

(No Model.)

2 Sheets—Sheet 1.

E. OLIN.
FIRE ESCAPE.

No. 467,690.

Patented Jan. 26, 1892.

FIG. 4.

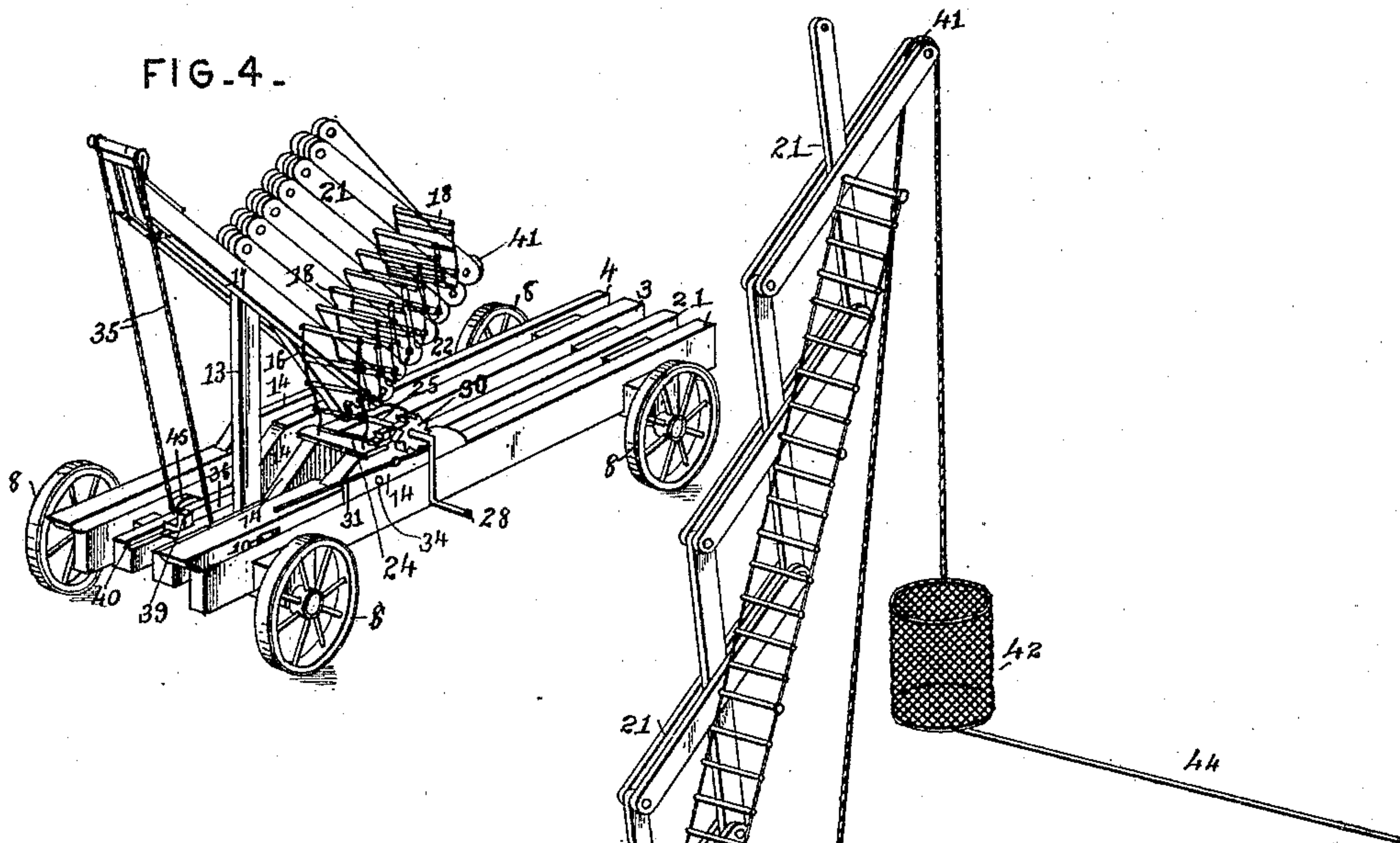


FIG. 1.

