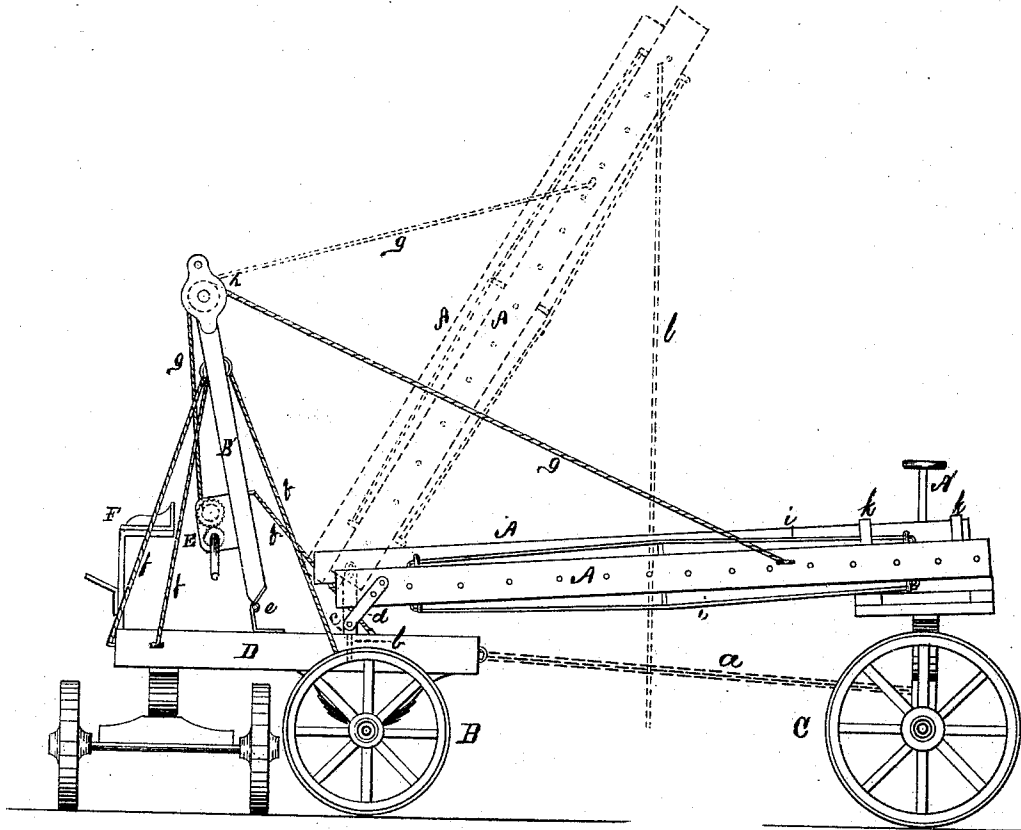


J. A. ARNOLD.

FIREMEN'S ESCAPE-LADDER AND TRUCK.

No. 182,050.

Patented Sept. 12, 1876.



Witnesses.
Z. D. Wagner
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UNITED STATES PATENT OFFICE.

JAMES A. ARNOLD, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN FIREMEN'S ESCAPE-LADDER AND TRUCK.

Specification forming part of Letters Patent No. **182,050**, dated September 12, 1876; application filed January 26, 1876.

To all whom it may concern:

Be it known that I, JAMES A. ARNOLD, of the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Fire-Escape and Hook and Ladder Truck combined; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in fire-escapes and their combination with firemen's hook and ladder apparatus, the object of which is to secure increased efficiency in the operation of the former, and, in its combination with the latter, to improve the mode of uniting both upon the same trucks.

The accompanying drawing fully illustrates the nature and character of my improvements, in which the figure is a side elevation of a combined fire-escape, hook and ladder, and trucks constructed in conformity with the principles involved in my invention, all of which will be hereinafter more fully set forth and described.

The ordinary hooks and ladders, as well as the escape-ladders A, are supported at the front and rear by trucks B and C, which are connected by a chain, *a*, the front wheels of said truck B being arranged to cut under the platform D, and the truck C being provided with a tiller, A', for the purpose of facilitating the managing of the apparatus when turning the corners of streets, both trucks being arranged so as to turn freely, all as shown and indicated in Fig. 1.

One end of the lower or bottom escape-ladder is secured to the front platform D by means of a rod, *b*, which passes vertically through said platform, and constitutes a pivot upon which said ladder may turn freely, said rod being connected to a cross-bar, *c*, which is also pivoted to straps *d* secured to the foot of the ladder on each side, thereby permitting said ladder to be raised from a horizontal to a vertical position, and inclined either toward the sides or rear when used for an escape, as

shown and indicated in Fig. 1. For this latter purpose I construct, in combination with the platform D, a derrick, which for convenience I make adjustable—that is, to be raised to its proper position when in use, and lowered so as to be out of the way when not in use—for which reason a single post, B', is secured to the platform D by means of a suitable hinge, *e*, as shown and indicated in Fig. 1. Said post B' is supported by suitable stay-chains *f*, which are secured thereto and to the platform D in such a manner and position as to admit of its being adjusted as described. The escape-ladders A are raised and lowered by means of chains *g*, which are attached to the sides of the lower ladder, passing over pulleys *h* at the top of the post B', and connect with a suitable hoisting apparatus, E, secured to said post B', all as shown and indicated in the figure above referred.

The platform D is provided with a suitable seat, F, for the driver, which should be arranged so as to let down out of the way when the escape is being used, as will be obvious.

The different sections of the escape-ladders are arranged to operate telescopically, being secured at the ends and sliding in suitable housing *k*, as indicated in Fig. 1. It should also be understood that the fire-escape ladders must be so adjusted upon the rear platform or truck as to be entirely disconnected therefrom as speedily as possible when required to be used, and, when so disconnected and being used as an escape, the whole apparatus (except the hooks and ordinary ladders, which must be removed) may and is designed to be moved about from point to point by and with the front truck alone, the escape-ladders being raised and supported at any angle by means of the derrick and hoisting apparatus, aided by suitable guys *l*, as indicated by dotted lines in Fig. 1. When the top of the ladder is resting against a building the truck is prevented from moving by turning the front wheels in the position indicated in the same figure. It will be understood that previous to raising the ladder it should be secured at the foot by suitable straps, or other fastenings, so as to prevent it from turning.

The pin *b* serves to secure the ladders firmly to the truck, but permits the latter to turn in-

dependently, and also allows the ladders to be instantly detached when required.

By substituting the chain *a* for the ordinary rigid tongues connecting the detachable trucks, the latter may be introduced into narrow alleys, and other places where they could not otherwise be used. The substitution of a single pivoted post, B', and flexible guys or stays *f* for the ordinary derricks, consisting of a number of hinged posts and rigid braces, renders the apparatus lighter in weight, more compact, and permits the pivoting of the ladders A to the front truck, which is not possible where rigid braces secured to the truck prevent any swinging movement of the ladders thereon.

I claim—

1. The combination of the detachable trucks B C, the derrick secured to the front truck, and the ladder A resting upon the rear truck and connected to the front truck by a detachable rod or pivot, *b*, as set forth.

2. The combination, with truck D, of the adjustable ladders, the derrick-post B', hinged at the lower end to the truck, and the flexible stays *f* connected to the post and to the truck, as specified.

In testimony that I claim the foregoing as my own I hereto affix my signature in presence of two witnesses.

JAMES A. ARNOLD.

Witnesses:

OLIVER DRAKE,

JOHN C. TUNBRIDGE.