No. 709,402. Patented Sept. 16, 1902.

E. A. HERNDON.

EXTENSION LADDER AND TRUCK THEREFOR.

(Application filed Apr. 26, 1902.)

(No Model.) 2 Sheets—Sheet 1.

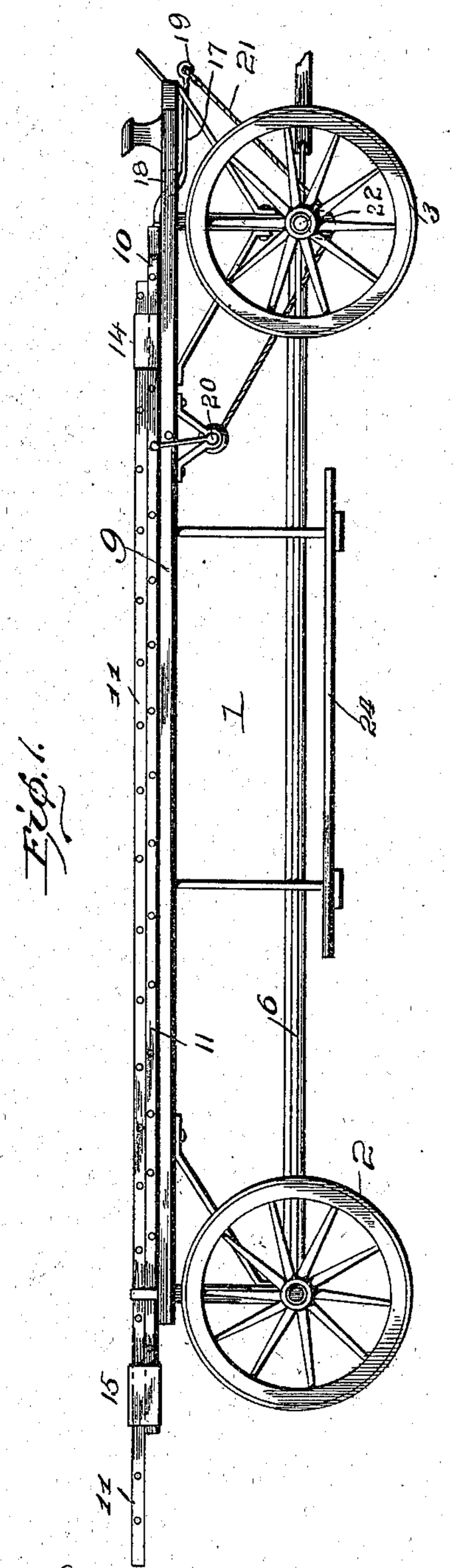

Fig. 1.

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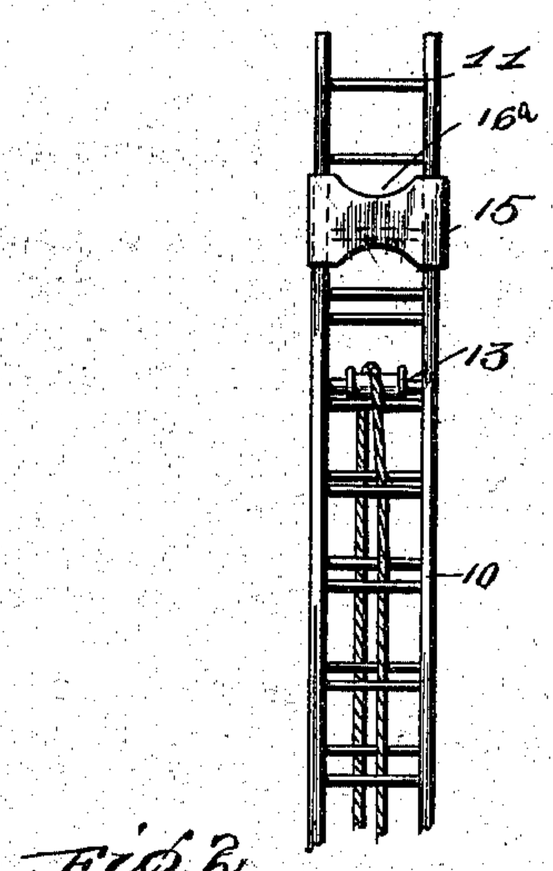


Fig. 2.

