C. A. GRECO.

FIRE ESCAPE.

APPLICATION FILED JULY 8, 1914.

1,178,314.

Patented Apr. 4, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

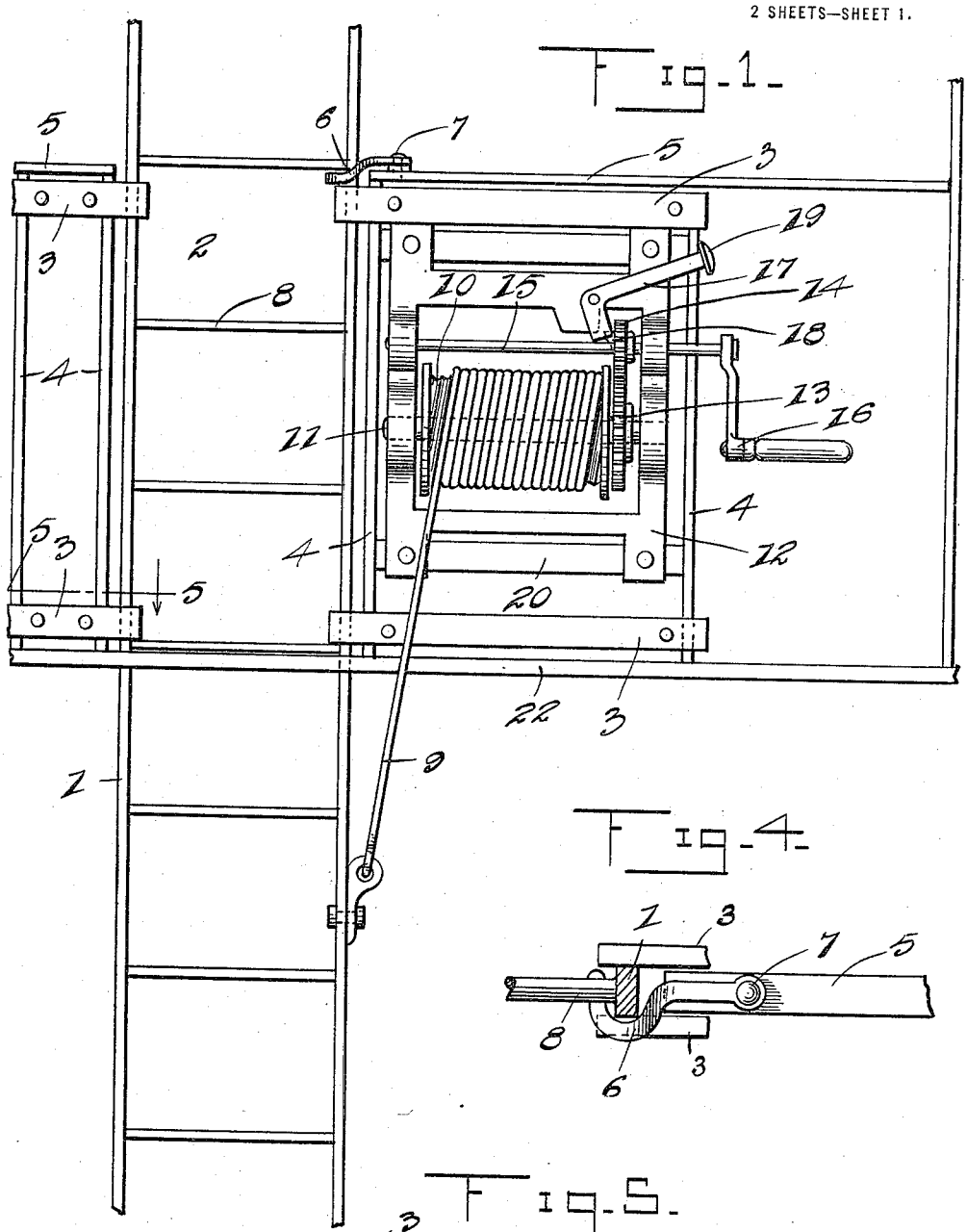
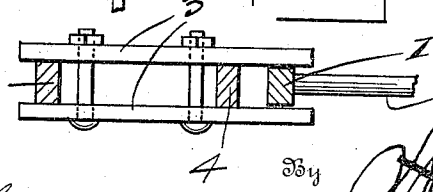


Fig. 4.

Fig. 5.



Witnesses

C. R. Beale.

Wm. L. Fowler.

