

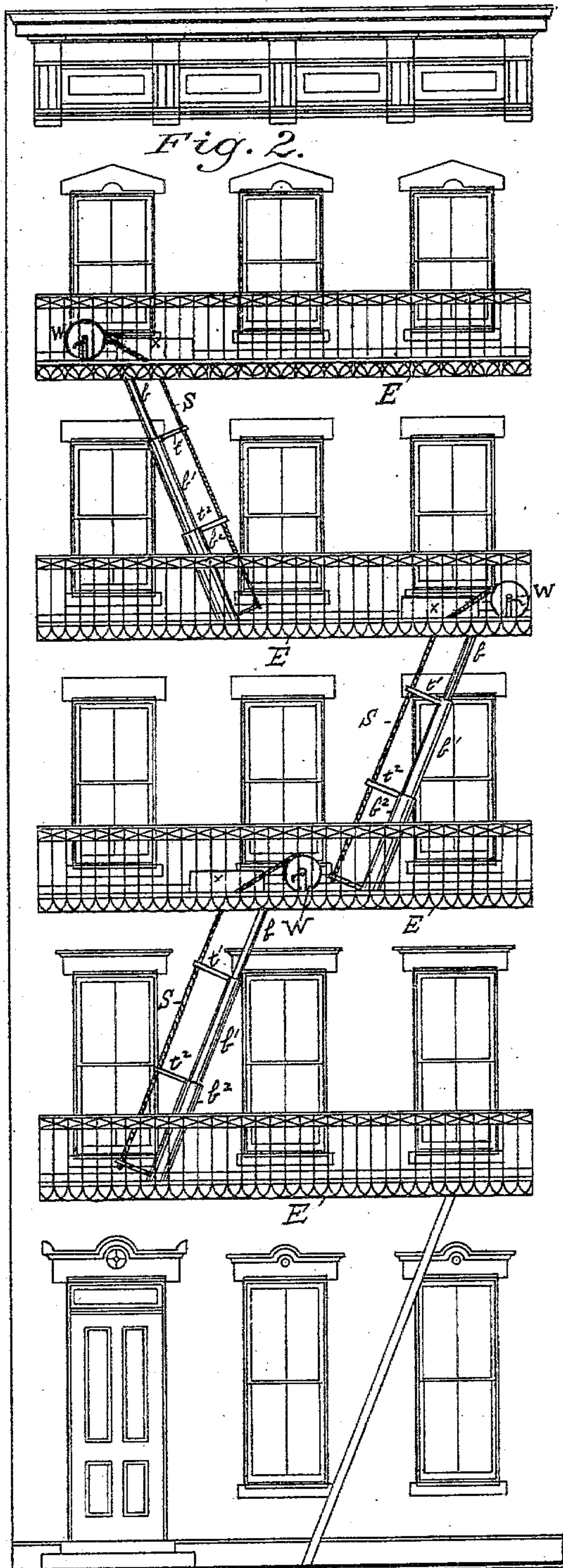
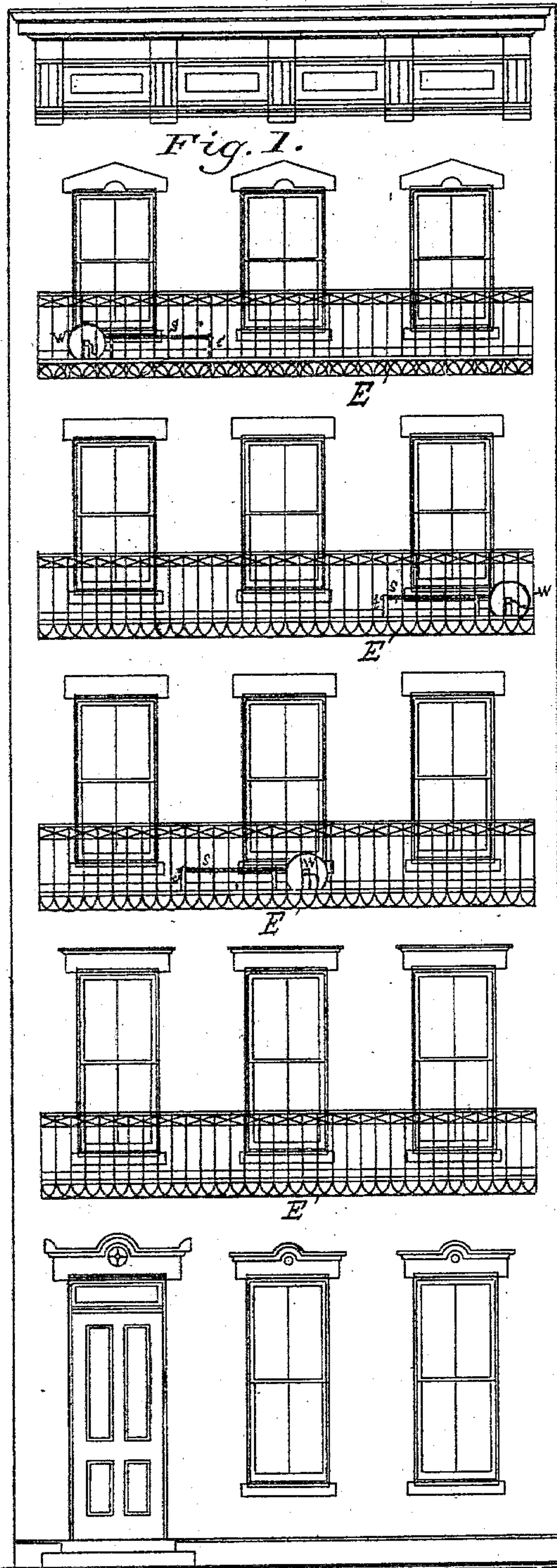
(No Model.)

