No. 708,120. Patented Sept. 2, 1902.

J. M. BRAZILL.

FIRE ESCAPE.

(Application filed Dec. 2, 1901.)

(No Model.) 4 Sheets—Sheet 1.

Figure 1.

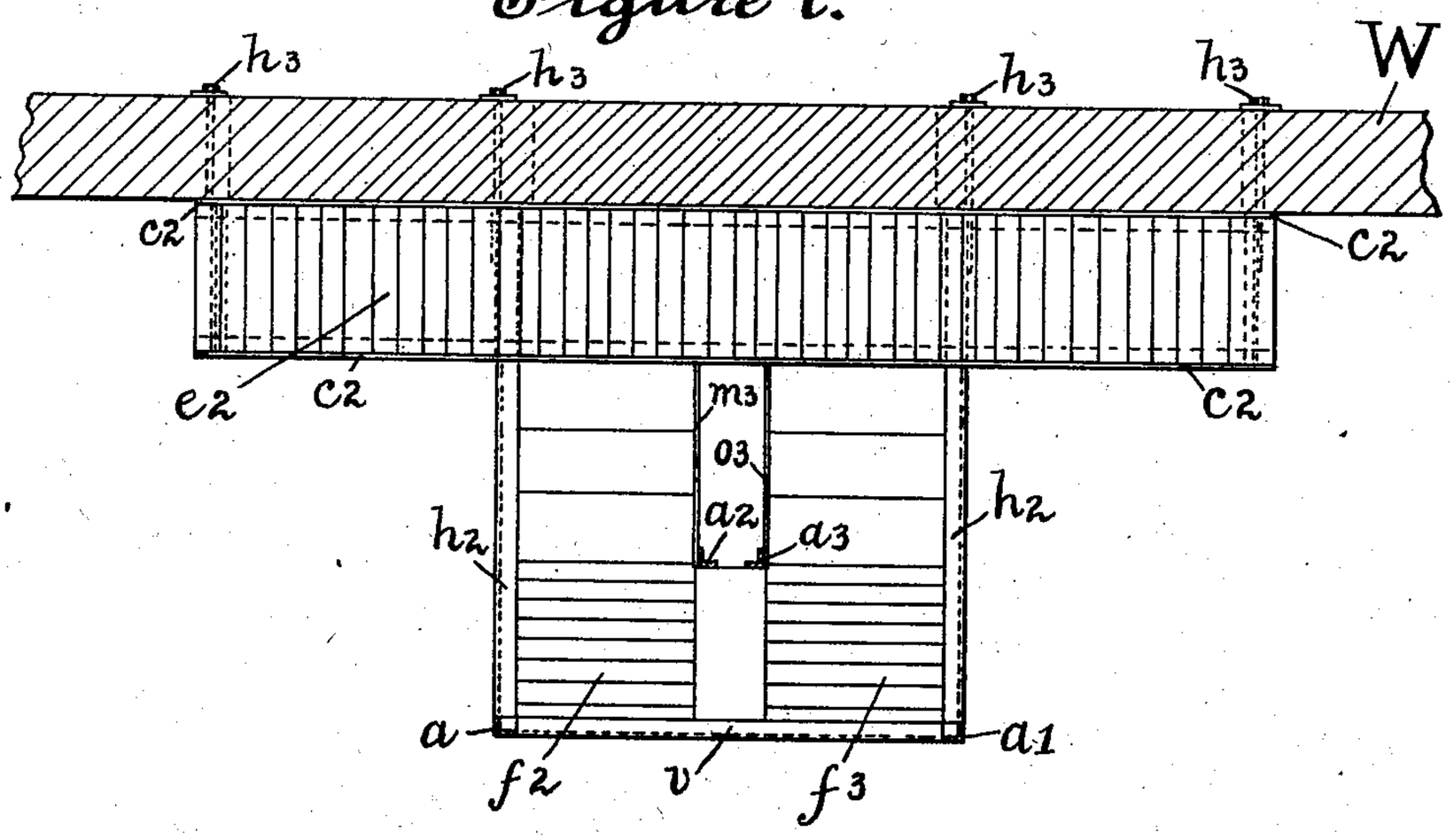
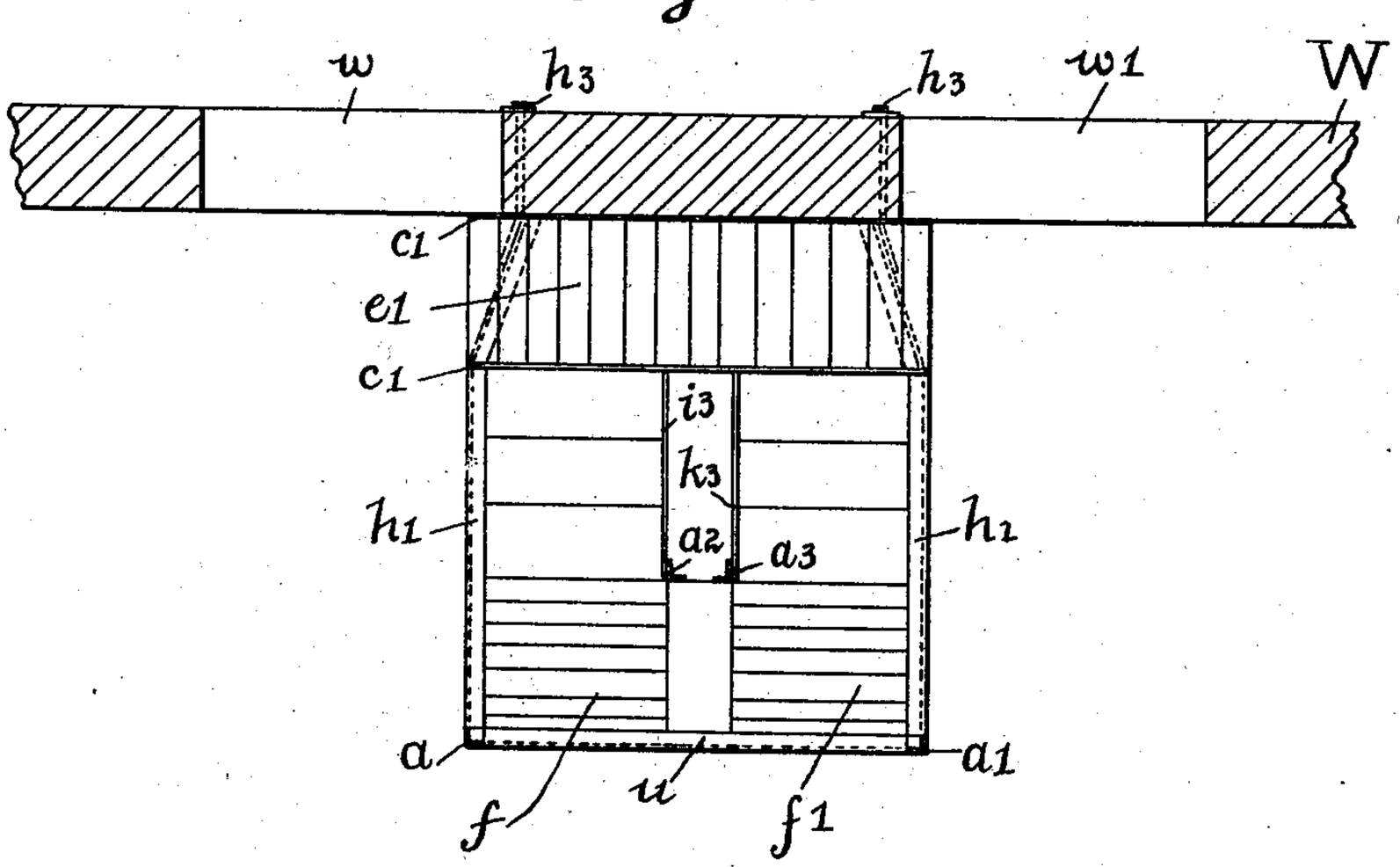


Fig. 2.