Inventor

C. A. Greco.

By A. Randolph Jr.

Attorney

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 2.

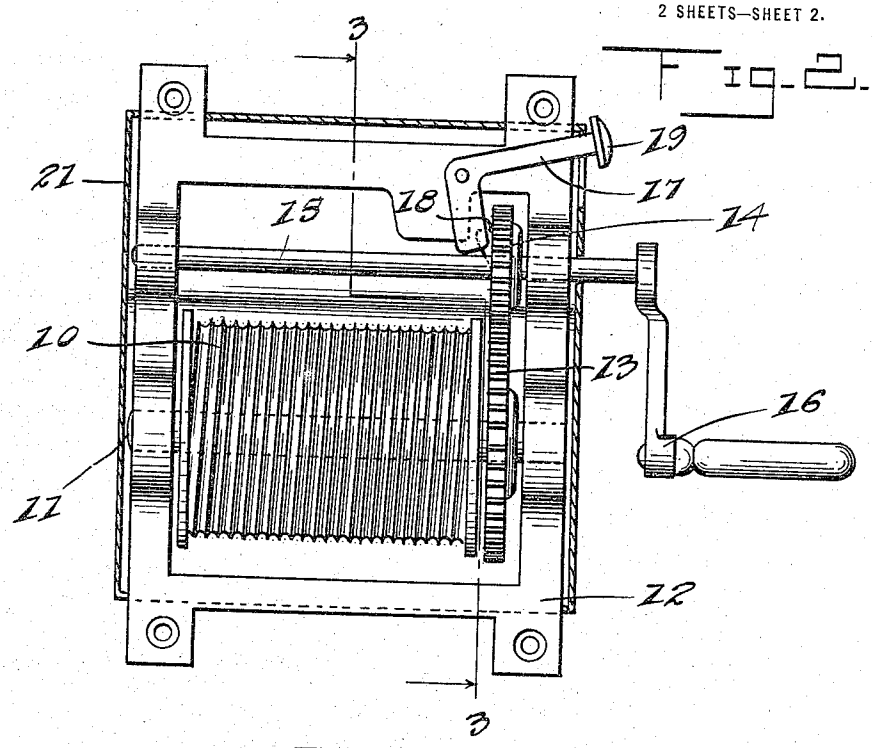
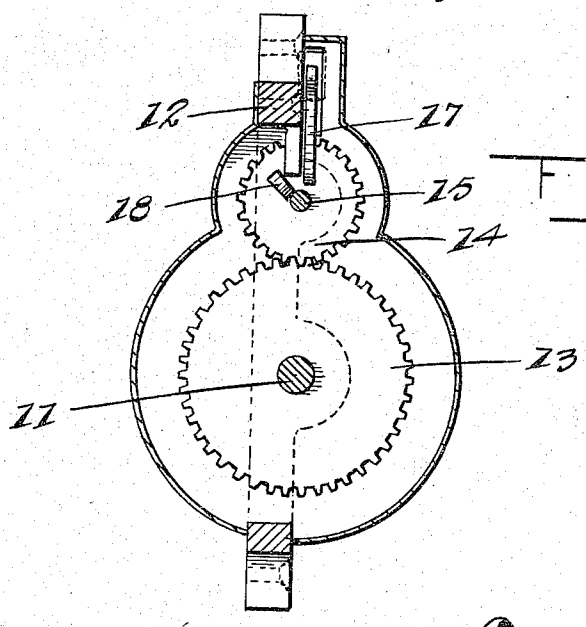


Fig. 3.



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Attorney

UNITED STATES PATENT OFFICE.

CARMINE A. GRECO, OF BROOKLYN, NEW YORK.

FIRE-ESCAPE.

1,178,314. Specification of Letters Patent. Patented Apr. 4, 1916.

Application filed July 8, 1914. Serial No. 849,770.

To all whom it may concern:

Be it known that I, CARMINE A. GRECO, a subject of the King of Italy, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention comprehends certain new and useful improvements in fire escapes and has for its primary object to provide an improved form of means for raising and lowering a vertically movable ladder of a fire escape. The invention has for another object to provide raising and lowering means for the ladder of a fire escape which may be readily mounted upon the balcony of the fire escape of the form now in general use without occupying a great amount of space.

The invention has for another object to provide a device of this character which will be composed of the minimum number of parts, may be readily incorporated in a fire escape of the type now in general use and will be highly efficient in use.