2 Sheets—Sheet 1.

J. HART.
FIRE ESCAPE.

No. 283,391.

Patented Aug. 21, 1883.



Witnesses.
Jas. B. Lockwood
Jas. J. Clark

Inventor.
Joseph Hart

(No Model.)

2 Sheets—Sheet 2.

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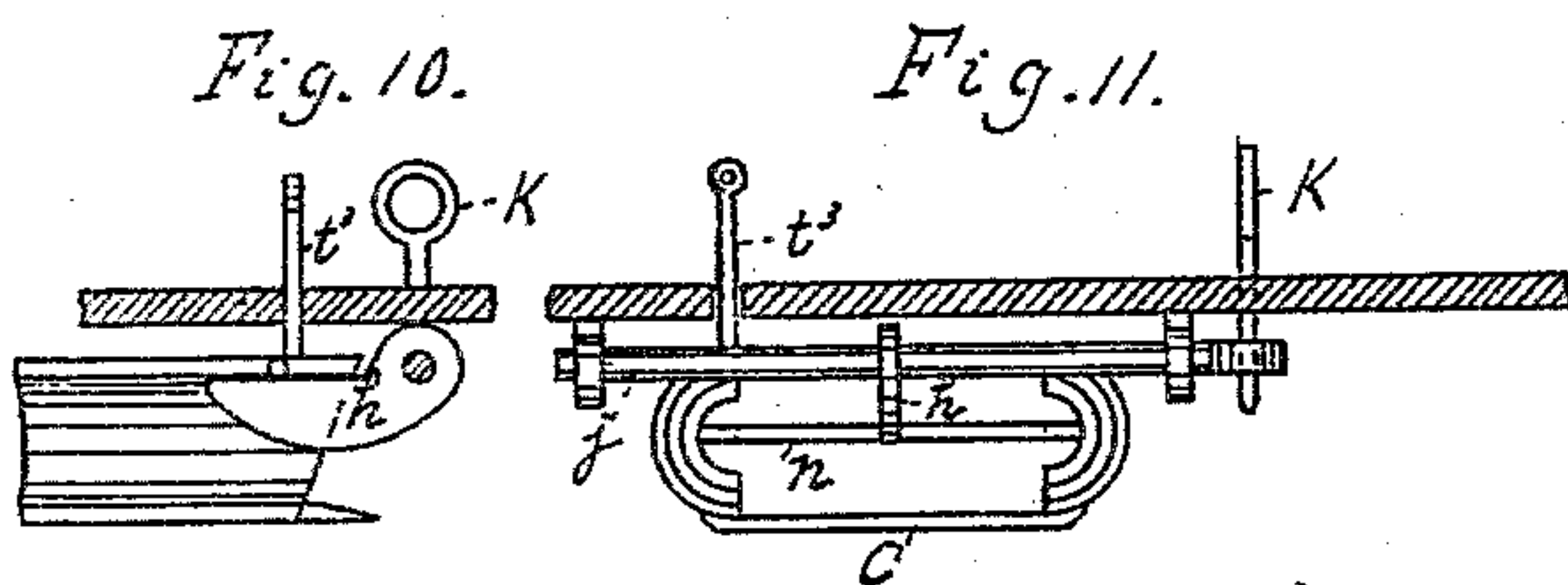
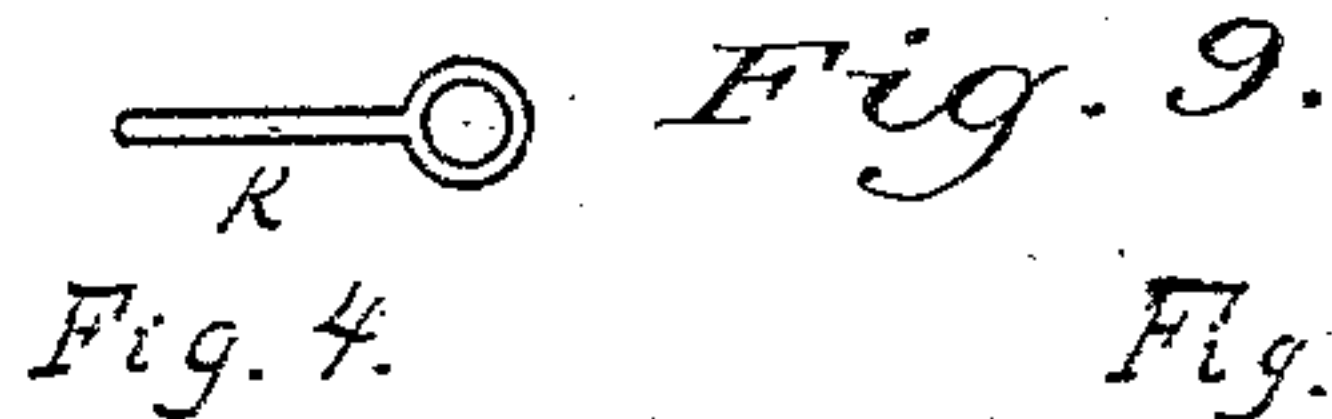
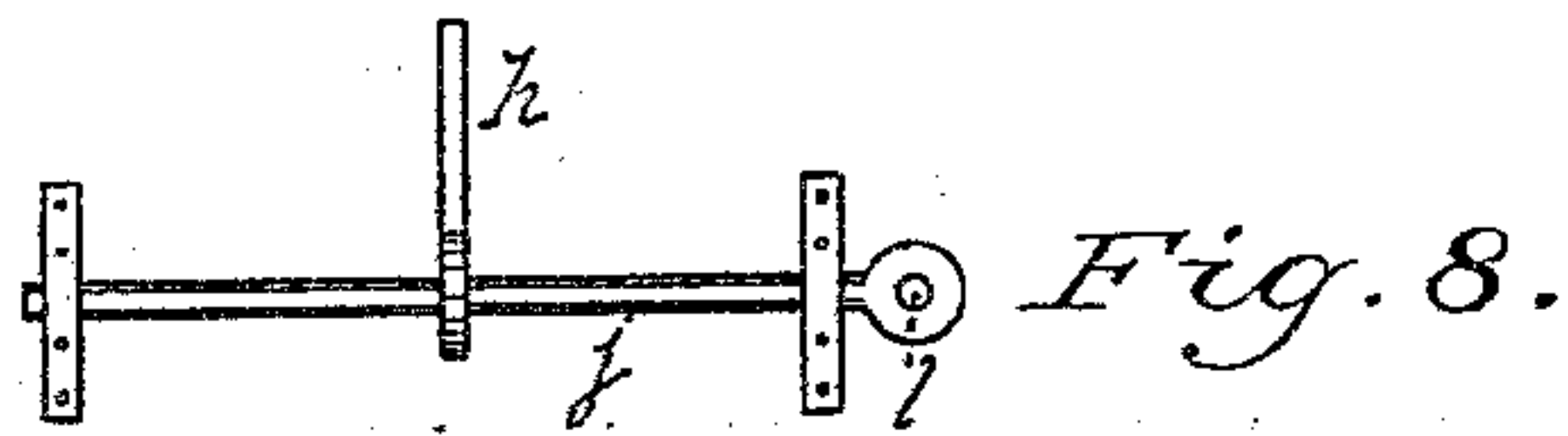


