2 Sheets—Sheet 1.

J. P. MORRIS.

Fire-Escape Ladder.

No. 202,364. Patented April 16, 1878.

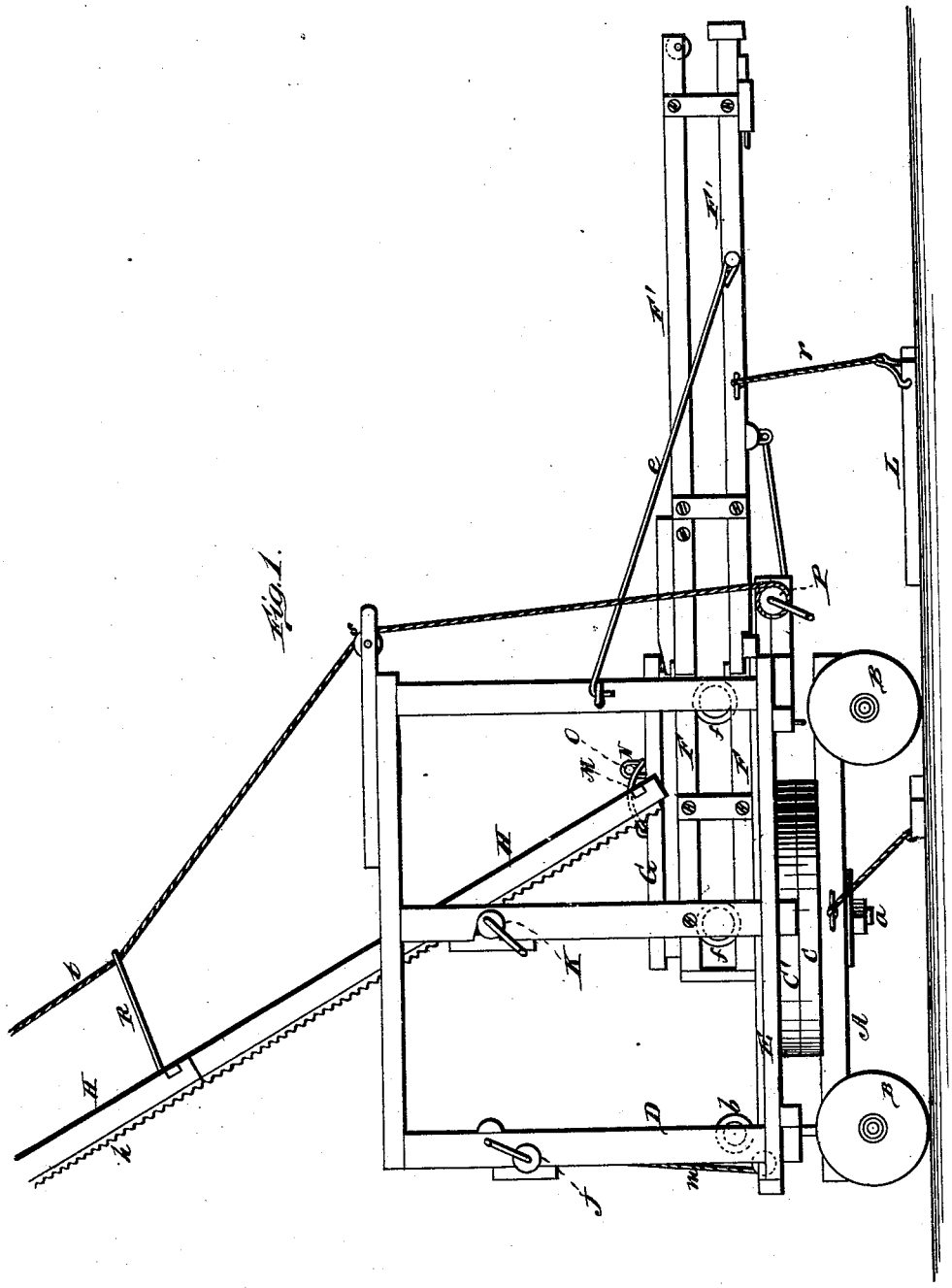

Fig. 1.

WITNESSES

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2 Sheets—Sheet 2.

