No. 849,651. PATENTED APR. 9, 1907.

S. ASHFORD.

ALARM FOR FIRE ESCAPES.

APPLICATION FILED MAY 9, 1906.

Fig. 2.

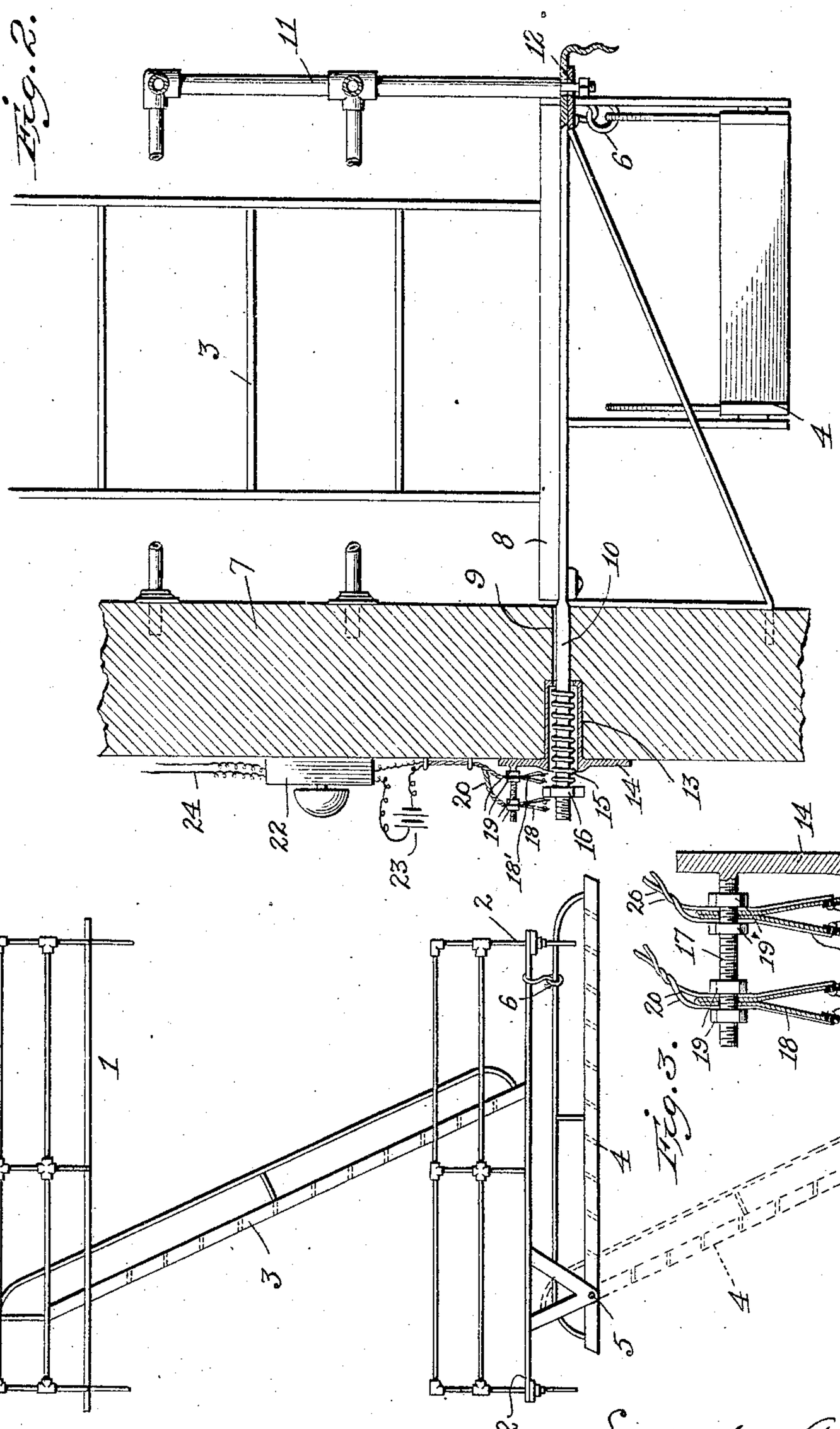
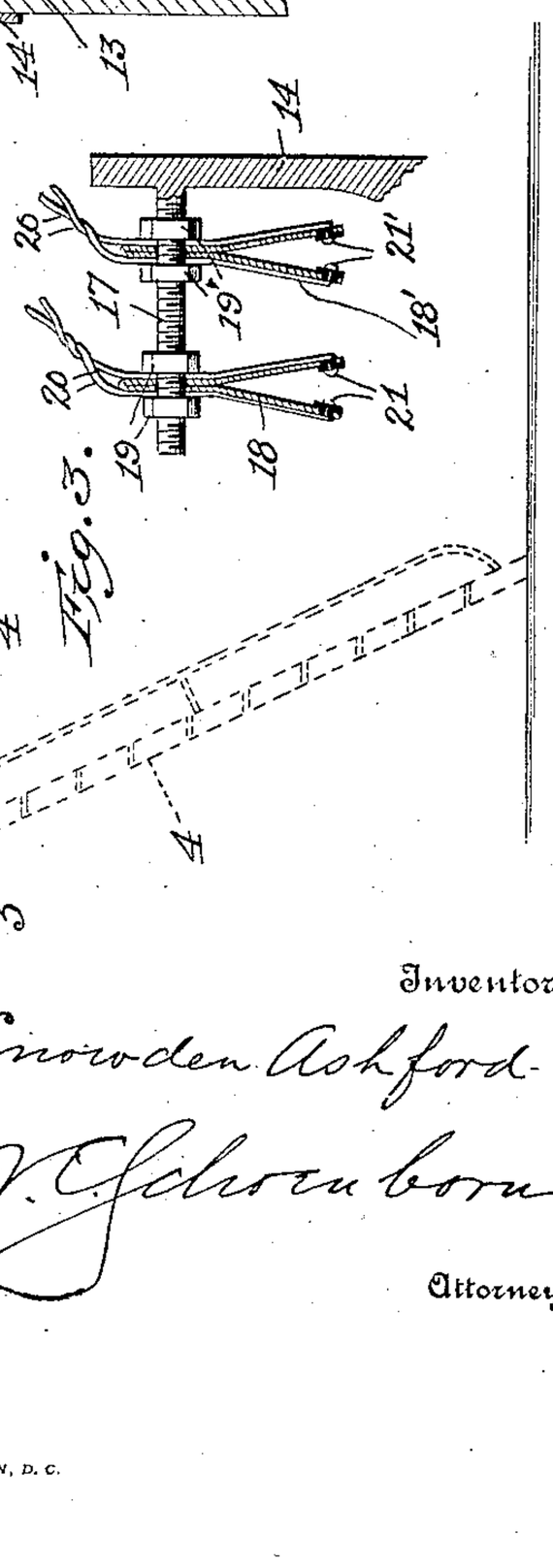