Fig. 11.

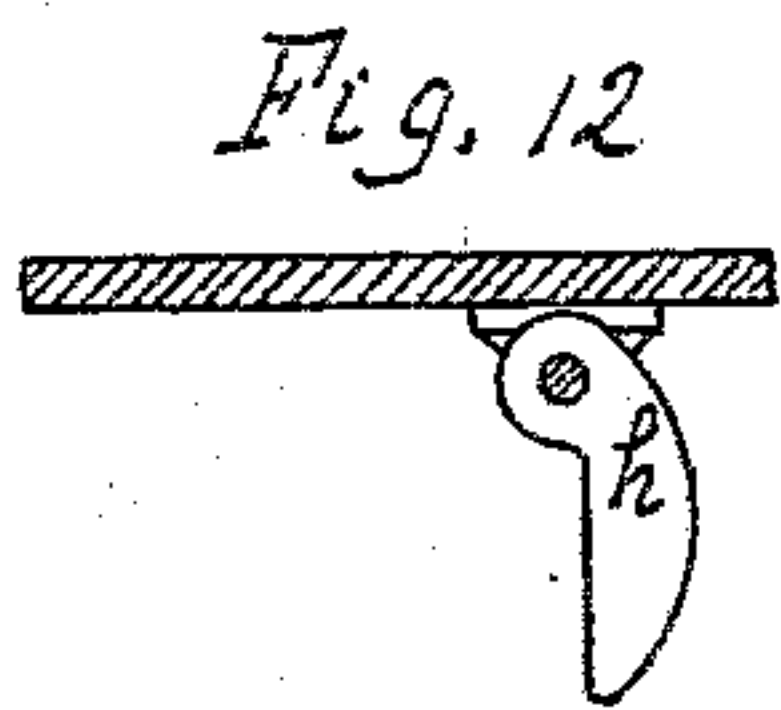