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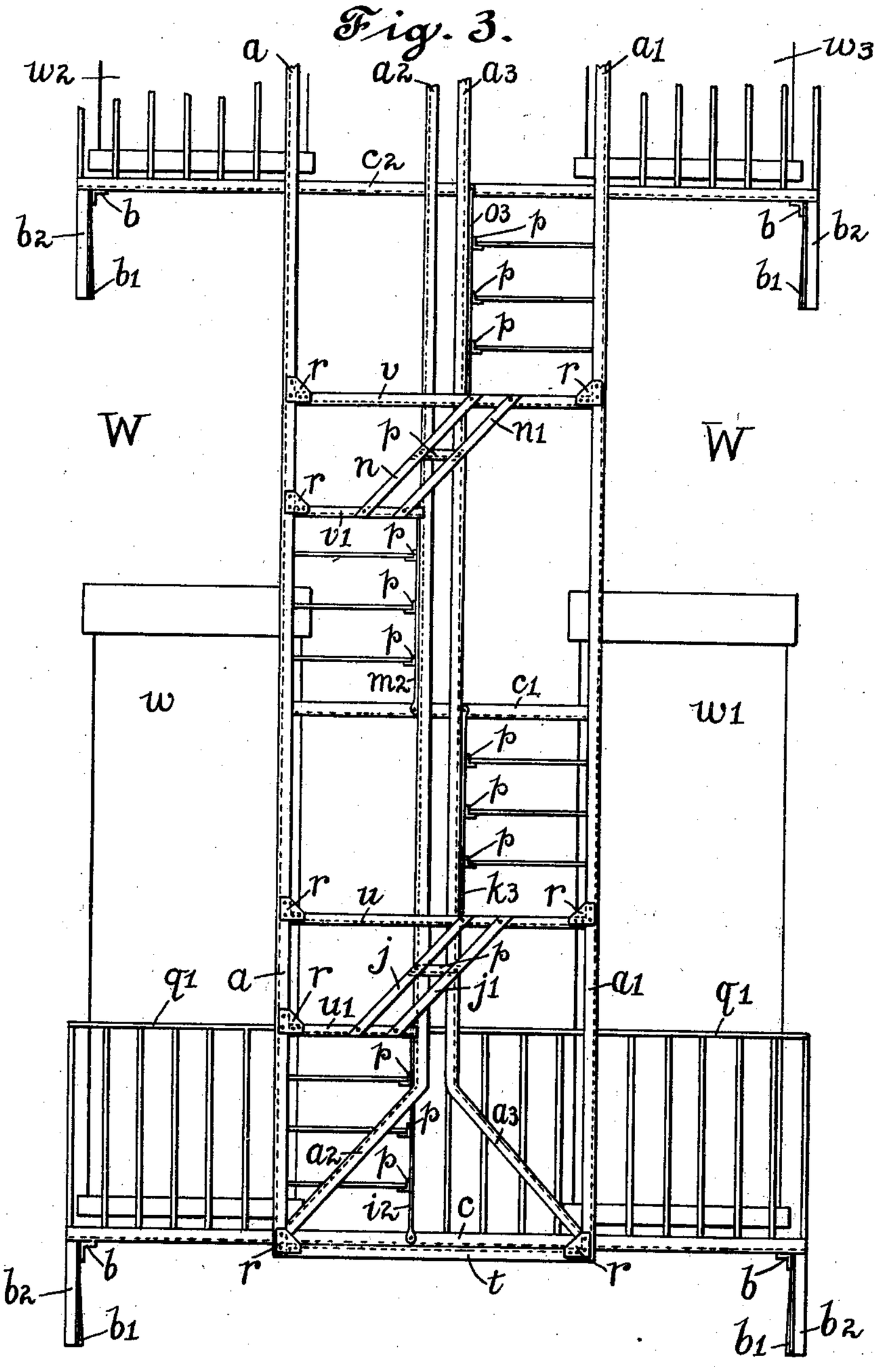
(No Model.) 4 Sheets—Sheet 2.

