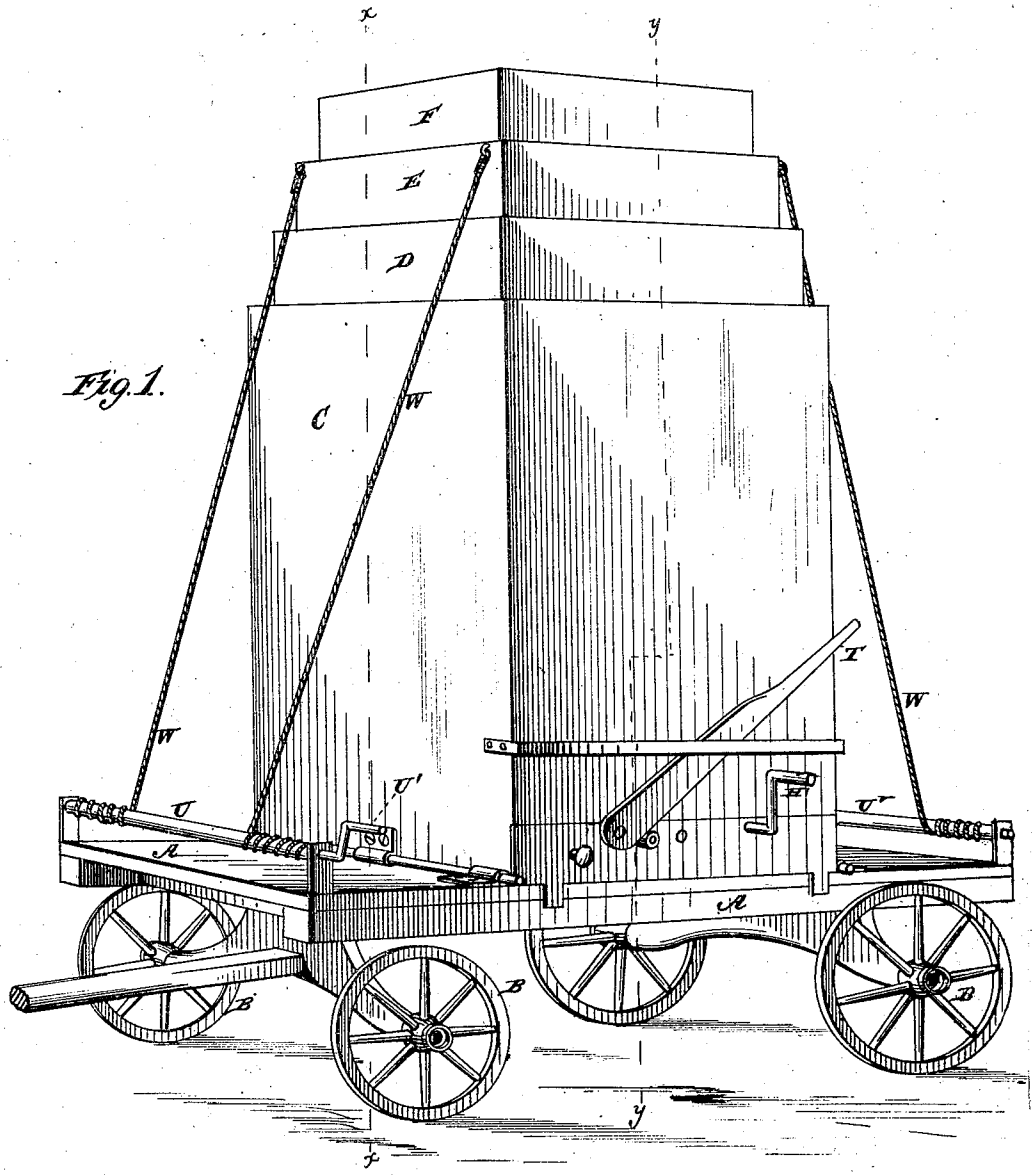
(No Model.) 3 Sheets—Sheet 1.

S. T. MICKEY.

Fire Escape.

No. 236,348. Patented Jan. 4, 1881.

Fig. 1.



Witnesses.
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(No Model.) 3 Sheets—Sheet 2.

