 2 shows a similar view of the double rack with operating-screw forming part of my device. Fig. 3 is an isometric view of the sliding jaw of my invention, showing the guides and retaining-springs. Fig. 4 represents a plan of one of the partially-toothed cams used in my invention.

Similar letters of reference refer to correspondingly like parts throughout the different figures.

The object of my invention is to provide a simple, efficient, and quick-acting clamp having great power and adapted to be used for various purposes, such as temporary rope-splices, hauling-clamp, temporary guy-fasteners, &c.

My invention is constructed in the following manner:

Referring to the drawings, A represents the rectangular-shaped case of my device, which incloses the working mechanism. This case A is constructed with its stationary jaw *g*, forming a part thereof, being cast thereon with openings *e e* between the said jaw and the ends of the side projections of the case. Within the openings *e e* and extending longitudinally through the case A in a direction parallel with the stationary jaw *g* is the movable or sliding jaw F, constructed with right-angular projecting guides *b b* near each end thereof at such location as to be adapted to extend into grooves *l*, cut in the sides of the case A to receive them. These guides *b b* are preferably constructed of round material having a head on one end similar to a bolt and its opposite end rigidly fastened into the

sliding jaw F, as shown in Fig. 3 of the drawings. This construction will allow spiral springs *s s* to be placed on the guides *b b* for the purpose of retracting the sliding jaw F when released by the operating mechanism of my device. This operating mechanism, wherein great power is attained, consists of two partially-toothed cams B B, adapted to mesh into a double rack C, operated by a screw E, which latter is turned by a wrench or convenient handle independently or permanently attached, the head of the operating-screw projecting outside of the inclosing case A. The double rack C is located at the center of the case A and extends transversely across the same, sliding in grooves made to receive and guide its movement. This rack C is preferably formed and retained in position by means of ribs *d d*, cast upon opposite sides and extending its entire length, which ribs engage grooves cut in the bottom and top of the case A and prevent any lateral play. At the center of one end of the double rack C is a threaded hole, extending longitudinally through the rack, of sufficient size to receive the threaded portion of the operating-screw E, within which the latter turns in operating my device, as will hereinafter be explained.

The operating-screw E represents an ordinary machine-screw having a square head, which extends outside of the case A, and a threaded length equal to the length of the double rack C. A hole is drilled through the side of the case A at the proper place to allow the threaded portion to enter the threaded hole in the double rack C, and a groove or collar made in the operating-screw E just inside of the case, or other sufficient means provided to prevent the said screw from withdrawing when turned in either direction.

Located each side of and meshing into the double rack C are the partially-toothed cams B B, confined in the case A by their axles *i i*, which enter holes drilled to receive them. These cams B B are provided with gear-teeth for nearly one-half their circumferences, the toothed portions being of equal radiuses and teeth corresponding in cut with the teeth of the double rack C. The remaining portions of the circumferences of the cams B B are of increasing radiuses until points are reached opposite the commencement of the gear-teeth,

where a shoulder is formed, as shown in Figs. 1 and 4 of the drawings. The cams B mesh into opposite sides of the double rack C, when one end of the latter is in close contact with the side D of the case A, in such manner that the shoulders or longest radiuses of the said cams point toward each other and bear against the opposite end of the rack. In this position the sliding jaw F of my device will be open to its utmost and be retained against the peripheries of the cams B B by the tension of the spiral springs s s upon the jaw-guides b b. It can now be readily understood that by turning the operating-screw E by attaching a wrench or handle to its protruding head the revolving of the screw will force the double rack C forward, imparting motion to the cams B B, which, in revolving, by the means of their ever-increasing radiuses coming in contact with the sliding jaw F, force the latter forward until its greatest extension is reached, and thus reduce the space between the two jaws of my device. By reversing the motion of the operating-screw E the double rack C is drawn outward toward the side D of the case A and the cams B B turned in the opposite direction, when the tension-springs s s will tend to keep the sliding jaw F in contact with the diminishing cam-surface of the cams B, and thus the jaw will be opened.

My invention can be readily used for a temporary rope-splice by placing the pieces between the jaws g and F and turning the screw E until sufficiently clamped. When used for hoisting purposes, my clamp can be attached to any portion of the hoisting-rope without the necessity of knotting the latter, and should

the load at any time overcome the horses the latter can be immediately released and prevented from being drawn backward by turning the handle attached to the head of the operating-screw E, which will unfasten the said clamp from the hoisting-rope and prevent an accident from spoiling the horses.

To facilitate attaching to my invention when used for drafting purposes, loops f f may be cast upon or otherwise attached to one end of the clamp or case A, as shown in Fig. 1 of the drawings, to which chains can be hooked into to attach the horses.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. An improved clamp consisting of the case A, having jaw g cast thereon, the sliding jaw F, operated by partially-toothed cams B B, meshed into a double rack C, operated by the turning of the screw E, all substantially in the manner shown, and for the purpose set forth and described.

2. An improved clamp consisting of the combination of the case A, having stationary jaw g cast thereon, sliding jaw F, having guides and retaining-springs for the purpose described, partially-toothed cams B B, bearing against said sliding jaw and meshing into a double rack operated by a screw in such manner that turning the said screw tends to open and close the said jaws, all substantially in the manner shown, and for the purpose described.

FRED B. MCKENNEY.

Witnesses:

THOMAS MAHER,
JAMES H. KENNEDY.