Fig. 3.



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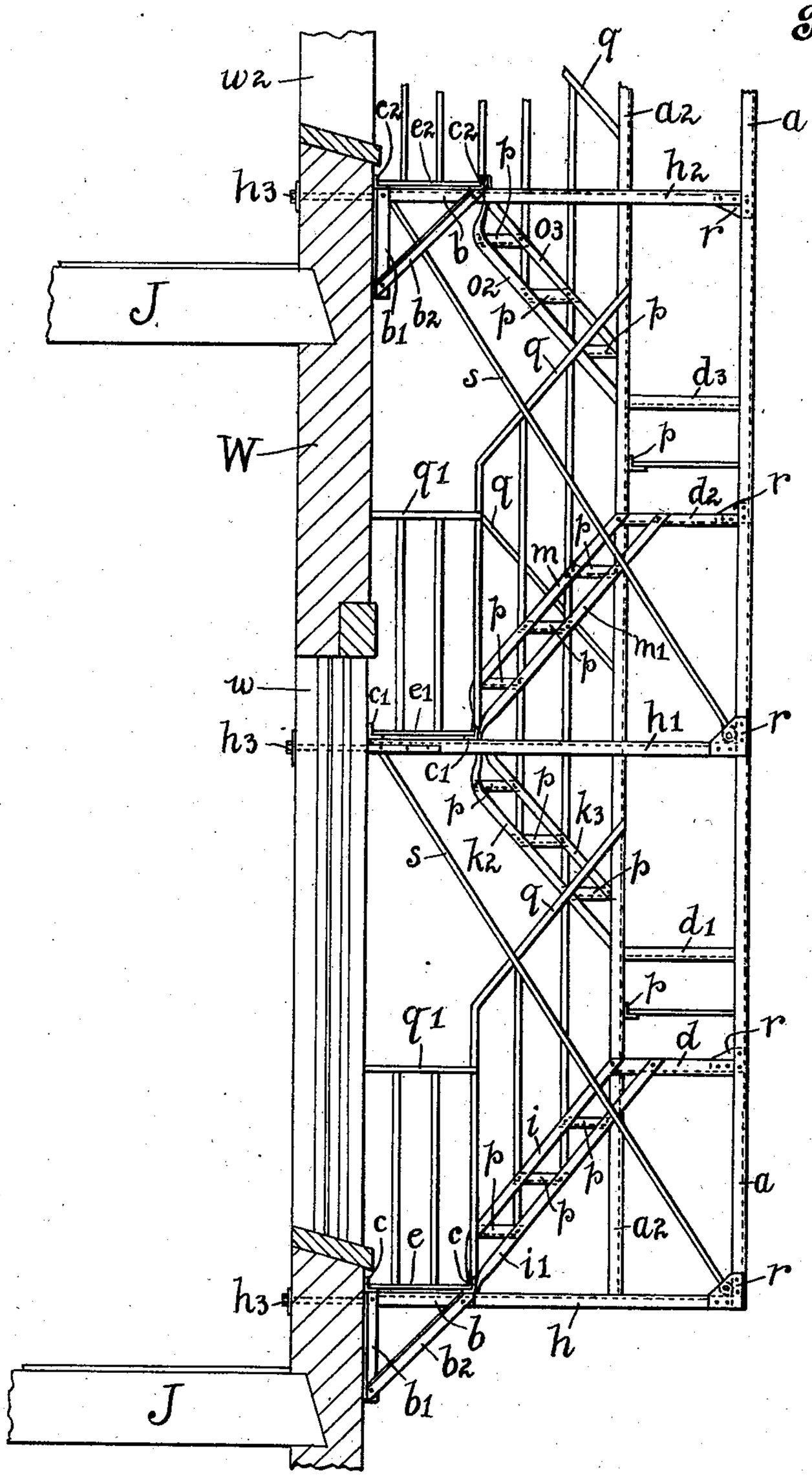
(No Model.) 4 Sheets—Sheet 3.