Fig. 1.

Fig. 3.



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ALARM FOR FIRE-ESCAPES.

No. 849,651. Specification of Letters Patent. Patented April 9, 1907.

Application filed May 9, 1906. Serial No. 316,021.

To all whom it may concern:

Be it known that I, SNOWDEN ASHFORD, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Alarms for Fire-Escapes, of which the following is a specification.

My invention relates to alarms or signals which are especially adapted to give warning when the weight of a person or other weight is placed on any one of the several balconies of a fire-escape or if the amount of weight supported by any balcony is reduced—as, for example, when the lower ladder is made to rest upon the ground.

The object of my invention is to devise an improvement in fire-escapes which can be readily and cheaply attached or applied to the existing forms of construction without having to materially alter in any particular the exterior construction of the usual form of fire-escape or to make other than slight additions or changes in the construction of the parts which pass through the walls for supporting the fire-escape on the building.

Other evident advantages and objects of the construction will appear from the hereinafter-detailed description of the device and manner of operating the same.

My invention consists of structural features and relative combinations of elements, which will be hereinafter more fully and clearly described, and particularly pointed out in the appended claims.

Referring to the one sheet of drawings, in which similar reference characters indicate the same parts in the several figures, Figure 1 is a side elevation of two of the balconies of a fire-escape with the connecting and lower ladders. Fig. 2 is an enlarged view of one of the lower-balcony supports, showing the wall in section and the means of attaching the electric alarm device. Fig. 3 is an enlarged view of the electric contact-points and means for adjusting the same.

Referring to Fig. 1, 1 is an upper and 2 a lower balcony of a fire-escape, which may be secured and supported on the outside of a wall in a manner to be presently described. 3 is an inclined ladder connecting the upper balcony with the lower one and so related thereto that the upper-balcony floor can move without affecting the ladder 3. 4 indicates the lower ladder, having one of its ends pivoted at 5 to the lower balcony, so as to permit the other end to be elevated and supported by means of an easily-operated catch or hook 6 or to be detached from said hook and rest on the ground, as indicated in dotted lines.

Referring to Fig. 2, 7 is a section of the wall of a building to the outside of which the fire-escape is secured, and at two or more points in said wall corresponding to the line of a floor-balcony 8 an opening 9 is formed, which is adapted to loosely receive an anchor or extension-rod 10, which is secured to the floor of the balcony. The balcony-floor or base 8 is so constructed and disposed with respect to the rigidly-secured balustrade that it has an independent movement and is permitted by means of the loose connectings 12 to have a slight movement to or from the wall, according to whether weight is taken from or added to the balcony, to be hereinafter more clearly explained.

13 is an annular casing or sleeve which is placed at the inner end of the wall opening or hole 8 and is provided with an annular flange 14, which bears against the inner side of the wall 7. Seated within the casing 13 and surrounding the inner end of the rod 10 is a coil-spring 15, one end of which abuts against the contracted inner end of the casing 13, while its other end is subject to the pressure of an adjustable nut 16, engaging the threaded inner end of the rod 10, and thereby correspondingly compressing the coil-spring 15.

