

No. 704,126.

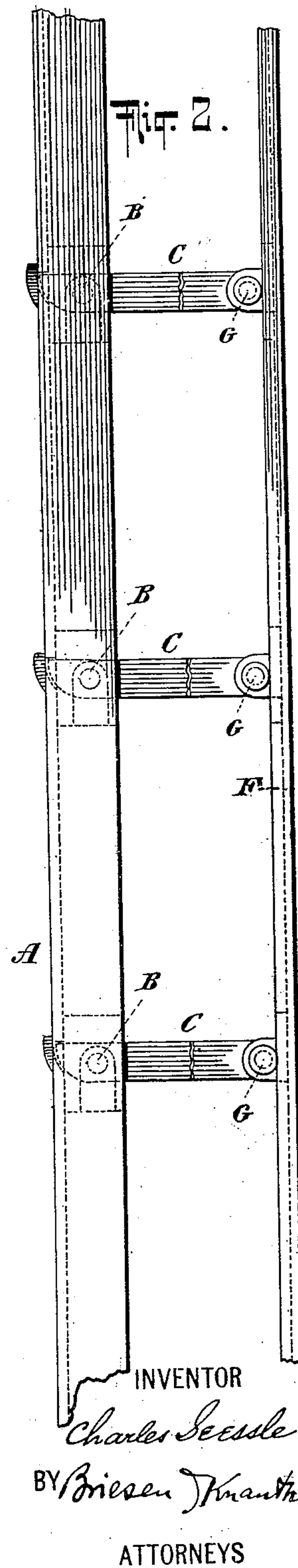
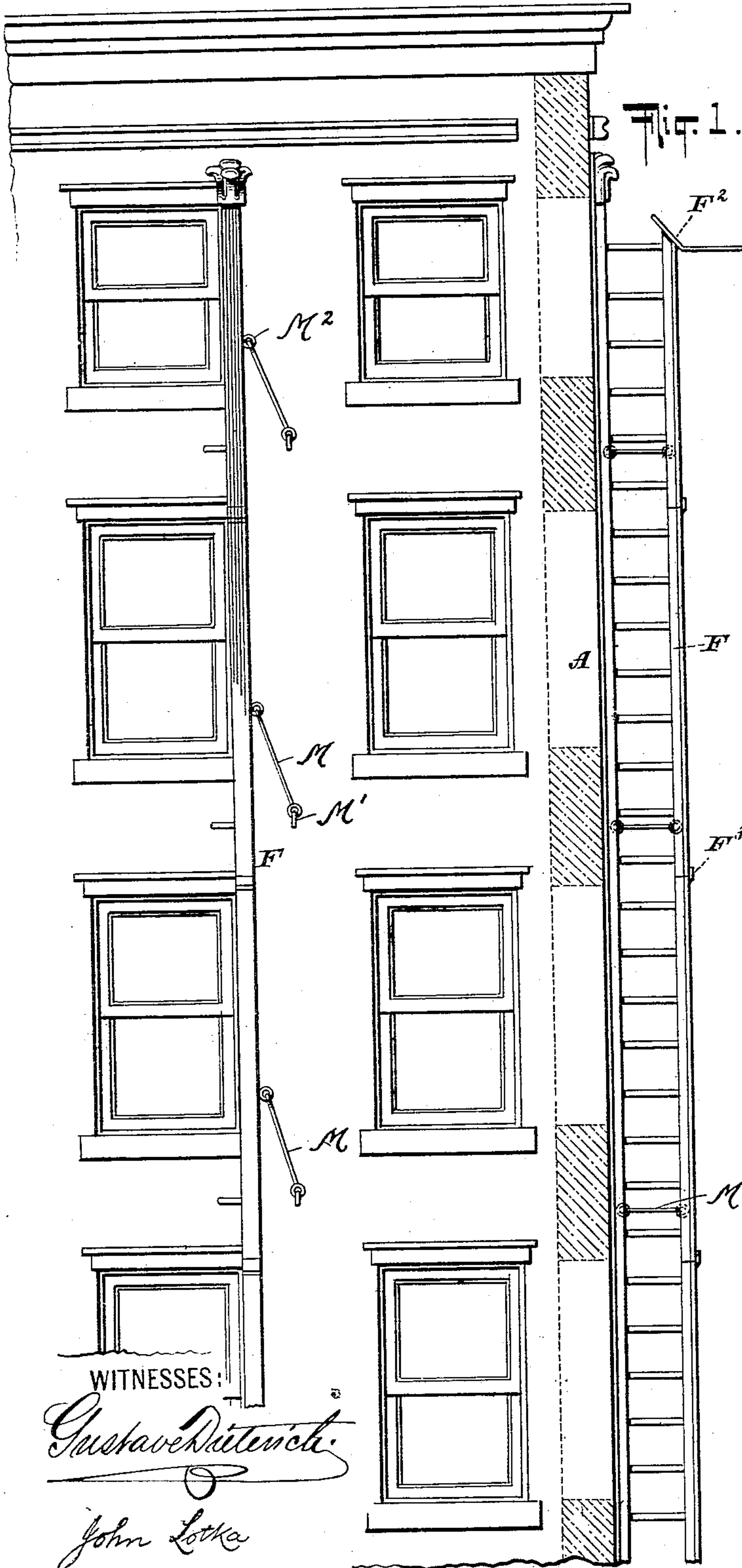
Patented July 8, 1902.

