

(No Model.)

W. A. FRIES.

FIRE ESCAPE.

No. 306,235.

Patented Oct. 7, 1884.

Fig. 1.

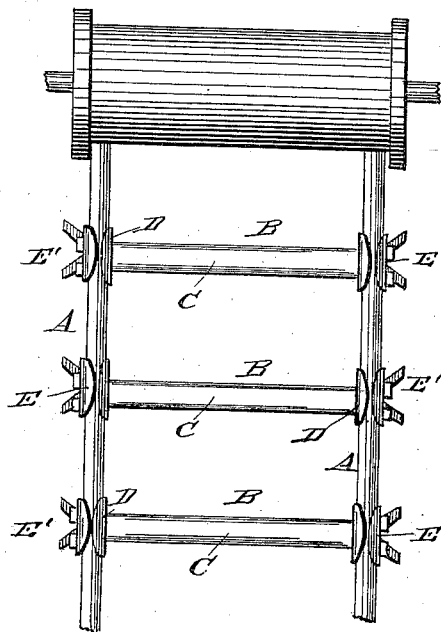


Fig. 2.

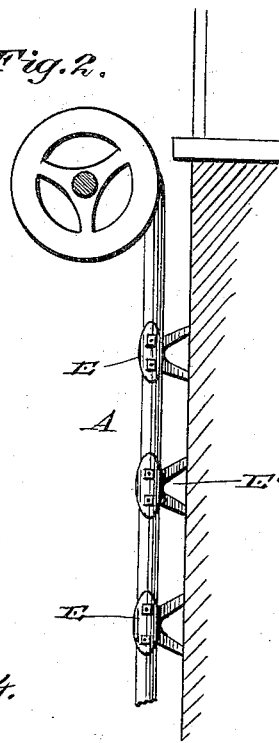


Fig. 4.



Fig. 3.

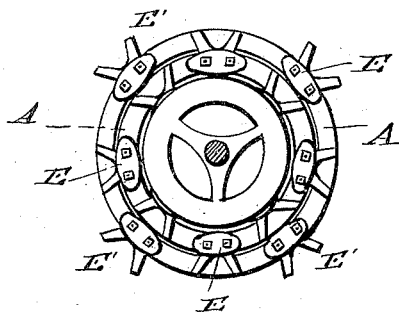


Fig. 5.

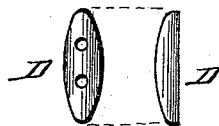


Fig. 6.

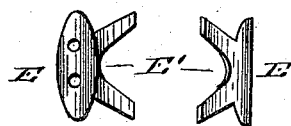
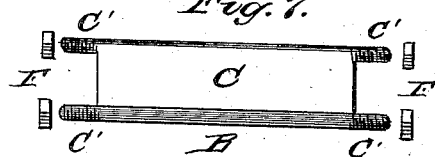


Fig. 7.



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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 306,235, dated October 7, 1884.

Application filed January 31, 1883. Renewed March 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ARMSTRONG FRIES, a citizen of the United States, now residing at Clifton Heights, Delaware county, in the State of Pennsylvania, and lately of Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof to enable others skilled in the art to make and use the said invention.

The object of this invention is to produce a fire-escape of such flexibility as to be compactly coiled and readily uncoiled when required for use, and also to be indestructible by fire, and of less heat-conducting properties than metal, so that even in the event of the apparatus becoming heated it will not so quickly burn the hands and feet of those descending or climbing upon it.

To effect these ends, the nature of my invention may be stated to consist of a ladder formed of asbestos, with stiffening-bars in the rounds, and with a peculiar form of clamp for securely uniting the rounds with the side ropes, and for projecting the rounds of the ladder away from walls, so as to afford an easy hand and foot hold upon the rounds.

I will now proceed to describe particularly the mode of making this invention, referring in so doing to the drawings annexed and the letters of reference marked thereon.

Figure 1 shows a front elevation of the fire-escape as erected; Fig. 2, a side elevation as erected; Fig. 3, a side elevation as coiled; Fig. 4, a transverse section of one of the rounds, and Figs. 5, 6, and 7 views in detail of the clamps and screws for uniting the rounds and sides of the ladder.

The same letters of reference apply to the same parts in the several figures.

A represents the sides of the ladder, formed of asbestos rope preferably braided in concentric layers, and it may have a flexible wire core or cord to contribute to its strength; but this feature is not absolutely essential.

B are the rounds, made with a central stiffening-bar, C, covered with asbestos filaments wound, or preferably braided, over it. Upon each end of the stiffening-bars C are formed tenons C', over which are placed washers D,

concave on the side toward the ropes A, and adapted, by projections formed in such concave surfaces to hold on the ropes A without sliding when the washers E are applied on the outer sides of the ropes A, and secured thereon by nuts F, or by riveting the ends of the tenons C' upon the washers E. The washers E are grooved in the sides toward the ropes A, and in conjunction with the washers D form clamps, binding the ropes A securely within them. The washers E are provided with projections or legs E', extending backward and spreading outwardly, which perform two functions. They not only support and steady the ladder at a little distance from the wall, so as to permit of a space for the hands and feet of those climbing upon the ladder, but also to act as guides in coiling the ladder, the laterally-spreading form of the legs E' of the inner coils affording space for the close winding of the outer coils, and when the ladder is erected the spreading form of the legs E' renders them less likely to come in contact with the hands of those climbing. The inner washers, D, are preferably covered with asbestos, so as not to permit of contact with the persons climbing upon the ladder, and the tenons C' are passed through the ropes A by opening interstices through, between the strands or filaments of which the ropes are formed, and not by cutting or severing the strands.

The advantages of this invention are that it can, from the slow conduction of its material, be safely used when heated to a degree rendering metallic ladders impracticable. It is indestructible by fire; it can be coiled compactly, and evenly coiled without requiring any side guide to the reel; and from its lightness is readily transported and erected; and, further, being braided, it does not twist as ordinary ropes do. In use it is simply suspended from a building with the legs E' resting against the wall, and is climbed as an ordinary rope ladder is.

Having described my invention and the mode of making and using the same, what I claim is—

1. A fire-escape ladder consisting of side ropes of asbestos combined with rounds of metal covered with asbestos, secured together

substantially in the manner set forth and described.

2. In a flexible fire-escape ladder, the combination of the washers E, having legs E', adapted to rest on or against the wall and assist in coiling, in combination with the round-stiffenings C, provided with tenons C', and the washers D, all arranged to operate substantially as set forth.

10 3. In a flexible fire-escape ladder, the side

ropes, A, formed of asbestos filaments braided together, in combination with stiffened rounds B, secured by tenons C', and washers D and E, arranged substantially as set forth and described.

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