

No. 747,720,

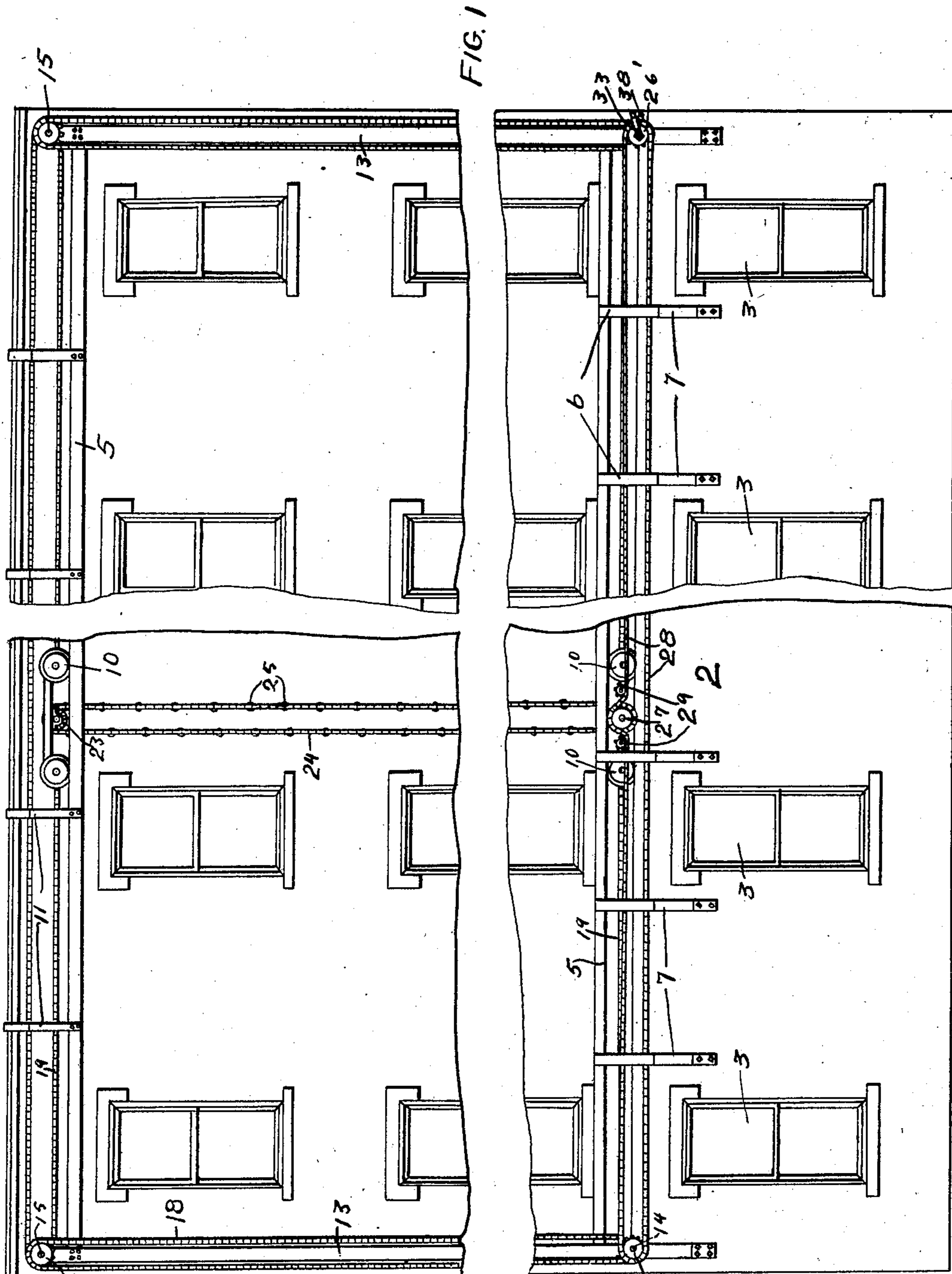
PATENTED DEC. 22, 1903.

S. M. HUNT.
FIRE ESCAPE.