C. SEESSLE.
FIRE ESCAPE.

(Application filed Oct. 1, 1901.)

(No Model.)

3 Sheets—Sheet 1.

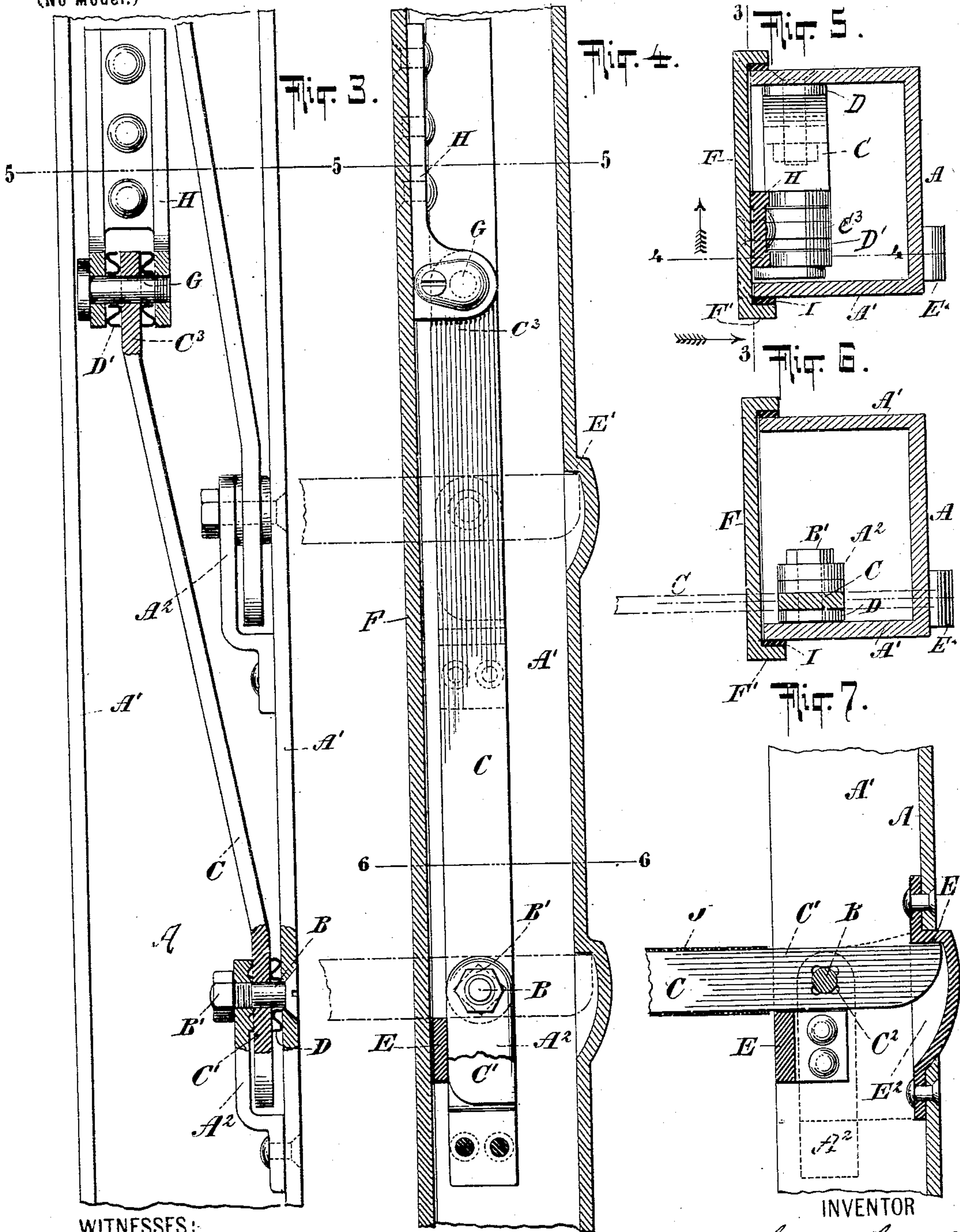


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3 Sheets—Sheet 2.