17 is a threaded rod, preferably made integral with and extending from the upper side of the flange 14 a short distance above the rod 10. Supported on the rod 17 are two spring-metal pieces 18 18′, each of which has two separated or forked ends having a section made of insulating material.

19 19′ are adjustable nuts engaging the threads of the rod 17 and are for the purpose of clamping and securing the adjacent separated ends of the pieces 18 18′ a certain distance from the nut 16 after an adjustment has been made to compress the spring sufficiently to counterbalance the normal weight acting on the floor-balcony 8.

20 20 are electrical conductors whose terminals 21 or 21′ pass through the insulating-sections at the separated or forked ends of the spring-metal pieces 18 18′, while 22 is the annunciator which rings the alarm and indicates what particular balcony has its normal or adjusted position disturbed by having the terminals 21 21′ come together by movement of the nut 16, and thereby close the circuit.

23 is a battery for supplying the electrical current, and 24 24 are the conductors leading to the upper balconies and constructed similar to those already described.

The operation of the device is as follows: Assuming that the nut 16 has been screwed up against the coil-spring 15 to such an extent that the combined weight of balcony-floor 8 and the ladders 3 and 4 is held in equilibrium, the pieces 18 18′ are adjusted and clamped by nuts 19 19 on the rod 17, so that the inner side of the forked ends 18 18′ impinge on or stand closely adjacent to the sides of the nut 16. After the above adjustments and relation of the several parts are insured it will be readily seen that should any person attempt to reach the balcony 2 by unhooking the ladder 4 and have it assume the position indicated by the dotted lines the weight supported by the balcony-floor 8 would be reduced, causing the coil-spring 15 to move the rod 10 and nut 16 to the left, when the two terminals 21 21 on the forked piece 18 would come in contact and complete the circuit, and thereby ring the alarm of annunciator 22. Should any person attempt to pass out on any one of the balconies, the additional weight supported by the balcony-floor at such a time would further compress the spring 15 and the nut 16 would move to the right and cause the terminals 21′ 21′ of the forked piece 18′ to complete the circuit and, as above explained, also give an alarm, when it could be immediately determined what balcony the person stepped out on.

From the above-explained mode of operation it will be seen that I have devised an attachment which will readily give an alarm and indicate at what particular point of several fire-escapes about a flat building a person is attempting to pass from one flat to another by the outside of the building.

From the foregoing disclosure it will be seen that I have described an alarm for fire-escapes which will effect all the functions and objects as recited in the statement of invention, and while I have described one and my preferred form it can be easily seen and understood by those skilled in the art that many changes will be readily suggested without departing from the spirit of my invention—as, for example, instead of employing electric current as the means of conveying the movement of the balcony-floor to the alarm or indicator any other expedient may be employed, whether a mechanical contrivance, compressed air, or other medium.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. An alarm for fire-escapes comprising a yielding balcony floor or platform supported in equilibrium and projecting on the outside of a wall, an alarm, and means connected with said floor or platform for actuating the alarm, when weight is added to or taken off the floor or platform.

2. An alarm for fire-escapes comprising a yielding balcony floor or platform supported in equilibrium and projecting on the outside of a wall, an alarm, and means connected with said floor or platform for actuating the alarm whether said floor moves away from or near to the wall of the building when weight is added to or taken off the floor or platform.

3. An alarm for fire-escapes comprising a balcony floor or platform, means for yieldingly supporting said floor or platform in equilibrium on the outside of a wall whereby the floor or platform is movable to or from the wall, an alarm, and means for actuating the alarm by any movement of the floor or platform when weight is added to or taken from the platform.

4. An alarm for fire-escapes comprising a balcony floor or platform on the outside of a wall, a rod passing loosely through the wall and connected at its outer end to the floor or platform, a coil-spring engaging the other or inner end of the rod and yieldingly supporting the floor or platform, an alarm and means operated by the movement of the rod for actuating the alarm to indicate whether weight is added to or taken off the floor or platform.

5. An alarm for fire-escapes comprising a balcony floor or platform on the outside of a wall, a rod passing loosely through the wall and connected at its outer end to the floor or platform, a coil-spring engaging the other or inner end of the rod and yieldingly supporting the floor or platform, an electric alarm, and means operated by the movement of the rod for closing the circuit of the electric alarm to indicate whether weight is added to or taken off the floor or platform.

6. An alarm for fire-escapes comprising a balcony floor or platform on the outside of a wall, a rod passing loosely through the wall and connected at its outer end to the floor or platform, a coil-spring engaging the other or inner end of the rod and yieldingly supporting the floor or platform, an electric alarm having two independently-adjustable terminals or circuits and means operated by the movement of the rod for closing either one of the circuits to indicate whether weight is added to or taken off the floor or platform.

In testimony whereof I affix my signature in presence of two witnesses.

SNOWDEN ASHFORD.

Witnesses:
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