

H. GRÜNBAUM.

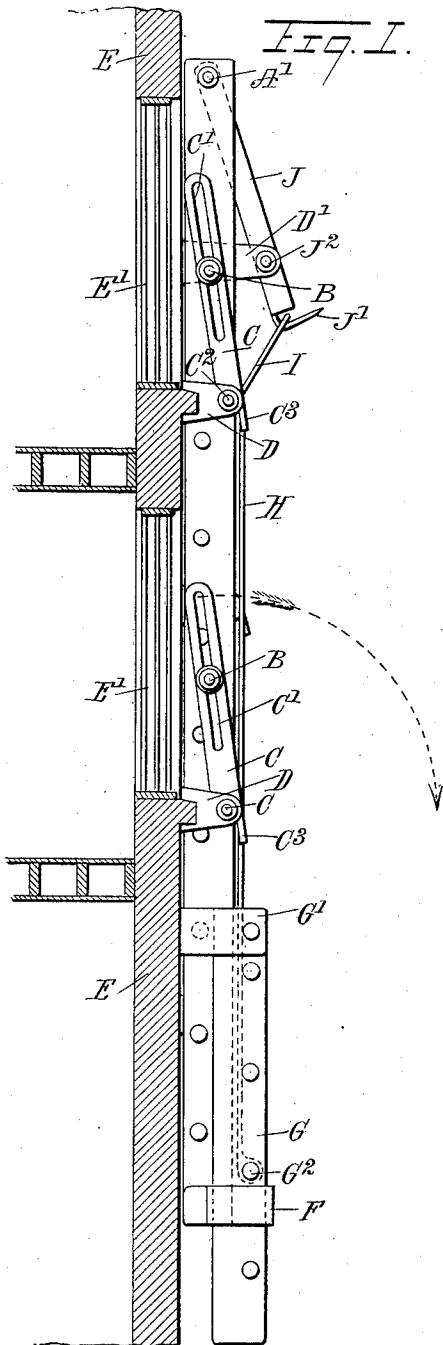
FIRE ESCAPE.

APPLICATION FILED JULY 13, 1911.

1,015,173.

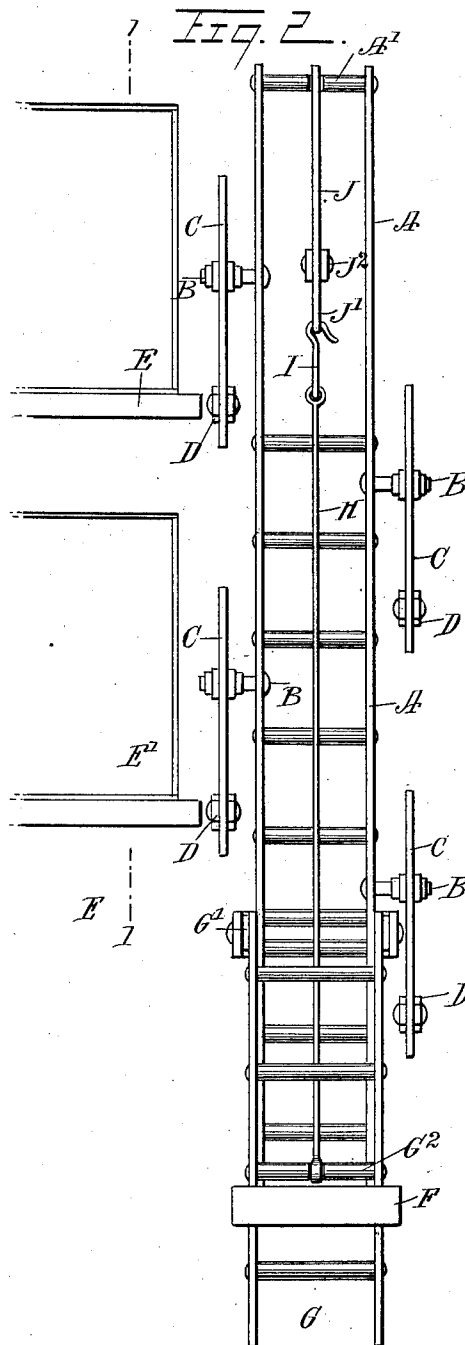
Patented Jan. 16, 1912.