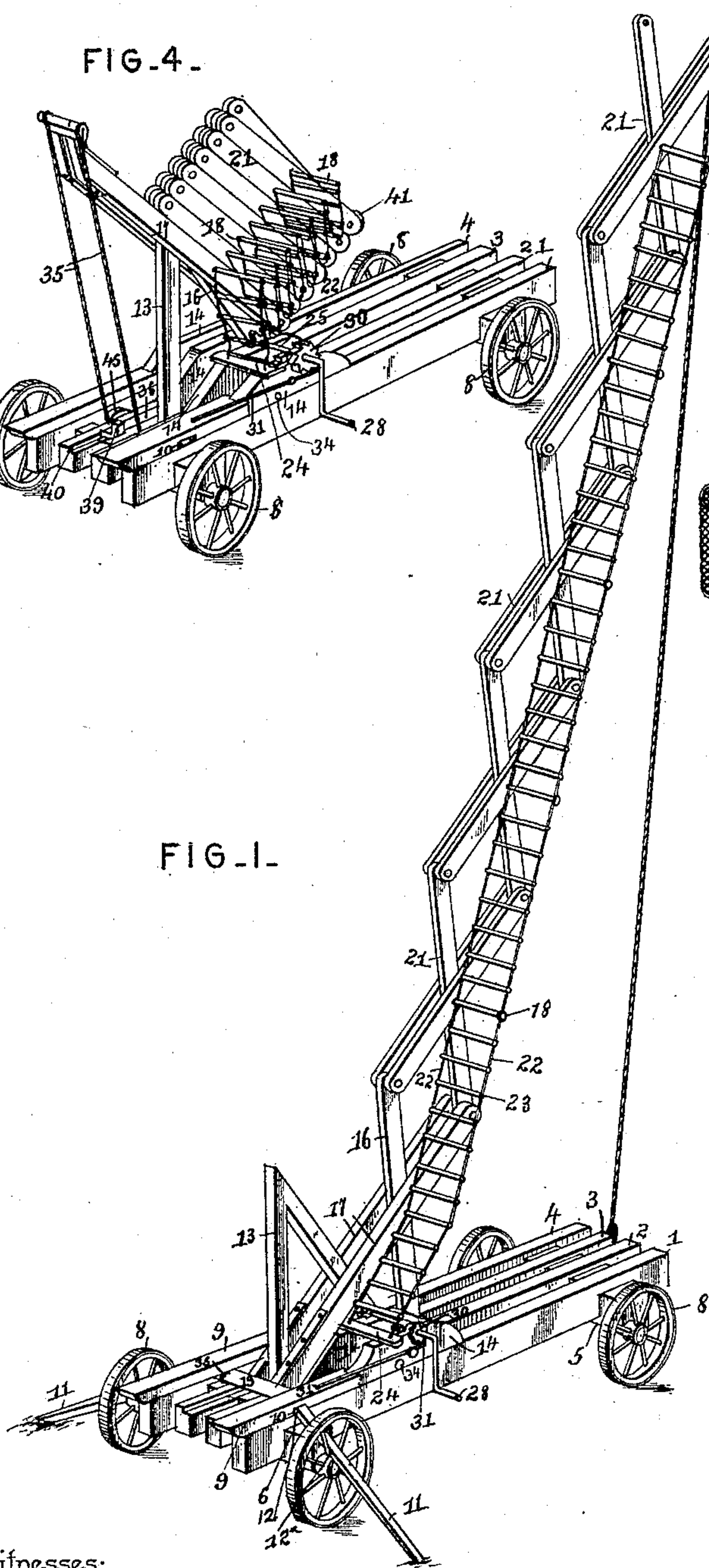