Fig. 4.



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(No Model.) 4 Sheets—Sheet 4.

Fig. 5.

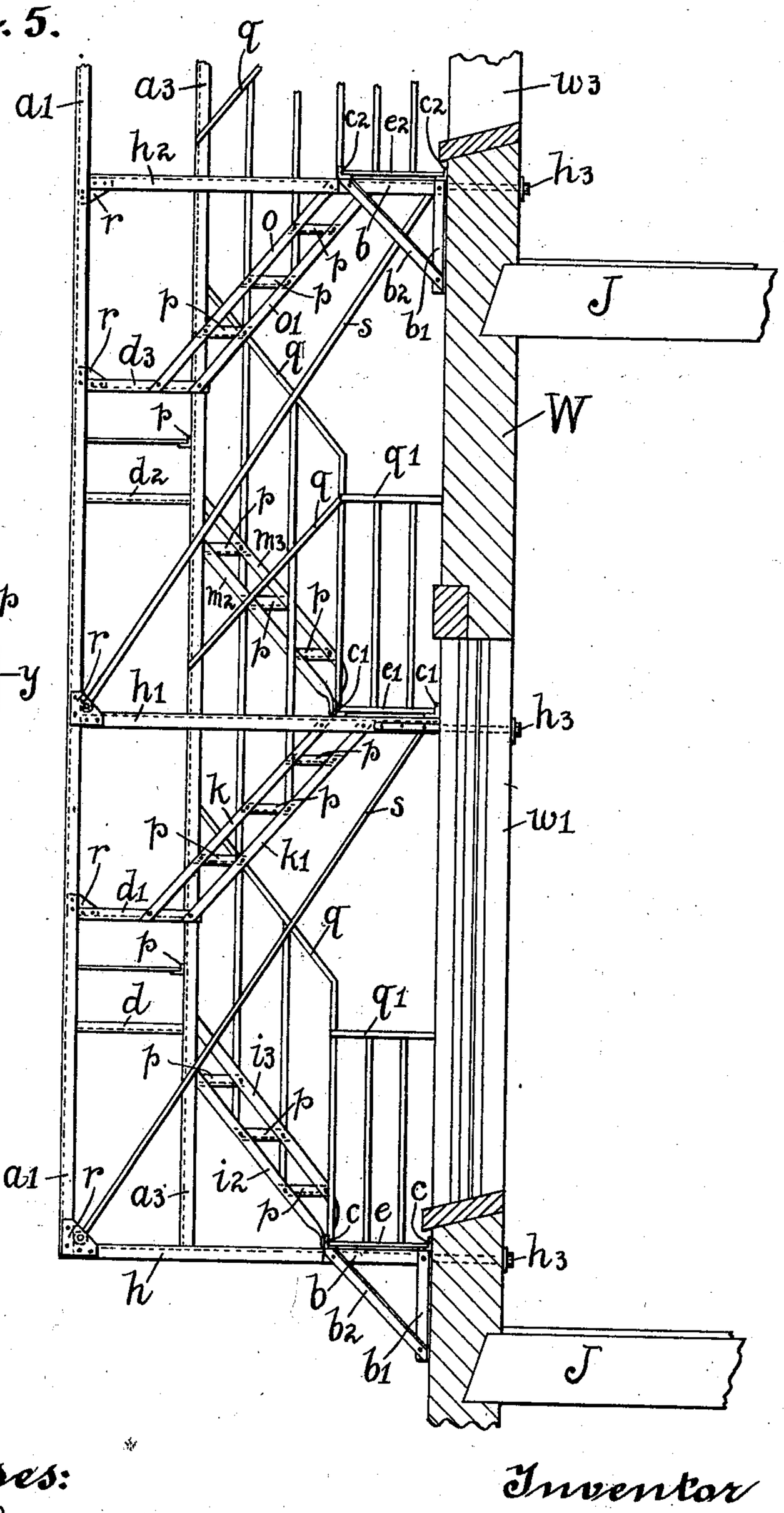
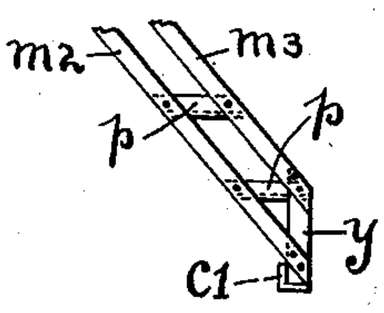


