

No. 877,363:

PATENTED JAN. 21, 1908.

I. NIELSEN.

FIRE ESCAPE.

APPLICATION FILED APR. 1, 1907.

2 SHEETS—SHEET 1.

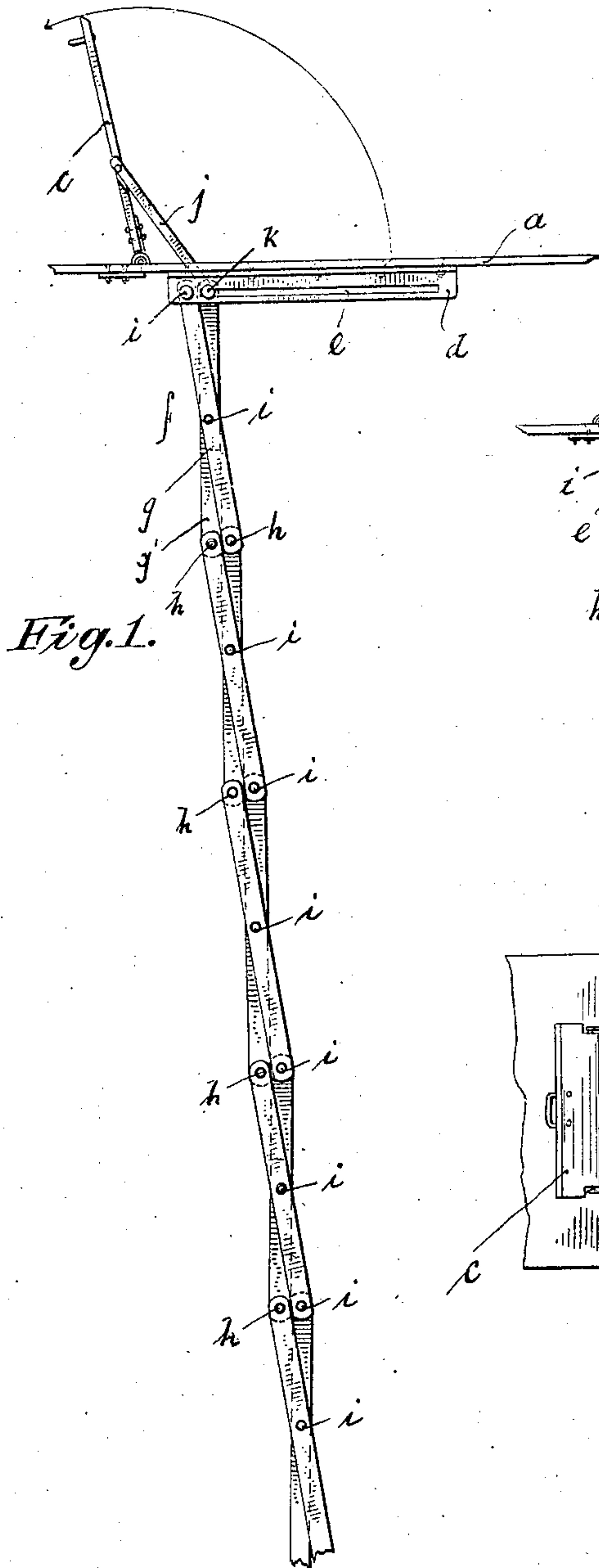


Fig. 1.