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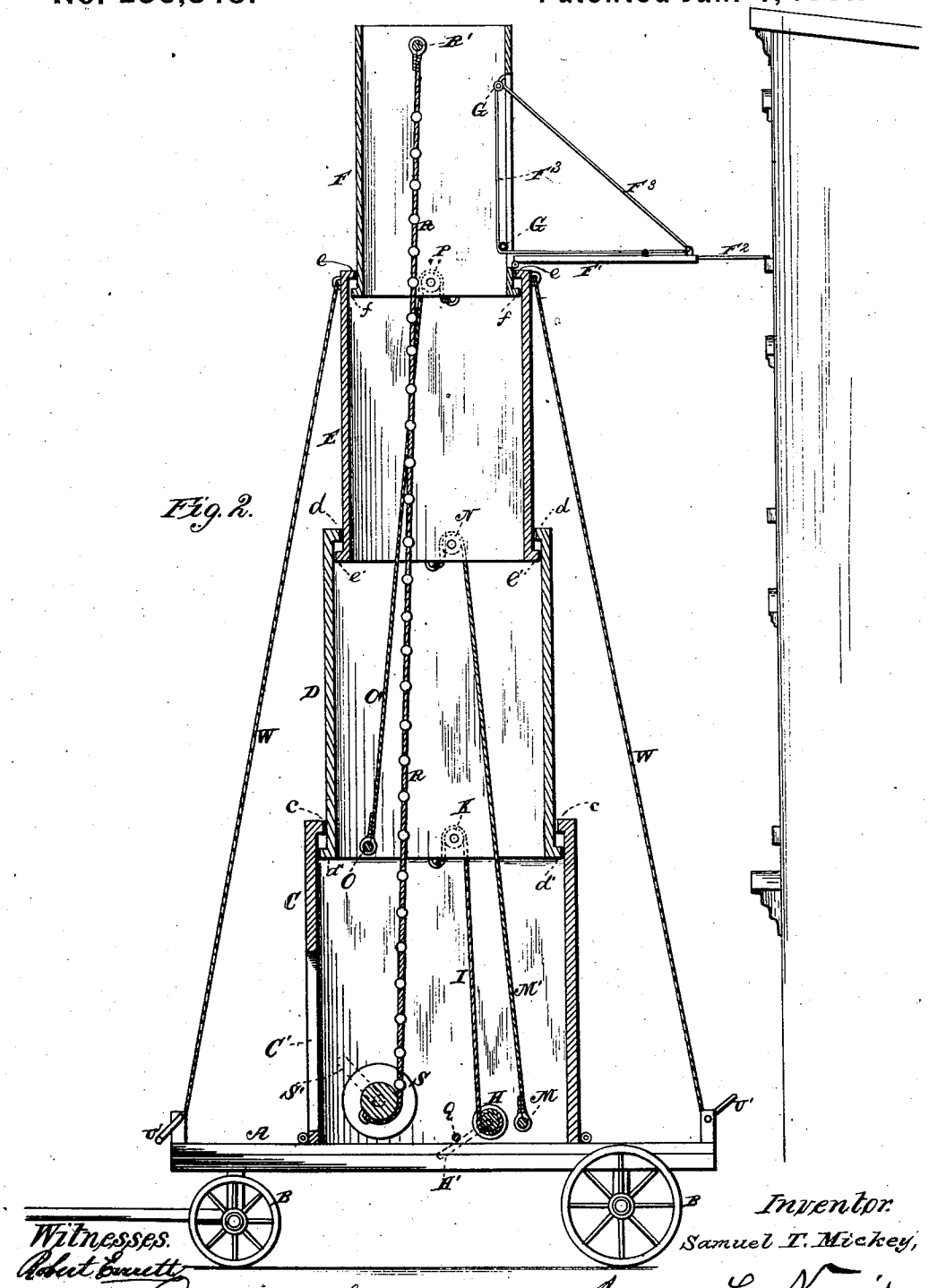
Fire Escape.

No. 236,348. **Patented Jan. 4, 1881.**

Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

S. T. MICKEY.

Fire Escape.

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Fig. 3.

