Jan. 11, 1927. 1,613,635

J. O. E. ZIMMERLUND

ROPE FASTENING DEVICE

Filed July 20, 1925

Fig. 1

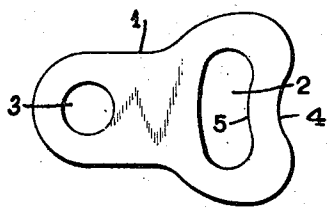


Fig. 2

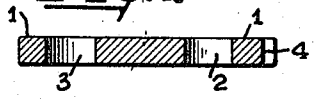


Fig. 7

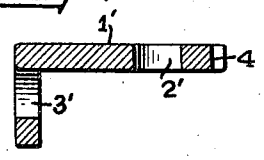


Fig. 3

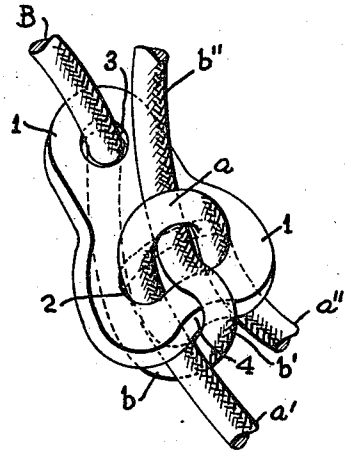


Fig. 4

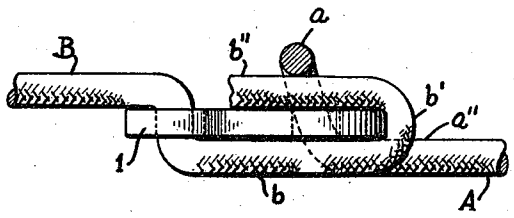


Fig. 5

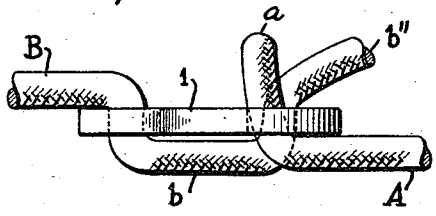
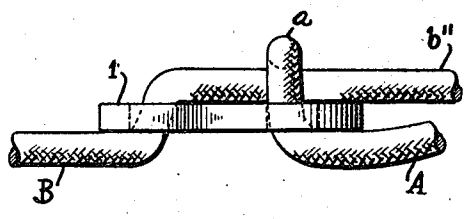


Fig. 6



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UNITED STATES PATENT OFFICE.

JOHN O. E. ZIMMERLUND, OF NEWBURGH, NEW YORK.

ROPE-FASTENING DEVICE.

Application filed July 20, 1925. Serial No. 44,674.

This invention is designed primarily for fastening together the two ends of a rope supported on two pulleys for hanging out "the wash," but is applicable to a wider range of service. The object of the invention is to provide means by which the ends of two ropes, or the two ends of the same rope, may be readily secured together, in practically straight-line end-to-end relation (as with clothes-lines), without danger of becoming disconnected except by intentional manipulation, and yet can readily be loosened when desired.

The invention consists of the novel arrangement of the two rope-ends upon a novel clamping-plate as hereinafter disclosed.

The invention will be best understood by reference to the accompanying drawings and the ensuing description which disclose, but merely by way of illustration, and not as a limitation, a preferred embodiment of the novel rope-fastening plate and several novel arrangements of the two rope-ends.

In these drawings:

Fig. 1 is a face view of the preferred form of the novel rope-fastening plate;

Fig. 2 is a longitudinal section of the same;

Fig. 3 is a perspective view, which illustrates one arrangement of the two ropes;

Fig. 4 is a side view of the subject-matter of Fig. 3;

Figs. 5 and 6 are perspective views of two other arrangements of the ropes; and

Fig. 7 is a longitudinal section of a modified form of the plate.

The new plate 1 is shown as having near one end an opening or hole 2 which is elongated transversely of the plate, so as to receive the fold of a looped rope; and said plate has near its other end a second opening or hole 3 large enough to receive the non-looped end of a second rope. Preferably the outer end or edge of the plate beyond said hole 2 is concave as at 4, and the adjacent side of said transverse opening is accordingly convexed as at 5, with a corresponding concave on its opposite side; and preferably the plate is flat, and may be of the general contour indicated by Fig. 1 to conform to the general shape and arrangement of the two openings.

