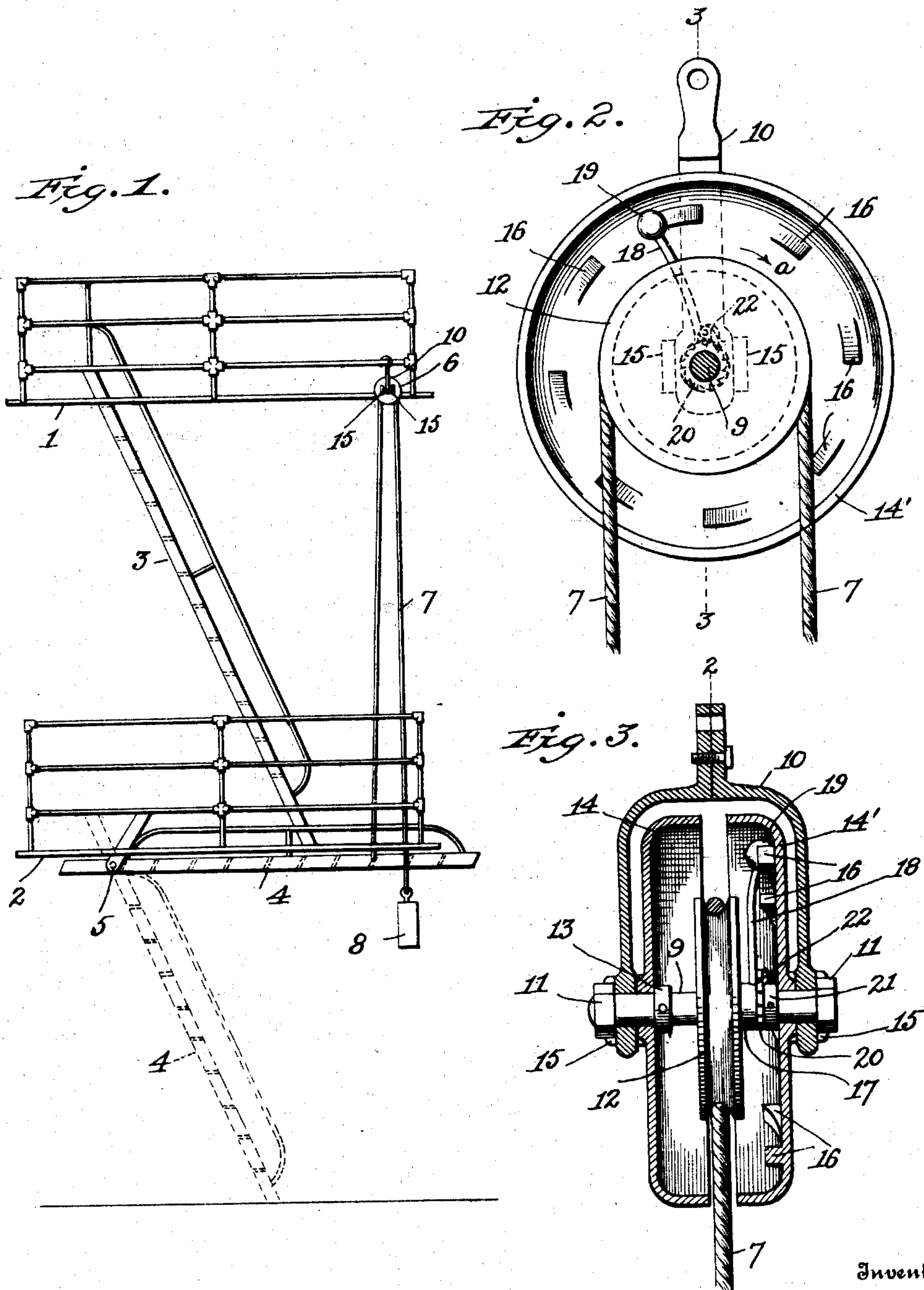


No. 864,878.

PATENTED SEPT. 3, 1907.

S. ASHFORD.  
ALARM FOR FIRE ESCAPES.  
APPLICATION FILED MAY 9, 1906.



Witnesses  
Edmond Jewell  
Walter Allen

Inventor  
Snowden Ashford  
By W. J. Schenborn  
Attorney



# UNITED STATES PATENT OFFICE.

SNOWDEN ASHFORD, OF WASHINGTON, DISTRICT OF COLUMBIA.

## ALARM FOR FIRE-ESCAPES.

No. 864,878.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed May 9, 1906. Serial No. 316,020.

*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  
5 useful Improvements in Alarms for Fire-Escapes, of which the following is a specification.

My invention relates to alarms which are especially adapted to give warning when the adjusted or elevated position of the ladders (and more especially the lower  
10 one) of a fire escape are disturbed or attempted to be lowered and used by an unauthorized person.

The object of my invention is to construct an apparatus which can be readily and cheaply attached or applied to the existing forms of construction and with-  
15 out having to alter in any particular the present arrangement or installed type of fire escapes.

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

20 My invention consists of structural features and relative arrangements 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 drawing, 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 a section on an enlarged scale on the line 2—2 of Fig. 3 of the alarm attachment.  
30 Fig. 3 is a section on a similar scale on the line 3—3 of Fig. 2.

Referring to Fig. 1, 1 is the upper and 2 the lower balcony of a fire escape which may be suitably secured to the walls of a building, not shown. 3 is the inclined  
35 ladder connecting the upper balcony with the lower one, while 4 indicates a ladder having one of its ends pivoted at 5 to the lower balcony so as to permit the other end to be elevated against the balcony or lowered and rest on the ground, as indicated in dotted lines.  
40 Secured to a fixed section of the building above the lower balcony, or preferably, as shown, to the upper balcony 1, is a specially constructed pulley structure 6 over which passes a cable 7 having one of its ends secured to the free end of the pivoted ladder 4 while its  
45 other end is provided with the usual counterweight 8.