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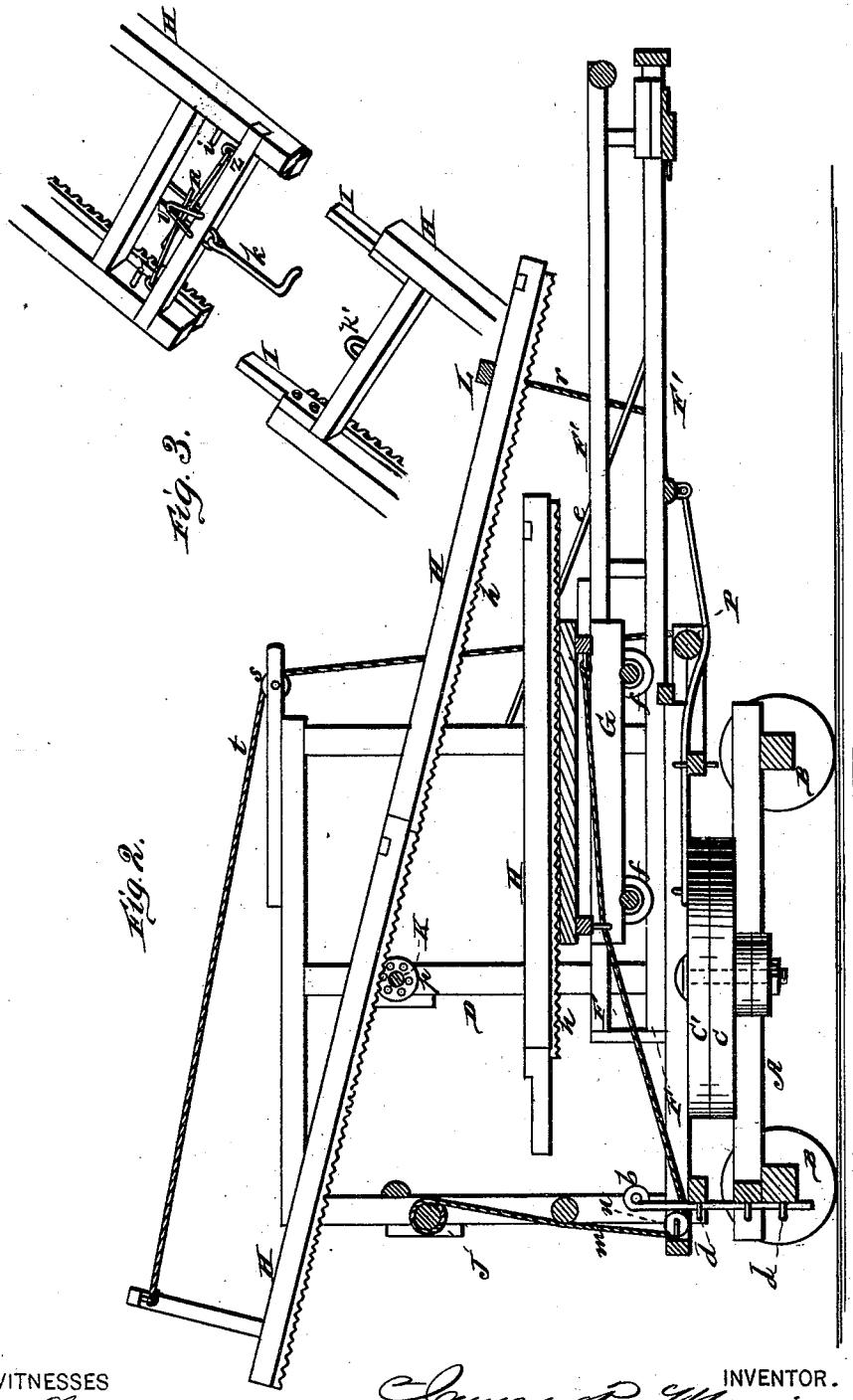

Fig. 3.

Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES P. MORRIS, OF PARIS, TEXAS, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO GILBERT G. WRIGHT AND JOSEPH K. BYWATERS, OF SAME PLACE.

IMPROVEMENT IN FIRE-ESCAPE LADDERS.

Specification forming part of Letters Patent No. **202,364**, dated April 16, 1878; application filed March 23, 1878.

To all whom it may concern:

Be it known that I, JAMES P. MORRIS, of Paris, in the county of Lamar and State of Texas, have invented a new and valuable Improvement in Fire-Escapes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of my fire-escape. Fig. 2 is a longitudinal vertical section, and Fig. 3 is a perspective view of a portion thereof.

The nature of my invention consists in certain improvements in fire-escapes, as will be hereinafter more fully set forth, and pointed out in the claims.

The annexed drawings, to which reference is made, fully illustrate my invention.

A represents a truck-frame, of any suitable dimensions, mounted upon wheels B B, and provided with a central circular disk, C, upon which the entire machine may be turned in any direction desired. On the disk C is, by means of a central bolt, *a*, pivoted a similar disk or turn-table, C′, and upon this turn-table is firmly secured an upright frame-work, D, having a platform, E, on each side, at or near the bottom. The frame-work D is held in position parallel with the truck-frame A by means of a sliding bolt, *b*, on the frame D entering staples or keepers *d d* on the frame A. By raising the bolt out of said keepers the frame D is released and can be turned in any direction required. In the lower part of the frame D, on the inside, at each side, are secured two parallel rails, F F, one above the other, and at a suitable distance apart. These rails extend from one end of the frame-work D to or beyond the center thereof, as shown.

