No. 835,957. PATENTED NOV. 13, 1906.

S. J. LAMORA.

LADDER ROUND.

APPLICATION FILED MAR. 7, 1906.

Fig. 1

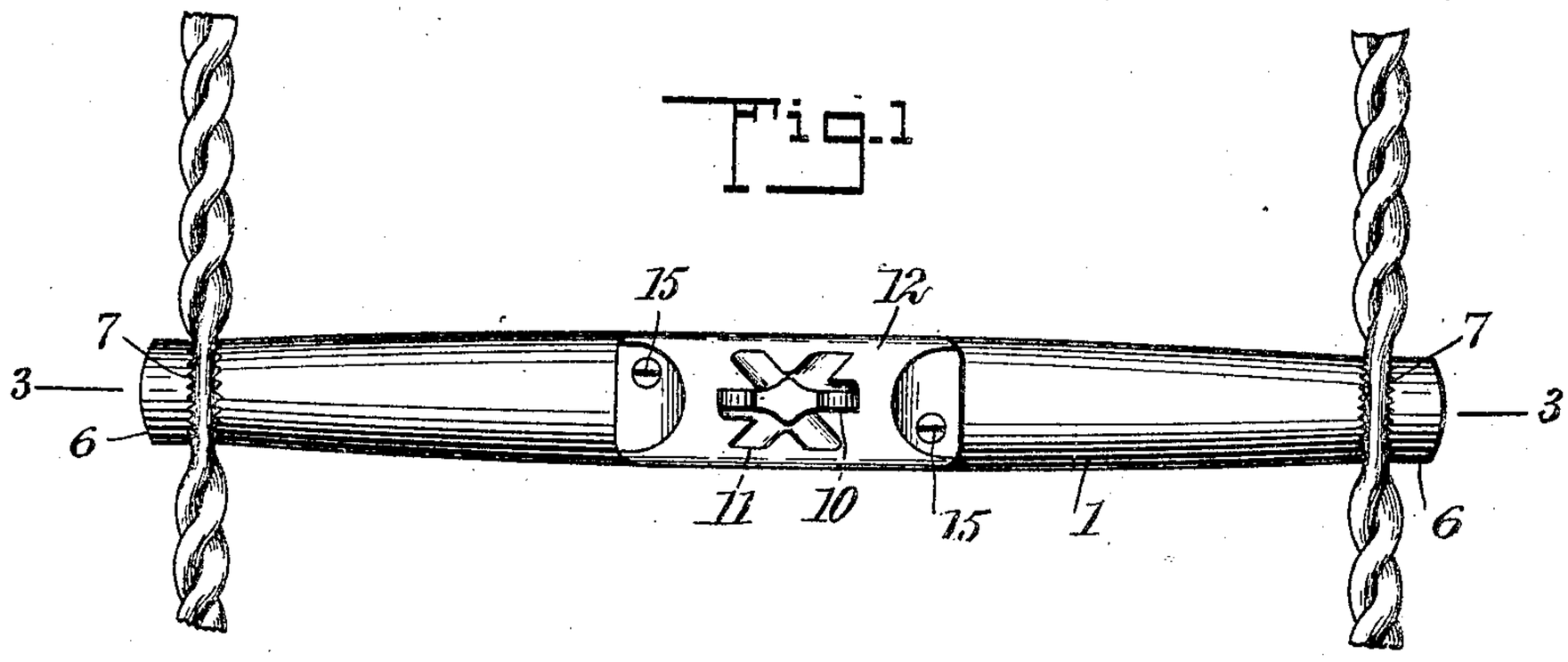


Fig. 2

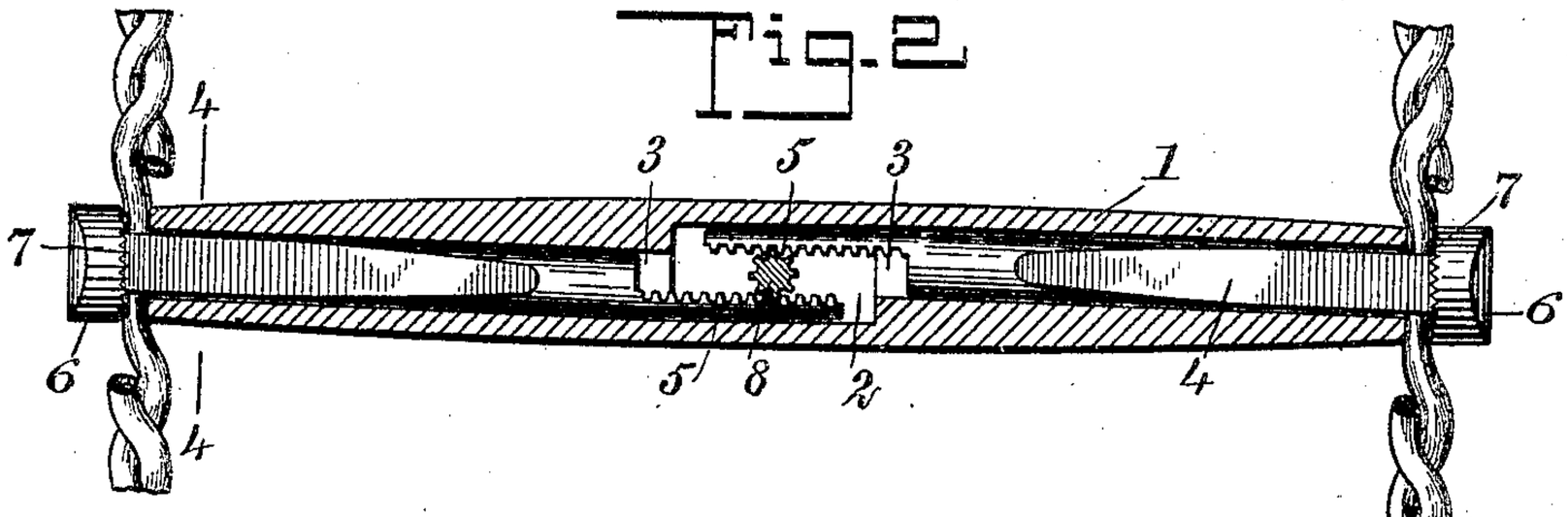


Fig. 3

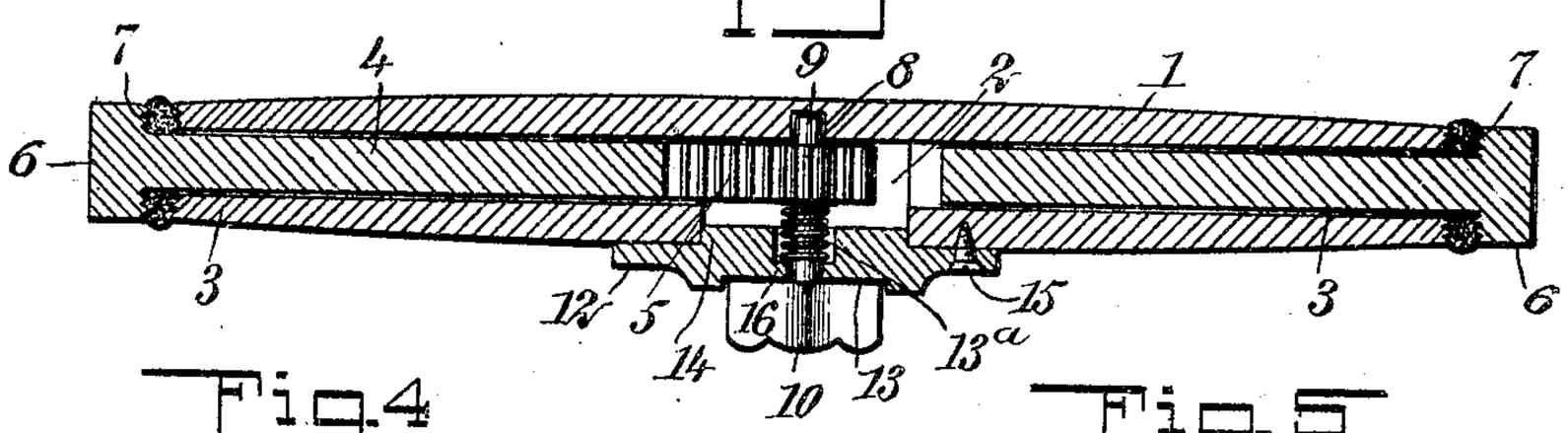


Fig. 4

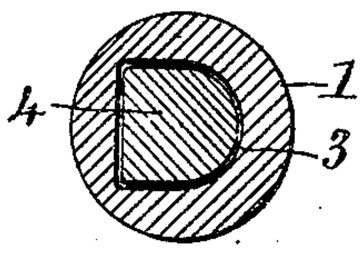
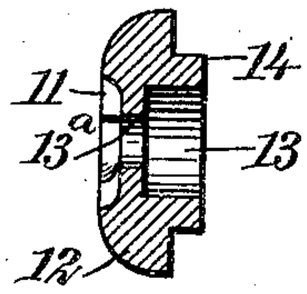


Fig. 5



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LADDER-ROUND.

No. 835,957. Specification of Letters Patent. Patented Nov. 13, 1906.

Application filed March 7, 1906. Serial No. 304,691.

To all whom it may concern:

Be it known that I, SELIPHE JOSEPH LAMORA, a citizen of the United States, and a resident of Danville, in the county of Caledonia and State of Vermont, have invented a new and Improved Ladder-Round, of which the following is a full, clear, and exact description.

This invention is an improvement in ladder-rounds, and has for an object, among others, to provide an improved ladder-round capable of being quickly attached and detached to or from wire or hemp ropes, bars, chains, or the like whereby a ladder may be built up in a short time and disassembled when desired to pack it in small compass. This construction is especially desirable as a life-saving means for the upper floors of buildings when it is necessary to construct at short notice a ladder for reaching the ground, as in case of fire.