APPLICATION FILED DEC. 29, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
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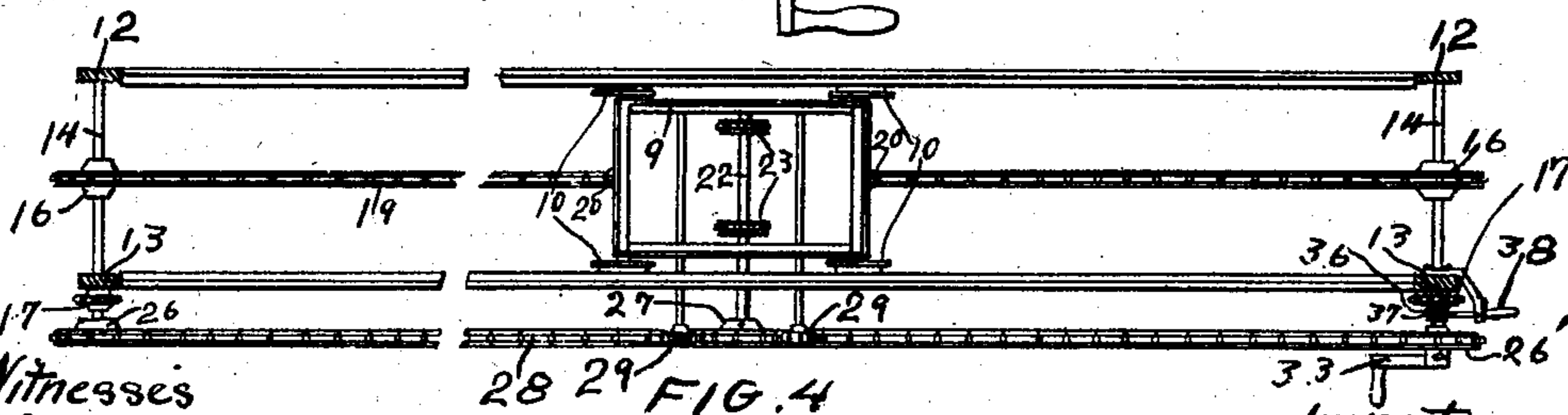
