(No Model.)

T. W. KEITHLEY.

FLEXIBLE LADDER.

No. 575,246. Patented Jan. 12, 1897.

Fig. 1.

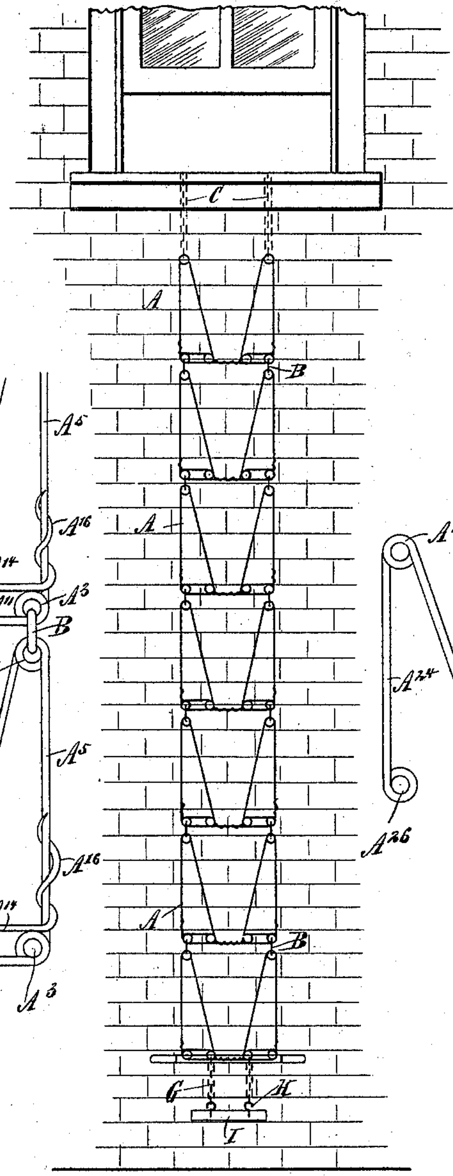


Fig. 2.

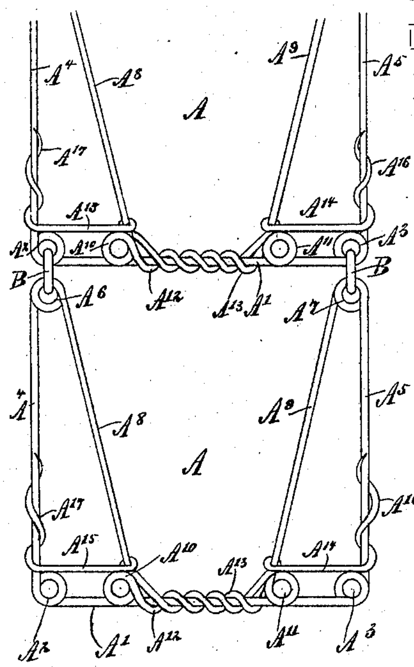


Fig. 3.

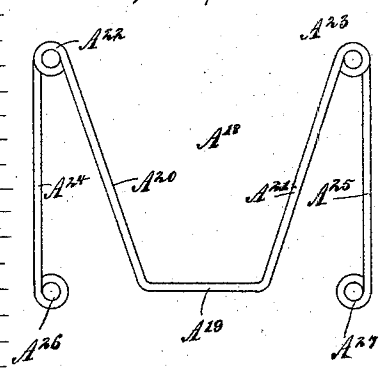
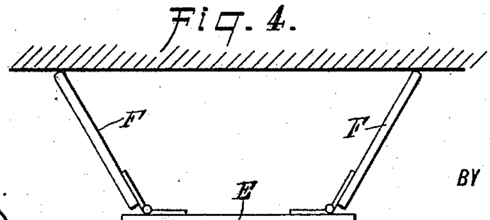


Fig. 4.



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FLEXIBLE LADDER.

SPECIFICATION forming part of Letters Patent No. 575,246, dated January 12, 1897.

Application filed May 5, 1896. Serial No. 590,311. (No model.)

To all whom it may concern:

Be it known that I, THEODORE W. KEITHLEY, of Montevideo, in the county of Chippewa and State of Minnesota, have invented a new and Improved Flexible Ladder, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved flexible ladder which is simple and durable in construction and especially designed for use as a fire-escape in hotels and other buildings, to permit of conveniently folding it up and storing it under a window to be ready for immediate use.

The invention consists principally of a ladder made in sections, flexibly connected one with the other, each section being formed of a metal wire bent to form two sides, a rung, and braces extending from the sides to the rung.

The invention also consists of certain parts and details and combinations of the same, as will be fully 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 characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement as applied. Fig. 2 is an enlarged side elevation of one of the sections. Fig. 3 is a like view of a modified form of section, and Fig. 4 is a sectional plan view of the lowermost section and the device for holding the ladder from the wall.

The improved ladder, as illustrated in Fig. 1, is provided with a number of sections or links A, flexibly connected with each other by means of rings or links B, each section being preferably formed of a metal rod or a wire bent to form the rung A′, terminating at its ends in the eyes A^2 and A^3, from which extend upwardly the parallel sides A^4 and A^5, respectively, terminating at their upper ends in eyes A^6 and A^7, respectively, from which extend downwardly and inwardly the braces A^8 and A^9, terminating at their lower ends at the rung A′ and preferably in eyes A^{10} and A^{11}, located suitable distances apart to leave sufficient room on the rung A′ for the foot of the party climbing up or down the ladder. The rod or wire, after forming the eyes A^{10} and A^{11}, is twisted around that part of the rung A′ extending between the eyes A^{10} and A^{11} to reinforce the foot portion of the rung. The twisted parts A^{12} and A^{13} are twisted around the braces A^9 and A^8, respectively, and then extend horizontally above the eyes to the sides A^5 and A^4, respectively, the ends of the wire or rod being wound a few times around the said sides at A^{16} and A^{17}.

Now it will be seen that by the arrangement described a very strong section is formed, on which the rung A′ is strongly braced and reinforced, as above described. The links B for connecting adjacent sections engage the opposite eyes A^2 A^6 and A^3 A^7, respectively, as plainly indicated in Fig. 1.

The section A^{18} (shown in Fig. 3) is formed of a single piece of wire bent into the rung A^{19}, from the ends of which extend upwardly and outwardly the braces A^{20} and A^{21}, formed into eyes A^{22} and A^{23}, the eyes being connected with the sides A^{24} and A^{25}, terminating at their lower ends in the eyes A^{26} and A^{27}. The links B connect with the eyes A^{22}, A^{23}, A^{26}, and A^{27}.

The uppermost section of the ladder is connected at its eyes A^6 and A^7 with chains C, preferably secured to the window-sill at the inside of the room, and the lowermost section is provided with a horizontal bar E, on the rear face of which are hinged arms F, adapted to engage with their free ends the face of the wall, so as to hold the ladder a suitable distance from the wall.

From the eyes A^{10} and A^{11} of the lowermost section extend chains G, adapted to hook onto hooks H, secured to a plate I, affixed to the wall. Thus by this arrangement the ladder is held in a stretched position on the wall from the window to within a short distance of the ground.

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

1. A flexible ladder comprising sections flexibly connected with each other, each section being formed of a rod or wire bent to form a rung, two sides and braces extending from the sides to the rung, substantially as described.

2. A flexible ladder, provided with a series

of sections flexibly connected with each other, each section being formed of a single piece of wire formed into a rung, terminating at its ends in eyes from which extend sides terminating in eyes, from which eyes lead inwardly braces connected with the rung, the braces terminating in twists engaging part of the rung at the middle thereof, substantially as described.

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Witnesses:
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