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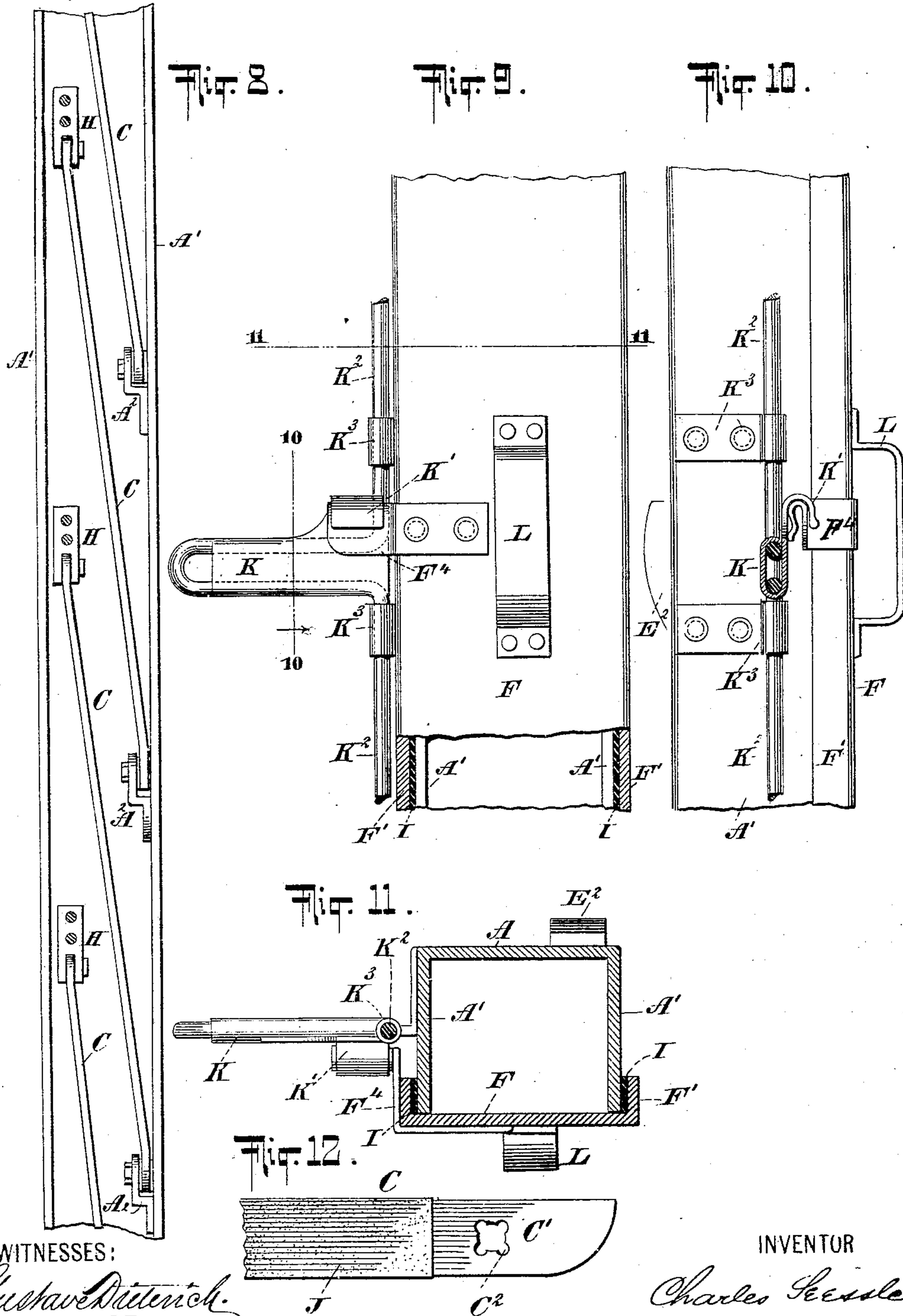
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3 Sheets—Sheet 3.

