G. H. JOHNSON.

FIRE ESCAPE.

APPLICATION FILED APR. 1, 1910.

971,276.

Patented Sept. 27, 1910.

2 SHEETS—SHEET 1.

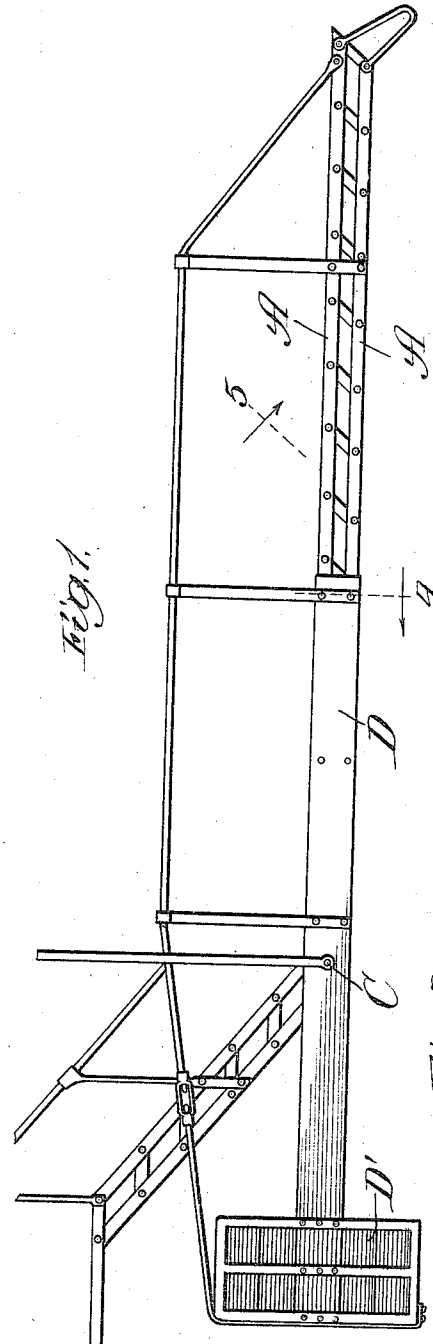


Fig. 1.

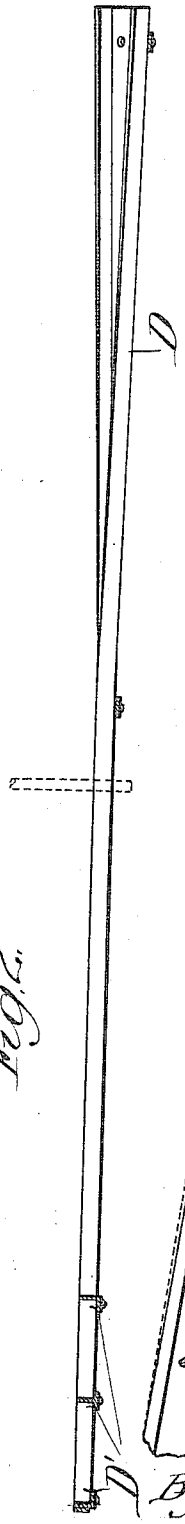


Fig. 2.

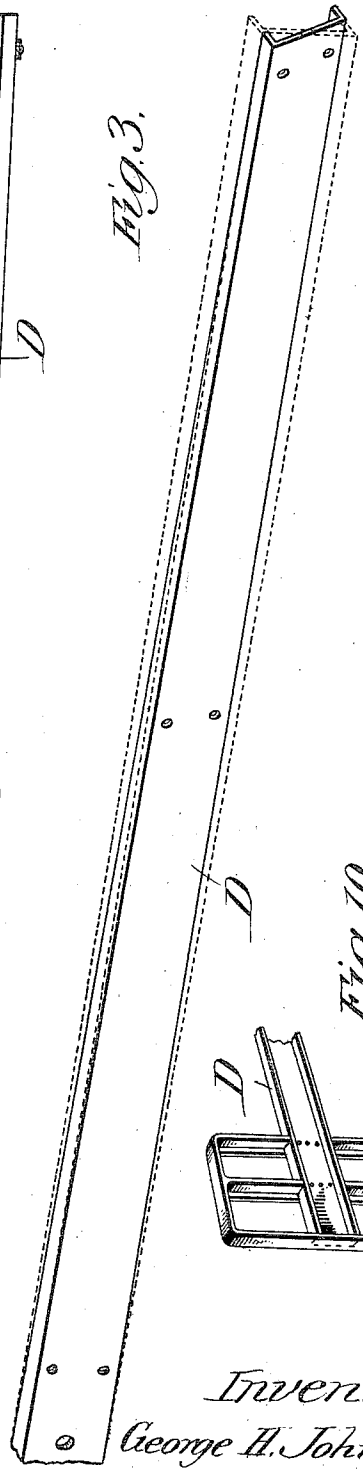


Fig. 3.




Fig. 10.

Witnesses:

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Chas. H. Buell.