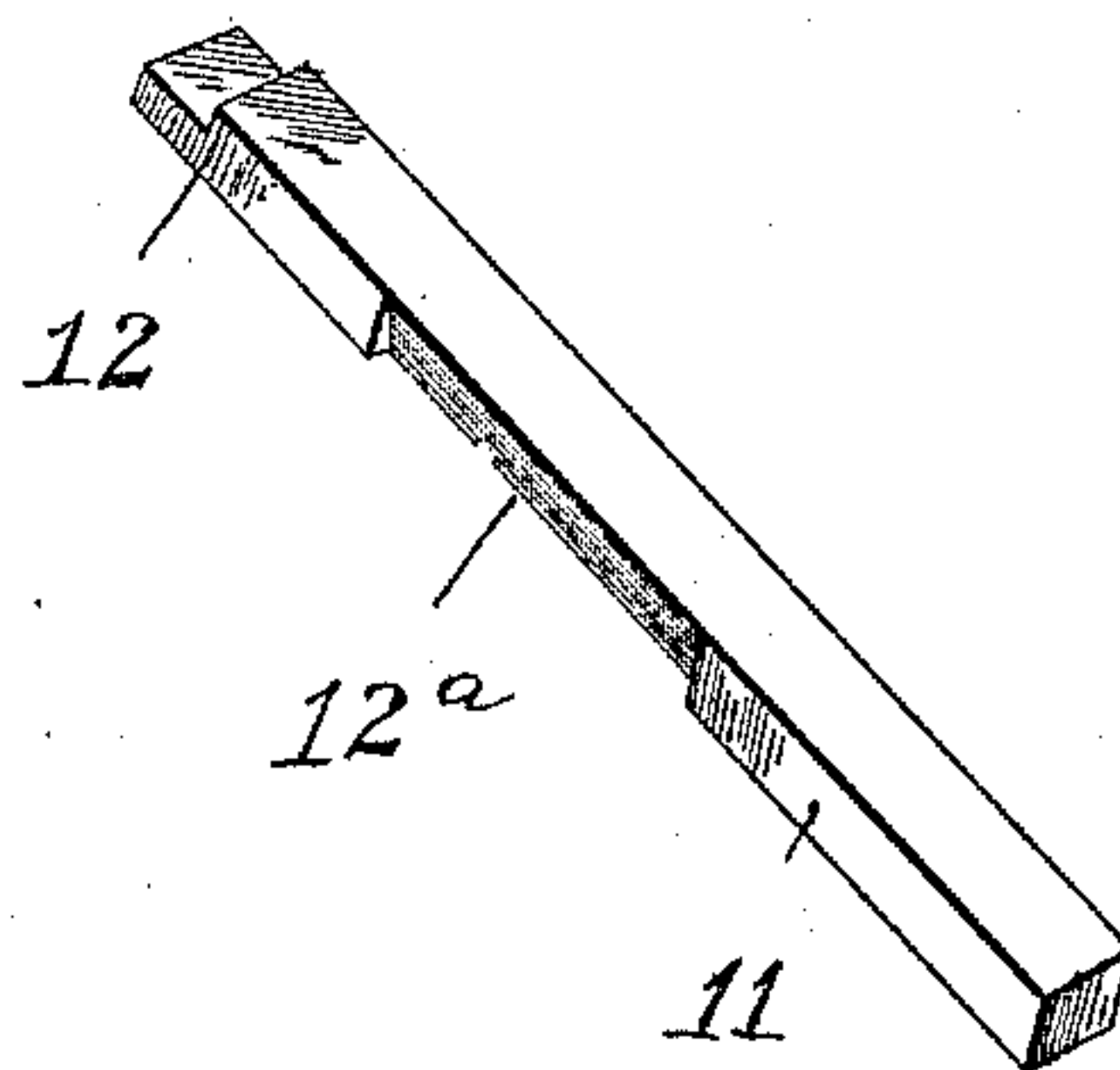


