N. JOHNSON.

FIRE ESCAPE.

APPLICATION FILED AUG. 1, 1911.

1,041,090.

Patented Oct. 15, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

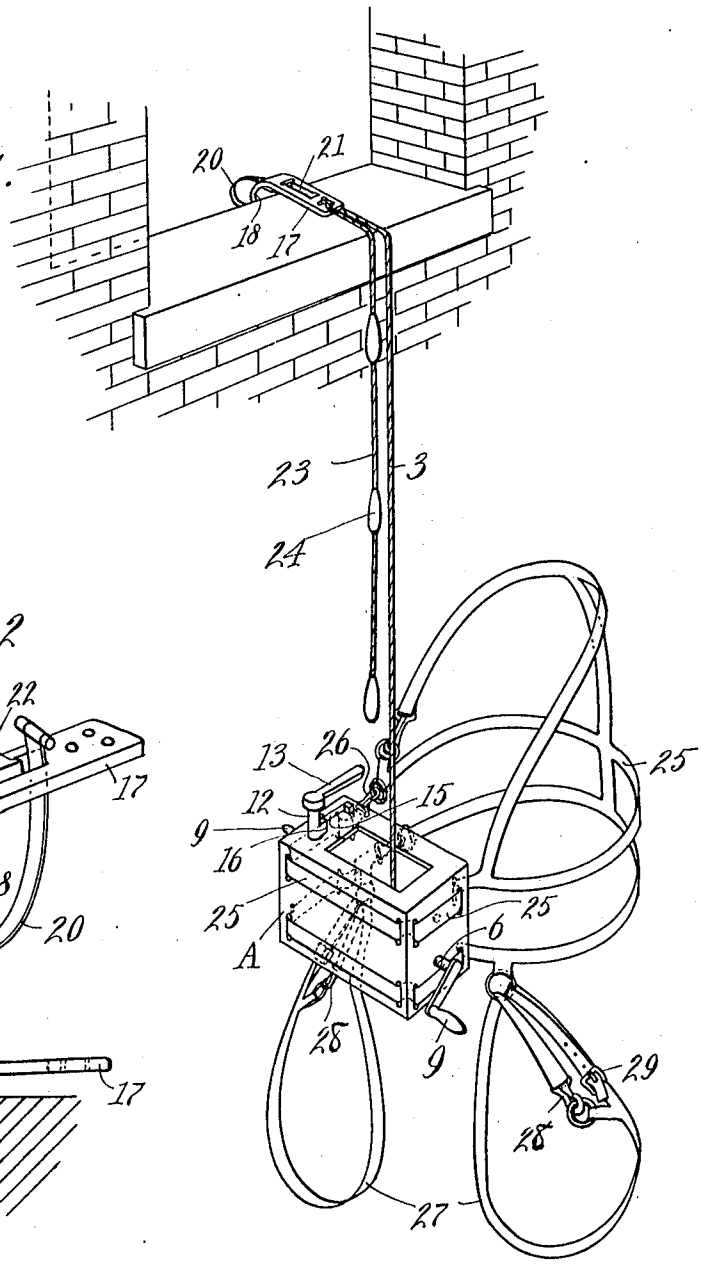


Fig. 2

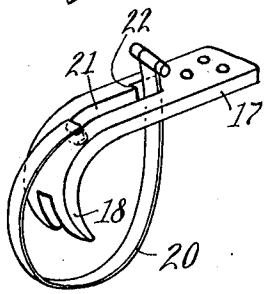
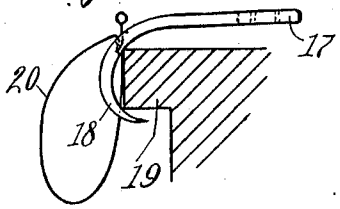


Fig. 3



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COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 4

