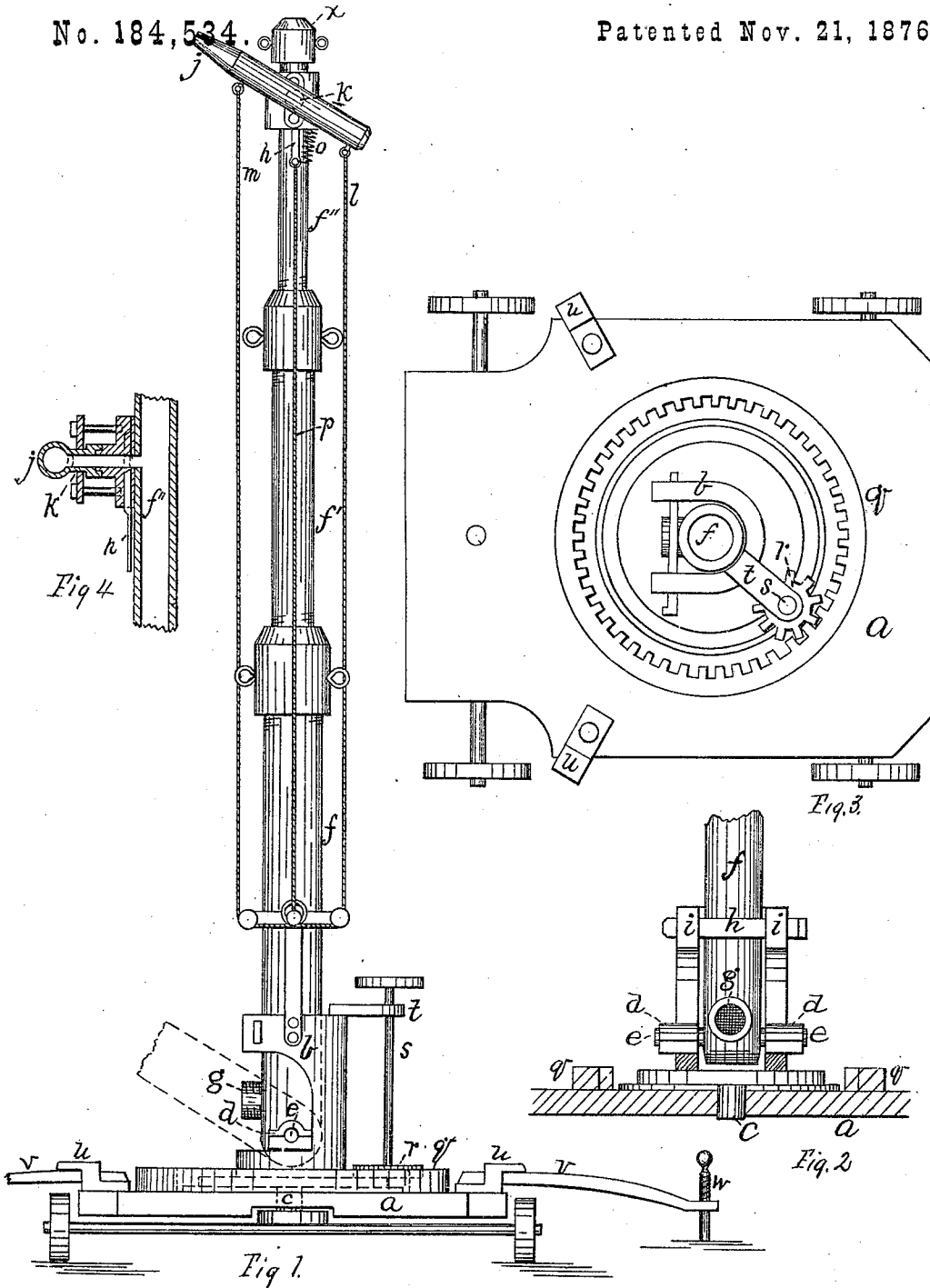


J. B. LOGAN.

APPARATUS FOR EXTINGUISHING FIRES.

No. 184,534.

Patented Nov. 21, 1876.



Witness
 John A. Mason
 W. E. Brown

Inventor
 John B. Logan
 Per. Geo. H. K. Searcy, Atty.

UNITED STATES PATENT OFFICE.

JOHN B. LOGAN, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF HIS
RIGHT TO ABNER GREENLEAF, OF SAME PLACE.

IMPROVEMENT IN APPARATUS FOR EXTINGUISHING FIRES.

Specification forming part of Letters Patent No. **184,534**, dated November 21, 1876; application filed
April 22, 1876.

To all whom it may concern:

Be it known that I, JOHN BERNARD LOGAN, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Devices for Extinguishing Fires; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 shows an elevation of my invention; Fig. 2, a front elevation of support, partially in section; Fig. 3, a plan of truck and support; Fig. 4, section of tube and nozzle.

Same letters show like parts.

The object of my invention is to furnish a device for extinguishing fires, by means of which water may be delivered upon the fire from a height without the use of ladders, and without exposing the firemen to danger.