(No Model.)



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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 704,126, dated July 8, 1902.

Application filed October 1, 1901. Serial No. 77,180. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SEESSLE, a subject of the Emperor of Germany, residing at Irvington, Essex county, New Jersey, have
5 invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to fire-escapes, and particularly to that class of such devices in
10 which a folding ladder is attached to the wall of a building.

The object of my invention is to provide a device of this class which will be strong and durable, which will take up little space, and
15 which will be capable of ready manipulation.

A specific embodiment of my invention will now be described with reference to the accompanying drawings, and the features of novelty will then be pointed out in the ap-
20 pended claims.

Figure 1 is an elevation of a building provided with my improved fire-escape. Fig. 2 is a side elevation of a portion of the improvement in position for use. Fig. 3 is an enlarged detail view of the latter with parts in
25 section on line 3 3 of Fig. 5. Fig. 4 is a sectional elevation on line 4 4 of Fig. 5. Fig. 5 is a sectional plan on line 5 5 of Figs. 3 and 4. Fig. 6 is a sectional plan on line 6 6 of
30 Fig. 4. Fig. 7 is a partial sectional elevation of the ladder-support and one of the rungs. Fig. 8 is a detail face view of one of the ladder-sections with the outer standard omitted. Fig. 9 is a detail outside view showing the
35 manner of locking the ladder-sections in the closed position. Fig. 10 is a section on line 10 10 of Fig. 9. Fig. 11 is a cross-section on line 11 11 of Fig. 9, and Fig. 12 is a detail view of a portion of a rung.

40 The improved ladder or fire-escape comprises, essentially, the following three parts: a support secured to the building, an upright arranged to move toward and from the support, and rungs pivotally connected at one
45 end to the upright and at the other end to the support. Preferably, for the sake of easy manipulation, the outer upright is constructed in sections, so that the entire ladder practically consists of a series of independent sec-
50 tions, and in folding the ladder back into the

closed position only one section is to be raised at a time.