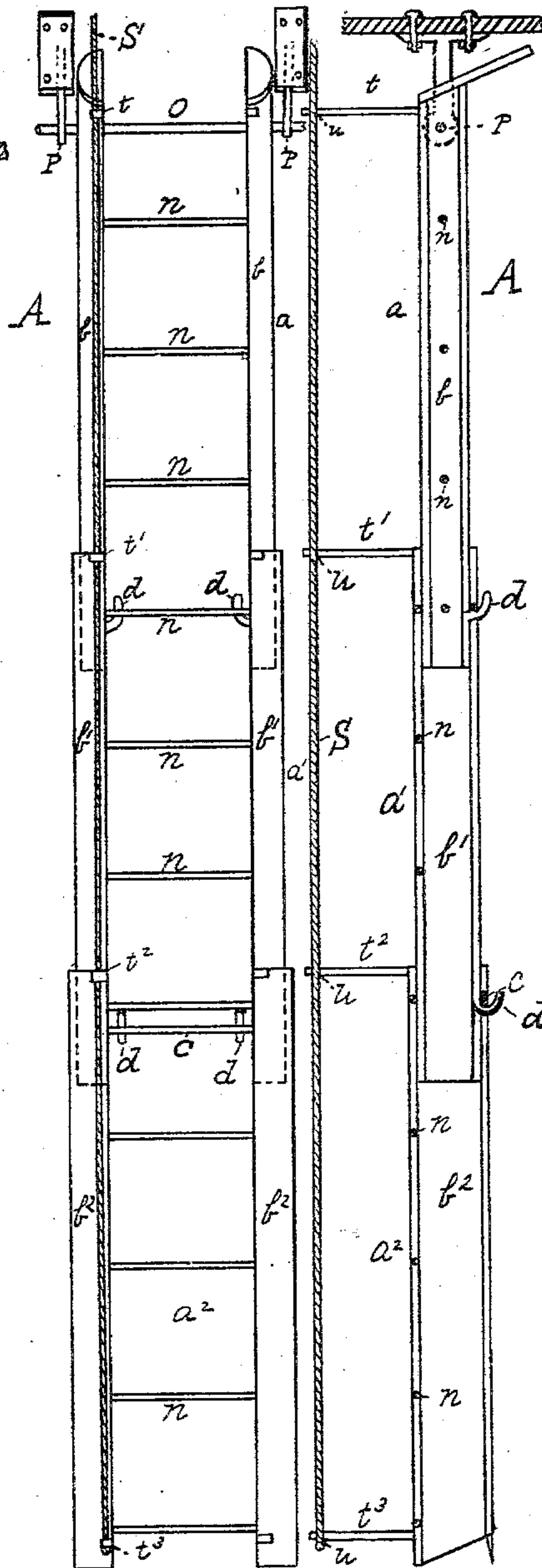
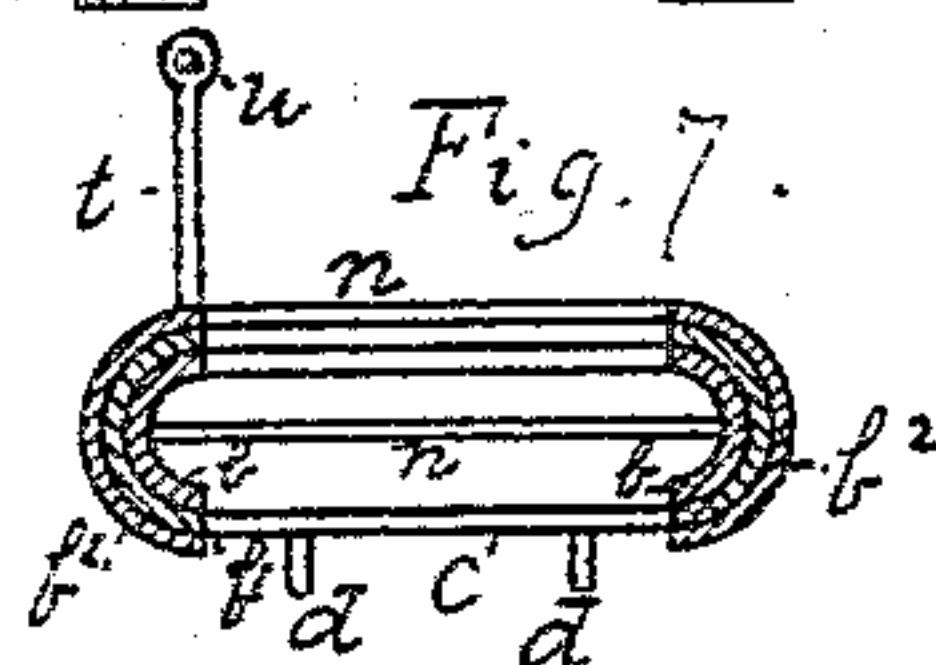