According to Fig. 3, the fold a of the looped end of a rope A is inserted through said transversely-elongated opening 2, so as to protrude beyond what (for distinction) will be referred to as the "upper" face of the plate; and then the non-looped end of a second rope B is inserted, from the same upper side of the plate, down through the other hole 3, passes at b beneath the plate, and then returns at b' over concavity 4 and between the twin members a' and a'' of said loop, to rest along the upper face of the plate at b''. By pulling said twin members a'—a'', the fold a of rope A is tightened against said portion b'' of the other rope B. The harder the two ropes A and B are pulled, the more firmly will fold a clamp end-portion b'', and the more securely will ropes A and B be united. To release the fastening, it is merely necessary to pull the two rope-ends towards each other, thereby relieving the pressure of fold a upon said portion b''; and thereupon said portion b'' can be withdrawn, and the two ropes separated. Instead of separating them, however, a greater length of the rope B can be drawn down through hole 3, and then secured in place as before, thus shortening the effective length of the united ropes.

According to Fig. 5, the fold a of the loop of rope A is passed up through the elongated opening 2, and the non-looped end of rope B is passed down through hole 3, both as before; and then the end of rope B is passed up through said elongated hole 2 and also between the twin members a' and a''; after which said twin members are pulled down as before, and the fold a clamps the interposed portion of rope B firmly against the plate.

According to Fig. 6, the fold a of the looped end of rope A is passed up through the enlarged opening 2 as before; and the non-looped end of rope B is passed up through the other hole 3, but upwardly from beneath, and then along the upper face of the plate and through the loop; after which the twin members a' and a'' are pulled down as before, the fold a clamps the interposed end of rope B against the plate.

Fig. 7 illustrates a modified plate, in which one of the apertured ends of the plate 1′, is offset from the main body which is provided with the elongated hole 2′, the offset here being indicated as approximately a right angle. The various arrangements of the two ropes with this form of plate, will be obvious without explanation.

Referring to Fig. 4, it will be seen that,

when the two ropes A and B are tautened, the stress of the upper surface of the twin members a' and a'' (under the adjacent lower and outer edge of hole 3) tends to tilt the plate, raising that end and lowering the other end of the plate; and that the stress of the lower surface of rope B (upon the adjacent upper and outer edge of hole 3) tends to tilt the plate in the opposite direction. Consequently the sum of the stresses maintains the plate in substantial alignment with the rectilinear stress of the two ropes. In short, an important function of the second hole 3 is to afford a seat by which rope B engages that end of the plate and exerts leverage to maintain the desired pressure by which the two ropes are secured.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which as a matter of language might be said to fall therebetween, of course including the use of two distinct portions of the same rope when they are to be maintained secured together in practically straight-line end-to-end relation.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A rope-fastening for maintaining secured together the adjacent ends of two ropes occupying a practically straight-line end-to-end relation, comprising in combination a plate having near one end a transversely-enlarged hole and near its other end a seat, a rope-loop protruded through said hole with its two members lying side-by-side in said hole and extending thence in the same direction, and a non-looped rope engaging said seat and nearer its end clamped against said plate by the fold of said loop.

2. A rope-fastening for maintaining secured together the adjacent ends of two ropes occupying a practically straight-line end-to-end relation, comprising in combination a plate having near one end a transversely-enlarged hole and near its other end a second hole, a rope-loop protruded through said enlarged hole with its two members lying side-by-side in said hole and extending thence in the same direction, and a non-looped rope protruded from the opposite direction through said second hole with its outer portion extending through said protruded loop and clamped against said plate by the fold of said loop.

3. The combination of a plate having a transversely-enlarged opening and also a hole, a loop of a rope passed through said enlarged opening with its fold protruding beyond one face of said plate and with the two members of the loop lying side-by-side in said opening, and a second rope passed from the opposite face of said plate through the second hole with its end clamped against the first-named face of said plate by the fold of said loop, the two ropes being under directly-opposite tensions.

In testimony whereof I affix my signature.

JOHN O. E. ZIMMERLUND.