FIG. 6.



Witnesses:

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Inventor

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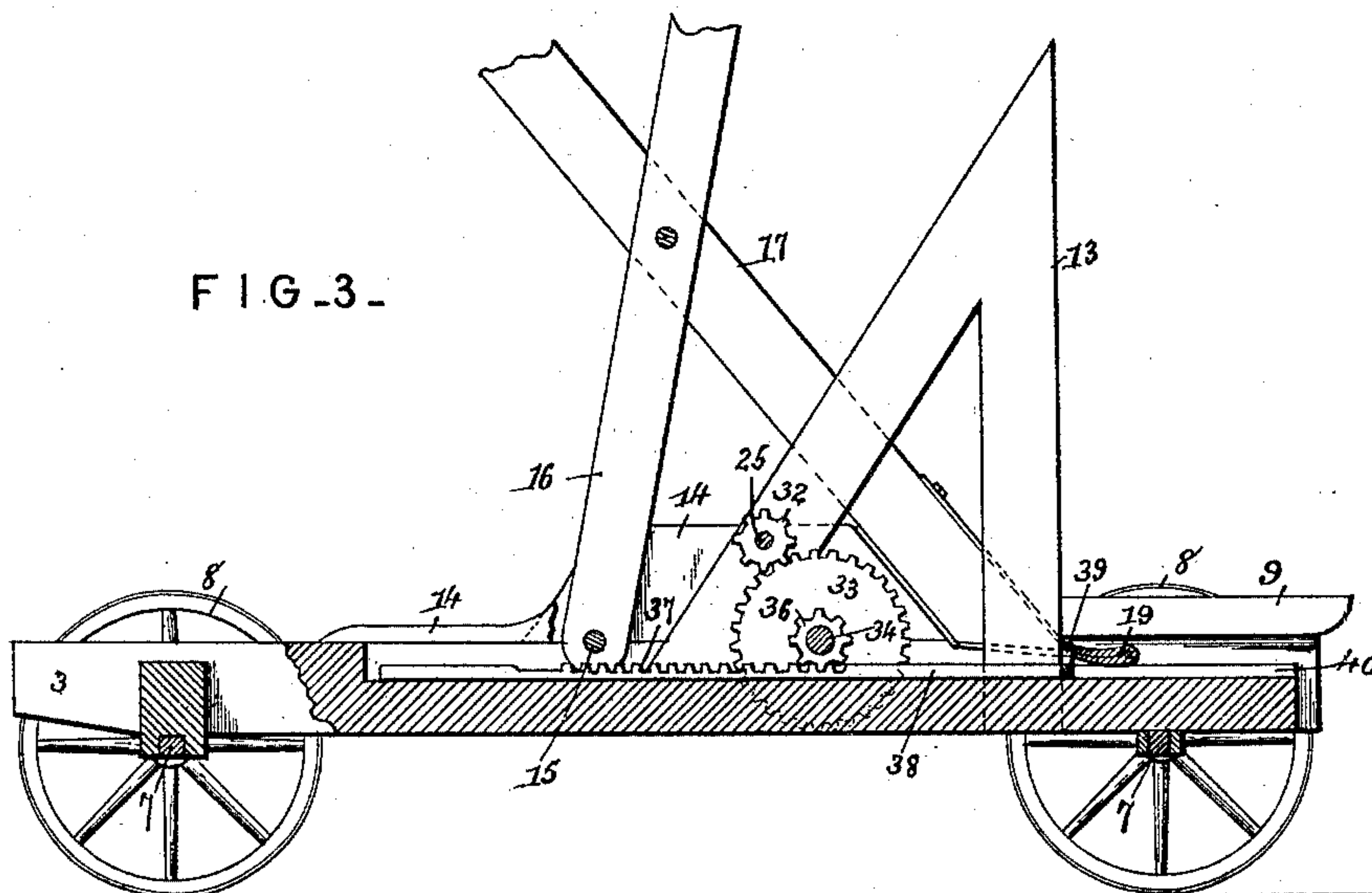