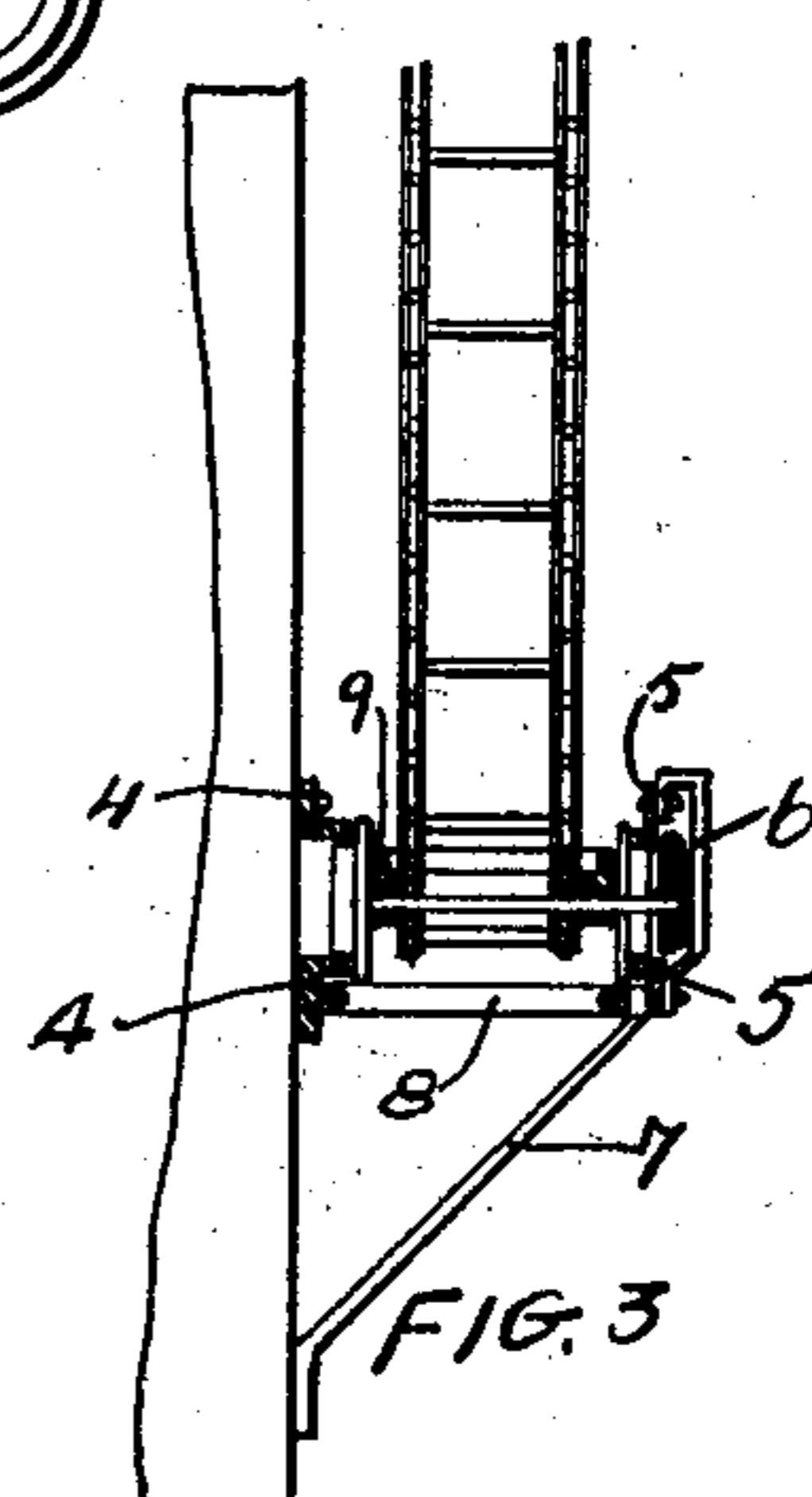
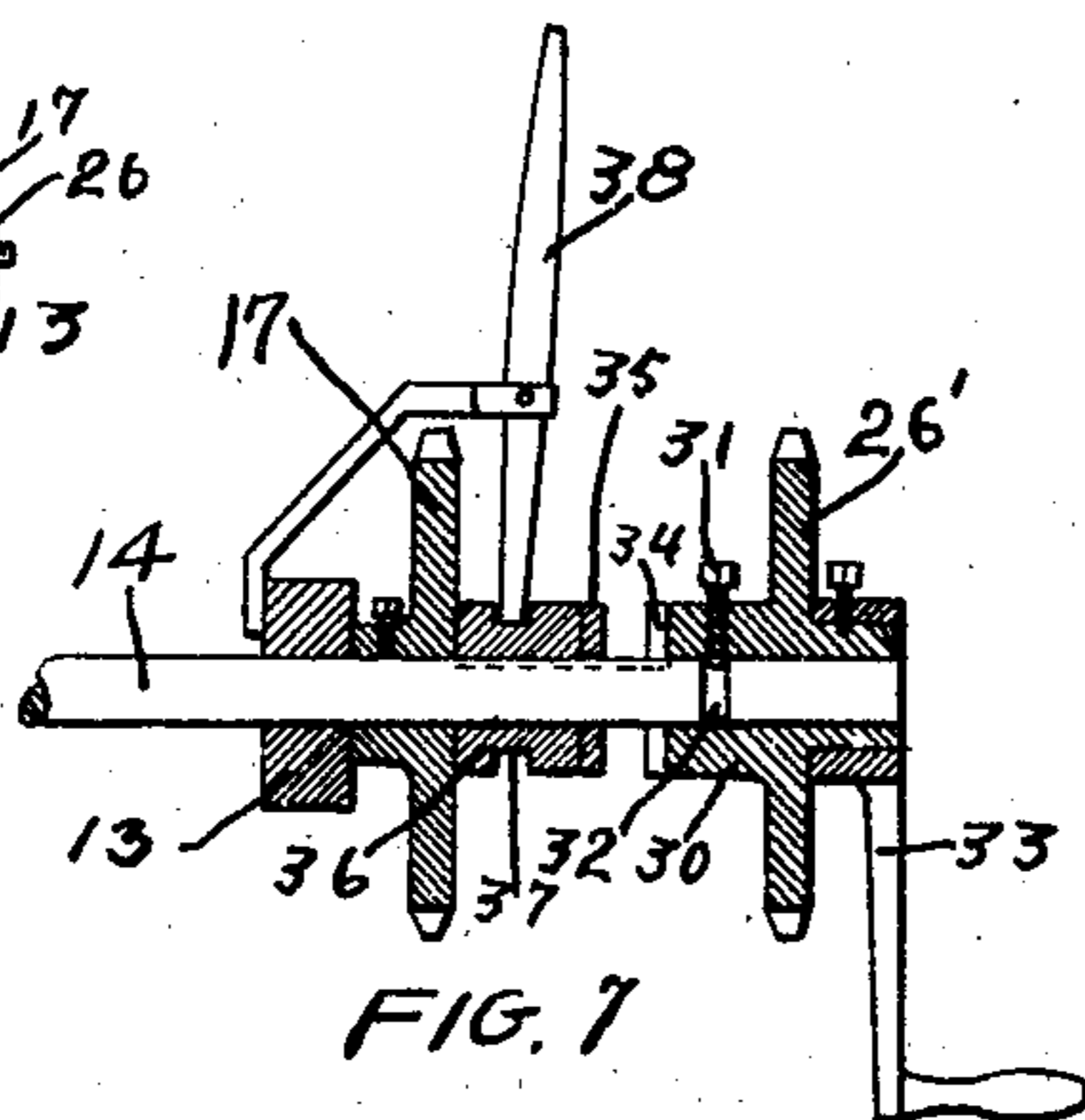
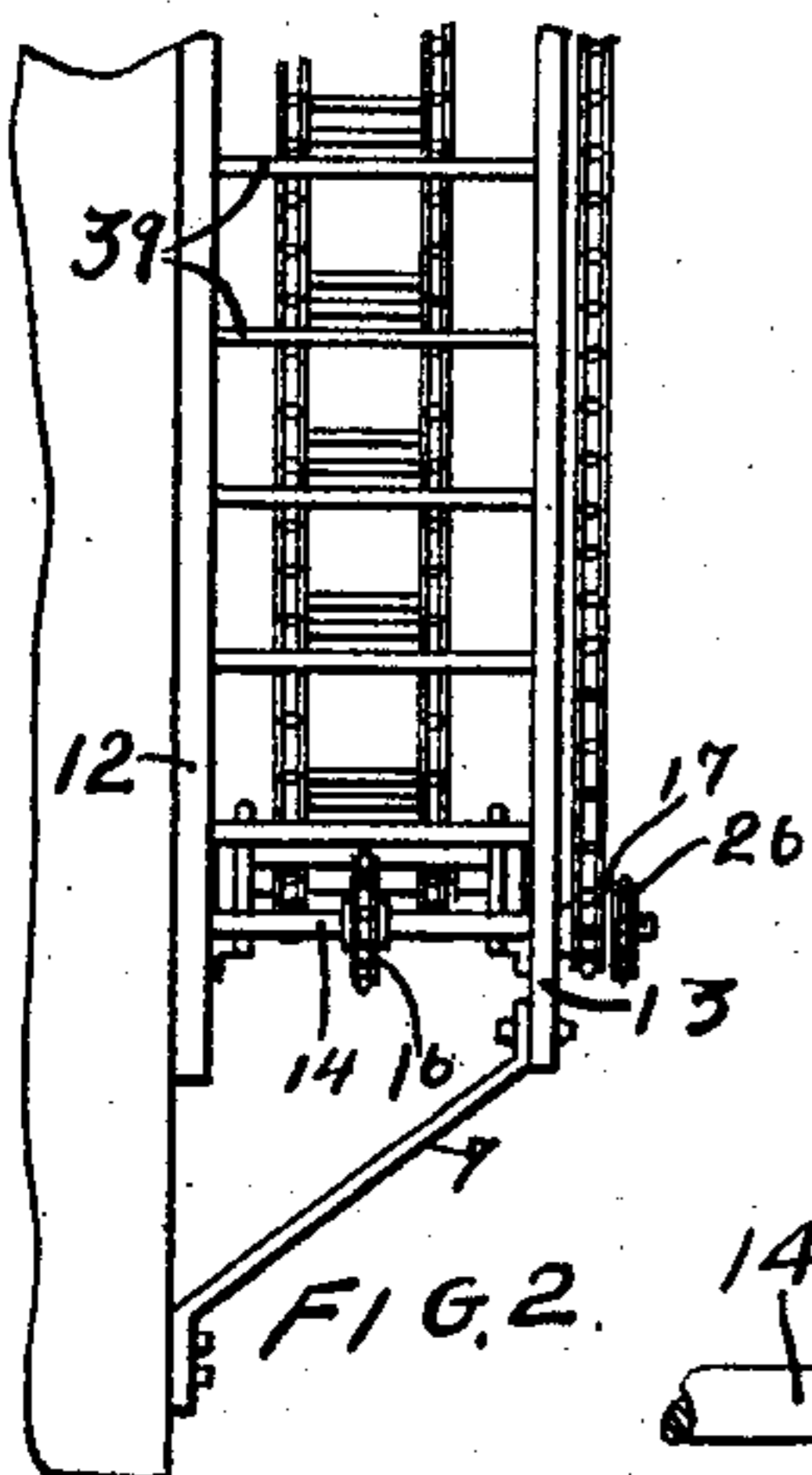
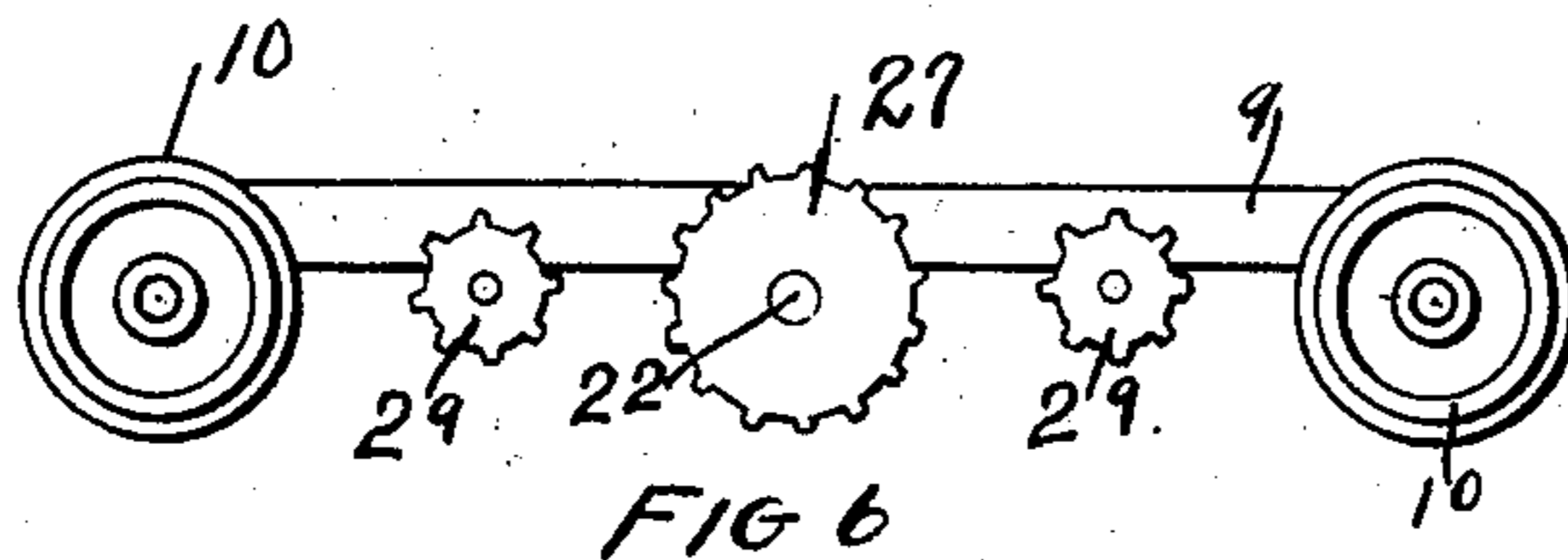