When the fire-escape is to be used a horizontal frame-work is attached at the ends of the rails F F, said frame-work consisting simply of two parallel rails, F′ F′, arranged to coincide with the rails F on each side and form extensions thereof, said rails F′ being connected by suitable cross-bars, so as to form a frame-work, and said frame-work connected, by hooks or braces *e e*, to the frame D, as shown.

G represents a carriage mounted upon flanged wheels *f*, which fit between the rails on each side, said wheels running on the lower rails, and the upper rails acting to hold the carriage down and prevent the same from tilting.

The ladder used in my fire-escape is made in sections, H H, of suitable length, each section being formed of two parallel side bars, connected by cross-bars or rounds, and on the back or under side of each side bar is formed or attached a rack-bar, *h*, as shown. Each section of the ladder is, at its upper end, provided with projecting side pieces I I, secured to the inner sides of the side bars of the section and projecting upward into the section above it, between the rack-bars *h*, front bar *z*, and pins *i*. The sections are then held together by means of hooks *k* and eye K′.

By these means the sections become firmly united together without any danger of becoming accidentally separated. At the rear end of the main frame D is a windlass, J, from which a rope, *m*, passes downward around a pulley, *n*, and connects with the carriage G. At about the center of the main frame D, a suitable distance from the top, is a horizontal shaft, K, on which are secured two elongated pinions, *p p*, placed at such distances apart as to mesh with the rack-bars *h h* of the ladder-sections when the same are laid upon said pinions. The windlass J and shaft K are provided with suitable cranks for rotating the same.

Each section H of the ladder is in succession laid upon the pinions *p* of the shaft K, the lower end of the section resting upon the top of the carriage G, which has been previously moved outward to the outer ends of the rails F′. By turning the shaft K the first section is moved a suitable distance to allow a second section to be added, and so on until the desired number of sections have been united together.

To prevent the ladder tilting over too far, a bar or lever, L, is thrown over each section in their order, said bar being, by ropes or chains *r r*, connected to the rails F′, as shown, thus

holding the already-united sections until another section can be added, and so on, until all have been connected together. When the desired number of sections have been thus connected together the bottom of the ladder is fastened to the carriage G by means of pivoted latches M M being passed over the lower round of the bottom section, said latches fitting over staples N N and held down by a rod, O, through said staples.

The ladder is now ready to be raised, which is done by turning the windlass J, to move the carriage G inward, and at the same time turning the shaft K at a corresponding rate, so as to advance the ladder in proportion to the advance of the carriage.

The ladder can thus be raised to any desired height, and the truck run up to bring the top to any desired point. The windlass J and shaft K are held by suitable pawls and ratchets.

Under the front ends of the rails F, in the frame D, is mounted a windlass, P, from which two ropes, *t t*, are carried over pulleys *s s* in the upper front corners of the frame D, to the upper end of the top section of the ladder before the ladder is raised.

This windlass is turned by means of a crank, so as to keep the ropes *t* taut and aid in keeping the ladder in position. On the upper end of each ladder-section H are pivoted two hooks, R R, which are intended to be hooked onto the ropes *t t* by the fireman as he ascends the ladder, and to be unhooked as he decends preparatory to taking down the ladder. These hooks support each section of the ladder from said ropes to make it still more firm.

The ladder can be easily and quickly run down and separated, and the sections placed inside of the frame-work D. The hooks R on each section are then held to the upper round or cross-bar by a spring-catch, *v*. The extension-rail frame is also detached and placed on top or at the side of the frame D.

What I claim as new, and desire to secure by Letters Patent, is—

1. A fire-escape consisting of a truck with turn-table having a frame-work erected thereon, a carriage movable upon a way, a sectional ladder, and hoisting devices, substantially as herein set forth.

2. The combination, with the truck A B, the turn-table C′, with frame-work D, having rails F F on each side, the extension-rail frame F′, with hooks or braces *e e*, and the carriage G, with wheels *f*, operated by the windlass J and rope *m*, substantially as and for the purposes herein set forth.

3. The combination, with the sections of a fire-ladder, the projecting side pieces I, front bar *z*, pins *i*, hook *k*, and eye K′, for the purpose explained.

4. In combination with the sectional ladder, the windlass P, guy-ropes *t t*, pulleys *s s*, and the hooks R R, as and for the purposes herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES P. MORRIS.

Witnesses:

JOHN F. BLACKMAR,

C. H. MCEWEN.