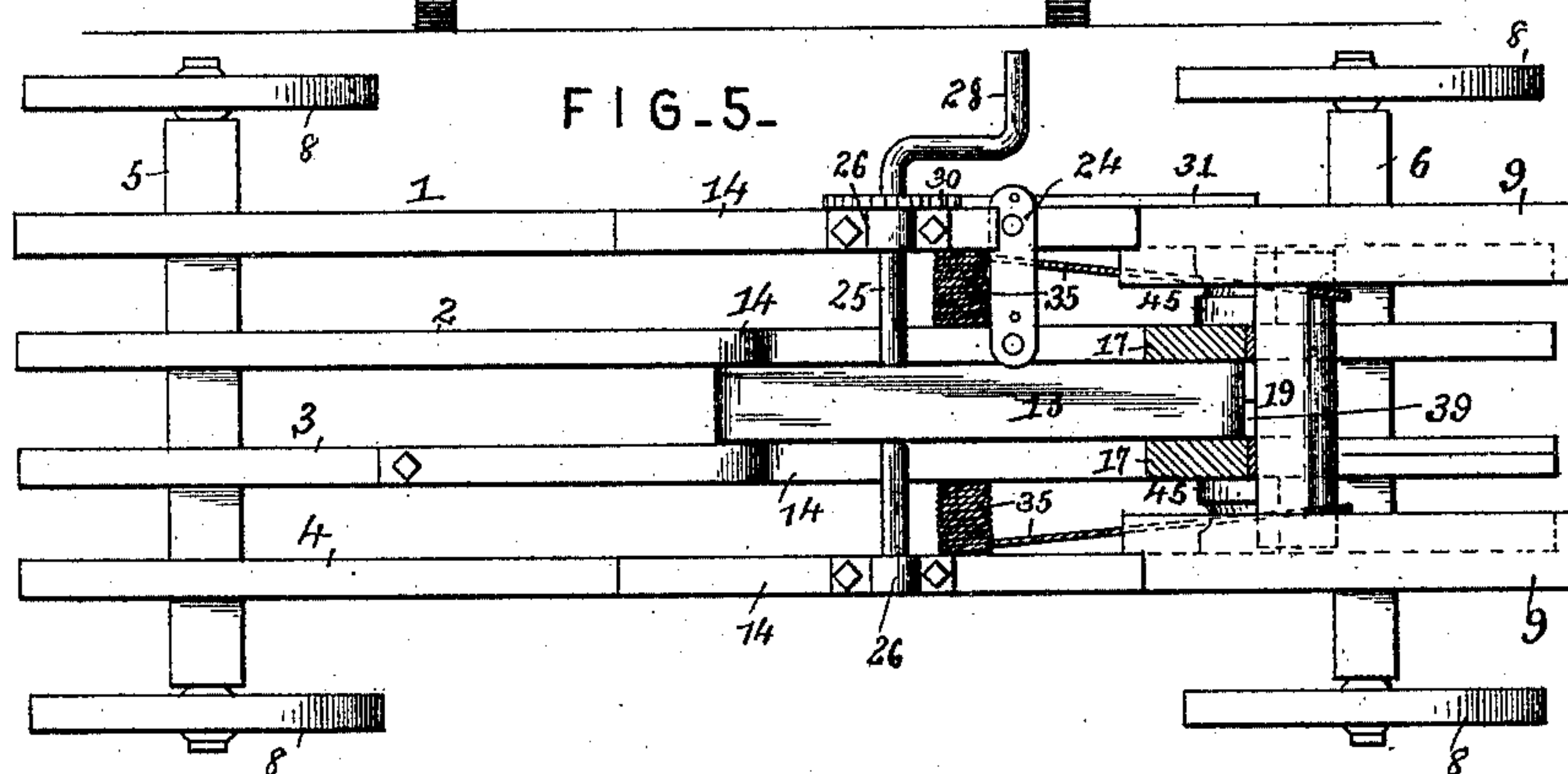
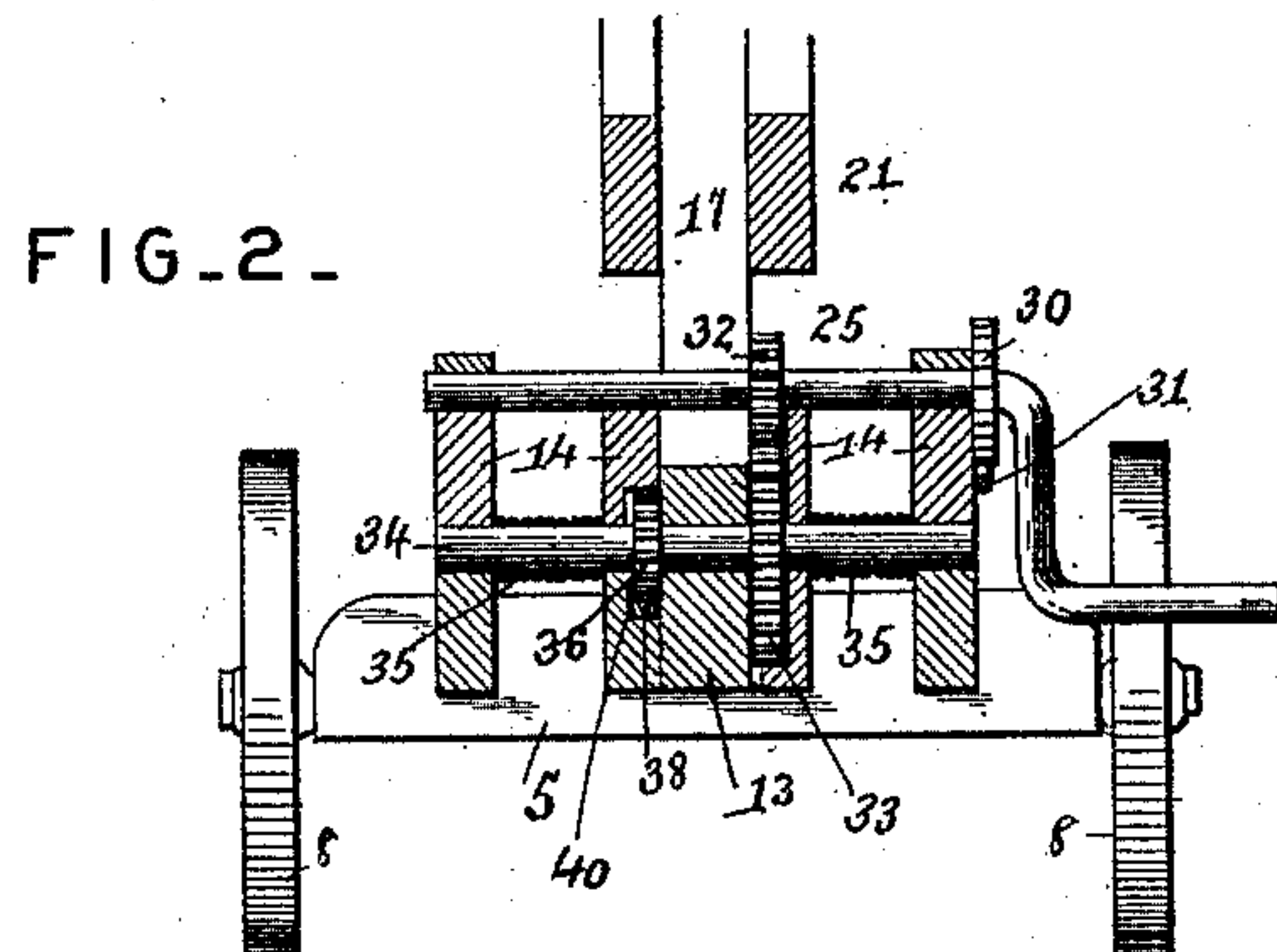
(No Model.)

