No. 646,291. Patented Mar. 27, 1900.

T. F. KRUEGER.

FIRE ESCAPE LADDER.

(No Model.) (Application filed Aug. 8, 1899.)

Fig:1.

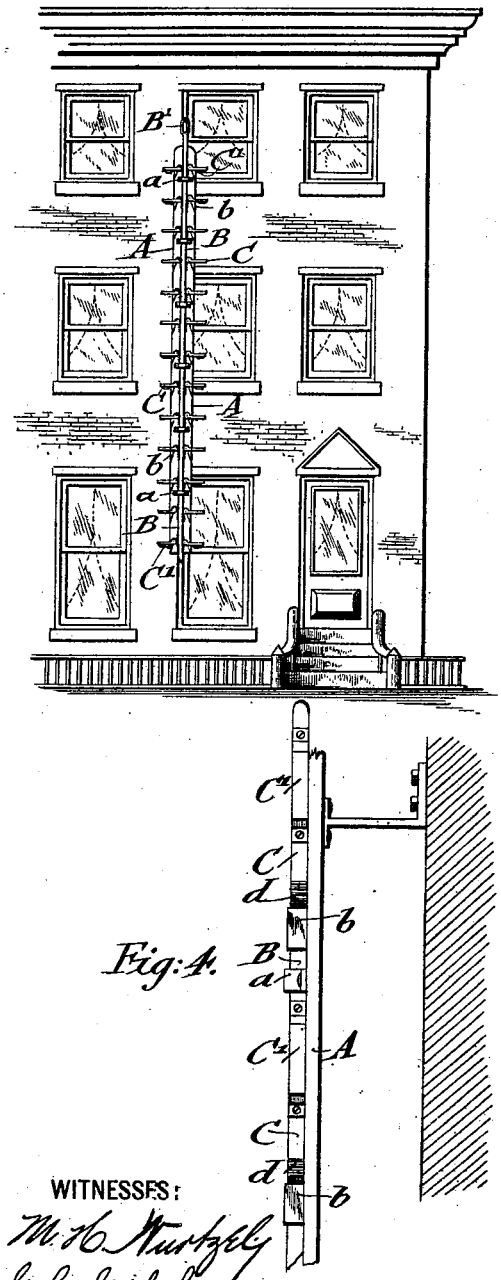

Fig:2.

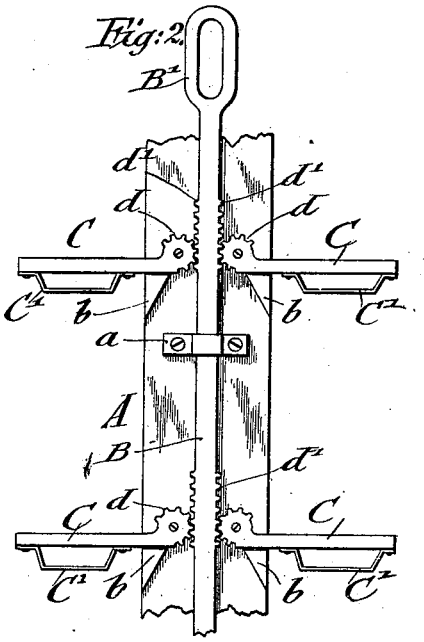

Fig:3.

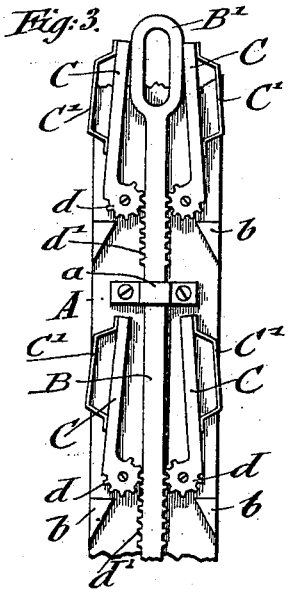

Fig:4.