3 SHEETS-SHEET 1.



WITNESSES

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3 SHEETS—SHEET 2.

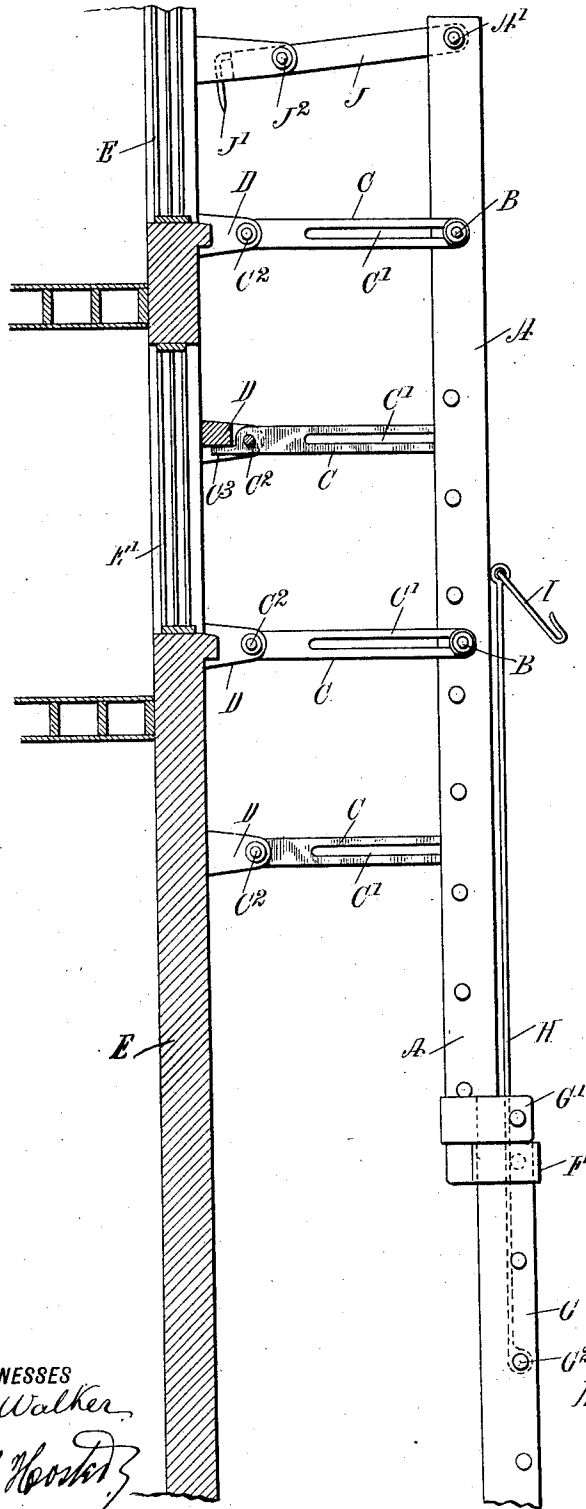


Fig. 3.