2 Sheets—Sheet 2.

E. OLIN.
FIRE ESCAPE.

No. 467,690.

Patented Jan. 26, 1892.



Witnesses:

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UNITED STATES PATENT OFFICE.

ERICK OLIN, OF GRANT, NEBRASKA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 467,690, dated January 26, 1892.

Application filed May 14, 1891. Serial No. 392,762. (No model.)

To all whom it may concern:

Be it known that I, ERICK OLIN, a citizen of the United States, residing at Grant, in the county of Perkins and State of Nebraska, have invented a new and useful Fire-Escape, of which the following is a specification.

This invention relates to that class of fire-escapes known as "lazy-tongs;" and the objects in view are to provide an apparatus of that class designed to be mounted upon a suitable truck for transporting to the scene of conflagration and adapted to be easily manipulated and distended to vast heights for the purpose of forming a support for the life-basket carrying hose-pipe and their handlers to advantageous points for fighting the flame, and to provide a flexible ladder to be extended and contracted with the operation of the lazy-tongs frame and adapted for the accommodation of persons endeavoring to escape and for the ascent and descent of the firemen.

A further object of the invention is to combine with the above the great advantages of exceedingly easy manipulation, whereby a single operator may raise and lower the framework of the escape.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of the apparatus, the same being shown as elevated or extended for use. Fig. 2 is a transverse section of the same. Fig. 3 is a longitudinal section. Fig. 4 is a perspective of the apparatus in a folded condition. Fig. 5 is a plan of the base. Fig. 6 is a detail of one of the anchoring-stakes employed.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention I employ a series of longitudinal sills 1, 2, 3, and 4, the same being mounted upon transverse bolsters 5 and 6, which are mounted upon the axle 7, the latter carrying wheels 8, by which the structure may be transported from point to point. Upon the sills 1 and 4 are mounted overhanging strips 9, overlapping the inner faces of the sills or beams and provided upon

their outer sides with sockets 10. Into these sockets anchoring-stakes 11 are inserted, said stakes being passed through the wheels between the spokes and terminating at their inner ends in tenons 12 for entering the sockets, while the lower edges of the stakes are beveled, so as to fit between the converging spokes of the wheel, as illustrated at 12^a. Securely bolted between the two sills 2 and 3 is a triangular vertical frame 13, and upon each of the sills are located bearing-standard 14. A shaft 15 is mounted in bearings formed transversely opposite each other in the standards and in front of the triangular frame 13, and upon the shaft is pivotally mounted the lower end of one member 16 of a toggle-section, the remaining double member 17 of said section being pivoted, as at 18, to the member 16 and embracing also the triangular frame 13, beyond which the member 17 extends. The rear terminals or ends of the strips composing the member 17 are connected by a cross-head 19, said head being adapted for movement under the ways 9 when the toggle-frame is in the act of being extended. To the upper ends of the two members is connected the lower end of a series of toggle-sections 21, of the ordinary construction, and the central pins 18 for connecting the members of the sections are sufficiently long to project beyond the sections and serve the purpose of rungs for a flexible ladder formed by opposite cables 22, connecting these rungs throughout the series and connected at intervals by transverse rungs 23. The lower end of the ladder is made fast to a plate 24.

In bearings 26 is journaled a power-shaft 25, terminating at one end in a crank 28 and having adjacent to the crank a ratchet-wheel 30, with which engages a weighted pawl 31, whereby said shaft may be locked against rotation in one direction and permitted to rotate in the opposite direction. The shaft carries at its center a small pinion 32, which latter engages and drives a large gear 33, mounted upon a drum-shaft 34, journaled in the standards of the frame. The drum-shaft 34 has passed around the same a pair of cables 35, one cable being located between each outer pair of sills forming the base. The other extremities of the cables are connected

to the head 19 of the member 17 of the main or lower toggle-section. The winding-shaft also carries a small pinion 36, which is adapted for engagement with the teeth 37 of a push-bar 38, the rear end of which is laterally bent, as at 39, into the path of the head 19, said bar being located for movement in a groove 40, formed in the inner face of the sill 3.

A pulley 41 is located at the upper end of the series of toggles, and a rope passing over the same has one terminal connected with a life-basket 42, while the remaining terminal goes to the ground. From the basket depends a steadying-rope 44.

Between the winding-shaft and head 19 the ropes leading from the shaft to the head pass under suitable pulleys 45.