Fig. 6.



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By his Atty.
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UNITED STATES PATENT OFFICE.

JAMES M. BRAZILL, OF ROCHESTER, NEW YORK.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 708,120, dated September 2, 1902.

Application filed December 2, 1901. Serial No. 84,372. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. BRAZILL, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a new and Improved Fire-Escape, of which the following is a specification.

The object of my invention is the construction of a fire-escape consisting in an outside stairway involving as little material and at as low an expense as consistent with thorough efficiency.

The accompanying drawings, illustrating my invention, are as follows:

Figure 1 is a plan view of any one of the main platforms or balconies except the one at the first floor above the ground floor, such platforms located immediately beneath a window or other exit from the building. Fig. 2 is a plan view of a platform intermediate between any two of such main platforms, as seen in Fig. 1. Fig. 3 is a front elevation of my fire-escape, while Figs. 4 and 5 are side elevations as seen from the left and right hand sides, respectively. Fig. 6 shows a modified detail.

Similar letters refer to similar parts throughout the several views.

The drawings illustrate the first two floors above the ground floor of so much of a building as is necessary to be shown in connection with my fire-escape, J representing the joist of such first and second floors, and W the wall of the building. (Seen in section in Figs. 1, 2, 4, and 5 and in elevation in Fig. 3.) On the first floor are seen windows w and w', and on the second floor windows w^2 and w^3.

In my fire-escape I make use of angle-irons $h\,h^2$, extending out horizontally from beneath each of the windows from which it is desired to provide an exit. These angle-irons are secured to the wall by means of bolts h^3, extending therethrough. From the lower angle-pieces h and extending to the top of the structure are seen the vertically-disposed angle-iron pieces $a\,a'$, which, by means of gusset-blocks r, are connected to the horizontally-arranged angle-irons $h\,h$ and $h^2\,h^2$, just referred to. Between these vertical pieces a and a' there extends horizontally the angle-irons t and u and v, all similarly secured, as seen, by means of gusset-blocks r. Two other vertically-disposed angle-irons a^2 and a^3 are seen located a short distance apart and near the center laterally of the fire-escape and nearer to the building than the angle-irons a and a' by just the width of the stairway. These angle-irons a^2 and a^3, as seen in Fig. 3, are bent at their lower ends so as to rest, respectively, upon the left and right hand angle-irons h. From each of the gusset-blocks r, joining the horizontal angle-irons h, h', and h^2 to the vertical angle-irons a and a', there extend obliquely upward and toward the building the sustaining-rods s, secured at their lower ends in these gusset-blocks r and at their upper ends in the horizontal angle-irons $h'\,h^2$, &c., whereby the weight carried by each pair of the horizontal angle-irons $h\,h$, $h'\,h'$, and $h^2\,h^2$ of the several platforms is sustained at their inner ends directly from the wall and at their outer ends by means of these rods s, taking support from the horizontal angle-irons $h'\,h'$ or $h^2\,h^2$ immediately above and at points near the surface of the wall of the building.