Inventor:

George H. Johnson

By Dyrenforth, Lee, Chrisman & Miles,

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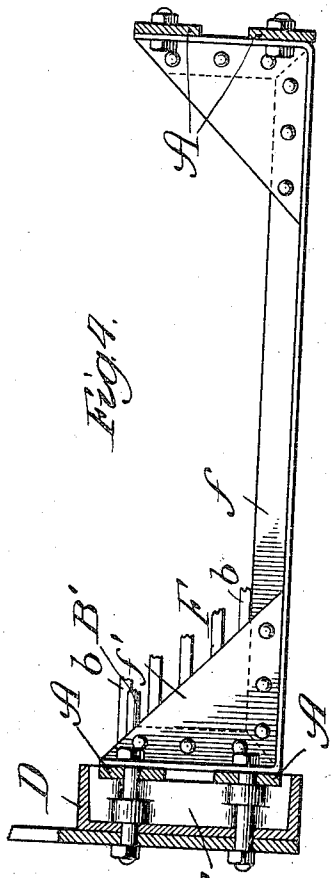


Fig. 4.

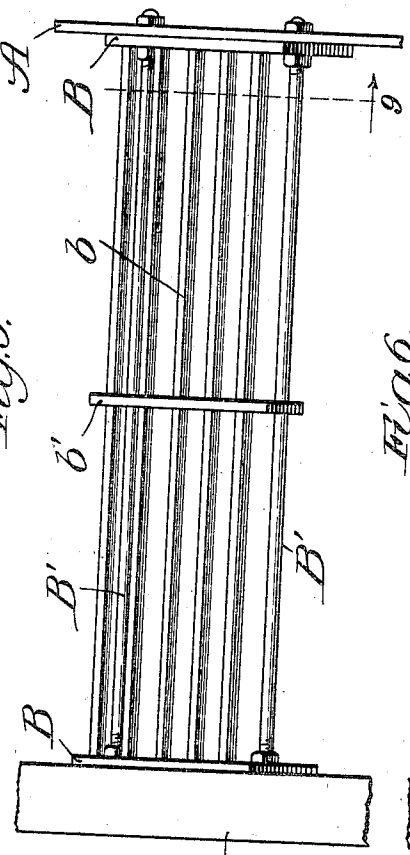


Fig. 5.

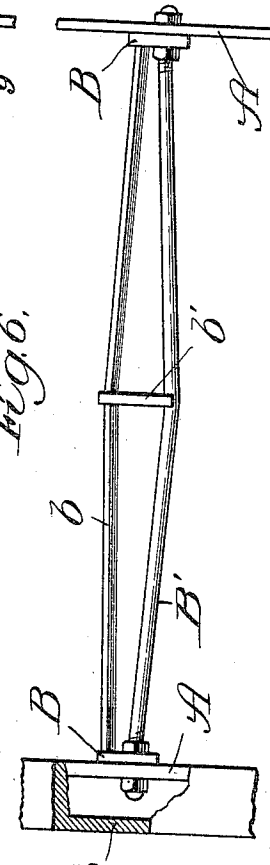


Fig. 6.

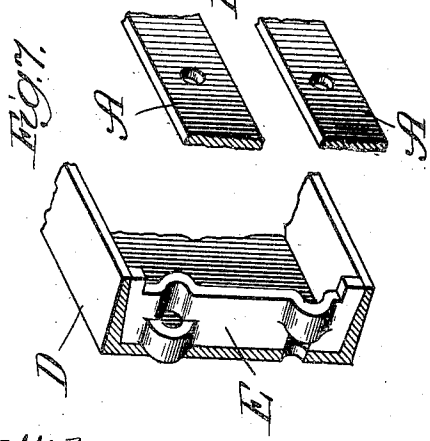


Fig. 7.

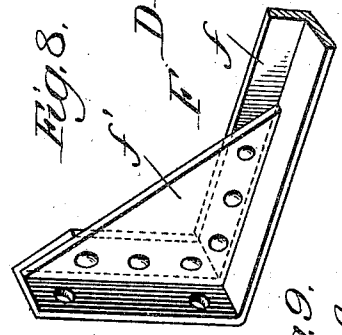


Fig. 8.

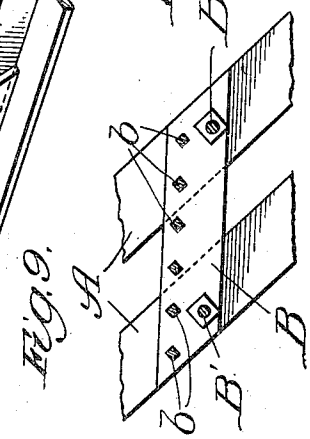


Fig. 9.

Witnesses:

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Inventor:

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By Dyrenforth, Lee, Chritton & Wiles,

Attys.

# UNITED STATES PATENT OFFICE.

GEORGE H. JOHNSON, OF CHICAGO, ILLINOIS.

## FIRE-ESCAPE.

971,276. Specification of Letters Patent. Patented Sept. 27, 1910.

Application filed April 1, 1910. Serial No. 552,790.

*To all whom it may concern:*

Be it known that I, GEORGE H. JOHNSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Fire-Escapes, of which the following is a specification.