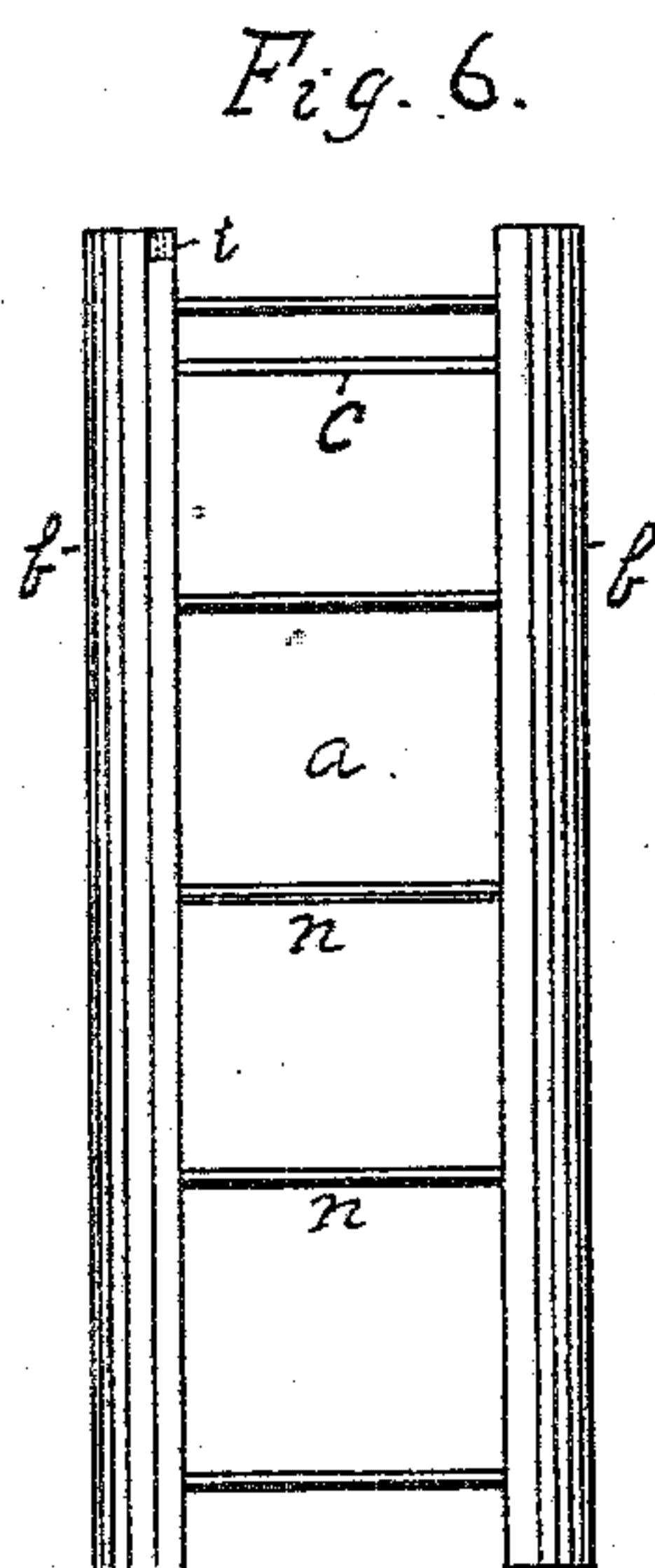


