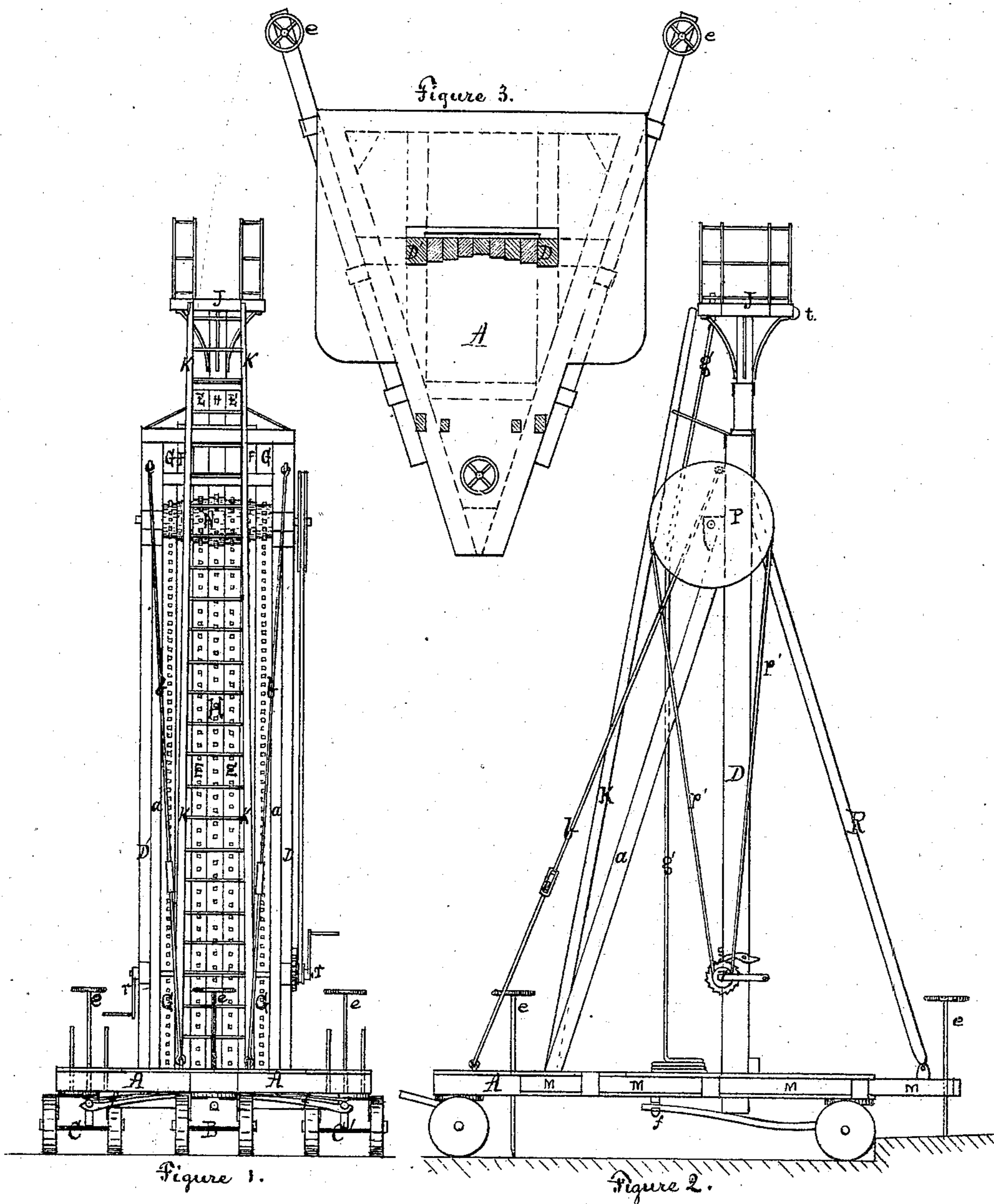


William H. Nobles.

Hose Elevator and Fire Escape.

No. 120,211.

Patented Oct. 24, 1871.



Witnesses.

