I. GIBBS.

Hose-Elevator and Fire-Escape.

No. 205,855. Patented July 9, 1878.

Fig. 1.

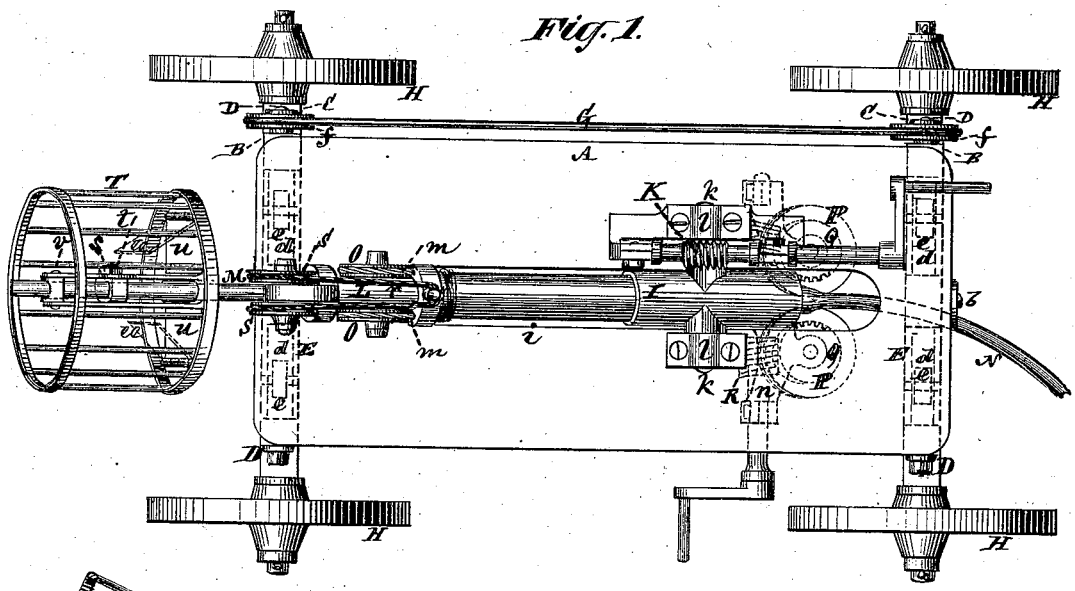


Fig. 2.

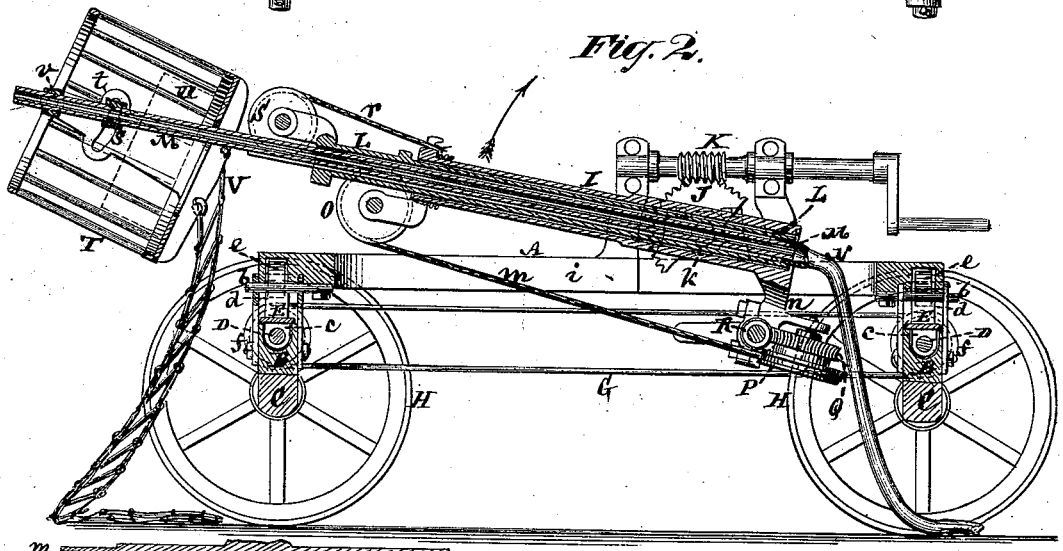


Fig. 4.

