(No Model.)

H. FRENCH.

ROPE LADDER.

No. 366,825. Patented July 19, 1887.

Fig. 1.

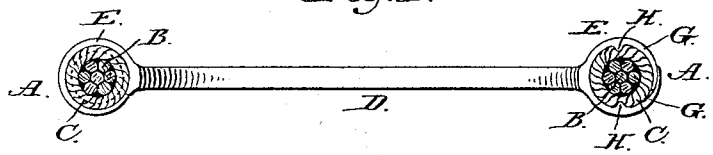


Fig. 2.

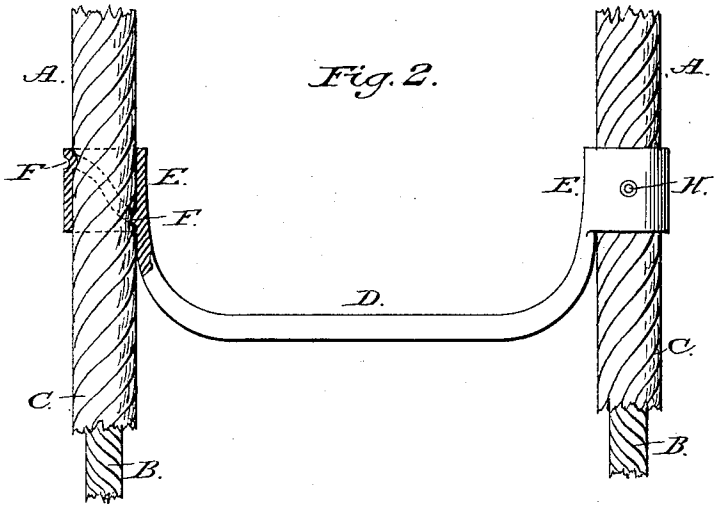
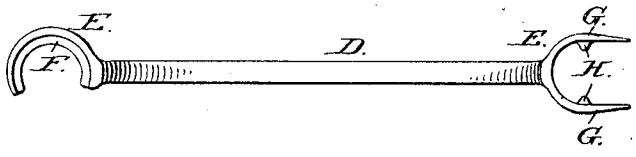


Fig. 3.



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ROPE LADDER.

SPECIFICATION forming part of Letters Patent No. 366,825, dated July 19, 1887.

Application filed April 9, 1887. Serial No. 234,229. (No model.)

To all whom it may concern:

Be it known that I, HARLOW FRENCH, of the city, county, and State of New York, have invented new and useful Improvements in Rope Ladders, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved rope ladder specially adapted for fire-escapes and other purposes.

The invention consists of peculiarly-constructed rungs secured to ropes composed of a metallic cable covered with fibrous material.

The invention also consists of various parts and details and combinations of the same, as will be described hereinafter, and then pointed out in the claims.

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

Figure 1 is a plan view of my improved ladder, showing the ropes in section. Fig. 2 is a front elevation, partly in section, of part of a ladder. Fig. 3 is a plan view of a rung before being attached to the ropes.

The ropes A A of the ladder consist each of a metallic cable, B, covered with strands C of fibrous material, thus making the ropes A flexible and very strong and durable, so that in case the fibrous strands C are burned or singed the wire cables B will still support considerable weight.

The rungs D of the ladder are each made of a single piece of metal of U shape, having at each end an ear, E, adapted to inclose the rope A.

The ears E may be formed like a split ring, as shown to the left of the rung D in Figs. 2 and 3, and provided on their inner surface with a spiral projection, F, which embeds itself in the fibrous strands C when the split ring E is closed, as shown in Fig. 2, thus preventing the ear from slipping on the rope. The ears E may also be formed in the shape of a fork as shown to the right of the rung D in Figs. 2 and 3, each prong G of the fork being provided with projections or lugs H, which embed themselves in the fibrous strands C when the prongs G are closed around the rope A, as shown in Fig. 1.

The projection F and the projections or lugs H are preferably stamped or cast into the ears E. The projection F may be formed on the prongs G, instead of the projection H, and the latter may be formed on the rung instead of the spiral projection. The ears E before being closed have the appearance as shown in Fig. 3—that is, the split ring is open to admit the rope A, after which the ring is closed by pressing the ends of the ring together. The prongs G stand parallel to each other to admit the rope A, after which the prongs are pressed toward each other until their outer ends overlap, as shown in Fig. 1. The U-shape form of the rung equalizes the strain on both ropes A when weight is applied to the rung. The U shape of the rung also prevents slipping of the foot of the person ascending or descending the ladder, and permits a firm grip with the hand.

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

1. In a rope ladder, the combination, with the ropes, of a rung made of one piece of metal of U shape, and provided at its ends with ears secured to the ropes, substantially as described.

2. In a rope ladder, the combination, with the ropes, of a rung made of one piece of metal of U shape, and provided at its ends with ears forming open rings clamped upon the ropes, substantially as described.

3. In a rope ladder, a rung made of one piece of metal of U shape, and provided at its ends with ears, each forming an open ring, having at its inner surface penetrating projections, substantially as described.

4. In a rope ladder, a rung made of one piece of metal of U shape, and provided at its ends with ears having at their inner surfaces spiral projections, substantially as described.

HARLOW FRENCH.

Witnesses:
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