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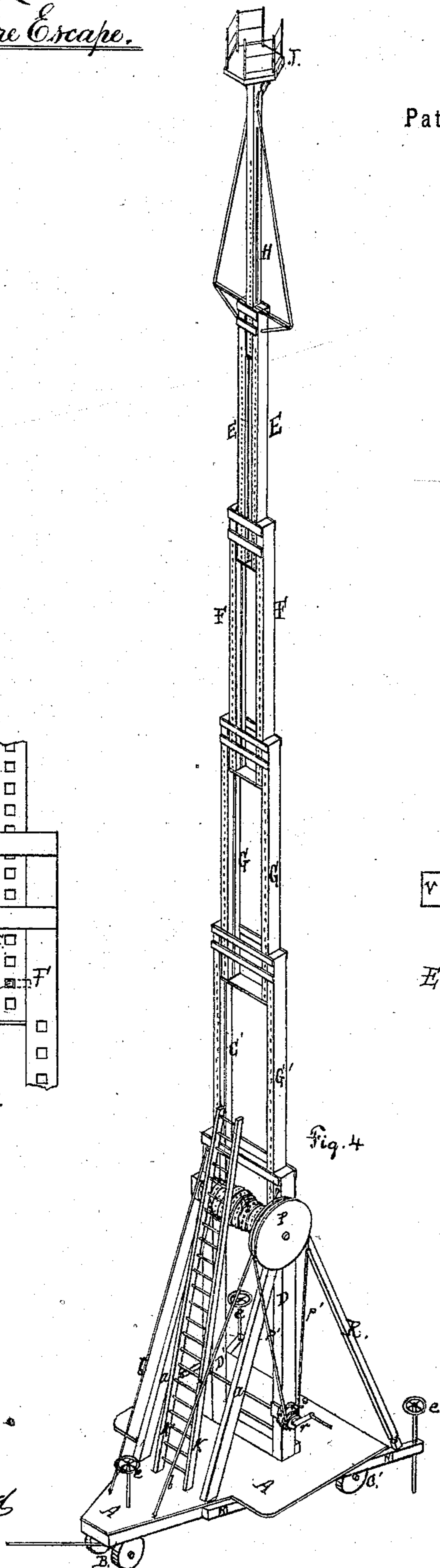
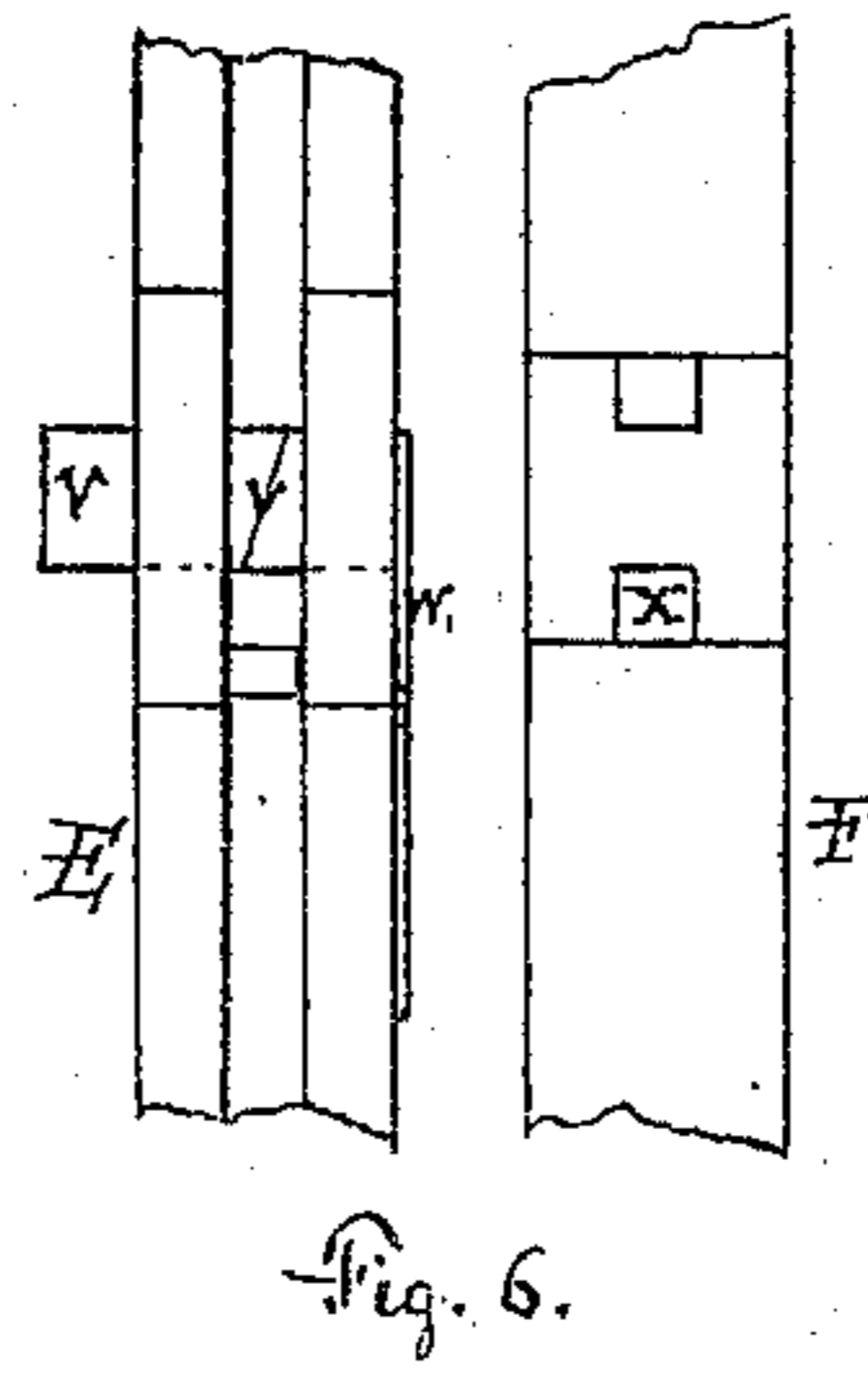