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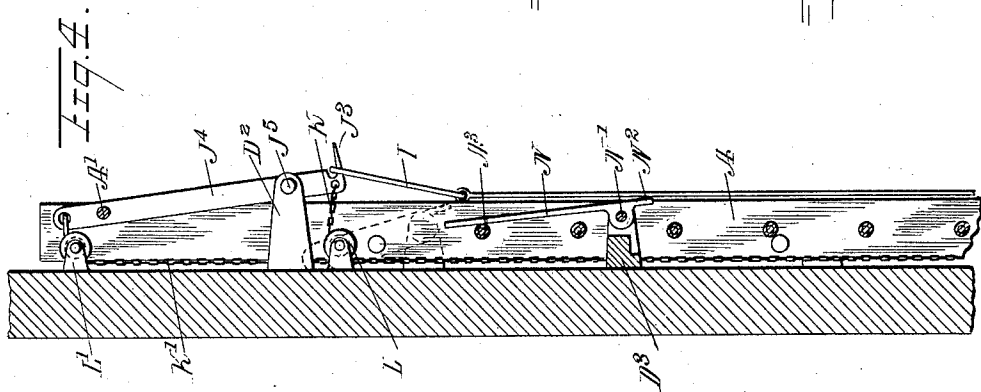
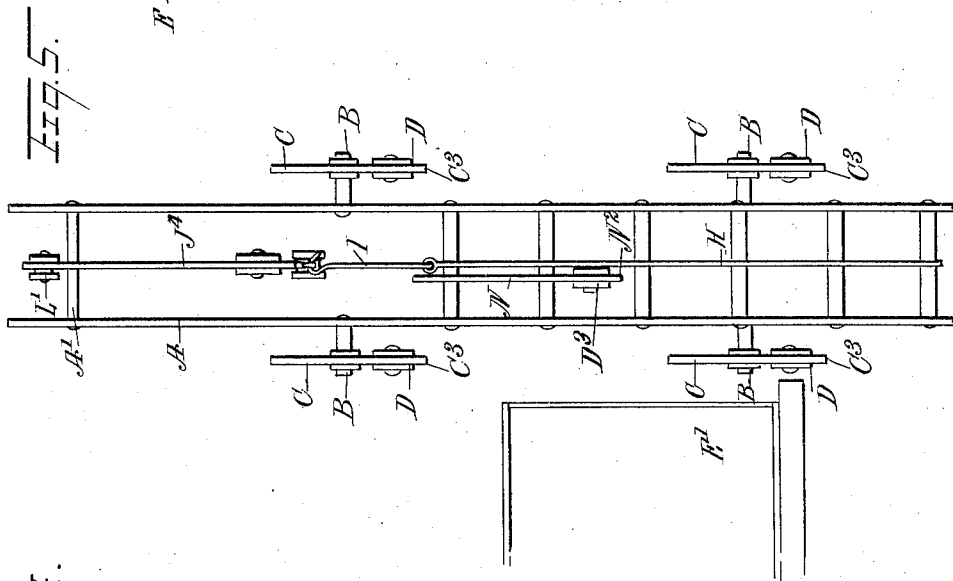
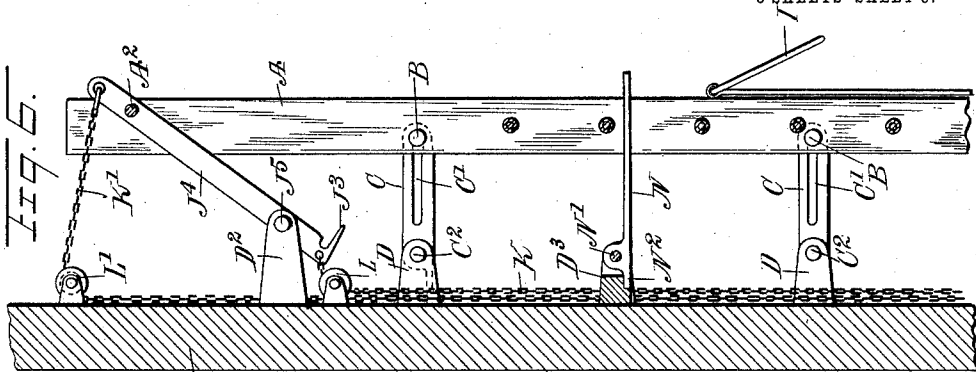
FIRE ESCAPE.

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3 SHEETS—SHEET 3.

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WITNESSES

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# UNITED STATES PATENT OFFICE.

HEINRICH GRÜNBAUM, OF NEW YORK, N. Y.

## FIRE-ESCAPE.

1,015,173.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed July 13, 1911. Serial No. 638,270.

*To all whom it may concern:*

Be it known that I, HEINRICH GRÜNBAUM, a subject of the King of Hungary, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Fire-Escape, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved fire escape forming a permanent fixture on a building and normally folded against the wall of the building, and adapted to swing into position a distance away from the face of the wall to permit persons to descend to the street without danger of being burned by flames issuing out of the windows adjacent to the fire escape.