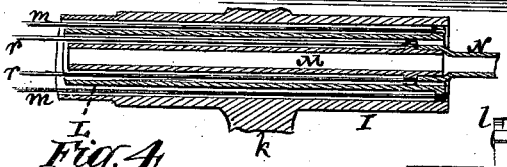
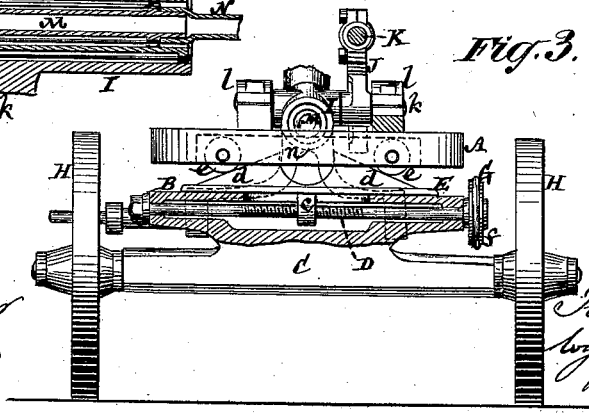


Fig. 3.



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UNITED STATES PATENT OFFICE.

IVERS GIBBS, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN HOSE-ELEVATOR AND FIRE-ESCAPE.

Specification forming part of Letters Patent No. **205,855**, dated July 9, 1878; application filed October 18, 1877.

To all whom it may concern:

Be it known that I, IVERS GIBBS, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Hose-Elevators, of which the following is a description, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to apparatus for elevating hose or pipe at fires to facilitate the discharge of water in a stream at great heights, in place of carrying the hose up long ladders, which latter are both dangerous and very inefficient. These apparatus are usually provided with raising or lowering and extensible tubes, with which the hose is connected, and which are mounted on a suitable platform or carriage.

My invention consists in a combination, with a series of telescopic tubes or equivalent structures, to the inner one of which the hose is attached, and the outer one of which is fitted to rock in its bearings, of a screw and worm-wheel gear applied to the outer or lower one of said tubes, for raising and lowering the latter, and with it the inner extension tube or tubes, provided with means for raising and lowering them within the outer or lower tube, whereby increased efficiency and security are obtained.

My invention also consists in a combination, with a raising and lowering series of telescopic tubes or frames, the outer one of which is fitted to rock in or on bearings transversely to the axial line of said tubes, of a platform or base carrying said tubes, and made adjustable laterally or to opposite sides of the plane in which said tubes are rocked, independently of the ground or surface on which the apparatus rests, whereby said apparatus may be tilted laterally, and while at work and before elevating the column of tubes, to suit different requirements independently of all ground adjustment.

My invention likewise consists in a combination of special means or devices for laterally tilting the platform which carries the column of telescopic tubes or frames, whereby the tilting of said platform laterally to level it is both simply and effectually obtained.

Figure 1 represents a plan of a hose-elevating apparatus having my invention applied, and showing the raising, lowering, and extensible tubes as let down or lowered. Fig. 2 is a longitudinal sectional elevation of the same, with the working parts in like position, and with a rope ladder as attached to a cage or basket on the upper or outer extension-tube. Fig. 3 is a partly-sectional end elevation of said apparatus; and Fig. 4, a longitudinal section, upon a larger scale, of a portion of the elevating and extensible tubes, with attached hose and means for extending certain of said tubes.

A represents the platform of a carriage on which the apparatus is mounted or with which it is combined. Said platform is connected by end trunnions *b b* with bolsters B B, to the under side of which the axles C C of the carriage are attached. The bolsters B B may be made hollow, and are fitted with screws D, which turn in bearings in the ends of the bolsters, and work within or through screw-threaded boxes *c*, attached to a frame or plate, E, capable of a sliding movement along the tops of the bolsters. These sliding frames or plates have double or reverse inclines *d d*, on which the platform A rests by rollers *e e*. Said screws are provided at their one end with outside pulleys *f f*, which are connected by a rope, band, or chain, G, to provide for the operation in concert of the screws D, at opposite ends of the carriage, and whereby, according to the direction in which said band is moved by hand, the sliding plates E are shifted to the right or to the left from a central position on their respective bolsters, and, by their inclines *d d*, caused to laterally tilt the platform A up or down on opposite sides. This provides for leveling the platform A before elevating the column or series of tubes carried by said platform when there are irregularities in the surface of the road on which the carriage rests by its wheels H H, and, furthermore, provides for tilting, as may be desired, the column or series of tubes laterally toward either side of a narrow alley or toward any building.