Immediately beneath each pair of adjacent windows on each floor from which it is intended to provide an exit is located a balcony consisting in the horizontal angle-irons $c\,c$ for the lower floor and $c^2\,c^2$ for the next floor, resting upon the short horizontal angle-irons b at their extreme ends, which in turn constitute the upper members of the triangular brackets, consisting also in the elements b' and b^2. The angle-irons b are also supported from the wall by means of bolts h^3 extending therethrough. These platforms or balconies e and e^2 are supported in the middle and between the windows by the angle-irons h and h^2, respectively. Between these angle-irons c and c^2 and supported thereon are seen the floors e and e^2 of the balcony provided at each of the floors shown.

Just to the left of the center of the lower platform there extends upward and outward from the building a flight of steps consisting in the string-pieces i and i' and i^2 and i^3, as seen in Figs. 2, 3, 4, and 5, secured at their lower ends to the outer horizontal angle-irons c of the lower balcony, as indicated. The outer or left-hand pair of string-pieces i and i' have their upper ends secured to the horizontal member d, while the inner or right-

hand pair of string-pieces i^2 and i^3 are secured at their upper ends to the vertically-disposed angle-iron a^2. Between these string-pieces i and i' and i^2 and i^3 are provided and secured the horizontal tread-supports p, formed of angle-iron in the usual way and securely riveted to the respective string-pieces. Parallel with the horizontal member d (seen in Fig. 4) there is secured a similar piece d, as seen in Fig. 5, its outer end secured to the right-hand end of the member u' and its inner end secured to the upright a^2. The corner formed by the member u' and the member d, just referred to, is supported in the manner just about to be described.

Between the vertical pieces a and a' and opposite about the middle of the lower windows, as seen in Fig. 3, there is secured, by means of gusset-blocks r, a horizontal angle-iron u, from which there extends downward and obliquely to the left the string-pieces j and j', secured at their lower ends to the horizontal angle-iron u', thus supporting this angle-iron u' and that corner of the platform or landing f formed thereby in connection with the angle-iron d, extending from this angle-iron u' to the upright a^2. Between these string-pieces j and j' there is horizontally secured a tread-support p, and on the same level therewith, between the angle-irons a^2 and a^3, there is secured a similar tread-support p, as indicated in Figs. 4 and 5. These last-described tread-supports are used to support a step intermediate between the platform f, just described, and the platform f', to be described. From this horizontal member u there extends inwardly the angle-piece d', secured at its outer end to the angle-piece u and at its inner end to the vertical member a^3.

From the vertical member a' and secured thereto by means of gusset-blocks r, as indicated, there extends horizontally another angle-iron d', having secured to its inner end the lower ends of the string-pieces $k\,k'$, whose upper ends are secured to the right-hand horizontal angle-iron h'. These string-pieces k and k' serve to support the inner end of this last-mentioned horizontal member d'. As indicated in Figs. 3 and 4, similar string-pieces k^2 and k^3 have their lower ends secured to the vertical member a^3 and are also secured at their upper ends to the horizontal member c'. Between each of these pair of string-pieces k and k' and k^2 and k^3 there are secured the usual tread-supports p of angle-iron, supporting the steps leading from the platform f', as seen in Fig. 2, to the platform e'. This platform e' consists in the horizontal members c', one located next to the wall and the other at the outer edge of this platform e' and both of such members c' resting upon the horizontal members h'. From this platform e' there extends obliquely upward and outward to the platform f^2 a flight of steps consisting in the string-pieces m and m', supported in a way similar to that already described in reference to the string-pieces i and i' and secured at their upper ends to a horizontal member d^2. Of these members d^2 there are two, one secured at its outer end to the upright a and the other secured at its outer end to the right-hand end of a horizontal member v', and from this member v' there extends upwardly and to the right, as seen in Fig. 3, string-pieces n and n', secured at their upper ends to a horizontal member v in the same way that the string-pieces j and j' are secured to and between the horizontal members u' and u. Between these string-pieces n and n' there is secured a tread-support p, on a level with which a similar tread-support p is secured to the vertical members a^2 and a^3, thus constituting a support for the step intermediate between the platforms f^2 and f^3. This platform f^3 is carried by the horizontal member v, just referred to, and two horizontal members d^3, one extending toward the building from near the middle of the member v, as indicated in Figs. 1 and 3, and secured to the upright a^3, while, as indicated in Fig. 5, the other member d^3 is secured at its outer end to the upright a' and at its inner end is supported by the lower end of the string-pieces o and o', having their upper ends secured, as indicated in Fig. 5, also to the right-hand horizontal member h^2.