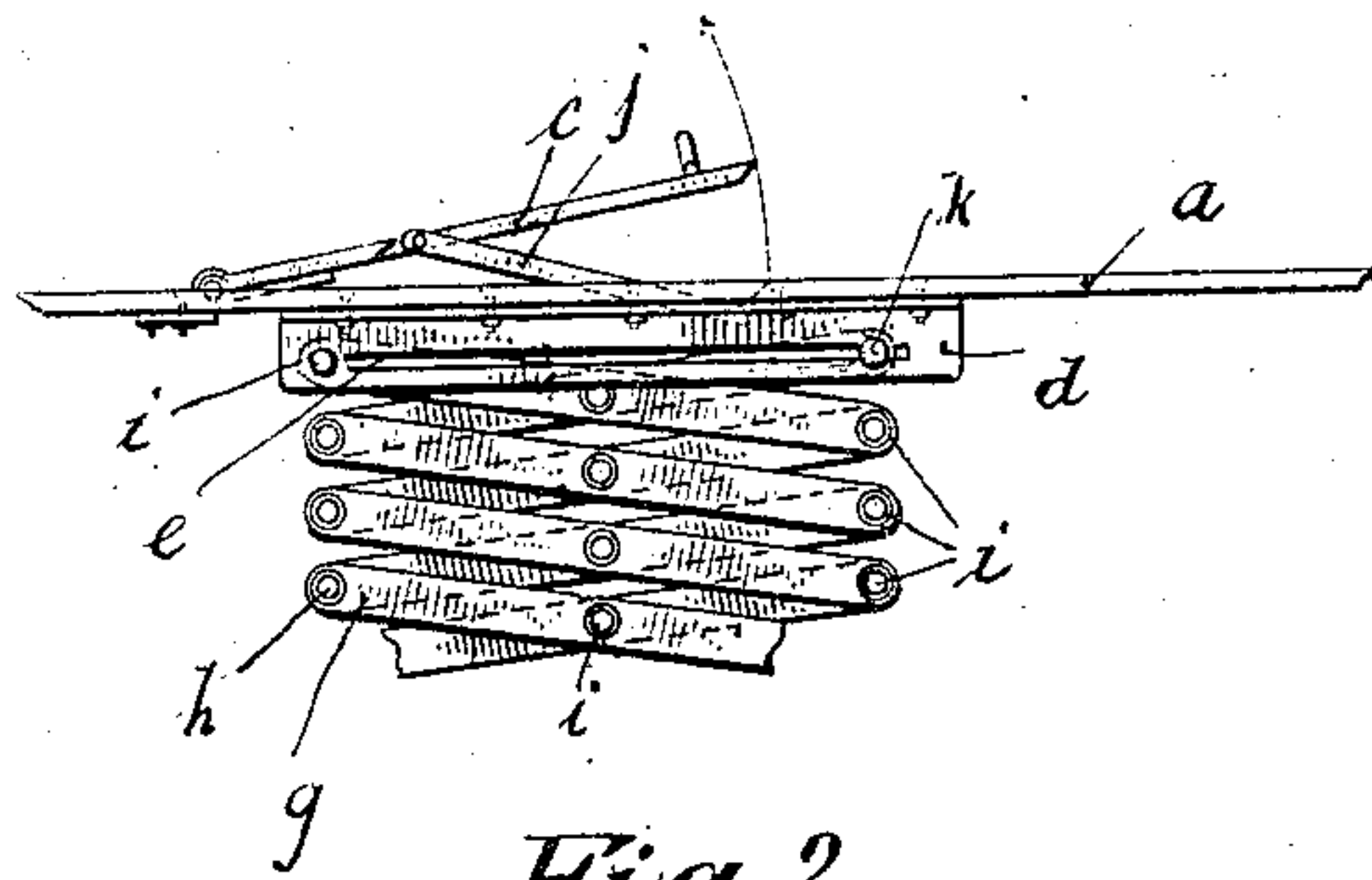


Fig. 2.