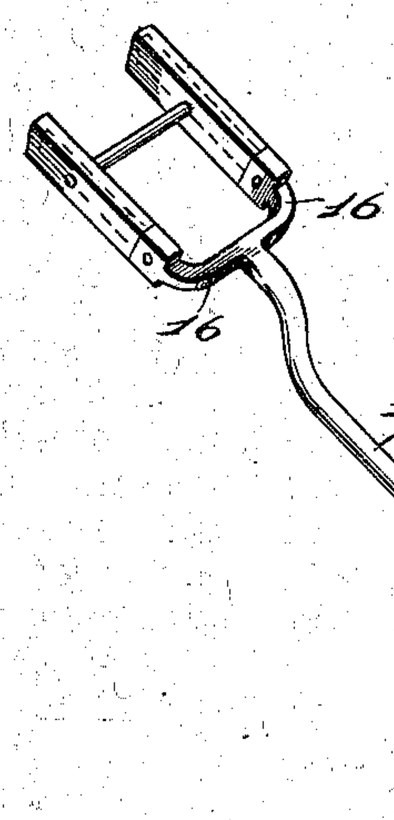


Fig. 4.

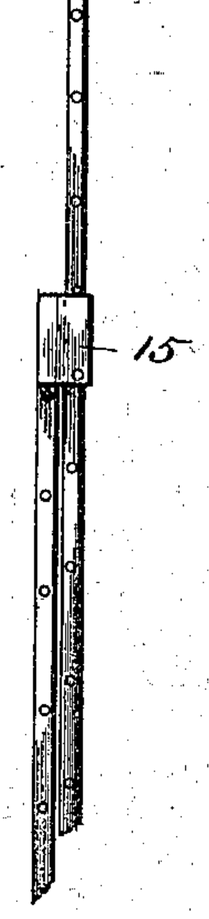
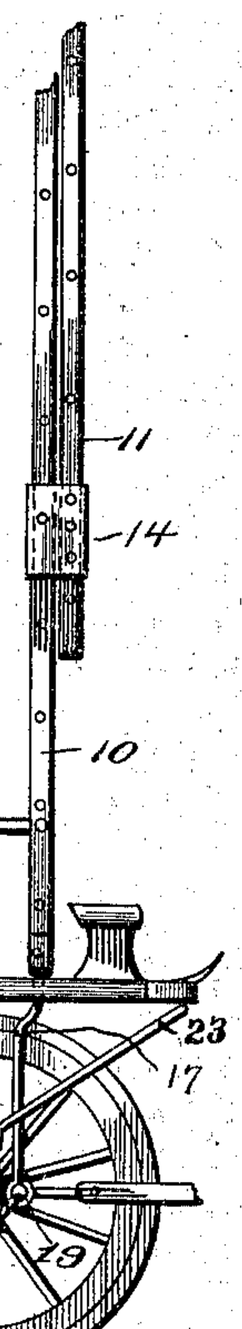


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWARD A. HERNDON, OF LAGRANGE, GEORGIA.

EXTENSION-LADDER AND TRUCK THEREFOR.

SPECIFICATION forming part of Letters Patent No. 709,402, dated September 16, 1902.

Application filed April 26, 1902. Serial No. 104,866. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. HERNDON, a citizen of the United States, residing at Lagrange, in the county of Troup and State of Georgia, have invented certain new and useful Improvements in Extension-Ladders and Trucks Therefor; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain novel and useful improvements in extension-ladders and running-gear therefor, and has particular application to devices of the class commonly known as "fire-trucks."

The invention has in contemplation the provision of means whereby the ladder or the sections composing the same may be easily and quickly extended into operative position.

A further object of the invention is to provide devices whereby when the ladder is in its extended position it may be turned in any desired direction.

The invention further contemplates the construction of an apparatus which shall be positive in operation, simple and durable in construction, one which can be operated with comparatively fewer men than the fire-trucks now in use, and one which shall do away with the use of cog wheels and gears, thus avoiding the danger of derangement and accident at critical times.

To the attainment of the above-recited objects and other objects not mentioned, but which will be apparent from a reading of the following specification the invention consists in the peculiar construction, combination, and arrangement of parts, as will be hereinafter described in the specification, illustrated in the annexed drawings, and set forth in the claims.

While I have herein illustrated and described my preferred form of apparatus, it will of course be understood that there can be deviation and modification in minor details and the relative arrangement of the parts without departing from the spirit of the invention or sacrificing any of the advantages thereof.

To a full understanding of the invention reference is to be had to the accompanying drawings, wherein—

Figure 1 is a side elevation of an apparatus embodying my improvements. Fig. 2 is a front view of an apparatus of my improved type, showing the ladder-sections elevated vertically relative to the truck-body. Fig. 3 is a side view of a portion of the truck-body and the accompanying ladders, showing the latter elevated and partially extended. Fig. 4 is a detail view of the ladder-supporting bracket.

Referring to the drawings by numerals, 1 indicates any suitable truck, which forms a support for the mechanism of the present improved apparatus.

Mounted on the top of the platform or body of the truck is the ladder, composed of two sections 10 and 11. These sections are extensible, the section 11 being movable longitudinally relative to the lower section 10. A windlass, as at 12′, is positioned on the lower ladder-section and has a rope or cable 12 secured at one end thereto, the said cable passing over a bearing block or roller 13, arranged near the upper end of the section 10. The other end of the rope is secured to the lower portion of the ladder 11. To prevent lateral movement of the said ladder-sections relative to each other, I have provided brackets, as at 14 and 15, which are cut away, as at 16ª, to form a hose-rest.