For the purpose mentioned, use is made of a main ladder hung on links, pivoted on brackets attached to the wall of the building, a bottom extension ladder mounted to slide on the lower end of the main ladder, and means for releasing the said extension ladder on swinging the main ladder from a folded position into position for use.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the fire escape showing the ladder in folded position against the outside of a building, the ladder being shown in section on the line 1—1 of Fig. 2; Fig. 2 is a front view of the same; Fig. 3 is a side elevation of the same and showing the ladder swung outward into position for use, parts being in section, and the building to which the ladder is applied being shown in section; Fig. 4 is a sectional side elevation of a modified form of the fire escape, showing the ladder in folded position against the wall of the building; Fig. 5 is a front elevation of the same; and Fig. 6 is a sectional side elevation of the same and showing the ladder extended in position for use.

The ladder A, of iron or other suitable material, is provided on its side bars with outwardly-extending pins B engaging elongated slots C' in links C, pivoted at C<sup>2</sup> on brackets D attached to the wall of the building E, the brackets D on one side of the ladder being adjacent the sills of the windows E', as plainly indicated in the drawings,

and the brackets D on the other side of the ladder A being midway between two windows located one above the other. Each of the links C is provided at its pivotal end with a lug C<sup>3</sup> adapted to engage the under side of the corresponding bracket D whenever the ladder A is swung outward into position for use, as plainly indicated in Fig. 3, it being understood that normally the ladder A is folded against the face of the building E, as indicated in Figs. 1 and 2. By arranging the brackets D in the manner described, the links C adjacent the windows E' can be used for a person to step on while passing out of the window onto the ladder A then in extended position, the link C next above and on the opposite side of the ladder being taken hold of by the person, with the hands, to guide the person safely to the ladder A.

The lower end of the ladder A is provided with a bearing F, in which is mounted to slide vertically an extension ladder G, adapted to reach from the first floor of the building to the pavement, the extension ladder G, however, being normally in a raised position to prevent persons from the pavement to climb up the extension ladder G and the main ladder A at the time the same are folded against the wall of the building. The upper end of the extension ladder G is provided with a bearing G' slidably engaging the side bars of the main ladder A, and to two of the upper rungs G<sup>2</sup> of the extension ladder G is attached a rod H, terminating at its upper end in a hook I, engaging a hook J' on a supporting and releasing lever J, fulcrumed at J<sup>2</sup> on a bracket D' attached to the building E. The upper end of the lever J is pivotally connected with the uppermost rung A' of the main ladder A, so that when the main ladder A is in the folded position as shown in Figs. 1 and 2, and the hook I engages the hook J' then the extension ladder G is supported in an uppermost position. Now when the main ladder A is swung outward into position for use, as shown in Fig. 3, then a swinging motion is given by the rung A' to the lever J, whereby the hook J' moves out of engagement with the hook I, thus releasing the extension ladder G and allowing the same to drop into lowermost position to permit persons descending the main ladder A to finally pass by the extension ladder G to the pavement.

In order to facilitate swinging the main ladder A into extended or folded position, use is preferably made of the device illustrated in Figs. 4, 5 and 6. The lever J<sup>4</sup> having the hook J<sup>3</sup> for supporting the link I is in this case pivotally connected at J<sup>3</sup> with a bracket D<sup>2</sup> attached to the wall of the building E, and the lever J<sup>4</sup> is also pivotally connected with the upper rung A<sup>2</sup> of the ladder A, and is extended beyond the said rung A<sup>2</sup>. The hook end of the lever J<sup>4</sup> is connected with a chain K passing over a pulley L journaled on the outside face of the building, to hang downward, and the upper end of the lever J<sup>4</sup> is connected with a chain K' passing over a pulley L' journaled on the wall of the building E, the chain then hanging down from the pulley L' a desired distance, that is, to the first floor or to the pavement. Now when the main ladder A and its extension ladder G are folded against the wall of the building E, as above described and shown in Figs. 4 and 5, and it is desired to extend the ladders A and G, it is only necessary for any person to exert a pull on the chain K, whereby a swinging motion is given to the lever J, so as to swing the main ladder A outward, at the same time moving the hook J<sup>3</sup> out of engagement with the hook I, to permit the extension ladder to drop. When it is desired to swing the main ladder A back against the face of the building, then it is only necessary for a person to pull on the chain K' to impart a return swinging motion to the lever J<sup>4</sup>, with a view to fold the main ladder A onto the face of the building. The extension ladder G is then raised and the hook I is engaged with the hook J<sup>3</sup> to support the extension ladder G normally in a raised position.