Longitudinally through the center of the platform A is a slot, *i*, to provide for the working of the column of tubes when being raised or lowered, and to keep the lower end of the same well down, whereby the apparatus is steadied. I is the lower tube, which is

hung by trunnions *k k*, to rock or work in bearings *l l* on the platform A. One of these trunnions, *k*, carries a worm-wheel or sector, J, with which a screw, K, supported by standards on the platform A, gears. Accordingly as this screw is turned to the right or to the left is the whole column of tubes raised or lowered from the trunnions *k k* as a center of motion. Such screw and worm-wheel gear forms a positive lock of itself for holding the column of tubes up or down, or in any intermediate position, and whereby the same positive motion is used to lower as to raise the tubes, and there is little or no probability of breakage or derangement of the parts.

L M are two extension-tubes, arranged one within the other, and the outer one of which is made capable of sliding up and down within or in and out of the rocking base-tube I. While the invention is not restricted to any particular number of extension-tubes, two will suffice to explain it. These extension-tubes are suitably guided one within the other, to keep them from turning, and are controlled by stops, to limit them in their extension movement. The inner one, M, of these extension-tubes has attached to its lower end the hose N, by which the water is supplied from a fire-engine or other source, and to the upper end of said inner tube is attached a nozzle or other distributing device. Attached to or near the lower end of the outer one, L, of these extension-tubes are opposite side wire ropes or chains *m m*. These ropes pass over pulleys O O at the top or outer end of the lower rocking tube I, and from thence to windlasses or pulleys P P, to which they are attached. Said windlasses P P are carried by a bracket, *n*, attached to the base-tube I, below the rocking fulcrum or trunnions of the latter; and on the axles of said windlasses are worm-wheels Q, with which an endless screw, R, (operated by hand, and having its bearings in the bracket *n*) is arranged to gear. Attached to or near the lower end of the inner tube M of these extension-tubes are wire ropes or chains *r r*, which pass over pulleys S on the upper ends of the outer extension-tube L, and are attached at their one end to the outer or rocking base-tube I.

By this connection of the extension-tubes and rocking base-tube the extension-tubes L and M are made capable of being elevated uniformly and simultaneously by suitably rotating, through a crank or handle, the windlasses P P.

Arranged on the upper end of the inner one, M, of the extension-tubes L M is a basket or cage, T, in which the fireman who controls the discharge-nozzle may stand. This basket is hung to swing on an upper pivot, *v*, in transverse relation with the elevating motion of the column of tubes from the trunnions *k* as a moving center, and is provided with a slotted attachment, *s*, for holding the basket, by a locking-screw, *t*, in a proper position for different inclinations of the columns of tubes. Said basket is provided in its bottom with trap-doors *u*, through which the fireman may ascend or descend by means of a rope-ladder, V, attached to and carried up by the basket, and which may also serve as a fire-escape. This ladder is independent of the extension-tubes, and is a direct attachment to the basket or cage T.

If desirable or found necessary, guy-ropes may be attached to the upper extension-tube to guide or steady and brace the column of tubes.

The extension and elevating devices hold the column of tubes in whatever position it may be elevated or extended.

It is not absolutely necessary that the outer tubes I L should be close ones, and frames which are not strictly tubes may be substituted for them; but it will suffice to designate them tubes. Neither is it absolutely necessary that these tubes or frames should be arranged one within the other, as they may be fitted to slide one outside of the other. Again, instead of connecting the screws D D by pulleys *f f* and an endless rope or chain, G, to effect the tilting of the platform, said screws may be disconnected or independent of each other, and be separately operated, as required, by cranks or handles applied to them.

I claim—

1. A hose or pipe elevator composed of a series of telescopic tubes or frames, the inner one of which carries the hose to be elevated, and the outer one of which is hung to rock on or about a transverse axis, in combination with the screw K and worm-wheel or sector J, substantially as and for the purposes herein described.

2. The combination, with a series of raising and lowering or telescopic tubes or frames, the lower one of which is fitted to rock in or on bearings transversely to the axial line of the tubes, of a platform or base carrying said tubes, and made adjustable independently of the ground or surface on which the apparatus rests, laterally or to opposite sides of the plane in which said tubes are rocked, substantially as specified.

3. The combination of the screws D D, the sliding plates or frames E, operated by said screws, and having reverse inclines *d d* on them, the pulleys *f f*, and connecting rope or chain G, the laterally-tilting platform A, actuated by said inclines, and having mounted on it a column of raising and lowering tubes, the bolsters B, the axles C, and the wheels H H, substantially as specified.

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