(No Model.)

A. J. BLEW.

FIRE ESCAPE.

No. 355,917. Patented Jan. 11, 1887.

FIG. 1. FIG. 2. FIG. 4. FIG. 5. FIG. 6. FIG. 3. FIG. 7. FIG. 8. FIG. 9. FIG. 10. FIG. 11. FIG. 12. FIG. 13.

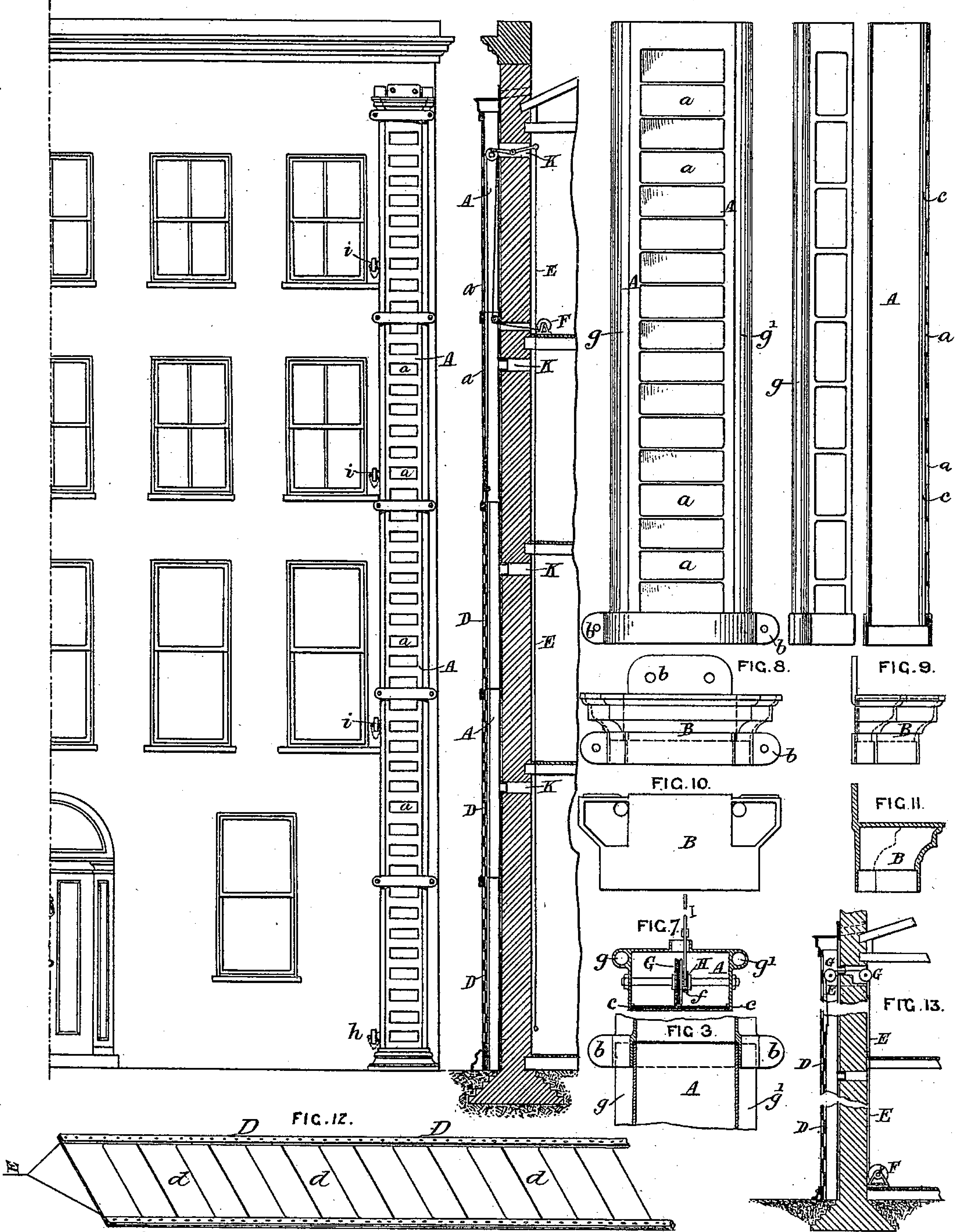
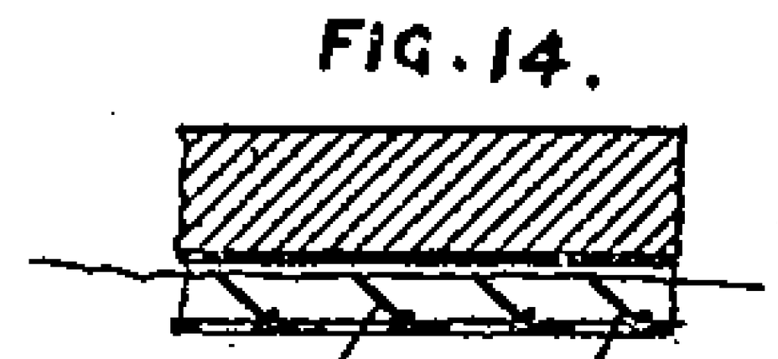


FIG. 14.