With these and other objects in view as will become more apparent as the description proceeds, the invention consists in certain novel features of construction, combination and arrangement of parts as will be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a front elevation of the complete device, Fig. 2 is an enlarged detail elevation of the raising and lowering means with parts in section, Fig. 3 is a cross sectional view substantially on the plane of line 3—3 of Fig. 2, looking in the direction indicated by the arrow, Fig. 4 is a fragmentary top plan view, showing the hook engaged beneath one of the ladder rungs to lock said ladder in raised position, and Fig. 5 is a slightly enlarged detail section on the plane of line 5—5 of Fig. 1, looking in the direction indicated by the arrow.

Referring in detail to the drawings by numerals, 1 designates a ladder of conventional form which is adapted for vertical movement in front of the opening 2 of the balcony of a fire escape of the form now in general use, said ladder 1 working between the guide bars 3 which are arranged in pairs and clamped upon opposite sides of the vertical supporting bars 4 for the railing 5 of said balcony, the ends of said guide bars 3 projecting over the door opening or gateway 2 and engaging the opposite longitudinal edges of the side rails of the ladder to opposite sides of said opening 2 to guide said ladder in its vertical movement.

The ladder 1 is locked in raised position to form a gate for the opening 2 by means of a suitable hook 6 which is pivoted upon the rail 5 to one side of the opening 2, as shown at 7, and adapted for engagement beneath one of the rungs 8 of said ladder 1. The ladder 1 is raised and lowered by means of a cable 9 which has one end attached to one of the side rails of said ladder 1, while its opposite end is secured to the drum 10 which is mounted upon the shaft 11 and supported in the supporting frame 12 and adapted to rotate in said frame, said shaft 11 also carrying a gear wheel 13 with which is engaged a smaller gear wheel 14 mounted upon the drive shaft 15 carrying a crank 16 by means of which said drive shaft 15 may be rotated to revolve the shaft 11 and drum 10 to wind the cable 9 upon said drum or unwind said cable from the drum, as desired, and thereby control the upward and downward vertical movement of the ladder 1.

When it is desired to lock the drive shaft 15 against rotation, the working end of the pivoted locking lever 17 is engaged against the lug 18 projecting laterally from one face of the gear 14. It will be evident that when the outer end 19 of the locking lever 17 is grasped and the lever turned upon its pivot to disengage the working end thereof from the lug 18, the drive shaft 15 may be readily rotated to revolve the drum 10 in the desired direction. It will also be understood that the supporting frame 12 is secured in any suitable manner to the cross bars 20 secured to the vertical supporting bars 4, previously mentioned, and the operative parts mounted in the supporting frame 12 are inclosed by a suitable casing 21 which has its bottom open to permit the cable 9 to operate through said lower end of the casing 21. It will further be evident that the locking lever 17 and crank 16 as well as the hook 6, may be readily operated by a party standing upon the landing 22 of the fire escape. It will further be apparent that

such form of raising and lowering means for the ladder 1 may, if desired, be secured to a wall to raise and lower the ladder 1 in front of a window or other exit.

While I have shown and described the preferred embodiment of my invention, it will be understood that minor changes in the details of construction, combination and arrangement of parts may be made without departing from the spirit and scope of the invention as claimed or sacrificing any of the advantages thereof.

What is claimed is:—

In combination with a fire escape balcony having vertical supporting bars and horizontal hand rails, two of said supporting bars and the hand rails being spaced to provide an exit opening, of a pair of lower guide bars secured to said supporting bars on each side of the exit opening, a pair of upper guide bars secured to said supporting bars on each side of the exit opening, the bars of each pair being located on opposite sides of and relatively spaced by the supporting bars, and the opposing ends of said guide bars projecting into the exit opening to provide vertically disposed guide ways, a ladder having its sides slidably mounted in said guide ways, means by which said ladder may be raised and lowered, and a hook pivotally mounted upon the upper side of one of said hand rails, said hook extending downwardly and forwardly to a point beyond the end of said rail to permit of its bill being swung under one of the rungs of said ladder to support the ladder in raised position and to permit the bill to rest upon the end of one of the adjacent guide bars when in ladder supporting position to take the weight of the ladder off of the pivot of the hook and place it upon said adjacent guide bar.

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

CARMINE A. GRECO.

Witnesses:

CARMINE DE LUCA,

SAVERIO D'ONOFRIO.