At the lower end of the ladder 10 is mounted a bracket or hanger of substantially the shape and formation illustrated in Fig. 4 of the drawings. It will be observed on reference to the aforesaid Fig. 4 that this hanger is formed of two arms 16 16, converging into one main extension or depending portion 17. This hanger is preferably formed of metal, and near the point where the two arms converge into the depending extension is formed with a compound curve, as shown, for the purpose of allowing the ladders to rest flatly upon the truck-body when not in use. The arms 16 16 may be secured in any suitable manner to the sides of the section 10 and are designed to rest upon the truck-top 9 when the ladder is in its elevated position. The portion or extension 17 passes through an orifice 18 in the forward end of the truck,

and such extension has an eye or looped portion, as at 19, formed at the lower end thereof. On the under side of the body portion 9 of the truck is mounted a windlass or winding-drum 20 for the cable 21, one end of the said cable being fastened to the eye 19 of the portion 17. It will be seen that when the rope 21 is wound by the windlass 20 such action will tend to bring the hanger from a horizontal to a vertical position, thus raising the said section 10. Directly beneath the front axle of the truck is a bearing-roller 22 for the aforesaid rope 21. When the ladder is elevated, it may be turned in any direction, the arms 16, in conjunction with the body portion 9 of the truck, forming a simple turn-table. A bearing-bracket, as at 23, is secured to the front end of the truck for the purpose of acting as a guide and retainer for the hanger, operating to prevent the latter from moving in a direction not desired.

The operation of my improved device will be readily apparent. On reaching the scene of the fire the windlass 20 is operated, thus bringing the hanger of the ladder-section 10 from a horizontal to a vertical position. The desired angle of elevation having been attained, the windlass or winding-drum on the section 10 is operated, causing the section 11 to move longitudinally relative to the section 10. When the section has been extended the desired distance, the entire ladder may be turned upon its axis to any position and then allowed to fall or rest against the building ready for use.

At the sides of the truck-body, as at 24, I have provided platforms for the operators to stand upon, and the truck may also be provided with tool-boxes and receptacles for the fire-axes and other implements.

The many advantages incident to a structure embodying my improvements are too evident to necessitate dwelling upon the same here in detail.

What I claim is—

1. In an apparatus of the class described, the combination with a suitable truck, of a ladder mounted thereon, and lifting means secured to the ladder and extending through an orifice in the said truck, said ladder, when lifted, being rotatable upon the said lifting means.

2. In an apparatus of the class described, the combination with a suitable support of a ladder mounted thereon, a bracket extending from said ladder through said truck and finding a bearing thereon, and means for swinging said bracket upon its bearing for lifting said ladder, the ladder being left free to rotate upon said bracket.

3. In a truck-ladder, the combination with a suitable truck, of an extension-ladder mounted thereon, a bracket or lifting-lever fixed to said ladder and extending therefrom substantially in line therewith, having an offset portion therein, whereby the ladder may lie flat upon the truck, while the bracket extends through the truck and lies in a parallel plane thereto, and means for pulling the free end of said bracket downwardly for lifting the ladder.

4. In a device of the class described, the combination with a suitable truck, of a ladder mounted thereon and means for lifting and pivotally supporting said ladder, such means comprising a hanger formed with converging arms and a depending portion extending therefrom, an eye formed at the end of the depending portion, a windlass mounted on the truck-body, and a cable having one end secured to the eye of the depending portion of the hanger and the other passed about said windlass.

5. A truck-ladder comprising a carrying truck or vehicle, an extension-ladder mounted thereon, a lifting, pivotally-supporting bracket for the ladder formed with a ladder-engaging bifurcated portion, and an elongated pivoting-lever portion, the said lever portion affording means for lifting and pivotally holding the ladder in its various positions, said ladder being rotatable upon said lever portion.

6. In a device of the class described the combination of a suitable truck, an extensible ladder mounted thereon, and means for elevating the said ladder and retaining it against lateral movement, such means comprising a hanger secured to the end of said ladder, a portion of said hanger extending through an orifice formed in the truck-body, a windlass on the truck-body, a cable secured to said hanger and adapted to be wound by said windlass, and a bracket fastened to the front of the truck-body and having arms extending on both sides of the said ladder-hanger.

7. A ladder-truck, comprising a truck or supporting-wagon, a ladder carried thereby, a lifting bracket or lever secured to the lower end of the ladder, one end of the same projecting through an engaging slot formed in the floor of the truck, an elongated guide-bracket arranged beneath the floor of the truck and bracing the forward bolster thereof, the said bracket guiding and bracing the ladder-lifting bracket in its various positions, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

EDWARD A. HERNDON.

Witnesses:
HENRY D. BURKS,
F. P. LONGLEY.