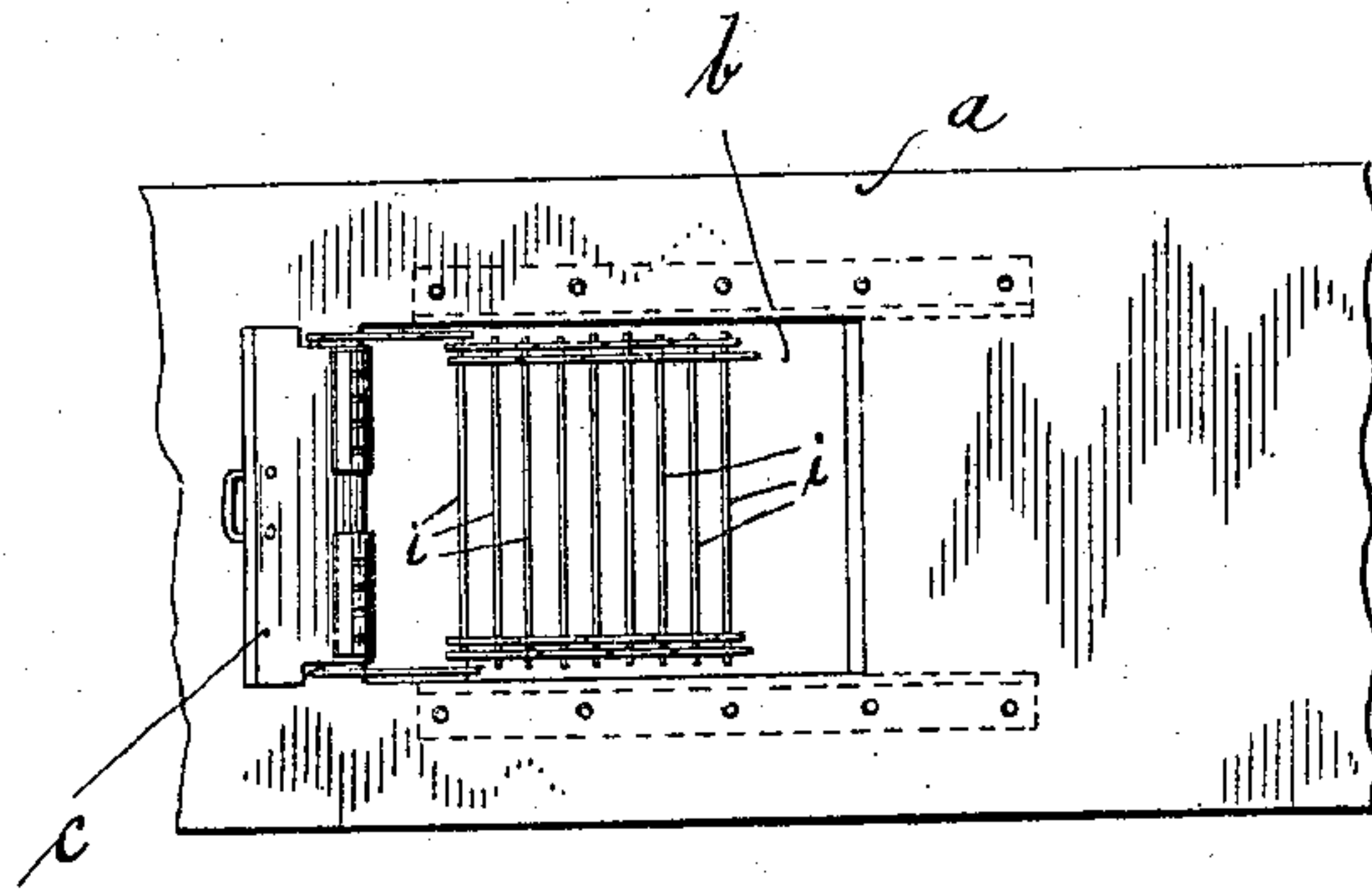


Fig. 3.

