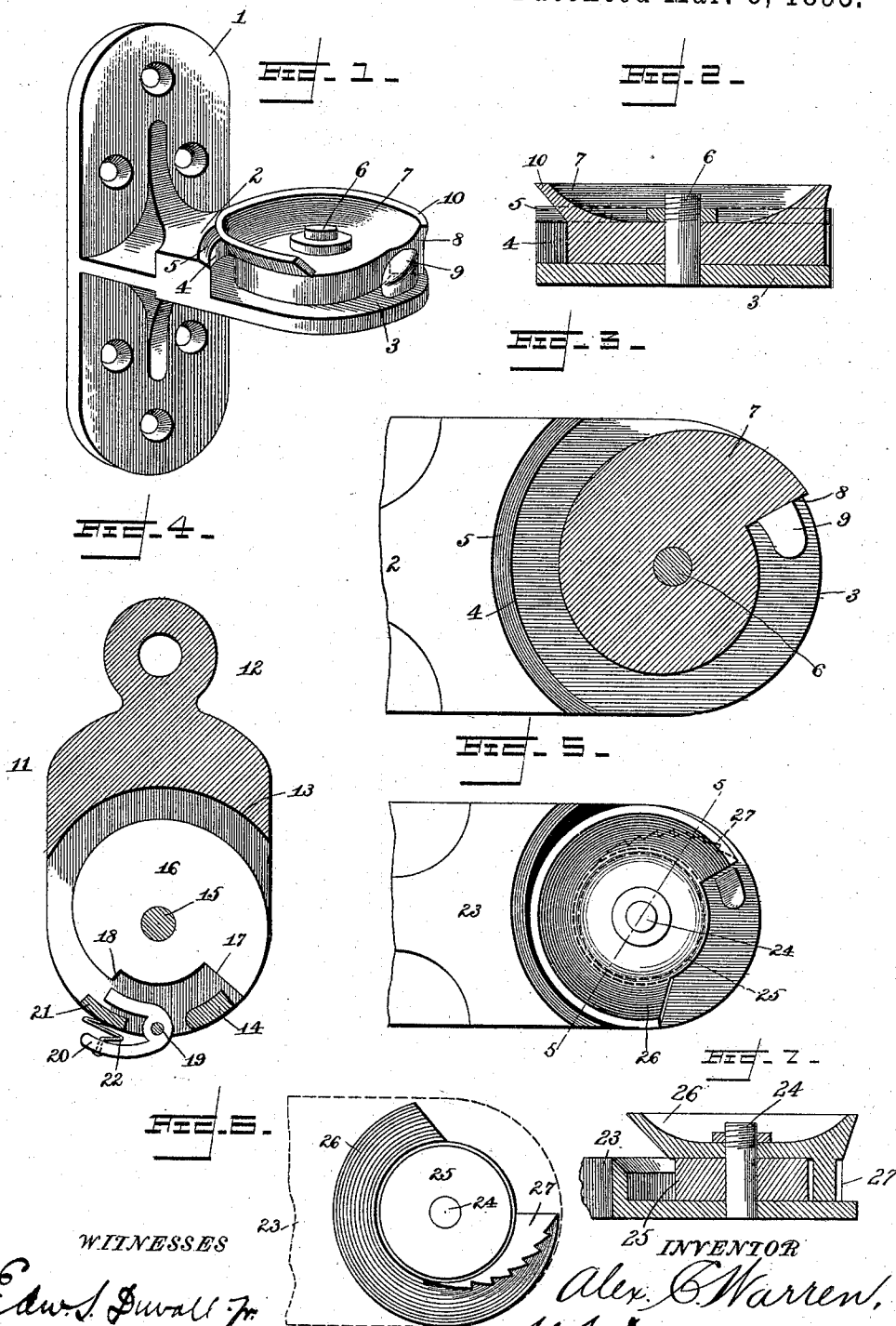


(No Model.)

A. C. WARREN.
ROPE FASTENER.

No. 535,150.

Patented Mar. 5, 1895.



WITNESSES
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ROPE-FASTENER.

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To all whom it may concern:

Be it known that I, ALEXANDER C. WARREN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rope-Fasteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in rope fasteners or clamps, the objects in view being to provide a simple device whereby ropes may be secured to any fixtures, such for instance as a post, wall, fence, &c.

Various other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a perspective view of my improved fastener. Fig. 2 is a vertical transverse sectional view of the same. Fig. 3 is a plan view, the cam being shown in horizontal section. Fig. 4 is a horizontal section of a modified construction of clamp. Fig. 5 is a top plan view of a second modification. Fig. 6 is a bottom plan view of the construction shown in Fig. 5. Fig. 7 is a vertical sectional view of the form shown in Fig. 5.

Like numerals of reference indicate like parts in all the figures of the drawings.

For the purpose of illustrating the utility and applicability of my invention, I have shown in Fig. 1 the same as adapted to serve as a clothes line fastener, although as will hereinafter appear the clamp is not limited to this use, but may be used for connecting ropes, holding hammock ropes and for various other purposes.

In the present instance 1 indicates a securing plate which is designed to be applied to the wall of a house, a post, or other support, and for the purpose of fastening has the usual screw-receiving openings formed in it. Cast integral with the plate 1 and extending horizontally and therefore at a right angle thereto, is the arm 2 whose outer portion is recessed at 3 producing in rear of the same a binding shoulder 4. This binding shoulder 4 is eccentrically arranged and disposed with relation

to a stud 6 in the recess 3, and has its upper edge flared or beveled as indicated at 5, the lower portion of the shoulder being perpendicular to the bottom of the recess 3.