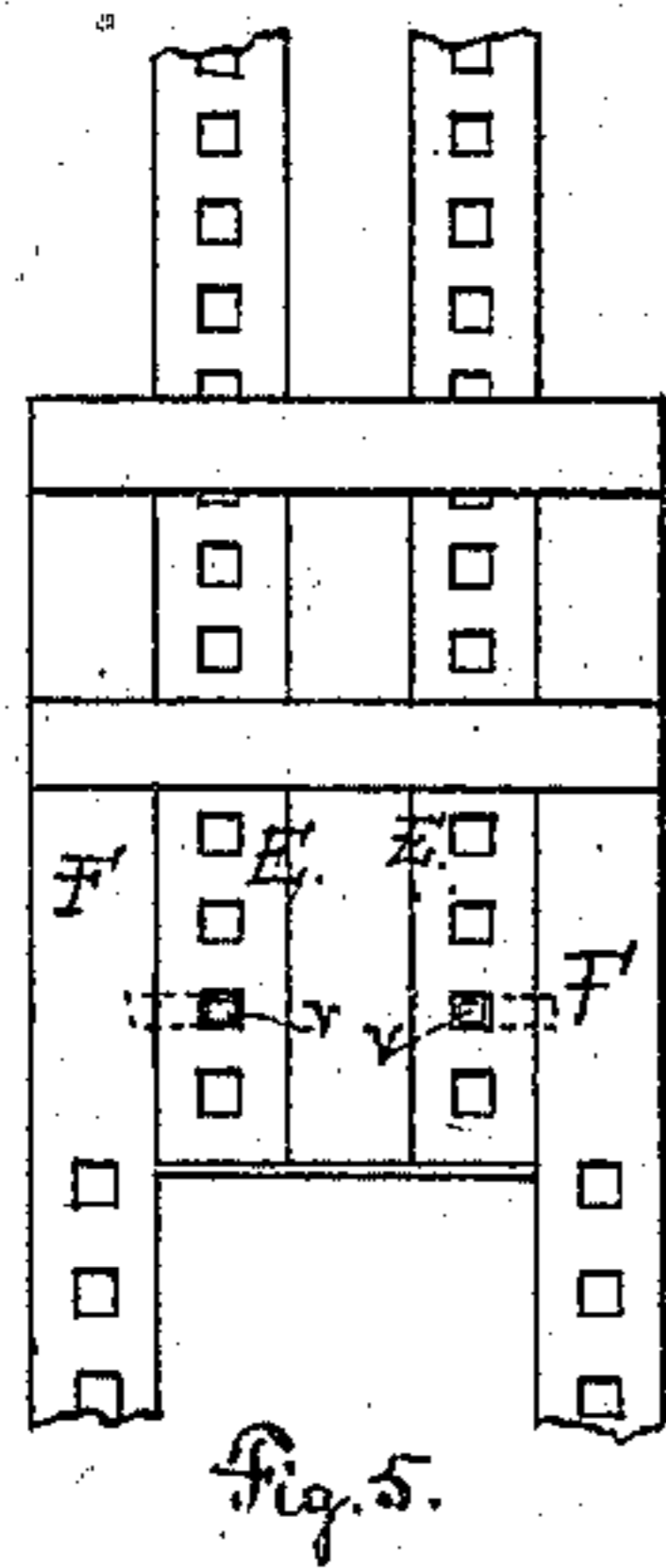
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UNITED STATES PATENT OFFICE.