The pulley structure 6, as shown in Figs. 2 and 3, comprises a shaft or spindle 9, which is rotatably supported in the ends of a hanger 10, and held therein by the bolts or enlarged ends 11. Keyed or secured at the  
50 center of the rotary shaft or spindle 9 is a grooved pulley wheel 12 which is adapted to receive the cable 7 above described. 13 is a collar also fixed to and rotating with the shaft 9.

14, 14' are two saucer-shaped pieces, preferably of  
55 bell metal or highly resonating composition, which

are adapted to be loosely and removably supported near the ends of the shaft and are provided on their outer sides with ears 15, 15, which engage the flattened sides of the ends of the hanger 10 engaging the shaft 9, and thereby prevent the pieces 14, 14' from turn-  
60 ing with the shaft when said shaft is rotated by pulley wheel 12, while the cable is passing over the same.

16, 16 are a series of inclined and spaced cams formed or attached on the inner side of the saucer-shaped piece 14' to be engaged by a hammer to be presently  
65 described.

17 is a collar loosely surrounding the shaft adjacent to the wheel 12 and provided with a ratchet gear 20.

18 is a resilient rod extending from the collar 17, which normally tends to have its outer or weighted  
70 end 19 to almost bear against the inner side of piece 14'. A collar 21 is secured to the shaft and is provided with a lug having a pivoted pawl 22 which is adapted to engage the ratchet gear 20 and rotate the collar 17 when the wheel 12 is turned in the direction  
75 of the arrow *a*, Fig. 2, while when rotated in the opposite direction, the pawl simply rides over the ratchet, as will be readily understood.

The operation of the device is as follows: Assuming the lower pivoted ladder 4 is in the position as  
80 shown in full lines by Fig. 1, should any one attempt to reach the lower balcony by pulling down said ladder 4 against the action of the counter weight 8 into the position as indicated by the dotted lines, the cable 7 will cause the pulley wheel 12 to rotate  
85 in the direction of the arrow *a*, Fig. 2, which rotates the shaft 9 and collar 21. This movement causes the pawl 22 to engage the ratchet 20 on the loose collar 17, thereby dragging it around with the rotation of the shaft 9. During the rotation of the loose collar  
90 17, the weighted end 19 is made to intermittently ride up the incline of each of the spaced cams 16 and store up the spring or resilient rod 18 and be suddenly released when the gong or saucer-shaped piece 14' is struck by the end 19 and made to resonate and give  
95 warning that the lower ladder 4 is being disturbed. When the ladder 4 is raised the pulley rotates in the opposite direction, and the pawl 22 simply rides over the ratchet without causing the hammer to strike the alarm, as will be readily understood, and needs no  
100 further explanation.

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  
105 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.

Having now fully described my invention, what I 110



claim as new and desire to secure by Letters Patent is:—

1. An alarm for fire escapes comprising a pivoted ladder having its free end adapted to rest on the ground, a wheel or pulley adapted to receive a cable, means for rotatably supporting said wheel or pulley above the pivoted ladder, a cable having one end attached to the free end and supporting the pivoted ladder and passing over the wheel or pulley, an alarm device connected with the wheel or pulley, and means for actuating the alarm by the rotation of the wheel or pulley when the ladder is lowered.

2. An alarm for fire escapes comprising a pivoted ladder having its free end adapted to rest on the ground, a wheel or pulley adapted to receive a cable, means for rotatably supporting said wheel or pulley above the pivoted ladder, a cable having one end attached to the free end and supporting the pivoted ladder and passing over the wheel or pulley, a counterweight on the other end of the cable, a sounding device surrounding the pulley, a hammer for striking the sounding device, and means for actuating the hammer by the rotation of the wheel or pulley when the ladder is disturbed.

3. An alarm for fire escapes comprising a pivoted ladder having its free end adapted to rest on the ground, a wheel or pulley adapted to receive a cable, a shaft connected with said pulley or wheel, a hanger for rotatably supporting said shaft, and pulley above the pivoted ladder, a cable having one end attached to the free end and supporting the pivoted ladder and passing over the wheel or pulley, a counterweight on the other end of the cable, a sounding plate or gong immovably supported on said shaft, a ham-

mer, and means for actuating the hammer against the sounding plate or gong by the rotation of the pulley when the ladder is lowered.

4. An alarm for fire escapes comprising a wheel or pulley adapted to receive a cable supporting a ladder of the fire escape, a shaft connected with said wheel or pulley, a hanger for rotatably supporting said shaft and wheel, a sounding plate or gong having a series of cams or projections and immovably supported on said shaft, a loose collar supported on the shaft, a hammer attached to the said collar and adapted to ride over the said cams or projections, and means attached to the shaft for engaging the loose collar and moving the hammer over the cams and impinging it against the sounding plate or gong.

5. An alarm for fire escapes comprising a wheel or pulley adapted to receive a cable supporting a ladder of the fire escape, a shaft connected with said wheel or pulley, a hanger for rotatably supporting said shaft and wheel, a sounding plate or gong having a series of cams or projections and immovably supported on the shaft, a loose collar provided with a ratchet and surrounding the shaft, a vibratory hammer attached to the said collar and adapted to ride over the said cam or projections and a pawl pivoted to the shaft for engaging the ratchet and moving the loose collar with the shaft and causing the hammer to intermittently strike the sounding plate or gong.

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

SNOWDEN ASHFORD.

Witnesses:

W. E. SCHOENBORN,  
CHARLES LOWELL HOWARD.