My device consists of a perpendicular tube receiving the water at its base from an engine, hydrant, or reservoir under pressure, and delivering it upon the fire from one or more nozzles attached to the tube at an elevation. It further consists in the peculiar construction of the tube, which is made in sections and the devices for raising and sustaining it; and also in the devices for regulating and controlling the stream, together with certain details of construction.

Reference to the drawing will illustrate my invention fully. At *a* is shown a truck or carriage, upon which a support, *b*, is secured by a vertical pivot, *c*. This support is provided with trunnion-boxes *d d*, in which is hung, by trunnions *e e*, a tube, *f*, closed at its lower end, but provided at *g* with an opening, upon which may be secured the hose from an engine, hydrant, or reservoir. The trunnions *e e* enable it to be placed in either a horizontal or perpendicular position, and when in the latter it may be secured by a bar, *h*, passing through projections *i i* in the support *b*. The top of the tube *f*, which in practice is about twelve feet long, is prepared to receive a second tube, *f'*, which in turn may receive a third, and so a succession of tubes may be coupled on until

the required height is attained. The upper tube is finished by a cap, *x*, keeping the water from being thrown out vertically. One or more sections may be used at a time, depending on the height desired, and these sections preferably decrease in diameter successively from the base upward. In the drawing three sections of tube are shown. The coupling is, of course, done while the tubes are in a horizontal position, after which they are elevated to a perpendicular position, and secured, as stated.

To the tube *f f' f''* are attached one or more nozzles, *j*, communicating with the interior of the tube. Through these nozzles the water is delivered upon the fire. Each section may, if desired, be provided with its nozzle, thus enabling the elevation at which the water is delivered to be readily changed by using different nozzles at different heights.

In order to allow the direction of the stream to be elevated or depressed, these nozzles are attached to the tube by a pivot-joint, *k*, permitting them to turn in a vertical plane, their position being controlled and regulated by means of cords or like devices *l m*, attached to either end, and running to the bottom of the tube. Between the tube *f f' f''* and the nozzles *j* cut-offs *h* are provided, closing by means of a spring, *o*, and opened by a cord or chain, *p*, thus enabling the water to be cut off or admitted at any time.

It has been stated that the support *b*, to which the tube *f f' f''* is attached, is secured to the truck or carriage *a* by a vertical pivot, *c*. This method of attachment enables the support, and consequently the tube, to be turned in any direction in a horizontal plane, and the delivery-nozzles, being capable of adjustment in a vertical plane, enable the water to be delivered in any direction and at any angle of elevation with great precision.

In order to assist in turning the support *b* and tube, an internal gear-wheel, *q*, is secured to the platform of the truck *a* around the support. Within this gear meshes a pinion, *r*, mounted on a shaft, *s*, supported in a box, *t*, rigidly attached to the support *b*, so that by revolving the pinion *r* it is caused to travel around the internal gear *q*, causing the sup-

port *b* to rotate upon its vertical axis, carrying the tube *f f' f''* with it.

In order to insure the steadiness of the device while in use, and to enable it to resist the reaction of the stream, as well as to adapt the machine for use upon uneven ground, I attach to the sides of the truck sockets *u* adapted to receive horizontally-projecting arms or braces *v*, at the outer ends of which are vertical screws *w*, serving as legs, the length of which may be varied by turning them up or down as required by the inequalities of the ground.

When in use the wheels *y* are in most cases to be removed from the truck, which will add to its stability.

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

1. A device for extinguishing fires, consisting of a perpendicular tube, receiving water under pressure at its base, and adjustable in a horizontal plane upon a vertical axis, in combination with one or more nozzles attached to said tube, for delivering said water at an elevation, substantially as set forth.

2. In combination with a perpendicular tube receiving water under pressure at its base, one or more nozzles for delivering said water, said nozzle or nozzles being attached to said tube by a joint in such a manner as to be adjustable in a vertical plane, substantially as and for the purposes set forth.

3. A device for extinguishing fires, consisting of a perpendicular tube receiving water under pressure at its base, and adjustable in a horizontal plane, in combination with one

or more nozzles attached to said tube, and adjustable in a vertical plane, substantially as and for the purposes set forth.

4. A device for extinguishing fires, embodying a truck, *a*, a support, *b*, and a sectional tube, *f f' f''*, adjustable in a horizontal plane upon a vertical axis, adapted to receive water under pressure at its base, and deliver it upon the fire from an elevation, said tube being attached to said support by trunnions, enabling it to be raised or lowered, as and for the purposes set forth.

5. The combination of the tube *f f' f''*, as described, with one or more nozzles, *j*, jointed thereto, and cords or similar devices *l m*, for adjusting the vertical angle of the stream, as and for the purposes set forth.

6. The combination of the tube *f f' f''*, with the nozzle *j* and cut-off valve *n*, provided with operating devices *o p*, as set forth and shown.

7. The combination of the truck *a* and perpendicular tube *f f' f''*, with the support *b*, pivoted at *c*, internal gear wheel *q*, pinion *r*, and shaft *s*, operating as set forth, for the purposes described.

8. The sockets *u*, in combination with the lateral arms or braces *v*, and screws *w*, as described, for the purposes set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 21st day of April, 1876.

JOHN BERNARD LOGAN.

Witnesses:

ALBERT GREENLEAF,
ABNER GREENLEAF.