WILLIAM HENRY NOBLES, OF ST. PAUL, MINNESOTA.

IMPROVEMENT IN FIRE-ESCAPES AND HOSE-ELEVATORS.

Specification forming part of Letters Patent No. 120,211, dated October 24, 1871.

To all whom it may concern:

Be it known that I, WILLIAM HENRY NOBLES, of St. Paul, in the county of Ramsay and State of Minnesota, have invented a new Hose-Elevator and Fire-Escape, of which the following is a specification:

The objects of my invention are as follows, viz.: First, to elevate a hose, and firemen to operate it to a great height, and to keep them there securely while it is necessary for them to work, or to place them upon any part of a building. Second, to take people or goods from the upper stories of a burning building and land them safely in the street. Third, to propel or to withdraw a car or a mechanism from one place to another while the operative machinery is stationary and under the control of a single operator. Fourth, to elevate or lower goods or people in a building from one story to another.

All these different purposes are accomplished by one simple mechanism, and I have shown it in the drawing as applied to a machine which can be used for the double purpose of a hose-elevator and a fire-escape.

It has long been well known and admitted by all our firemen that much loss of property, and also of life, could be prevented if an apparatus were made by which the firemen could rise above the fire and play down upon it, instead of being obliged to play up through the air and come upon the flames with a stream which, by the time it reaches them, has lost a great portion of its force. In our present fire system the common ladder is the best form of apparatus used for carrying hose to the upper stories; but a large one cannot be put in place without a great expenditure of time and great labor, and when once in position it is very difficult to move it to another place. Further than this, it must always lean against something, and very frequently a proper support cannot be obtained. With my apparatus I can go close to the building, as close as it can be done with a ladder; or I can move my machine to any distance and in either direction from the fire, and then carry up the hose and firemen so as to gain an elevation sufficient to enable them to play down upon it. As a fire-escape my apparatus is unsurpassed, for it can be raised to the height of any roof or window and then quickly lowered with its freight.

In the drawing, Figure 1 is a front elevation,

and Fig. 2 a side elevation of my hose-elevator and fire-escape when closed. Fig. 3 is a plan of the platform, the dotted lines showing the mode of framing. Fig. 4 is an isometrical view of the elevator when extended, and Figs. 5 and 6 are details showing the mode of locking the parts together.

A represents a platform, heavily framed and planked over, which rests upon three trucks, B, C, and C'. On this platform I raise two posts, D and D', securing them firmly at the base and thoroughly staying them by means of braces *a a* and hog-chains *b b*. Between these posts, which are firmly connected at the top, is a series of frames, E F G, (and in Fig. 4 G'), and a mast, H. On the mast, and firmly braced to it, is a small platform or basket, J. In front of the frames is a ladder, K, extending from the lower platform to the upper when the machine is closed. *e e e* are adjusting-screws, to level or adjust the various portions of the platform. *f* is a spring-clamp, to hold the ends of the poles on the trucks C C'. *g* is a length of a hose extending from A to J, and connected with a fire-plug at J. M is an extension piece, fitted in slides on the platform A, so that it can be extended to give a broad base at the back of the machine. N is a cogged drum, to raise and lower the sections, and it is operated by means of the wheel P, endless chain *p'*, pinion and crank *r*, and pawl and ratchet *s*. R is a brace hinged to the extension piece M, and so connected with the post D as to take from the platform the weight of the machinery in part and to throw it upon the adjusting-screws. V is a latch-bolt fastened to a spring, *w*; and *x* is a projection over which the bolt *v* locks. *t* is a wheel, to keep the basket clear from the side of a building in going up.