The support consists, preferably, of a channel-iron the rear wall A of which fits against the wall of the building or against projecting por-
55 tions thereof, as cornices, and is secured thereto in any suitable manner. The side members A' of the channel-iron project forwardly, and to one of them are secured at regular intervals brackets A². The brackets and the
60 adjacent side member A' receive pivot-pins B, which, as shown, are constructed as screw-bolts, the inner ends of which receive nuts B'. On these pivot-pins are mounted the rear or inner ends C' of the rungs C. These
65 ends are of a smaller thickness than the space between the bracket A² and the side member A', and the inner face of the bracket is formed with grooves, as shown at the bottom of Fig. 3, so as to reduce the surface against which
70 the side of the end C' bears. For a similar purpose a grooved or corrugated washer D is interposed between the side A' and the adjacent face of the rung end C'. Further, the aperture of the rung through which the pivot-
75 pin B passes is not circular, but is provided with outwardly-extending recesses C², as shown in Figs. 7 and 12, so that the rung will engage the pivot only at a comparatively
80 small number of points instead of engaging it at the entire periphery. Figs. 5, 6, and 7 show that the pivots B are located near the forward portion of the side members A' and in front of the pivots, but at a lower level. Supporting-brackets E are secured to the
85 side members A', (see Fig. 7,) these brackets being adapted to be engaged by the lower edges of the rungs when the latter are in a horizontal position. Furthermore, the upper edges of the rungs are adapted to engage
90 stop-shoulders E', which may be formed directly upon the rear wall A of the support, as shown in Fig. 4; but preferably, for the sake of easier manufacture, the rear wall is provided with apertures at intervals to re-
95 ceive socket-pieces E², each of which has the shoulder E', as shown in Fig. 7. The socket-pieces may be made integral with the brackets A². It will be understood that the pivot B is between the two supports formed by the
100

bracket E and the shoulder E' and that these supports are so arranged as to practically relieve the pivot entirely of the weight carried by the ladder, thereby making the ladder very strong in use. The particular construction of the rung end C' adjacent to the pivot and the corrugated surfaces which engage the sides of said rung end contribute not only to facilitate the pivotal movement of the rung, but also to prevent rusting fast, which is of great importance, since a device of this class will often remain unused for months and possibly for years. The inner end portions C' of the rungs are parallel with the sides A' of the support. The outer or forward end portions of the rungs C³ are likewise parallel with the side portions A' and are pivotally secured to the outer upright or standard F, which is preferably made in sections. The connection is effected through the medium of a pivot pin or bolt G, secured to a forked bracket H, which is fastened by rivets or otherwise upon the inner surface of the upright F. Of course there are a number of such brackets secured at regular intervals along the upright F. It will be observed by reference to Figs. 3, 5, and 8 that these brackets H are located on the opposite side of the structure to that on which the brackets A² are located. From this arrangement it follows that the central or body portions of the rungs C are disposed obliquely, as clearly shown in Figs. 3 and 8. The opening at the inner end of the rung is made of the same shape as that shown at the outer end of the rung, as shown in Fig. 12, and, further, corrugated washers D' are interposed between the side surfaces of the rung end C³ and the members of the bracket H for the same purpose as described with reference to the outer rung end C'. By giving the rungs the oblique position described and shown I am enabled to fold the ladder into a very small compass.

While I have shown the rung ends parallel with the sides of the supports, so that the pivots B and G may be readily attached, I do not wish to limit myself to this specific construction.

The upright F is preferably provided with means for effecting a water-tight joint with the forward edges of the side members A'. This means may consist of a rubber lining I, secured to the inner surfaces of the flanges F' at the edges of the upright F, or, if preferred, the rubber lining may be attached to the outer surfaces of the side members A'.

To protect the parts when in their folded condition against the entrance of rain from above, I may provide a roof at the top of the structure, said roof being secured either to the support or to the upper end of the upright F, as indicated at F² in Fig. 1. When the upright is made of several sections, I may provide one end of each section with a guide F³, adapted to engage the adjacent end of the adjoining section, so that the sections of

the ladder when open will be firmly connected. However, in most cases these guides may be dispensed with.

To protect the rungs against becoming hot under the influence of fire, I may apply to them an asbestos covering J, as shown in Figs. 7 and 12.