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH HART, OF NEW YORK, N. Y.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 283,391, dated August 21, 1883.

Application filed March 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HART, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to that class of fire-escapes in which a permanent balcony on the outer wall of a building is connected with the ground, balcony, or other structure below it by means of a ladder extending downward from the under side of such balcony. As heretofore applied this class of fire-escapes has been objectionable, because there has been no known method of folding up and concealing the ladders reaching from the lower side of the balconies, when not in use, in such a manner as to be readily and safely placed in position when needed, and in consequence the ladders have been left reaching from one balcony to the next at all times, thus injuring the appearance of the building and obstructing its outer walls, as well as encumbering and interfering with the free use of the balconies for other purposes. I obviate these objections by using a sectional extension-ladder of the telescoping style, so constructed that it may be easily and compactly slid together, folded up, and concealed beneath the lower side of the balcony, constructed as hereinafter set forth, when not in use, and at the same time readily and safely placed in position when needed by a person on the balcony, and which forms, when in position, a complete and safe ladder, with a hand-line attached for the greater safety of the person descending.

In the drawings, Figure 1 represents a building with the ladders folded up and concealed from view. Fig. 2 shows the same with the ladders in position and ready for use. Fig. 3 is a longitudinal sectional side view of my ladders extended. Fig. 4 is a plan view of the same. Fig. 5 is a plan view of a ladder with angular side bars partly extended. Fig. 6 is a plan view of a section of my ladder. Fig. 7 is a view of a cross-section of my ladder when folded. Fig. 8 shows a rod and finger which may be used to support the end of the ladder when folded up and in place. Fig. 9 is the pin for securing the same. Fig. 10 is a sectional side view of the finger, rod and pin supporting the ladder. Fig. 11 is an end

view of the same. Fig. 12 is a side view of the finger when the ladder is released.

Similar letters of reference designate similar parts in all the drawings.

A is the ladder, consisting of the sections a a' a'' . The side bars, b b' b'' b^2 b^3 , of the several sections are made preferably of iron or similar material, and of a semi-tubular form. In the first section the rungs nn may be placed in the center line of the side bars, which, for the purpose of additional strength, may be made flat upon their inner surfaces, if desired. In the next section the side bars are made broad enough so that when the outer convex sides of the bars b b slide in the inner concave sides of the bars b' b' the edges of the bars b' b' shall overlap the edges of the bars b sufficiently to give room to fasten the rungs of section a' to such projecting edges of b' b' , so that the section a may slide within the section a' without coming in contact with the rungs thereof. In like manner the edges of the side bars, b^2 b^2 , of the next section, a^2 , must overlap the edges of the side bars, b' b' , and also the rungs fastened in or to the same, and the side bars of each succeeding section must be made so much broader and with so much greater concavity than those of the preceding section as to allow such preceding section to slide freely within it without coming in contact with its rungs. Any desired number of sections may be used, and the sections may be further strengthened by cross-stays inserted in the edges of the side bars opposite to the rungs, as c c c . The sections are prevented from slipping too far beyond each other and apart by the hooks d d , which engage with the rungs, cross-stays, or other hooks when the sections are extended.

I do not confine myself to side bars of a semi-tubular form. Other styles of telescoping side bars may be used, but I prefer the semi-tubular form above described, because it is stronger and neater than most others.

The upper end of my ladder I fasten to the lower side of the balcony by means of the rod o , resting in sockets P P , or any other suitable hinge device.

On the ends of the side bars of the sections I fasten upright rods t t t t , which have holes in their extremities at u , through which runs a rope, wire-rope, or chain, S , fast at one end to the rod t , and which, passing up through

the floor of the balcony, is attached to a windlass, W.

When it is desired to fold up and secure the ladder, the rope is wound up upon the windlass, which draws the sections together, when the rod *t*, acting as a lever, is drawn backward and upward by the motion of the rope, thus lifting the ladder into a horizontal position beneath the floor of the balcony. When the rod *j* is turned, and the finger *h* catches the bottom of the ladder, and is held in place by the pin *K*, passed through the floor of the balcony and the hole *l* in the end of rod *j*, the rods *t t' t'' t'''* pass up through an opening in the floor of the balcony.

When the ladder is required for use, the lower end is released and falls downward, and at the same time the sections are extended of their own weight, the rope *S* is drawn off the windlass and extended between the rods, and forms a hand-rope along the side of the ladder.

