(No Model.)

J. P. DUNN.

FIRE ESCAPE.

No. 250,901. Patented Dec. 13, 1881.

Fig. 1.

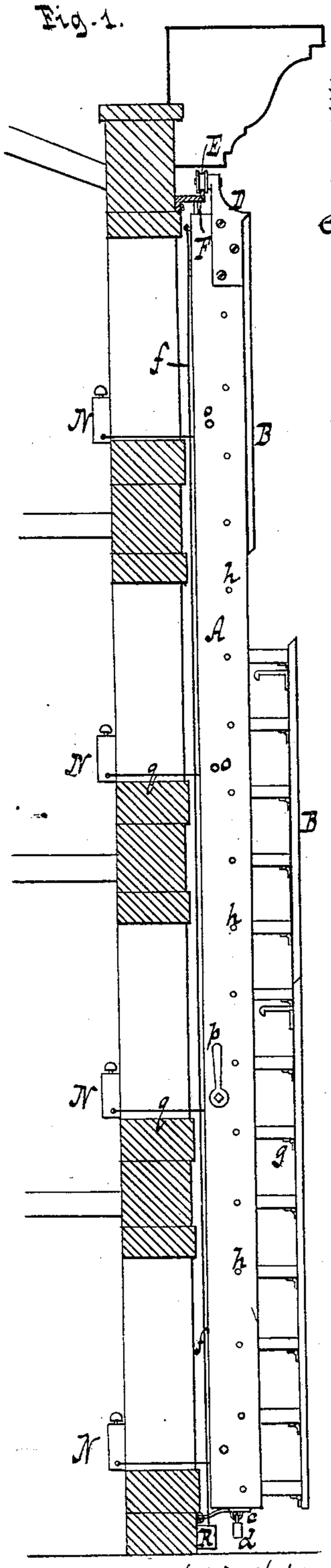


Fig. 3.

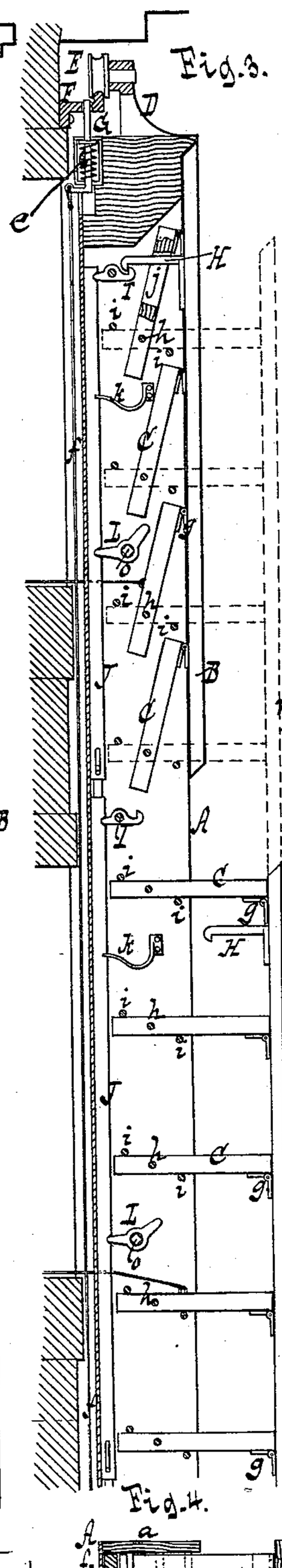


Fig. 2.