In the form shown in Figs. 4, 5 and 6, the links C are arranged in pairs on opposite sides of the ladder A, and the links are used for the persons to step on in passing from the window E' to the ladder. In order to provide a handhold use is made of a guide bar N fulcrumed at N' on a bracket D<sup>3</sup> attached to the wall of the building intermediate the brackets D next above and below. The bar N rests with its upper free end against one of the rungs A<sup>3</sup> of the ladder A, so that when the latter swings outward the guide bar N is swung into a horizontal position, as shown in Fig. 6, to permit a person to take hold of the guide bar while passing from the window to the ladder A. The guide bar N is provided at its pivotal end with a lug N<sup>2</sup> adapted to abut against the under side of the bracket D<sup>3</sup> to hold the bar N in the horizontal position shown in Fig. 6.

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

1. A fire escape for a building, comprising

a main ladder, links pivoted on the wall of the building and pivotally connected with the main ladder, an extension ladder on the lower end of the main ladder, and means for normally holding the extension ladder in raised position and allowing the extension ladder to drop on swinging the main ladder into extended position.

2. A fire escape for a building, comprising a main ladder, links pivoted on the wall of the building and pivotally connected with the main ladder, an extension ladder on the lower end of the main ladder, a releasing lever pivoted on the building and pivotally connected with the main ladder, and a connection between the said extension ladder and the said lever, to normally hold the extension ladder in raised position and to release the extension ladder on swinging the main ladder into position for use.

3. A fire escape for a building, comprising a main ladder, links pivoted on the wall of the building and pivotally connected with the main ladder, an extension ladder on the lower end of the main ladder, a releasing lever fulcrumed on the building and provided with a releasing hook, and a supporting and releasing means for the said extension ladder and connected with the said hook.

4. A fire escape for a building, comprising a main ladder, links pivoted on the wall of the building and pivotally connected with the main ladder, an extension ladder, a releasing lever fulcrumed on the building, said lever being connected at one end to the main ladder and having its opposite end provided with a releasing hook, a supporting and releasing link attached at its lower end to the extension ladder and provided at its upper end with a hook for engagement with the said lever hook.

5. A fire escape for a building, comprising a main ladder, links pivoted on the wall of the building and pivotally connected with the main ladder, an extension ladder on the lower end of the main ladder, a releasing lever pivoted on the building and pivotally connected with the main ladder, a connection between the said extension ladder and the said lever to normally hold the extension ladder in raised position to release the extension ladder on swinging the main ladder into position for use, and manually-controlled means connected with the said releasing lever for swinging the main ladder into open or folded position.

6. A fire escape for a building, comprising a main ladder, links pivoted on the wall of the building and pivotally connected with the main ladder, an extension ladder on the lower end of the main ladder, a releasing lever pivoted on the building and pivotally connected with the main ladder, a connection between the said extension ladder and

the said lever to normally hold the extension ladder in raised position to release the extension ladder on swinging the main ladder into position for use, pulleys journaled  
5 on the wall of the building above and below the fulcrum of the said releasing lever, and chains passing over the said pulleys and connected with the ends of the said releasing lever.

In testimony whereof I have signed my 10 name to this specification in the presence of two subscribing witnesses.

HEINRICH GRÜNBAUM.

Witnesses:

THEO. G. HOSTER,  
JOHN P. DAVIS.

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