In order to hold the ladder in a closed position and to release it when desired, I provide the following arrangement, (shown particularly in Figs. 9, 10, and 11:) To the outer surface of the upright F is secured a bracket F⁴, one end of which is adapted to be engaged by a catch-lip K' on a holder K. This holder has stems K² mounted to slide up and down in stationary guides K³, which may be secured to one of the side members A'. Figs. 3 to 6 and 8 to 11 show the parts in a normal closed position, in which the catch-lip K' is slid down over the end of the bracket F⁴. In case of fire the holder K, which is, of course, arranged adjacent to a window or other opening of the building, is raised so as to clear said bracket and release the outer upright F. In some cases the weight of said upright and of the parts connected therewith will be shown to cause it to drop into the position shown at the right in Fig. 1; but if this should not be the case a slight pull on the handle L, secured to the outside of the upright F, will start it on its downward movement. The inner ends of the rungs C will then come into the position shown in Figs. 2 and 7 and also indicated by dotted lines in Figs. 3 and 6, so that, as previously explained, the said rungs will be supported chiefly by the brackets E and shoulders E' and only very slightly, if at all, by the pivots B. The ladder will therefore be perfectly safe even if the pivots should have become weakened by rust. The asbestos covering J will preserve the ladder in a serviceable condition even if it should be exposed to great heat. To bring the ladder back into its normal position, its sections will be raised successively until a tight joint is obtained between the upright F and the side members A' of the support and the several holders K will be moved downward to catch over the brackets F⁴. The ladder will thus be kept in a compact and practically waterproof condition until occasion arises for its use.

Instead of using the handle L for starting the upright F in its opening movement I may after raising the holder K turn the same forward in the sleeves K³, so that the lower portion of the holder will engage the bracket F⁴. A forward movement of the holder K will then obviously push the bracket F⁴ and with it the upright F outward, thus starting the ladder on its opening movement. All the holders K may be connected to move in unison.

It will be understood that the rungs C, whether in their folded position, Figs. 3, 4, and 8, or in their extended position, Figs. 1, 2, and 7, will lie one above the other in the same vertical plane, although they will when extended stand out in a slightly-oblique posi-

tion from the support A. This oblique position makes it easier for the occupants of the building to step on the ladder from a window or other place.

5 It is apparent that the rungs C in passing from the upright folded position to the open position will by reason of their obliquity describe a portion of a conical surface of revolution upon their axes, (the bolts B.) By this
10 construction the rings may be placed in close proximity to each other, but when extended will hold the upright F far enough from the side of the building so as not to interfere with the free use of the ladder.

15 I may connect with my improved fire-escape alarm devices located on the several floors of the building with the circuits preferably so arranged that as soon as any one of the sections of the ladder is thrown open the alarm
20 will be given on all floors. These alarms may consist of ordinary bells or gongs or the circuit may include electric lights, the sudden lighting of which would warn the occupants, or both devices—that is, the audible and visible
25 alarm—may be used, so that the occupants may be awakened and at the same time the way to their exit will be clearly shown.

To prevent lateral swaying of the ladder, I may provide stays M, swiveled at M' to the
30 building or a fixed support and at M² to the upright F.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

35 1. The combination of the fixed support, the rungs pivoted thereto, the upright connected with the free ends of the rungs, and a locking device comprising two cooperating members, one secured to a fixed part and the other to
40 the upright, one of said members being mounted to slide and to turn about an upright axis, the sliding movement serving to lock or un-

lock the two members, while the turning movement serves to throw the upright outward by bringing said member in operative contact
45 with it.

2. The combination of the stationary support, the upright arranged to move in a plane at one side of the support, brackets located upon the support at the other side thereof,
50 and parallel therewith, and rungs each having one end portion extended between a bracket and the adjacent portion of the support and pivotally connected therewith, while the other end portion of the rung is pivotally
55 connected with the upright, and the central portion of the rung is disposed obliquely to said end portions.

3. The combination of a stationary support, rungs pivoted thereto, an upright connecting
60 the outer ends of the rungs, and a locking device comprising two cooperating members secured respectively to the support and to the upright, one of said members being mounted to slide on the part carrying it and also to turn
65 on the said part about an upright axis so as to cause the upright to be swung away from the support.

4. The combination of the stationary support, the rungs having their inner ends piv-
70 oted to one side of said support, the upright arranged to fold against the said support, means for pivotally connecting the outer ends of the rungs with the upright at the opposite side to their pivotal connection with the sup-
75 port, and a compressible waterproof lining arranged to form a joint between the upright and the support when the former is folded against the latter the lining being carried by one of said parts.

CHARLES SEESSLE.

Witnesses:

EUGENE EBLE,
JOHN LOTKA.