W. DANKE.

FIRE ESCAPE.

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1,203,313.

Patented Oct. 31, 1916.

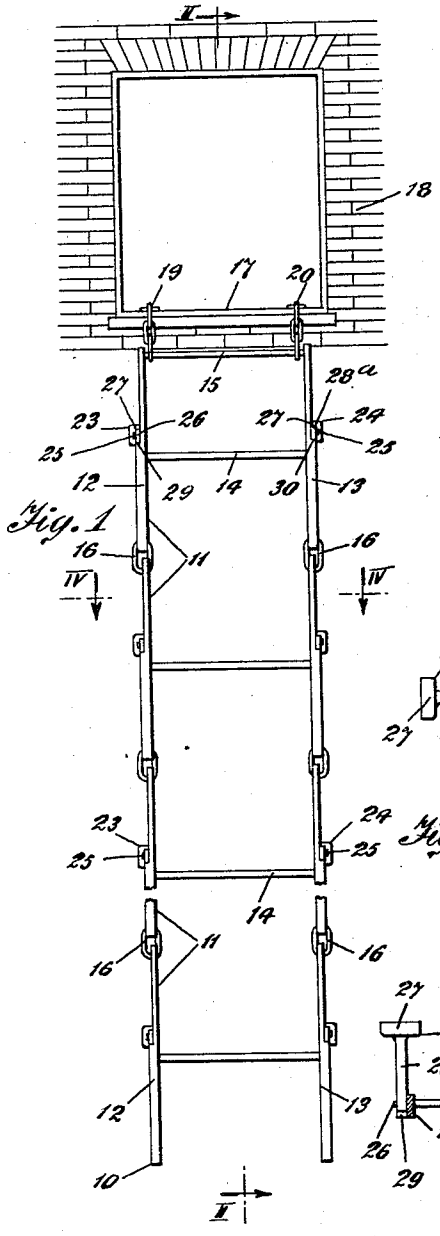


Fig. 1

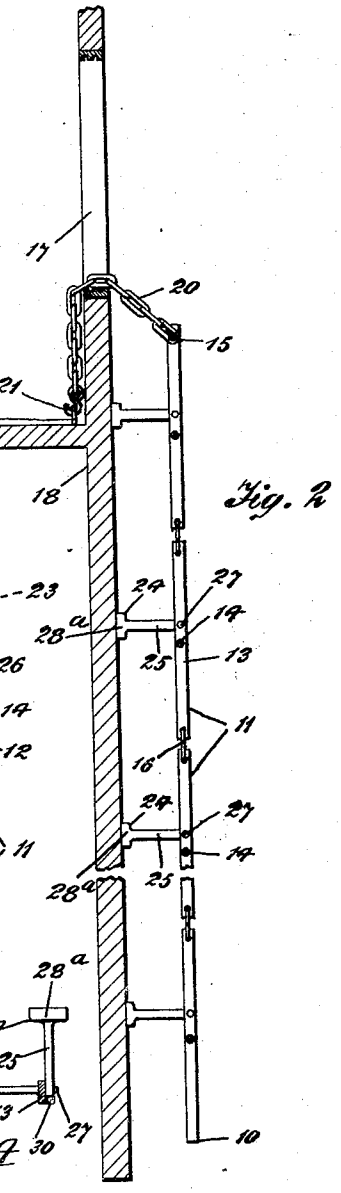


Fig. 2

Fig. 3

Fig. 4

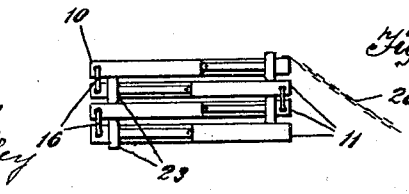


Fig. 5

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FIRE-ESCAPE.

1,203,313. Specification of Letters Patent. Patented Oct. 31, 1916.

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To all whom it may concern:

Be it known that I, WALTER DANKE, a subject of the Czar of Russia, and a resident of New York, county and State of New York, have invented a certain new and useful Improvement in Fire-Escapes, of which the following is a full, clear, and exact specification.

This invention relates to a class of devices adapted to be used in emergency in buildings.

My invention has for its object primarily to provide a fire escape designed to be employed to allow persons to escape from a building and like structure when threatened with fire and other danger, and which is of a foldable form so as to occupy a very limited space for being kept in a room when not in use as well as for being quickly disposed exteriorly of the building for use in emergency.

The invention consists essentially of a foldable ladder composed of a plurality of corresponding rung sections connected together so as to be in overlapping arrangement when folded as well as for being suspended one under the other on the wall of a building, and each section is provided with automatically adjustable means for removably retaining the ladder in spaced relation to the wall of the building as well as to prevent inward sagging of the ladder under the weight of a person.

A further object of the invention is to provide a fire escape of a simple and efficient construction which is susceptible of being made light in weight as well as being very durable.

A practical embodiment of the invention is represented in the accompanying drawing forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views, the said invention being more fully described hereinafter, and then pointed out in the claim at the end of the description.