WITNESSES:

M. H. Kurtzley

J. C. Seibel.

INVENTOR

Theodore F. Krueger

BY

Church & Ragner

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THEODORE F. KRUEGER, OF NEW YORK, N. Y.

FIRE-ESCAPE LADDER.

SPECIFICATION forming part of Letters Patent No. 646,291, dated March 27, 1900.

Application filed August 8, 1899. Serial No. 726,498. (No model.)

To all whom it may concern:

Be it known that I, THEODORE F. KRUEGER, a citizen of the United States, residing in the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Fire-Escape Ladders, of which the following is a specification.

This invention relates to certain improvements in fire-escapes for buildings, and especially in fire-escapes of that class which are applied permanently to the building, so as to connect windows of different stories either through the medium of balconies at the different stories or directly, as may be desired.

My invention consists of certain features of construction and combinations of parts to be hereinafter described and then claimed.

In the accompanying drawings, Figure 1 represents a front elevation of a building with my improved fire-escape ladder in position thereon in using position. Fig. 2 is a detail elevation of a portion of my improved fire-escape ladder, drawn on a larger scale. Fig. 3 is a view showing the same folded up when not required for use, and Fig. 4 is a side view of Fig. 3.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the upright, which is attached permanently to the building in any suitable manner, as by brackets A′, and which extends from the top or uppermost story down to the lower story. The upright is preferably made of wrought-iron or other suitable metal. It is provided at suitable distances from each other with keepers *a*, in which is guided a slide-rod B, which extends throughout the length of the upright A, or, as is evident, it may be made of several sections, so as to permit the easier operation of the ladder when required for use. To the upright A are pivoted at certain distances from each other rungs C, which are provided at their inner ends with mutilated pinions *d*, that mesh with rack-teeth *d′* on the slide-rod B, as shown in Figs. 2 and 3. The rungs are preferably made of rectangular cross-section and are supported when moved in horizontal position by the upward motion of the slide-rod B on horizontal abutments or shoulders *b*, that are cast integral with the upright A or attached thereto in any suitable manner. Some of the rungs may at each floor be provided at their under side with handles C′, so that the rungs of the fire-escape ladder can be taken hold of and pulled down from section to section, so as to produce by the upward motion of the slide-rod B the swinging of the rungs from the vertical into the horizontal position, as shown in Fig. 2, in which position they are ready for use. If but one slide-rod is used, its upper end has a handle B′. When one of the rungs is moved down, the slide-rod is compelled to follow by the intermeshing of the mutilated pinion *d* with the rack-teeth *d′* on the slide-rod. In the same manner when one of the rungs is moved in vertical position the slide-rod is compelled to follow the movement of its pinion and carries along the other rungs and returns them into vertical folded-up position, as shown in Fig. 3.

My improved fire-escape ladder has the advantage that it takes up but little room when in folded-up or unused position. The folded-up rungs may evidently be protected by a suitable sheet-metal casing, which is provided with openings in its ends, said casing being given the color of the building, so as not to make an objectionable appearance.

My improved fire-escape ladder has the advantage that the rungs can be quickly moved into horizontal position either along the entire fire-escape if one slide-rod is used or in sections for each story if more than one slide-rod is used by the person who is to descend mounting the sill of the window and then stepping on the rungs and descending on the horizontal rungs in the same manner as when descending an ordinary ladder.

The fire-escape ladder is always ready for use, is of comparatively simple and cheap construction, and can be applied to any ordinary dwelling or to factory buildings, hotels, &c., without detriment to the building itself.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A fire-escape ladder, consisting of a stationary upright, a slide-rod guided on the

same, rungs pivoted to said upright and provided with mutilated pinions at their inner ends, meshing with rack-teeth on said slide-rod, and abutments on said upright for supporting the rungs when in use, in horizontal position, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

THEO. F. KRUEGER.

Witnesses:
M. H. WURTZEL,
GEO. L. WHEELOCK.