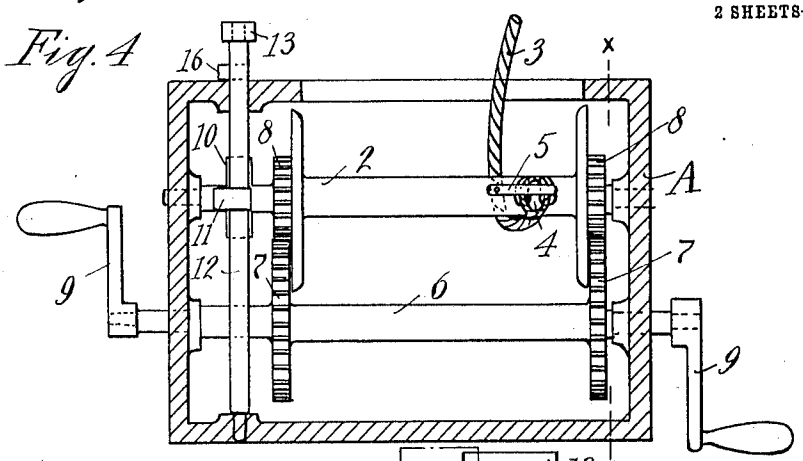


Fig. 5

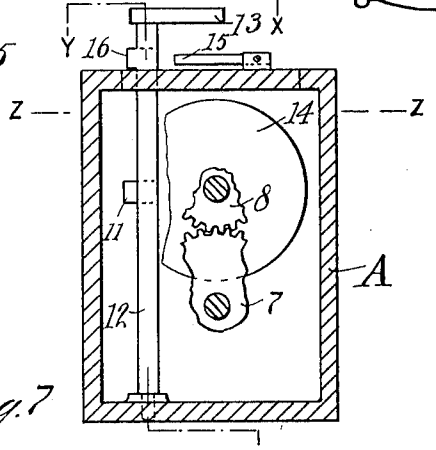


Fig. 6

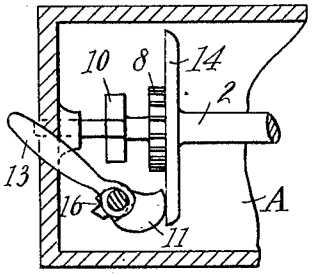


Fig. 7

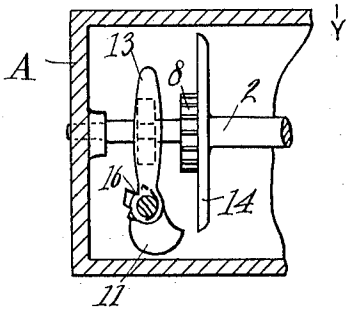


Fig. 8

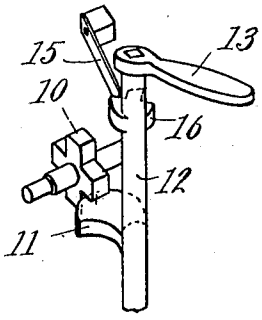
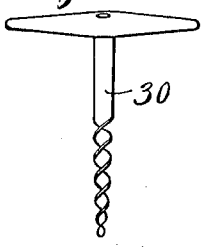


Fig. 9



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UNITED STATES PATENT OFFICE.

NELS JOHNSON, OF SOUTH STILLWATER, MINNESOTA.

FIRE-ESCAPE.

1,041,090. Specification of Letters Patent. Patented Oct. 15, 1912.

Application filed August 1, 1911. Serial No. 641,813.

To all whom it may concern:

Be it known that I, NELS JOHNSON, a citizen of the United States, residing at South Stillwater, in the county of Washington and State of Minnesota, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to improvements in fire escapes, its object being to provide a device by which a person can safely and expeditiously lower himself from an elevation.