Mounted for rotation on a stud 6 is the binding cam 7. The face of this cam is eccentric to the pivoted stud 6 and is adapted to lie parallel with the eccentric shoulder 4 when a rope is clamped in the fastener. The cam is provided with a radial shoulder 8 designed to contact with a stop-stud or lug 9 with which the bottom of the recess 3 is provided. The cam 7 has the lower portion of its periphery parallel vertically to the lower portion of the binding shoulder 4, and the upper half is provided with a flared flange 10 which extends about three-fourths the circumference of the cam and gradually approaches the vertical as it reaches the shoulder 8.

In use in order to insert a rope the cam is revolved until the shoulder 8 rests against the stop-stud or lug 9, after which the rope may be readily passed transversely into the space between the surfaces of the cam and shoulder 4, the bevel 5 of said shoulder facilitating such passage. One end of the rope, which I will call the fast end, it will be understood is preferably secured to a post or other support from which it is desired to stretch the rope, and the rope between its ends is placed between the cam and binding-shoulder as above stated. The loose end of the rope is then grasped by the hand of the operator and strained, the travel of the rope being such as to cause the cam to bear at its shoulder 8 against the stop-lug. After a sufficient strain, a slackening of the loose end of the rope will cause the cam to partially revolve in the opposite direction so that, as will be obvious, the rope will be caught between the eccentric surface of the cam and that of the shoulder throughout their length, and the greater the strain upon the rope the more tightly will the eccentric surfaces clamp the same. The dispositions of the two surfaces are such with relation to each other that the rope is clamped throughout the length of the eccentric shoulder whereby undue wear upon the rope is prevented and a secure hold is obtained. In order to loosen the rope it is simply necessary to draw upon the free end causing the cam

to reassume the first position, after which the rope may be readily slipped from over the cam.

It will be obvious that I have provided a very simple device, by means of which ropes may be securely fastened without knotting and without danger of injuring the same.

The principle of my invention may be embodied in various kinds of fasteners for various purposes, as for instance as shown in Fig. 4 wherein in lieu of the bracket composed of the securing plate 1 and arm 2, I have illustrated a sheave or pulley block 11 the same having at one end an eye 12 which may be engaged over a hook or connected with a rope as desired. Within the bifurcation of this block I produce the eccentric binding or cam shoulder 13, and I also provide the stop-stud or lug 14 at one side of the center of and within the opening in the block. Upon a pin 15 in said opening I seat for partial rotation the cam 16, the same having the radial stop-shoulder 17 at the longest portion of the cam and at the shortest portion or that nearest the center a locking shoulder 18. The stop-shoulder 17 is to abut against the lug 14, and the locking shoulder 18 is to lock the cam in substantially this position.

I pivot at 19 at the end of the block between the parts 14 and 21 a U-shaped catch 20 the terminals of the same loosely embracing and adapted to vibrate at opposite sides of a lug 21. The outer terminal of the catch forms a thumb piece and is normally pressed outward by means of a spring 22 interposed between its inner face and the lug 21.

This style of fastener is especially designed for use upon hammock ropes or other ropes wherein it is desirable to have an adjustment and yet the necessity of entire removal is very infrequent. The operation of the rope in connection with this form of fastener is the same as in the fastener shown in Fig. 1 with the exception that the rope must be passed through endwise. It is desirable however, that some means be provided for locking the cam in an open position during the adjustment of the rope and it is for this purpose that I provide the catch 20. By the presence of this catch the operator may by pressing the same inward against the tension of the spring lock the cam open during the adjustment of the rope, and by subsequently removing the pressure the strain upon the rope will rotate the cam in the direction of travel of the rope and permit the same to clamp the rope between its cam surface and that of the shoulder 13.

I have illustrated a second modification in Figs. 5 and 6 of the drawings wherein the

bracket 23 is the same as that shown in Fig. 1 and is provided with the pin 24. A roller or wheel 25 whose periphery is perpendicular to the surface of the bracket is arranged upon the pin and over the same a flanged cam 26 is located, the same like the wheel being loose upon the pin, and provided at one side with a depending binding flange 27 overlying the periphery of wheel 25. The rope is stretched around the wheel with no friction, but just before slackening the free end of the rope the same is held against the surface of the binding flange, causing the cam to revolve back when the rope is released, whereby the rope becomes pinched between the binding surface of the flange and the binding shoulder of the bracket.

By the term "support" as employed in the claims, I mean either a bracket as shown in Fig. 1 wherein the same is stationary, or it may be a pulley block as shown in Fig. 4, the term therefore being generic to these two constructions.

Having described my invention, what I claim is—

1. In a rope-fastener, the combination with a support having a curved binding-shoulder, of a cam pivoted eccentrically to the support and provided with a radial stop-shoulder at its longest portion, a stop-lug arranged upon the support in the path of the stop-shoulder, and means for locking the cam in an open position during the adjustment of the rope, substantially as described.

2. In a rope fastener, the combination with a support having a curved binding shoulder, of a cam pivoted eccentrically to the support and having a cut-away portion forming two shoulders, a lug on said support for engagement with one shoulder and a catch pivoted on the support for engagement with the other shoulder to lock the cam against rotation.

3. In a rope fastener, the combination with a support having a curved binding shoulder provided with a bevel at its upper side to facilitate the reception of the rope, of a cam pivoted eccentrically upon the support and with relation to the shoulder and provided with a radial stop shoulder at its longest portion and having the upper portion of its binding periphery shaped to conform to that of the binding shoulder, and a stop lug arranged upon the support in the path of the stop shoulder of the cam, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER C. WARREN.

Witnesses:

EUGENE C. RACE,
A. E. M. LOCHREN.