The operation is as follows: When the scene of conflagration is reached, the anchoring-stakes, which are conveniently carried upon the apparatus, are removed, passed through the wheels at the rear end of the machine, and have their ends inserted in mortises formed in the frame, as heretofore explained, it being of course understood that the apparatus has been first moved to the point of use under a burning building. It is now simply necessary to wind the crank and the shaft with which it is connected, whereupon rotary movement is imparted through the medium of the pinion upon said shaft to the large gear-wheel of the winding-shaft, which latter is, by reason of the relative difference in size between the gear and the pinion driving the same, rapidly rotated, and as rotated winds thereupon the elevating-ropes. These ropes draw upon the lower end of the member 17, and by reason of the remaining member being held stationary, yet pivotal, the member 17 is brought to an inclined position, the movement continuing and being transmitted, as will be readily understood, to the entire series of toggle-sections. As the rear end of the member 17 descends its lower end or head comes in contact with the bent end of the toothed push-bar, and said bar is fed forward slightly until its teeth engage with the pinion of the winding-shaft, and after such engagement the bar moves with the pinion. The toggle-frame having been extended to the desired height, which is only limited by the number of toggles employed, it will be seen that a hose-pipe, together with the pipeman, may be supported upon the flexible ladder, and thus will be enabled to pour upon the flames and at a proper point a stream of water. The pipeman may ascend and descend by the flexible ladder, which is raised with the toggle-frame. Persons may escape by this ladder or by the basket, which, it will be understood, may be raised and lowered over the pulley in the manner apparent, collecting persons at the uppermost windows and also from windows vertically below the first-mentioned window.

To lower the escape, it is simply necessary to remove the weighted pawl from the ratchet-wheel of the power-shaft, using said pawl as a brake and operating the winding-shaft so as to slacken the elevating-ropes. When the winding-shaft is first operated, the push-bar is operated by the pinion upon said shaft, and it is at this point that it serves its function of pushing—namely, by being forced at its rear end against the head 19, and thus forcing the lower end of the member 17 out from under the guides or ways 9, after which the greater portion of lowering is accomplished by gravity, it being simply necessary to slacken the elevating-ropes and utilize the brake, as may be desired.

Having described my invention, what I claim is—

1. In a fire-escape of the class described, the combination, with the truck or base provided at opposite sides with wheels and having formed in its sides opposite its wheels mortises, of the extensible escape mounted thereon, and stakes adapted to be inserted between the wheels, beveled upon opposite sides to fit between the spokes, and terminating at their inner ends in tenons for fitting said mortises, substantially as specified.

2. In an escape of the class described, the combination, with the base, the triangular frame mounted upon the base, and the series of toggle-sections, one member of the lower section being pivoted to the base and when in a lowered position adapted to rest upon the triangular frame, and the remaining member loosely embracing the base, of the winding-shaft and ropes connected to the ends of said latter member in rear of the triangular frame and to the shaft, substantially as specified.

3. In a fire-escape of the class described, the combination, with the base, a way thereon, and a rack-bar mounted in the way, of a winding-shaft, a pinion thereon for engaging the rack-bar, means for operating the shaft, a series of toggle-sections pivoted together, one member of the lower toggle-section being pivoted to the base at one side of the winding-shaft and the remaining member being independent of the rack-bar and adapted to slide at the opposite side of the shaft and beyond the rack bar and arranged in the path of the rack-bar, and ropes connecting the latter member with the winding-shaft, substantially as specified.

4. In an escape of the class described, the combination, with the base having the opposite ways, the winding-shaft, and means for operating the same, of the series of toggle-sections, one member of the lower section of which is pivoted to the base and the remaining member having a transverse head for engaging or taking into the ways of the base, ropes connecting the rear end of said

member with the winding-shaft, a reciprocating bar located in the path of the said remaining member, and means for forcing the bar into contact with and to actuate said
5 member at the beginning of the unwinding of the winding-shaft, substantially as specified.

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

ERICK OLIN.

Witnesses:

O. R. JOHNSON,
R. W. SAVAGE.