WITNESSES

Josef Ammon
Geoffroy

INVENTOR

Iver Nielson

BY

Max H. Ordman

ATTORNEY

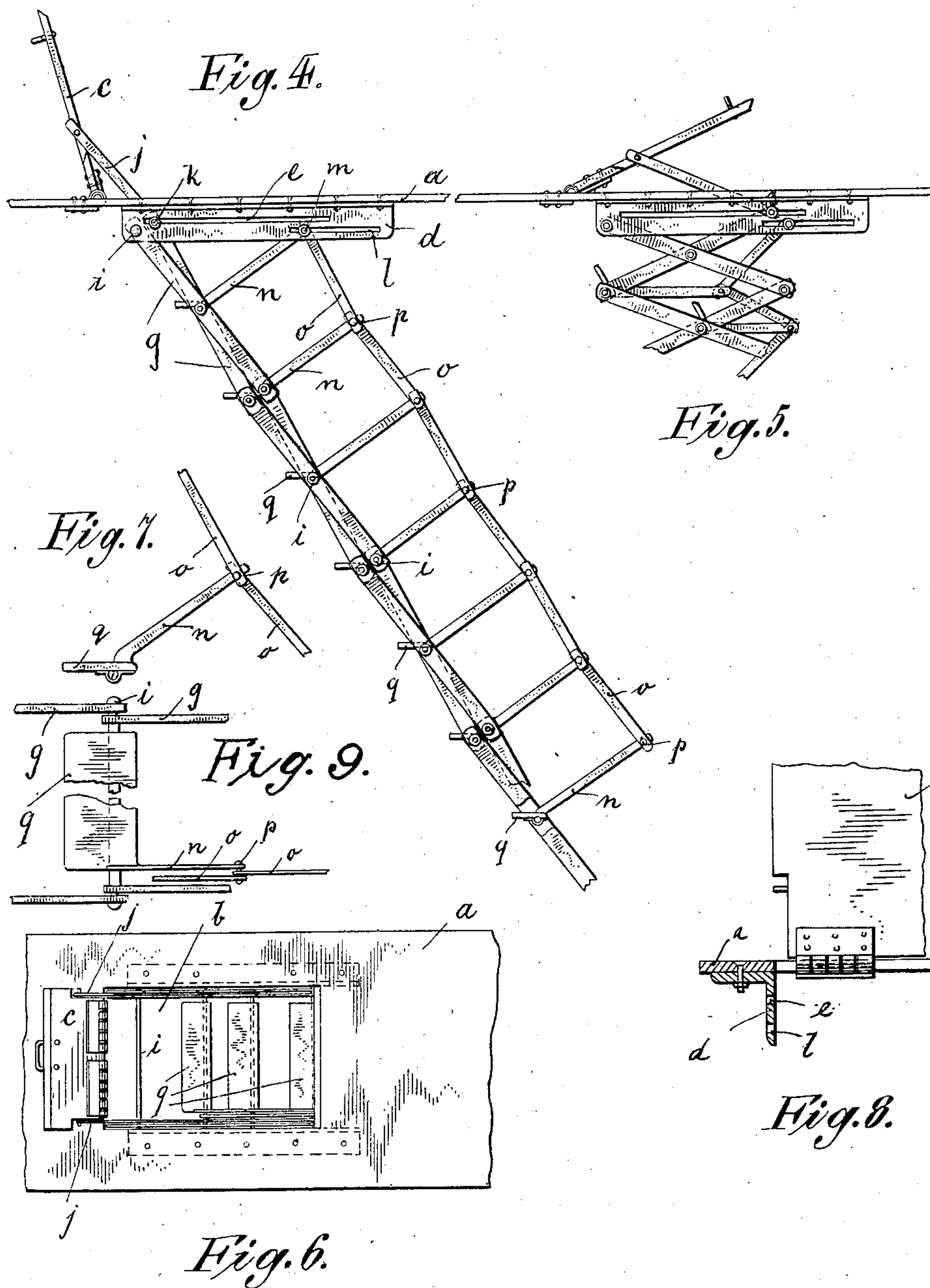
No. 877,363.

PATENTED JAN. 21, 1908.

I. NIELSEN.
FIRE ESCAPE.

APPLICATION FILED APR. 1, 1907.

2 SHEETS—SHEET 2.



WITNESSES
Josef Amos
Geoffrey

INVENTOR
Iver Nielsen
BY
Max S. Ordman
ATTORNEY

UNITED STATES PATENT OFFICE.

IVER NIELSEN, OF NEW ROCHELLE, NEW YORK.

FIRE-ESCAPE.

No. 877,363.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed April 1, 1907. Serial No. 365,879.