In the drawing, Figure 1 is a fragmentary view, showing the window of a building with one form of fire escape embodying my invention when suspended therefrom for use, part of the fire escape being broken away. Fig. 2 is a fragmentary sectional view, partly in detail and partly broken away, taken on the line II—II of Fig. 1. Fig. 3 is an enlarged fragmentary view showing a side elevation of a part of the fire escape. Fig. 4 is a detail sectional view taken on the line IV—IV of Fig. 1, and Fig. 5 is a view of the fire escape when folded.

The fire escape has a foldable ladder 10 composed of a plurality of sections, as 11, all of which are preferably similar in shapes and sizes, and each section is formed of two spaced parallel side bars 12 and 13. Between the side bars 12 and 13 of each of the sections 11, and connected to the central parts of these side bars, is a rung, or step 14 in the form of a rod. The side bars 12 and 13 of the sections are of lengths so that the rungs 14 are spaced apart at distances to permit a person to climb upward and downward on the ladder, and between the upper ends of the top section is a rod 15. The sections of the ladder are assembled so that the lower ends of the side bars of each section are in opposed relation to the upper ends of the side bars of the section thereunder, and the opposing ends of all of the sections are connected preferably by links, or rings, as 16, to allow the ladder to be folded together by guiding the sections in overlapping arrangement upon each other as well as permitting the sections to be disposed one under the other in alinement when the ladder is unfolded and arranged for use, as will be hereinafter more fully explained.

When the fire escape is not in use it is folded together, as shown in Fig. 5, so as to occupy a limited space in a room of a building or elsewhere for ready use in emergency, and to permit the device to be suspended for use from for instance the window, as 17, of a building, as 18, to spaced parts of the rod 15 of the foldable ladder 10 are connected one of the corresponding ends of two chains, or cables, as 19 and 20. The other ends of the chains 19 and 20 terminate with hooks 21 for being removably inserted in eyes, as 22, which may be suitably arranged interiorly of the room of a building, or the chains may be fastened in any other manner for allowing the other ends thereof with the ladder to be disposed through the window and to permit the ladder to be supported in suspension on the exterior of the building, as illustrated.

In order to prevent inward sagging of the ladder under the weight of a person when moving thereon as well as releasably retaining the ladder in spaced relation to the

wall of the building, on each of the sections 11 are provided a pair of automatically adjustable braces, or bars, as 23 and 24. All of the braces are preferably alike in shape and size, and each brace is formed with a bar 25. Each side bar is provided with a cut away portion and at the head of said cut away portion one of the corresponding ends of the bars of the braces of each pair are pivoted, at 26 and 27, so that all the braces may be swung upwardly in lapping positions on the side bars to permit the device when folded to occupy a very limited space the outer surface of the brace lying flush with the outer surface of the uncut portion of the side bar. On the second ends of the bars 25 of the braces of each pair are members, or heads 27 and 28^a, and these members are not only of sufficient weight to serve for causing the bars to automatically swing downwardly from their positions on the side bars of the sections of the ladder but also extend in similar right angular directions relative to the sections of the ladder and are provided with a flat face lying in a plane substantially parallel with the plane of the suspended ladder, so as to contact with the wall of the building for holding the ladder in spaced relation thereto and preventing any endwise oscillation thereof. To limit the downward movement of the braces as well as to releasably retain the braces in these right angular positions, on the outer side surfaces of the side bars of each of the sections of the ladder, and adjacent to the pivoted ends of each of the bars of the braces, are shoulders, or stops, as 29 and 30, which extend from the side bars so that the braces will be supported thereon when lowered to their positions at right angles to the sections, and these stops may be provided by reducing in width the upper part of each of the side bars, as shown. By providing the braces 23 and 24 to operate in this manner the ladder will be prevented from sagging inwardly when a person is moving thereon, thus a safe, simple and efficient device is provided for use in buildings and other structures whereby persons may escape therefrom in emergency.

In the foregoing description, I have embodied the preferred form of my invention, but I do not wish to be understood as limiting myself thereto as I am aware that modifications may be made therein without departing from the principle, or sacrificing any of the advantages of this invention, therefore I reserve to myself the right to make such changes as fairly fall within the scope thereof.

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

In a fire escape a ladder composed of a plurality of corresponding sections, each section consisting of two spaced side bars each provided with a cut away portion, and a step connecting said side bars; a brace for each side bar having one of its ends pivoted thereto at the head of the cut away portion thereof and being adapted to fold within said cut away portion, a shoulder formed by the cut away portion of the side bar and adapted to provide a stop for limiting the downward movement of the brace, together with a weight secured to the free end of each brace to cause said brace to automatically move downward when the ladder is suspended, said weight having a flat surface extending in a plane substantially parallel with the plane of the suspended ladder, and extending at right angles to the brace and on both sides thereof, so that the flat surface will contact with the wall of a building and hold the section in spaced relation thereto and also prevent any endwise oscillation thereof, substantially as described.

This specification signed and witnessed this third day of April A. D. 1916.

WALTER DANKE.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."