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the round embodying my invention attached to a twisted wire, one strand of the wire passing at each side of the round's jaw. Fig. 2 is a longitudinal section of the same, parts being in side elevation. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a section on the line 4 4 of Fig. 2; and Fig. 5 is a sectional view, on an enlarged scale, of the closure-plate covering a chamber in the center of the round.

The numeral 1 indicates the body portion of the ladder-round, having a rectangular chamber 2 at its center, from which lead passages 3 3, extending through the ends of the round, said passages being eccentric to the body portion 1 and out of alinement with each other. The passages 3 3 are also of peculiar cross-section, being round adjacent to the chamber 2 and gradually taking an enlarged U shape, as best seen in Fig. 4. The passages 3 3 contain rods 4 4, slidably mounted therein and conforming in shape thereto, which construction affords bearings for the rods and at the same time prevents any rotation of the rods relatively to the round-body. The rods 4 4 have at their extreme inner ends racks 5 5, projecting into the chamber 2 and at their extreme outer ends enlarged heads 6 6, having serrated clamping-jaws 7 on their inner faces coöperating with corresponding jaws at the ends of the body 1, between which jaws the wire is clamped when the rods are drawn toward each other by the racks. It is of importance that the rods 4 4 be mounted eccentrically to the body 1, as shown in Fig. 2, for the reason that it allows space for a pinion between the racks without weakening the racks by making them thinner.

For operating the racks a pinion 8, mounted on a shaft 9 and journaled in one side of the chamber 2, intermeshes, as shown in Fig. 2, with both racks. Attached to the outer end of the shaft 9 is a button 10, having wings engaging ratchet depressions 11 at the outside of a closure-plate 12. The plate 12 is constructed, as best shown in Figs. 3 and 5, with a central recess 13 and a contracted recess 13^a, forming a bearing for the outer end of the shaft 9, and a raised portion 14, fitting in the chamber 2 for positioning the plate and assisting screws 15 for holding it rigidly to the body 1. Between the pinion 8 and the bottom of the recess 13 is a spring 16, carried on the shaft 9, which acts to force the button 10 into the ratchet depressions 11, thereby securely locking the racks 5 and pinion 8 in fixed relation.