To all whom it may concern:

Be it known that I, IVER NIELSEN, a subject of the King of Norway, and a resident of New Rochelle, county of Westchester, State of New York, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

The present invention pertains to fire escapes, and particularly to such, comprising ladders connecting the different floors of a building and the object of this invention is to provide for folding ladders that will unfold or stretch upon lifting a flap door arranged in the fire escape platform to normally close the exit opening of the latter leading to the ladder.

In order to make my invention more clear, the same is illustrated in the accompanying drawing, in which similar reference letters denote corresponding parts and in which

Figure 1 is a side view of the unfolded or stretched ladder; Fig. 2 is a side view thereof partly folded; Fig. 3 a top plan view thereof; Figs. 4, 5 and 6 are similar views as Figs. 1, 2 and 3 respectively, showing a modified form of construction, and Figs. 7, 8 and 9 are details of construction.

With reference to the drawing, and particularly to Figs. 1—3, *a* designates the platform of the fire escape, which, as usual, has an opening *b* for one's escape to the ladder. Hinged to said platform is a flap door *c* that normally is adapted to close the opening *b*, and adjacent to the side edges of the latter are guide bars *d* riveted to the bottom surface of the platform *a*, which guide bars are provided with longitudinal grooves or slits *e*. Journaled in the guide bars at the rear ends of the slits, is a folding ladder *f* composed of the side links *g*, *g*, *g* arranged at both sides of the opening *b* and transversal rods *i* by means of which the links on one side are united with those on the opposite side. These rods serve at the same time as the steps of the ladder. Pivoted in the center of the members *g* are auxiliary members *g'* at both sides of the opening *b* forming lazy tongs and which are hinged to each other and of which the upper members are provided with laterally projecting pins or pivots *k* engaging the longitudinal grooves or slits *e* and adapted to slide therein when the ladder is folded and unfolded. Connected with said

upper members *g'* are arms *j* that are pivoted to the flap door *c* at *j'*.

Normally the flap door is turned down to close the opening *b*, owing to which the folding ladder is folded as illustrated in Fig. 2. By turning the door upwards, the arms *j*, *j* and members *g'* will cause the ladder to stretch into the position illustrated in Fig. 1.

In Figs. 4 to 9, a modification is shown with which, in addition to the folding ladder, that is constructed on the same principle as the one shown in Figs. 1—3, there is a railing for the safe descent of the person using the ladder, and the steps are formed of plates *q* secured to the rods *i* of the ladder. The railing is composed of forwardly extending members *n* rigidly secured to the plates *q*. These members *n* are connected by links *o* pivoted at *q* to each other and to the said members *n*. The upper link is pivoted with a projection *m* engaging a slot *l* arranged in the side bar *d* parallel to the slit *e*. The operation of the ladder of this modification is the same as in the one already described.

The flap door of course, may be omitted, and instead a lever or handle may be hinged to the platform, that can be connected with the folding ladder, so as to operate the ladder in a similar way as the flap door does.

What I claim and desire to secure by Letters Patent is:

1. In a fire escape, the combination with a platform, of a flap door hinged to said platform and adapted to close the exit opening therein, a folding ladder pivotally suspended from said platform, guide ways secured to the bottom surface of the platform, auxiliary links hinged to each other and pivoted to those of the folding ladder to form lazy tongs, the upper auxiliary links being guided in the said guide ways and connected with the flap door so as to stretch and fold the ladder by the opening and closing of the flap door, substantially as and for the purpose specified.

2. In a fire escape, the combination with a platform, of a flap door hinged to the latter and adapted to normally close the exit opening therein, of a folding ladder pivotally suspended from the said platform, guide bars arranged at the lower surface of the platform and having guide ways, auxiliary links hinged to

each other and connected with the said folding ladder to form lazy tongs, the upper auxiliary links being guided in the said guide ways, and connected with the flap door, a
5 railing composed of individual members attached to the steps of the ladder and linked to each other, the said railing being also adapted to stretch and fold simultaneously

with the ladder, substantially as and for the purpose specified.

Signed at New York this 28 day of March, 1907.

IVER NIELSEN.

Witnesses:

JOSEPH E. CAVANAUGH,
MAX D. ORDMANN.