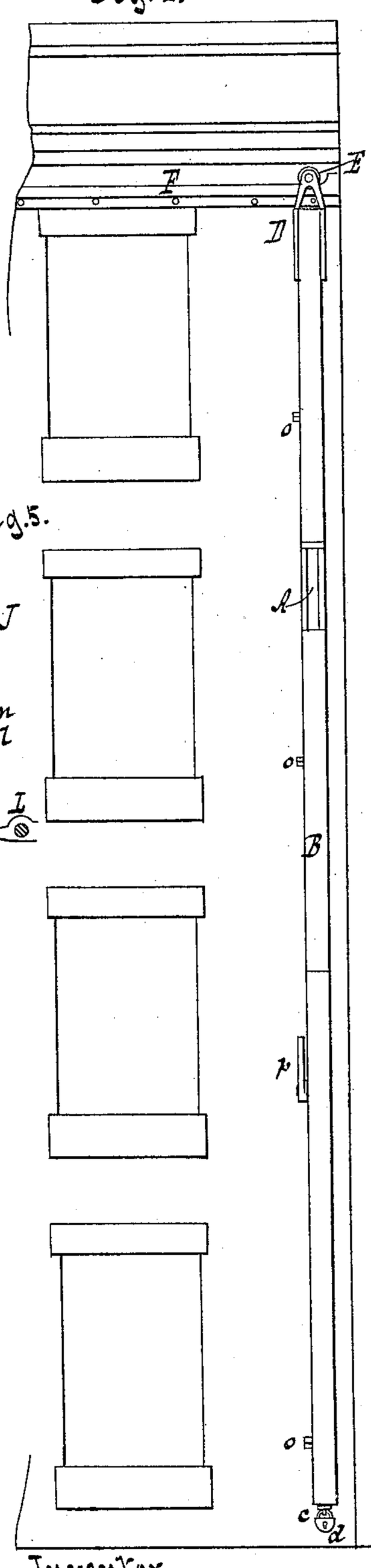


Fig. 5.

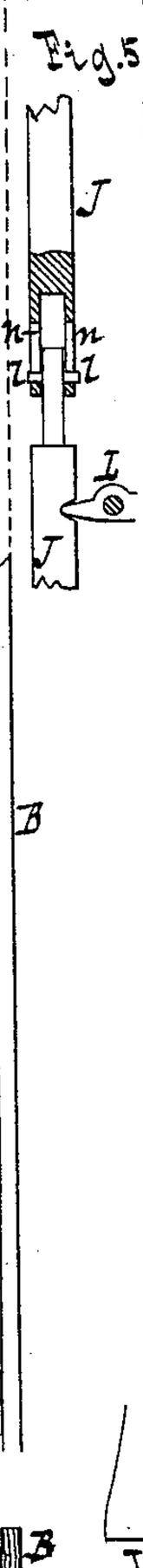
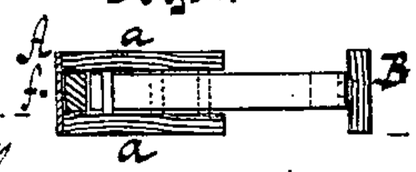


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 250,901, dated December 13, 1881.

Application filed September 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, J. PARIS DUNN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Fire-Escapes, of which the following is a specification.

This invention relates to fire-escapes for buildings, and especially that class thereof composed of a ladder the two sides of which are formed by the parts of a longitudinally-divided case and connected together by pivoted rounds, allowing one part of the case to be moved close up against the other or fixed part thereof, and retained in that position by a suitable fastening when the apparatus is not in use, the whole being applied to the exterior of the building and being accessible from either floor.

This invention is illustrated in the accompanying drawings, in which Figure 1 represents a side view. Fig. 2 is a front elevation. Fig. 3 is a vertical cross-section. Fig. 4 is a horizontal section. Fig. 5 is a detail view of the detent-operating rod.

Similar letters indicate corresponding parts.

The letters A B designate the parts of the longitudinally-divided case forming the sides of the ladder, and C the rounds, the main part A of the case being adapted to be fixed to the building, and having cheeks or side pieces, *a*, Fig. 4, which hug the rounds, thus sustaining the same in a lateral direction, while the part B is a simple bar having a like width to the main part.

At the upper end of the main or fixed part A of the case is a bracket, D, carrying a roller, E, which is adapted to a guide-rail, F, on the exterior and upper part of the building, and if this roller is placed on such rail the entire apparatus is supported by its means, and is thus rendered capable of being moved to any desired part of the building or from one building to another, wherever it may be required. At the bottom or any other suitable point below its upper end the fixed part A of the case is provided with a staple, *c*, for the reception of a hasp-lock, *d*, Figs. 1 and 2, or it is otherwise adapted to be locked to the building at the selected place, for safety. In addition to the roller E, the fixed part A of the case is provided at the upper end with a latch, G, (see Fig. 3,) which engages the guide-rail F or any other suitable part of the building, thus locking the apparatus also at the top. The latch G is shot by the action of a spring, *e*, and arranged to be retracted by a cord, wire, or chain, *f*, extending to the lower part of the apparatus. The cord *f*, or its substitute, is placed back of the fixed part A of the case for protection against burglars and others, and its lower end may be inserted in a box, R, similar to those usually employed for sending fire-alarm signals, making it accessible only to a person having a key to the box.

The rounds C are pivoted at one end to the movable part B of the case, as by hinge or rule joints *g*, and pivoted within or inside of their opposite ends to the fixed part A, as by studs *h*. On opposite sides of and above and below the points *h*, at which the rounds C are pivoted to the fixed part A of the case, such part is provided with stops *i*, and when the ladder is unfolded for use the rounds abut against both of these stops, as shown in Fig. 3, and are thus effectually supported and retained in the required position, relieving the pivots *h* of all strain. The end joints, *g*, are at the lower edge of the rounds C, thus allowing the ends of the rounds to abut against the movable part B of the case, and affording an additional support thereto. By the arrangement of the studs *i* within the ends of the rounds I gain the additional advantage of reducing to a minimum the area of width of the case A from front to back.