My invention relates to certain new and useful improvements in fire escapes and is fully described and explained in the specification and shown in the accompanying drawing, in which:

Figure 1 is a side elevation of my improved device; Fig. 2 is a top plan of the counterweight channel-iron on a somewhat larger scale than that used in Fig. 1; Fig. 3 is a perspective view of one end of the same on a still larger scale; Fig. 4 is a section in the line 4 of Fig. 1; Fig. 5 is a top plan of one of the stairs; Fig. 6 is an elevation of one of the stairs; Fig. 7 is a sectional perspective view showing the counterweight channel, a spacer and the adjacent side-bars of the stair; Fig. 8 is a perspective view of one of the braces; Fig. 9 is a section on the line 9 of Fig. 5, and Fig. 10 is a broken perspective view of the counterweight and the end of the channel-iron on which the same is mounted.

Referring to the drawings, A are two longitudinally-extending flat bars which are located in pairs in the same plane, similar pairs of bars being disposed on opposite sides of the stairway as shown in Fig. 4. These flat-bars make up the longitudinal members of the stairway. The treads of the stairs extend transversely between said bars A in proper angular relation with respect thereto, the tread-construction being best illustrated in Figs. 5, 6 and 9. It will be seen in these figures that the bars A carry tread-ends B, which are connected by cross-bars $b$, which are square in cross-section with their angles upward, according to the requirements of modern practice. These cross-bars make up the body of the tread. Below these bars in the front and rear of the treads respectively are truss-rods $B^1$, struts $b^1$ being interposed between said truss-rods and the cross-rods $b$, and the truss-rods being capable of being tensioned by means of nuts at their ends whereby to support, in a proper manner, the central portion of the treads illustrated in Fig. 6. The construction formed by the side-bars and treads set together in the manner illustrated, provides a lower fire escape section of desirable form, the same being pivoted upon a horizontal pivot C, so as to be swung up and down in the usual way. The stair-section thus formed is counterweighted upon one side only in the following manner.

D is an inwardly facing channel-iron, which extends alongside the upper portion of the stair-section and beyond the pivot of the same, the same being supplied with a weight $D^1$ at its free-end, the said weight serving to counterweight the free-end of the stair. Before said counterweight channel-bar D is secured to the stair-section proper, the lower end thereof is twisted in the manner illustrated in Figs. 2 and 3, that is, the edge thereof, which will be uppermost in the completed structure is twisted outward, that is in the direction away from the uncounterweighted side of the stairway. It is then firmly bolted or otherwise secured to the stair-section by any desired mechanism and the initial twist of the channel-bar will serve to keep the stairway in its proper flat relation, regardless of any tendency which the uncounterweighted side of the stair may have to sag down. In the form of construction herein illustrated, spacers E are interposed between the channel-bar and stair-section, the same consisting of flat-plates of such size as to fit transversely within the channel-bars and notched to receive the side-bars of the stair-section. The spacers have yokes stamped from their planes in opposite directions to receive and guide the bolts which secure the channel-bar to the stair-section.

For the purpose of rendering the stair-section transversely rigid to as great an extent as is possible the braces F are secured therein, the said braces consisting of angle-irons $f$ bent upward at the ends and raised by corner-plates $f^1$ in the form of right triangles. The braces F may be bolted into the stair-section in any desired position, but for greater convenience they are in practice secured by the same nuts which secure the counterweight channel-bars in position; the manner of assembling being clearly illustrated in Fig. 4.

I realize that considerable variation is possible in the details of construction of my improved device, without departing from the spirit of my invention, and I do not

intend, therefore, to limit myself to the specific form herein shown and described.

What I claim as new and desire to secure by Letters Patent is:

1. A fire escape, comprising a pivoted stair-section, a counterweight thereon, and a twisted member secured to the counterweighted side of said stair-section, the twist being in a direction to tend to elevate the opposite side of the stair.

2. In combination a pivoted stair-section, a twisted member secured to one side thereof, the twist being in a direction to tend to elevate the opposite side of the stair, said member extending beyond the pivot of the stair and carrying a counterweight at its end.

3. In combination a pivoted stair-section, a member secured to one side of the stair and extending beyond the pivot thereof, a counterweight carried by the free-end of said member, said member being twisted prior to this application to the stair for the purpose set forth.

4. In combination a pivoted stair-section, a channel-bar bolted to the side of the stair-section, and having its upper edge initially twisted away from the stair-section and a counterweight secured to the end of the channel-bar which extends beyond the pivot of the stair-section.

5. In combination, side plates and treads forming a pivoted stair-section, an initially twisted member secured to one side of the stair-section and having a counterweight beyond the pivot of the stair-section, and braces connecting the said bars of the stair-section for rendering the stair-section transversely rigid.

6. In combination a pivoted stair-section having side plates, an initially twisted channel-bar at one side of the stair-section and extending beyond the pivot thereof, a counterweight applied to the free-end of said stair-section and spacers in the form of flat plates fitting within the channel-bar notched to receive the adjacent side plates and having bolt-guiding yokes stamped from its body.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, in the presence of two subscribing witnesses.

GEORGE H. JOHNSON.

In presence of—

J. G. ANDERSON,

R. A. SCHAEFER.