The operation of my mechanism is as follows, viz.: The platform A is arranged on trucks, as shown, each truck being pivoted so that it can be turned in any direction. The tongues of the trucks C and C' are clamped by the spring-clamps *f f*, and horses are attached to the truck B to drag the machine to the place where its services are required. On arriving there the truck B and one of the other trucks can be turned on their axes, so as to hold the whole machine firmly in its place. If the ground on which it rests is level, this will be all that is required; but if it is necessary to operate it on a sloping grade,

then some arrangement will be required for leveling, and I therefore use the screws *e e*. They are shown in the drawing in two different ways, those in the rear of the platform A in Fig. 1 being intended to raise the platform from the truck, while the others are to raise the platform with the truck. The rear screws in Figs. 2, 3, and 4 are attached to the extension pieces M M, and their operation is obvious. The forward screw raises the front of the platform and throws the basket toward and in contact with the building, if required, and it controls, as it were, the whole mechanism. When the platform is leveled, two men ascend the ladder to the basket J and attach a hose and nozzle to the coupling on the stationary hose *g'*, and as soon as the hose is connected with a hydrant or engine the men can commence playing upon the fire. In many cases they would be at a sufficient elevation without being raised any higher, as I calculate that the basket would always be at a height of from twenty-five to thirty feet from the ground when the machine is closed; but if they are too low, two men on each side turn the cranks *r r*, when the central cogs take hold of the mast H and raise it until it arrives at a point where a spring-latch, *v*, fastens it to the frame E, raising the latter until the next set of cogs connects with it, when the cogs leave the mast H, and the two sections H and E, being firmly joined together, they are thrown up by the action of the cogs upon E, until the latter locks upon F, as shown in Fig. 5. F is then raised, and, in its turn, locks into and raises, and then is raised by G until the basket has arrived at its extreme elevation, where, as well as at all points during its ascent, it is held up by the pawl and ratchet *s*. When raised above the ladder it is well to have guy-ropes attached to the upper mast, which can be carried out from the machine in any direction and secured at convenient points. The sections are lowered in the usual way, and a brake may be applied if desired. The lock which holds the sections together is so constructed that when one section reaches its lower bearing a cog, or the periphery of one of the wheels, presses the spring-

latch bolt *v* back and relieves it from the lock *x*, so that the next section may descend. In this way all the sections can be brought down and folded together, as shown in Fig. 1, without the least jar to the occupants of the basket, as will be obvious from the fact that the cogs take hold of an upper section before the lower one is released. This lock I consider of great importance, as by it I can clamp the sections firmly together, and then release them in an automatic manner. By dovetailing the parts *v* and *x* the sections can be prevented from pulling apart sidewise, and this would enable me to use single pieces instead of frames for the sections when propelling a car or machinery in a horizontal direction. I prefer to make the different sections of varying thicknesses of material, having the central one, or mast H, the thinnest, as thereby I save weight in the upper sections; and by having the cogged drum arranged with different-sized wheels, as shown, I gain power with every section that is raised.

I claim as my invention—

1. A series of telescopic sections, which is extended and retracted by cogged wheels engaging with racks upon the sections when they are so arranged that the section upon which the cogs are acting will be operated by the direct action of the cogs upon the section, all as herein described.

2. In combination with extending and retracting sections, the locking arrangement herein described, consisting of the spring-latch *v* and catch *x*, when constructed as shown, and made to unlock by the pressure of a cog, or the periphery of a wheel, upon the latch *v*.

3. In combination with the platform A, the three pivoted trucks B, C, and C', as and for the purpose specified.

4. The spring-clamps *f f*, as arranged, for holding the tongues of the trucks C C'.

WILLIAM HENRY NOBLES.

Witnesses:

CHAS. F. SLEEPER,
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