A trap-door may be used to cover the greater portion of the opening in the balcony, through which the rods *t t' t'' t'''* and the rope *S* pass, and by means of which the ladder is reached when the ladder is not in use, as *x*.

Around the lower edge of the balcony I place a depending rim, *E*, which is sufficiently broad to project below and conceal the ladder when folded and the projecting supporting devices. This depending-rim may be of any desired pattern, and may be formed as an extension of the railing around the upper side of the balcony. It serves to conceal the ladder from view and protect it from the weather, and at the same time is an ornament to the balcony.

By means of my invention a ladder of considerable length may be easily and neatly folded up and concealed beneath a balcony which is very much shorter than the ladder, and therefore but short balconies need be used, if desired, and a great saving is made in the amount of material required for their construction, while the hitherto unsightly fire-escape is converted into an ornamental structure by the folding and concealing of the ladder part of the escape within the balcony.

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

1. The extension-ladder *A*, consisting of the sections *a, a', and a''*, having side bars, *b b' b'' b'''*, rungs *n n n*, hooks *d d*, and cross-stays *c*, pivoted at its upper end to a fire escape balcony, substantially as and for the purposes set forth.

2. The extension-ladder *A*, consisting of the sections *a, a', and a''*, having side bars, *b b' b'' b'''*, rungs *n n n*, hooks *d d*, rods *t t' t'' t'''*, and rope *S*, pivoted at its upper end to a fire-es-

cape balcony, substantially as and for the purposes set forth.

3. The extension-ladder *A*, consisting of the sections *a, a', and a''*, having side bars, *b b' b'' b'''*, rungs *n n n*, hooks *d d*, with the rods *t t' t'' t'''*, and rope *S*, and having the cross-stays *c c*, pivoted at its upper end to a fire-escape balcony, substantially as and for the purposes set forth.

4. The combination, with the ladder *A*, consisting of the sections *a, a', and a''*, having side bars, *b b' b'' b'''*, rungs *n n n*, hooks *d d*, with the rods *t t' t'' t'''*, rope *S*, and cross-stays *c c c*, pivoted at its upper end to a fire-escape balcony, of such balcony, with the rod *j*, finger *h*, and pin *k*, for the purpose of supporting and concealing such ladder when not in use, substantially as described.

5. The combination of the ladder *A*, consisting of the sections *a, a', and a''*, having side bars, *b b' b'' b'''*, rungs *n n n*, hooks *d d*, rods *t t' t'' t'''*, rope *S*, with the cross-stays *c c c*, pivoted at its upper end to a fire-escape balcony, of a windlass, *W*, or similar device upon such balcony, adapted to raise the ladder and fold the same horizontally beneath the floor of the balcony, substantially as and for the purposes set forth.

6. The combination, in a fire-escape, of the ladder *A*, consisting of the sections *a, a', and a''*, having side bars, *b b' b'' b'''*, rungs *n n n*, hooks *d d*, rods *t t' t'' t'''*, rope *S*, with the cross-stays *c c c*, pivoted at its upper end to a fire-escape balcony, of such balcony, with the rod *j*, finger *h*, and pin *k*, or similar fastening device, for the purpose of supporting and concealing such ladder, of the windlass *W*, adapted to fold and raise such ladder into place horizontally beneath such balcony, substantially as set forth.

7. The combination, with a fire-escape, consisting of the ladder *A*, pivoted to the under side of a balcony, with the windlass *W*, or similar device, adapted to fold and raise the ladder into place, and the balcony, and with the rod *j*, finger *h*, and pin *k*, or their equivalents, of the depending rim *E* around the lower edge of such balcony, adapted to protect and conceal from view such ladder and supporting devices when folded and raised into place beneath the balcony, substantially as set forth.

8. The combination, with a fire-escape balcony and a ladder pivoted thereto, of the rod *j*, the finger *h*, and pin *k*, as and for the purpose specified.

JOSEPH HART.

Witnesses:

JAS. B. LOCKWOOD,
JAS. T. CLARK.