The movable part B of the case is made in sections, each of which is provided with a catch, H, and the fixed part A is provided with detents I, which engage the catches respectively when the sections of the movable part are brought up against the fixed part to fold the ladder, thus firmly retaining the sections in the desired positions. Openings *j* (see Fig. 3, top part) are made in the appropriate rounds C for the passage of the catches H through them.

In the fixed part A of the case is arranged

a vertically-sliding rod, J, which is made in sections, one to each section of the movable part B. The sections of this rod J engage the detents I, respectively, while each is subjected to the action of a spring, *k*, having a tendency to force the same downward; and if the sections of the rod are moved upward against their springs, the detents are thereby actuated to release the catches and allow the movable part B of the case to recede from the fixed part. The sections of this detent-operating rod J are connected in such a manner that each is adapted to move upward independently of the one above it, but carries with it the section or sections below it, such connection being effected in this example by means of pins *l*, (see Fig. 5,) projecting from one section near its upper end and entering slots *n* formed in the next upper section near its lower end. The sections of the rod J are approximately opposite to the floors of the building, and by their arrangement a person standing on either floor is enabled to release and unfold those sections of the movable part C of the case below such floor, but not those above, so that those sections not actually in use are left undisturbed. Either section of the detent-operating rod J is moved up against the action of its spring *k* by one arm of an elbow-lever, L, the other arm of which has its terminal end near one of the rounds C, so that if a rocking motion is imparted to this lever it not only acts on the detent-operating rod, but also strikes the round referred to, thus acting as a pusher for throwing the movable part B of the case away from the fixed part. The appropriate arm of the elbow-lever L engages the detent-operating rod J by entering a notch therein, as shown, it being so arranged as to remain in the notch in the motions of the lever. The arms of the elbow-lever L, moreover, are so arranged that the detents I are actuated to release the catches H before the lever begins to act on the movable part B of the case, and the lever is fixed to an arbor, *o*, which is adapted to receive a key, *p*, Figs. 1 and 2, for turning it.

In order to make known whenever the movable part B of the case is unfolded, and thus guard against burglars or others, I connect thereto a series of alarms, N, one to each section of such part, by cords *q* or other suitable means, either of these alarms being sounded by the movement of the part B away from the fixed part.

It is also designed to so arrange the movable part B of the case that it may be released from below its entire length by the fire department, and thus give the inmates of a building an alarm in case of fire; also, that the fire department can take the hose to any part of the building without any delay. This is done by attaching the wire or chain *f* to the upper end of the detent-operating rod J, as well as to the latch G, the same passing over a pulley applied to the fixed part A of the case, so that by pulling the wire or chain it will raise the detent-operating rod its entire length, releasing the catches and allowing the movable part of the case to open.

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

1. The ladder having its sides formed by the longitudinally-divided case, the fixed part of which has a roller at the upper end adapted to a guide-rail on the exterior and upper part of the building, and is capable of being locked to the building below the upper end, substantially as and for the purpose described.

2. The ladder having its sides formed by the longitudinally-divided case, the fixed part of which is provided at its upper end with a roller adapted to a guide-rail on the exterior and upper part of the building, and with a latch for engaging such rail or any other suitable part of the building, and which is capable of being locked to the building below the upper end, substantially as and for the purpose described.

3. In a fire-escape, the combination, with the rounds pivoted to the movable and stationary parts of the case and extended beyond their pivotal connection with the stationary part of the case, of two stops, *i i*, located on opposite sides of and above and below each of the pivots connecting the rounds to the stationary part of the case, substantially as described, whereby the said pivots of the rounds are relieved of all strain when the ladder is opened.

4. The longitudinally-divided case forming the sides of the ladder and having the movable part thereof made in sections, each provided with a catch, in combination with pivoted detents applied to the fixed part of the case for engaging the catches respectively, and the detent-operating rod, made in sections, each adapted to move upward independently of the one above it, but carrying with it the section or sections below it, substantially as shown and described, for the purpose set forth.

5. The combination, with the longitudinally-divided case forming the sides of the ladder, the catches, detents, and detent-operating rod, of the rocking elbow-levers engaging the detent-operating rod by one arm, and having the other arm arranged to act as a pusher for throwing the movable part of the case outward or away from the fixed part thereof, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

J. PARIS DUNN. [L. S.]

Witnesses:
W. HAUFF,
CHAS. WAHLERS.