The operation of the device is as follows: To clamp a rope between the serrated jaws 7, the button 10 is pulled outwardly from engagement with the ratchet-recesses and turned to the right, which acts to separate the jaws carried on the heads 6 from those of the body 1. The strands of the rope can then be separated and slipped over the heads 6 between the jaws, after which the button 10 is turned to the left, drawing the rods 4 together and jamming the rope between the serrations. The separation of the jaws cannot thereafter take place until the button 10 is disengaged from the ratchet-recesses 11 and the pinion 8 is rotated. As shown, the button 10 and closure-plate 12 are arranged to come at one side of the round, where they are less likely to interfere with the feet or hands of the climber.

While the construction herein described and illustrated in the accompanying drawings shows one form of my device, it is obvious that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a ladder-round, the combination of a body portion having a chamber at its center, passages leading from the chamber to the ends of the body portion, rods slidable in the passages and carrying racks at their inner ends projecting into the chamber, jaws at the outer ends of the rods, coöperating with jaws on the body portion, a pinion engaging the racks and carried on a shaft journaled at one side in the chamber and at its opposite side in a closure-plate, a button fixed to the outer end of the shaft, adapted to operate the pinion, and a ratchet-face on the closure-plate for locking the button and pinion in fixed position.

2. In a ladder-round, a body portion, rods slidably mounted therein, racks at the inner ends of the rods, a pinion engaging the racks, clamping means between the outer ends of the rods and body portion, and means for operating the pinion.

3. In a ladder-round, a body portion, rods slidably mounted therein, jaws between the outer ends of the rods and body portion, and means for drawing the rods inwardly to clamp a rope between the jaws.

4. In a ladder-round, a body portion, rods slidably mounted therein, having clamping means at their outer ends, said rods being eccentric to the body portion, and means for engaging the ends of the rods and drawing them toward each other.

5. In a ladder-round, a body portion, rods slidably mounted therein, means to prevent the rotation of the rods relatively to the body portion, jaws carried at the outer ends of the rods and body portion, and means for forcing the jaws together.

6. In a ladder-round, a body portion, rods having jaws coöperating with jaws at the ends of the body portion, means carried at the inner ends of the rods for operating the jaws, and means for locking the jaws in fixed relation.

7. In a ladder-round, a body portion provided with a chamber at its center, rods slidably mounted in the body portion and having jaws coöperating with jaws on the body portion, racks extending from the rods into the chamber, a pinion engaging the racks, a closure-plate at one side of the chamber, ratchet depressions in the closure-plate, a button for operating the pinion, and a spring between the pinion and closure-plate for forcing the button into the depressions.

8. In a ladder-round, a body portion, rods slidably mounted therein, clamping means at the outer ends of the rods, coöperating with the ends of the body portion, said rods being mounted eccentrically to the body portion, racks at the inner ends of the rods, and a pinion for operating the racks.

9. In a ladder-round, a body portion, rods slidably mounted therein, clamping means at the outer ends of the rods, coöperating with the ends of the body portion, said rods being mounted eccentrically to the body portion, racks at the inner ends of the rods, a pinion for operating the racks, and means for locking the pinion and racks in fixed relation.

10. A ladder-round having clamping-jaws at its ends, a rack-and-pinion mechanism for operating the jaws, and means for locking the jaws in fixed relation.

11. A ladder-round having clamping-jaws at its ends, means for operating the jaws, a closure-plate on the round, and a button engaging ratchet depressions in the closure-plate for locking the jaws in fixed relation.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SELIPHE JOSEPH LAMORA.

Witnesses:
HENRY J. WILLIAMS,
NATHAN BENLAYER.