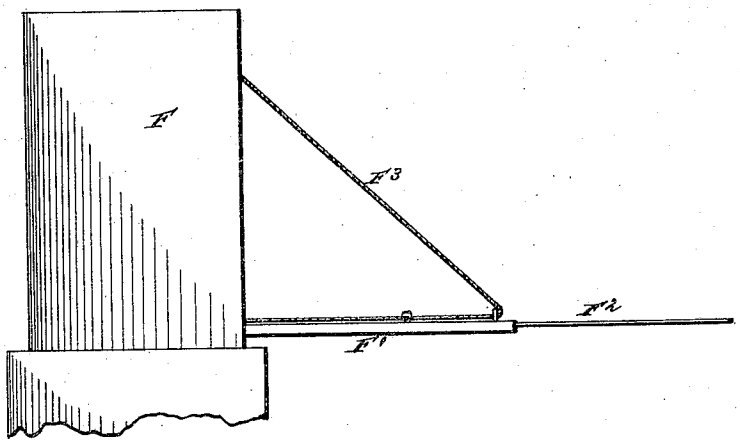
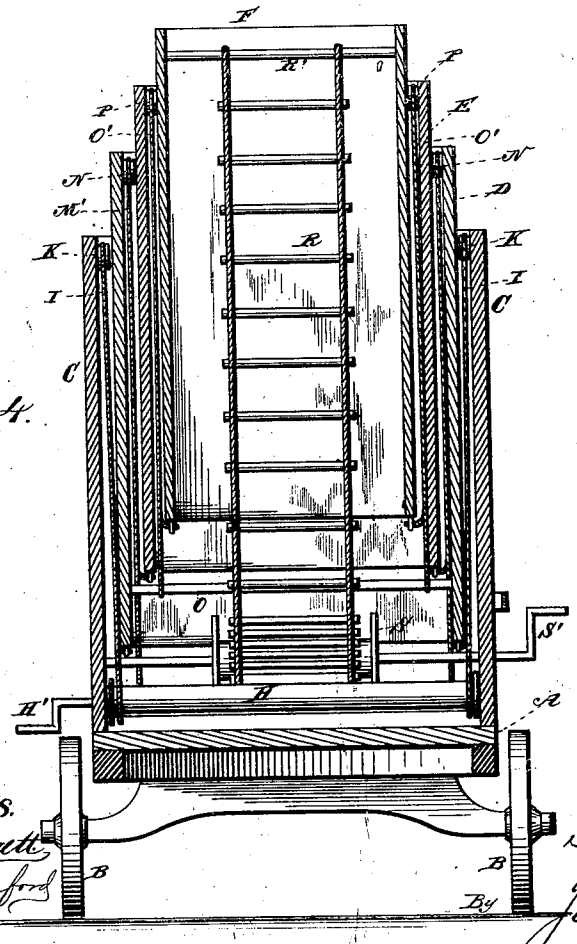


Fig. 4.



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UNITED STATES PATENT OFFICE.

SAMUEL T. MICKEY, OF MOUNT AIRY, NORTH CAROLINA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 236,348, dated January 4, 1881.

Application filed November 3, 1880. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL T. MICKEY, a citizen of the United States, residing at Mount Airy, in the county of Surry and State of North Carolina, have invented new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to an extension tower-like fire-escape having an inclosed passage from top to bottom, its object being to provide for the extension of an escape-ladder therein simultaneously with the raising of the tower for stowing the ladder in convenient position and condition for subsequent use as the tower is lowered, and to prevent the several sections from becoming separated when extended.

In the drawings, Figure 1 is a perspective view of my improved fire-escape apparatus with the several sections lowered. Fig. 2 is a section taken on a vertical plane indicated by dotted line *x x*, Fig. 1, the sections being raised. Fig. 3 is a side elevation of one of the sections with the door lowered and extended, and Fig. 4 is a section taken on a vertical plane indicated by the dotted line *y y*, Fig. 1.

The letter A refers to a platform for supporting my improved fire-escape apparatus. This platform is supported by wheels B, and it is otherwise adapted to admit of the apparatus being readily drawn through the streets of a city. The lower outer section, C, of the series of telescoping sections in this apparatus is secured upon the aforesaid platform A, and is constructed substantially in the form of a rectangular box with closed sides and an open top; or in lieu of the solid walls any appropriate frame-work may be employed for all of its sides excepting that side which is designed to face the building. The material of which this section is composed is preferably of metal, although a portion of the section might be constructed of wood and a portion of sheet metal, or of wood protected by sheet metel, in order that when the apparatus is drawn up alongside of a burning building that side of it which faces the fire will be closed and made non-combustible, both for the purpose of preventing the apparatus from taking fire and for shielding persons ascending or descending within the same from smoke, sparks, and flames issuing out from the windows of the burning building. The section C is provided with a door through one of its sides, so that persons may pass in or out thereof. The remaining sections D E F are preferably constructed in a similar manner to the section just described, and are arranged to telescope or slide within each other, in order that the structure may be contracted in compact form, so as to pass through the door of the engine-house and under telegraph-wires, elevated railways, and bridges. The height and number of these sections will be according to the height to which it is adjudged necessary to extend the apparatus.

The lower section, C, is provided with a door, C′, to admit of the entrance and exit of persons; and the upper section, F, has door F′, which is hinged at its bottom edge, so that after the apparatus has been brought alongside of a building and the sections extended so as to bring the door of the upper section on a level with the window, or such other portion of the building to which access is desired, the hinged door of said top section can be let down, so as to form a bridge between the apparatus and the building. This door is provided with a movable extension, F^2, so that the bridge which will be formed by the door when lowered may be extended with reference to the space between the apparatus and the building; and as a convenient means for operating such extension a cord, F^3, is connected with the same and passed around or through suitable guides G, in such manner that by drawing the cord in one direction the extension will be moved out, and by drawing upon the cord in a reverse direction the extension will be retracted. This cord is also to be utilized for the purpose of opening or closing the door, as occasion may require.