As indicated in Figs. 3 and 4, string-pieces o^2 and o^3 are secured at their lower ends to the upright a^3 and at their upper ends to the horizontal member c^2. Between each pair of string-pieces o and o' o^2 and o^3 are secured in the usual way the tread-supports p, constituting supports for the steps leading from the platform f^3 to the second balcony e^2.

The balcony e, opposite the lower windows, has around it a railing q', which, as indicated in Figs. 4 and 5, is extended upward at q and secured to the vertical member a^2. From the vertical member a^3 there extends obliquely upward a similar railing q, joined to the railing q' around the platform e'. From this railing q' there extends obliquely upward another section of the railing q, secured to the vertical member a^2, and from the vertical member a^3 a similar railing q is extended upward, so as to join with the railing q' of the upper balcony.

I will now describe the course a person would take in passing from the upper balcony to the lower balcony through my fire-escape, exit to this upper balcony being afforded by means of the windows w^2 and w^3. After reaching the balcony one would pass to the right of the middle thereof and downward and outward on the steps leading therefrom to the platform f^3, thence to the left, as seen in Fig. 3, downward two steps upon the platform f^2, thence downward and toward the building onto the platform e', thence to the right-hand end of such platform, as seen in Fig. 2, thence downward and outward from the building upon the platform f', thence down two steps therefrom to the platform f, thence downward and toward the building upon the lower balcony e. No provision is

shown for reaching the ground from the lower balcony *e*, as for that purpose the usual swinging ladder or any similar means may be provided. My invention contemplates only the reaching of the lower balcony from the different upper stories of the building to which it may be applied.

Refer now to Fig. 6. Instead of connecting the string-pieces, such as those seen in Fig. 6, m^2 and m^3 directly to the angle-iron c' I have sometimes found it preferable to secure each of such string-pieces to a vertical member *y*, which in turn is secured at its lower end to the angle-iron c'. By this modification any forging in the process of putting up the fire-escape is rendered unnecessary.

What I claim is—

1. In an outside stairway for a fire-escape, in combination with the four vertical members constituting the outer and inner corners around which the stairway is built, horizontal pieces connecting the outside vertical members together and horizontal members also connecting such outside vertical members with the building, such last-named horizontal members constituting supports for the several platforms or balconies next to the building, flights of steps leading from the platforms next to the building to the platforms or landings supported by such vertical members and carried around such inner vertical members and within such outer vertical members, tie-rods extending obliquely from the inner ends of one pair to the outer ends of a lower pair of such horizontal members connected with the outside vertical members, all of such vertical members supported from and connected with such horizontal members.

2. In an outside stairway for a fire-escape, in combination with the four vertical members constituting the outer and inner corners around which the stairway is built, horizontal pieces connecting the outside vertical members together and horizontal members also connecting such outside vertical members with the building, such last-named horizontal members constituting supports for the several platforms or balconies next to the building, flights of steps leading from the platforms next to the building to the platforms or landings supported by such vertical members and carried around such inner vertical members and within such outer vertical members, and tie-rods extending obliquely downward and outward from the building and supporting the outer vertical members and the horizontal members by connections therewith at or near their junction, all of such vertical members supported from and connected with such horizontal members.

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