Witnesses:
John E. Parker
Wm. D. Conner

Inventor:
Alfred J. Blew
by his Attorneys
Howson and Sons

UNITED STATES PATENT OFFICE.

ALFRED JESSE BLEW, OF FAWLEY LODGE, HYTHE, NEAR SOUTHAMPTON, ENGLAND.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 355,917, dated January 11, 1887.

Application filed June 7, 1886. Serial No. 204,342. (No model.) Patented in England May 8, 1885, No. 5,705.

To all whom it may concern:

Be it known that I, ALFRED JESSE BLEW, gentleman, a subject of the Queen of Great Britain and Ireland, and residing at Fawley Lodge, Hythe, near Southampton, Hants, England, have invented certain new and useful Improvements in Fire-Escapes, applicable also for ventilating buildings, (for which I have obtained a patent in Great Britain, No. 5,705, dated May 8, 1885,) of which the following is a specification.

My invention has for its object to provide convenient apparatus or means for enabling persons to escape from dwelling-houses and other buildings when unable to do so by the ordinary means, in consequence of fire or for other reasons, which apparatus may also serve for ventilating purposes; and it consists in arranging on the exterior of a building, in close proximity to the windows or other like places of exit, a frame, trunk, or structure, which may extend upward from the ground to the uppermost window or other like exit, or to the roof of the building. This frame, trunk, or structure, which may consist of ornamental iron-work, preferably coated with fire-resisting material, or which may be constructed of fire-brick or other fire-resisting material, cased or faced with wrought-iron, is provided with openings at convenient distances apart, so as to form steps by which persons may ascend and descend. In the interior of this frame, trunk, or structure is a perforated wrought-iron plate, or a number of plates connected together by chains, wire ropes, or otherwise, and so arranged as to cover the openings or some of the openings in the frame, trunk, or structure when it is not required to be used as a ladder, but capable of being moved into position to uncover the openings in the said frame or trunk when it is required to use the same as a ladder or means of escape from the building. The inner movable plate or plates is or are connected by a chain or wire rope, or its equivalent, to a crab or windlass, or to other suitable mechanism, situated in any convenient part of the building, for the purpose of raising the said plate or plates into position for closing the openings in the trunk, in which position it is maintained by means of a ratchet-wheel and detent in connection with the windlass, or with a pulley or drum, over or around which the lifting chain or rope is passed. To the outer end of the engaging detent is connected a rope, which passes through the floors of the building to the lowest apartment thereof, if desired, so that when it is desired to uncover the openings in the frame or trunk the said detent may be disengaged from the ratchet-wheel by hauling on the rope in any of the apartments through which it passes, and thus release the wrought-iron plate or plates, which will then descend by its or their gravity and uncover the openings in the outer frame to admit of persons ascending and descending.

In order to keep the structure cool in case of fire, I arrange on each side thereof, or in close proximity thereto, a tube or pipe, to the lower end of one or both of which a hose-pipe or hose-pipes may be attached and water forced through the said pipe or pipes and through suitable passages leading therefrom into the several apartments in the building, or on the roof of the building, from whence it may flow over the structure, and thus maintain it in a cool condition. One of the said pipes may be utilized for conducting or conveying away rain-water from the roof.

The trunk or structure may be made to communicate with the several apartments of the building by suitable passages, through which vitiated air from the apartments may escape into the trunk, and by which fresh air may be admitted into the apartment.

In order that my said invention may be fully understood, I shall now proceed more particularly to describe the same, and for that purpose shall refer to the several figures on the annexed sheet of drawings, the same letters of reference indicating corresponding parts in all the figures.

Figures 1 and 2 represent, respectively, a front elevation and a vertical section of the front wall of a dwelling-house provided with my improved apparatus, constructed of metal, according to my invention, and the remaining figures are details of the apparatus drawn to an enlarged scale.

In carrying out my invention, I build in the wall of a dwelling-house or other building, or attach thereto by any suitable means, the trunk A, which may, as shown, be made in

parts or lengths, and the several lengths connected together by socket-joints, as shown in Fig. 3, or by riveting or otherwise, the said trunk being constructed of any length required, according to the height of the building to which it is to be applied. Fig. 4 is a front elevation of one of the lengths detached, and Figs. 5, 6, and 7 are respectively a side elevation, a vertical section, and a horizontal section of the same. Figs. 8, 9, 10, and 11 are views of the top or cap B of the trunk. The several lengths of the trunk may be fixed to the wall of the building in any suitable way. I have, however, shown them provided with lugs or ears *b*, by which they may be fixed by strong studs or nails driven through holes in the said lugs or ears into the brick-work.