To this end my invention consists in the features of construction, combination, and arrangement of parts hereinafter described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 is a perspective view of my invention as arranged in use; Fig. 2 is a perspective view of a supporting device forming part of my invention and adapted to be arranged in connection with a window sill; Fig. 3 is a side elevation of the same showing the window sill in section; Fig. 4 is a longitudinal section on line *y—y* of Fig. 5; Fig. 5 is a section on line *x—x* of Fig. 4; Figs. 6 and 7 are top views of one end of the supporting device shown sectioned away and showing the contained mechanism in different positions; Fig. 8 is a detail view of controlling mechanism forming part of my invention; and Fig. 9 is a detail view of a supporting post adapted to be used in connection with my invention.

Referring to the drawings A represents a windlass box, within which is journaled a drum 2 carrying at one end a cable 3. The cable is wound around the stud 4 carried by the drum and held in position by a spring 5. The cable may thus be easily disconnected from the drum. The drum is actuated from the shaft 6 journaled in the ends of the box and having operative connection with the drum through the medium of the intermeshing gears 7 and 8. The shaft 6 is provided with operating handles 9. Secured upon one end of the drum shaft is a notched wheel 10 which coöperates with a cam 11 carried by a vertical post 12 journaled at top and bottom in the box. The post 12 carries an operating handle 13 above the box. The turning of the post 12 will bring the cam 11 into locking engagement with the toothed wheel 10, as indicated in Fig. 8, and positively lock the drum against rotation. By oppositely turning the post to bring the cam against the disk 14 of the drum the cam will operate as a friction device to control the rotation of the drum and by turning the post to bring the cam into the intermediate position shown in Fig. 7 the drum will be permitted to freely turn. A controlling spring 15 is secured upon the top of the casing and engages at its free end with a notched shoulder 16 carried by the post 12.

The free end of the cable is connected with a support 17, which support has a bent end 18 to hook over the inner edge 19 of the window ledge. In order to allow the support to be freed from the window ledge, after a person using the escape has reached the ground, I provide a strap spring 20 supported at one end in one end of a longitudinal slot 21 in the support 17, the spring being downwardly looped and having its opposite end loosely supported in the opposite end of the slot 21. The end of the slot 21 supporting the free end of the spring is widened to form a locking shoulder 22 for the spring. When the support is hooked over the window ledge, as shown in Fig. 3, the free end of the spring will be compressed against the hook 18. Thus when the weight upon the support is relieved by the user reaching the ground the compressed spring 20 will force the support from the ledge. In order to assist the user in climbing over the ledge I provide a short cable 23 connecting with the support 17 and formed with interspaced hand grips 24.

In order to fasten the windlass box to the user's body I provide the arrangement of straps illustrated in Fig. 1. As shown this comprises straps 25 secured to one side of the box and adapted to be detachably connected by buckles 26 with the other side of the box after passing around the user's body and shoulders. I further provide the depending straps 27 to pass around the user's legs and to be secured in position by buckles and straps 28 and 29.

30 illustrates a stud that may be secured in the top of a flat roof. Where the stud is used it may be inserted through the slot 21 of the support in front of the free end of the spring. It will be apparent that where the stud is used the spring 20 will have no function in releasing the support as it has where used in connection with a window ledge support.

In use, the windlass box will be strapped around the user's body and the support 17 hooked over the window ledge as shown in Fig. 1. The user may then let himself over the window ledge through the medium of the short cable 23, and through the medium of the windlass gradually lower himself to the ground. In lowering himself to the ground he may regulate his descent by the mechanism illustrated in Figs. 4 to 8.

I claim as my invention:

A fire escape apparatus comprising a box, a drum journaled in said box, a disk rigid with said drum, a notched wheel supported by the drum supporting shaft, a hand actuatable shaft journaled in said box and having operative connection with said drum, a post journaled in said box, a cam carried by said post, means for actuating said post to turn said cam either into locking engagement with said toothed wheel, frictional engagement with said disk, or, an intermediate position, means carried by said box for supporting the same upon the user's body and a cable secured at one end of said drum.

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

NELS JOHNSON.

Witnesses:
H. S. JOHNSON,
H. SWANSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."