The section C has flanges *c* projecting inwardly from the tops of two of its opposite sides, and under these flanges extend flanges *d′* projecting outwardly from the bottom edges of two of the opposite sides of section D, which section has top flanges, *d*, under which take bottom flanges, *e′*, of section E, and this latter section is also provided with top flanges, *e*, under which project bottom flanges, *f*, of the top section, F. The flanges of the several sec-

tions, by their interlocking, prevent said sections from moving outward too far and becoming disengaged from each other, and they also act as guides when the upper sections are moving.

The devices employed for raising or lowering these telescoping sections are as follows:

Within the lower section, C, is arranged a rotary drum, H, which is operated by a crank, H′, at one of the outer sides of said section, and to this drum are fastened two cords or chains, J I, which pass up and over pulleys K, supported in the inner walls of section C, and thence down to a horizontal bar, L, secured in the lower portion of the next upper section, D. Within the lower portion of the lower section, C, is arranged a bar, M, from which two cords, M′, pass upward and over pulleys N upon the inner walls of the section D, and thence down to the lower portion of the next upper section, E, where they are secured; and from a bar, O, secured in the lower portion of section D two cords, O′, pass upward and over pulleys P upon the inner walls of the section E, and thence down to the lower end of the top section, F, where they are secured. By this arrangement it will be seen that when the drum within the lower section is rotated so as to wind thereon the cords I the next section D will be extended upward and out from the lower section, and that simultaneously with said movement of the second section D the remaining upper sections will, of necessity, be raised by reason of the cord-connections between the sections. It will also be seen that but one rotary drum is required to effect this operation, and that where more telescoping sections are employed than I have herein illustrated each additional section can be made to operate in a similar manner.

In order to check the drum from rotating so as to unwind the cords or chains therefrom after the sections have been raised to a proper height, any suitable stop mechanism may be employed—as, for instance, a rod, Q, may be passed through the lower section in such manner that by sliding the rod in one direction one of its ends will extend out from the said section so as to engage the handle of the drum, or a ratchet-wheel may be secured upon the shaft of the drum and a pawl arranged to engage with the ratchet.

The means employed for permitting the ascent or the descent of persons through the several telescoping sections consist of a flexible ladder, R, secured at its top end to a cross-bar, R′, in the upper section, F, and connected at its lower end with a windlass, S, located within the lower portion of the lowest section, C. The shaft of this windlass extends through one of the sides of this section, and is provided with a crank-handle, S′, by means of which the windlass can be operated to reel up the ladder upon the windlass. As the several telescoping sections are raised by the means just described the flexible ladder will be unreeled from the windlass in proportion to the height to which the top section of the apparatus is elevated, and when it is desired to retract or lower these sections it will only be necessary to turn the windlass so as to reel up the ladder, and thereby draw down the top section, the remaining sections following, as a matter of course, such movement of the top section. It is, of course, understood that in lowering the sections the stop or brake is taken off the drum and the latter turned so as to unwind the cords or chains thereon, and as a means of guarding against the too rapid rotation of the drum, which would be occasioned by the weight of the descending sections upon the cords, a brake-lever, T, is arranged to be applied to the shaft of the drum with such force as may be found necessary.

To provide additional means for steadying the apparatus while in an extended state, and also to assist in drawing down the top section should such assistance be rendered necessary, I provide upon the platform A two shafts, U, with crank-handles U′, and from these shafts or rollers extend cords W up to the top corners of the upper section of the apparatus. These cords will be unwound from the shafts as the sections are raised.

From the above it will be readily understood that my improved fire-escape apparatus can be readily extended to any desired height, and that a safe and agreeable passage will be thereby provided between the ground and the windows or roof of a building.

This apparatus, while providing means for the escape of persons from the building, is also especially adapted as a fireman's ladder, and by providing more than one of the sections with the extension-doors access can be easily had to different stories of the same building while the apparatus remains in an extended state.

Having thus described my invention, what I claim is—

1. The combination, with the telescoping sections in a fire-escape apparatus, of a flexible ladder connected at its upper end with the top section, and at its lower end attached to a windlass arranged within the lowest section, substantially as described.

2. The combination of the telescopic sections provided with the top and bottom flanges, serving as guides and stops, and the devices, substantially as described, for projecting the said sections one from another.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

S. T. MICKEY.

Witnesses:
J. W. SCHAUB,
R. L. HAYMORE.