On each side of the interior of the trunk A is a groove, *c*, in which grooves is fitted to slide a perforated wrought-iron plate, D, (a portion of which is shown in perspective in Fig. 12,) the openings or perforations *d* in the said plate corresponding in size to the openings *a* in the trunk A, so that when the openings *d* are opposite the openings *a* steps are provided, by which persons may ascend and descend the trunk. The plate D is connected by a wire rope, E, or its equivalent, to a crab or windlass, F, which may be situated, as shown in Fig. 2, in the top floor of the building; or it may be placed in the lowest apartment thereof, as shown in Fig. 13, or in the basement or any other suitable part of the building. The rope E passes over or around a pulley, G, fitted to rotate in the upper part of the trunk A and provided with ratchet-teeth *f*, with which a detent, H, engages for the purpose of maintaining the plate D in its elevated position, with the solid parts between the openings *d* thereof opposite the openings *a* in the trunk, thus preventing persons ascending the trunk until the plate D is moved so as to cause the openings thereof to come opposite the openings in the trunk. To the outer end of the detent H (which, together with the ratchet-wheel *f*, may, if desired, be arranged on the crab or windlass F) is attached one end of a rope, I, which passes down through the several floors of the buildings, so as to be accessible in any of the said floors, to be pulled for the purpose of disengaging the detent from the ratchet-wheel *f*, and thereby allow the plate D to descend by its own gravity, so as to bring the openings therein opposite the openings in the trunk A and form a ladder, by means of which persons, in the event of the building catching fire, may safely descend from any of the floors of the building.

In order to facilitate access to the ladder from the windows or other exits or openings in the building, the window-sills may be made sufficiently long to extend to the side of the trunk A; or a special platform may be built in or secured to the building just beneath the windows or other exits to assist persons in obtaining access to the ladder.

On the exterior of each side of the trunk A is a tube or pipe, *g g'*, through which water may be passed for the purpose of maintaining the trunk cool, for which purpose I provide at the lower part of the pipe *g* a screwed nozzle, *h*, to which a hose-pipe may be attached and water forced up through the said pipe onto the roof of the building, from whence it will flow over the trunk A, and thereby prevent the said trunk from becoming unduly heated. The pipe *g* may also be provided with other screwed nozzles, *i*, at suitable distances apart, for the reception of hose-pipes for directing streams of water through the windows or other openings to the interior of the building. The pipe *g'* may, if desired, be also provided with means for the attachment of hose-pipes similar to the pipe *g*, or it may be simply employed for conveying rain-water from the roof of the building.

K are openings in the back of the trunk A, communicating with the interior of the building, through which openings vitiated air may pass from the interior of the building into the trunk, other openings being provided, if required, for admitting fresh air into the building, and thus maintain the building perfectly ventilated.

Fig. 13 is a modification illustrating an arrangement whereby, in the event of the building catching fire, the plate D is caused to descend automatically by the burning of the rope E, by which it is held in its elevated position. This rope is connected at one end to the plate D, and passes thence over the pulleys G, and down through the several floors of the building to the lowest apartment, or to the basement, where its opposite end is connected to a crab or windlass, F, round which it is wound, so as to maintain the plate in its elevated position; or the end of the rope may be connected to a weight (or its equivalent) sufficiently heavy to maintain the plate D elevated.

In the event of fire burning the rope E, or should the said rope be otherwise broken or divided, the plate, being relieved of its counterbalancing-weight, will immediately descend, bringing the openings therein opposite the openings in the trunk A, thereby providing ready means to enable persons to escape from the building should they be unable to do so by the ordinary exits. Should the rope remain unbroken the plate D may be caused to descend by raising the rope in any of the apartments through which it passes, so as to remove the weight thereof from the plate.

Instead of the sliding plate D, the openings *a* in the trunk A may be each fitted with a separate hinged plate, D, as shown in Fig. 14, (or otherwise,) the several hinged plates being connected together by a rope or its equivalent, so as to be all operated simultaneously, by either hauling on or by releasing the rope, for the purpose of uncovering the openings *a* in the trunk in a similar manner hereinbefore described for operating the sliding plate D. When the trunk or frame A is made of metal, I prefer to coat it with some suitable fire-re-

sisting material—such, for example, as what is known as "asbestine," which is a substance well known and extensively used in America for fireproofing buildings. I wish it to be understood, however, that I do not confine myself to the use of metal in the construction of the trunk, as I may prefer to make it of bricks, artificial stone, concrete, fire-proof cement, or other suitable fire-resisting material, and which may, if desired, be incased or faced with metal, and the parts may also be tied together by metal bars or rods, which may constitute the steps of the ladder.

I am aware that it has been proposed to provide a fire-escape ladder against the wall of a building with an inclosing-case having a parallel movement outward and from the ladder; but such a construction I do not desire to claim.

I claim as my invention—

1. A building provided with a fire-escape trunk having openings therein to form steps, and having a movable plate or plates to open and close said openings, substantially as and for the purpose described.

2. The combination of the fire-escape trunk having openings, and a movable plate or plates to close said openings, with a tube or tubes through which air may be forced, substantially as described.

3. A building having a fire-escape trunk provided with openings, in combination with a sliding plate having corresponding openings to open and close the openings in the trunk, substantially as set forth.

4. A building provided with a fire-escape trunk having openings, with a movable plate or plates within the trunk to open and close said openings, substantially as described.

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

ALFRED JESSE BLEW.

Witnesses:

HENRY OWEN,
Merchant, Wolverhampton.

FREDK. E. HISCOCKS,
U. S. Consulate.