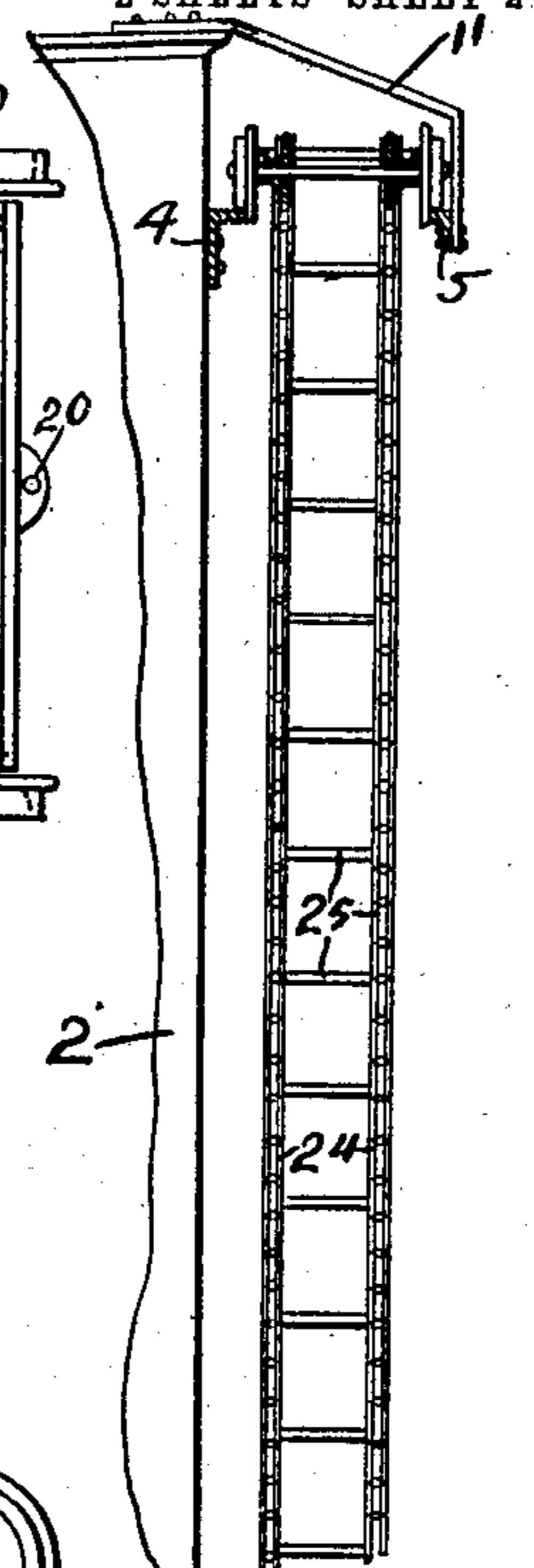
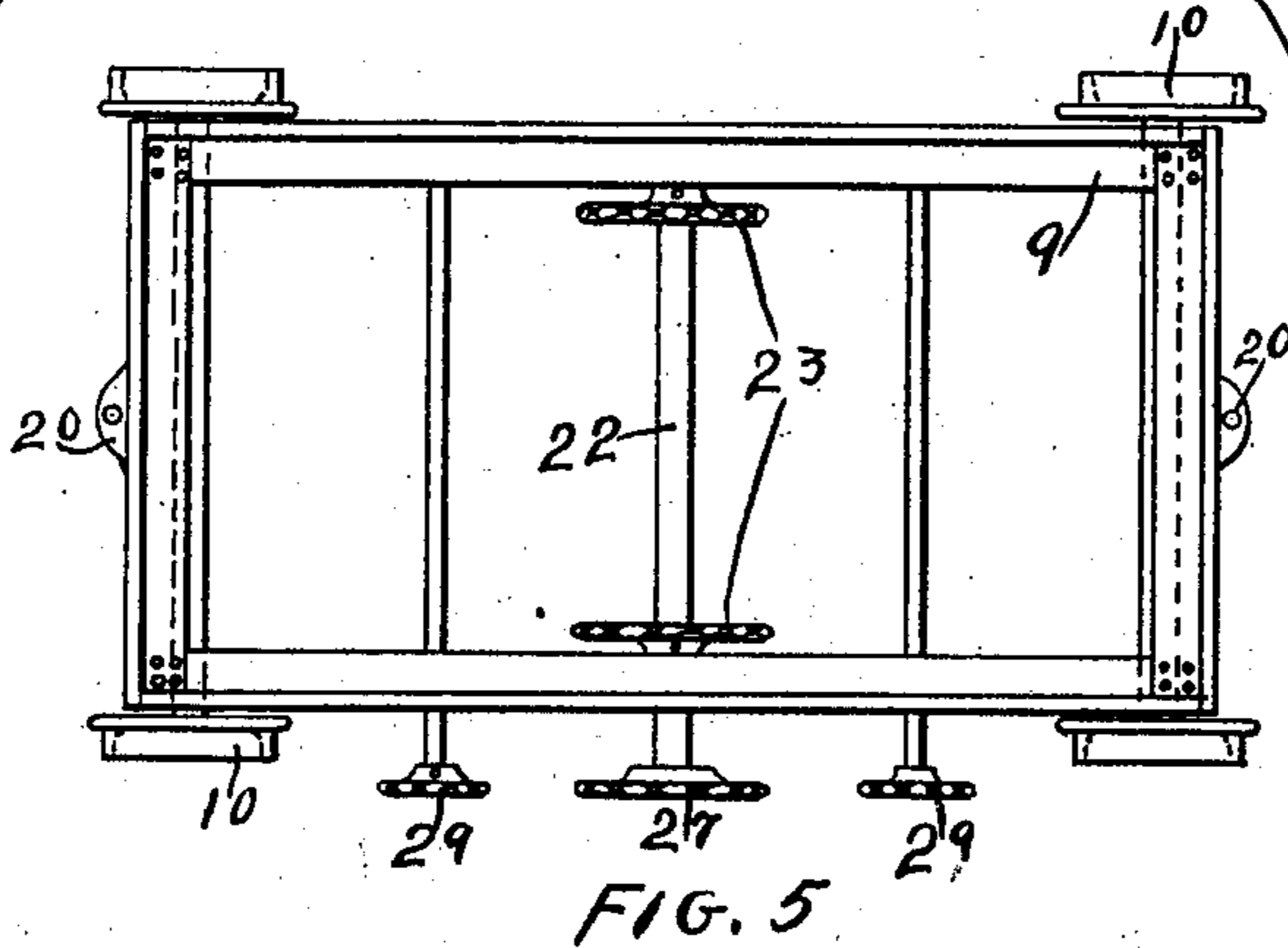
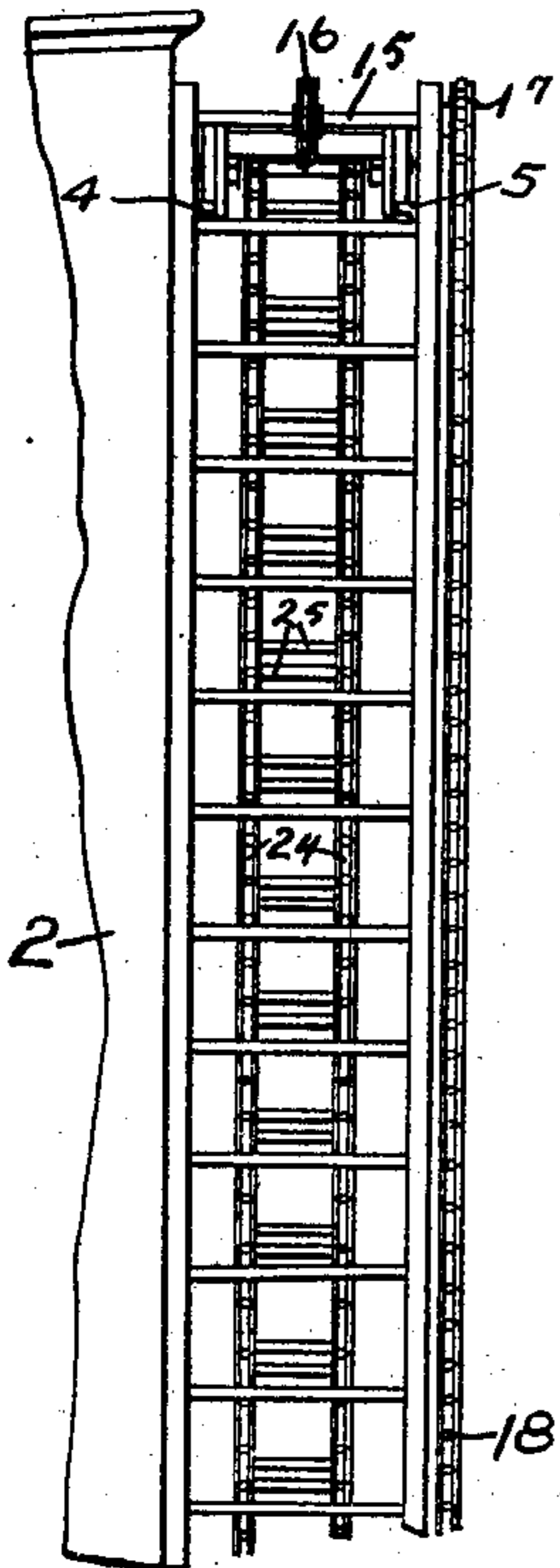
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2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE.

SAMUEL M. HUNT, OF MINNEAPOLIS, MINNESOTA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 747,720, dated December 22, 1903.

Application filed December 29, 1902. Serial No. 137,006. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. HUNT, of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to fire-escapes adapted to be permanently secured to the outer wall of a building; and the object of the invention is to provide an apparatus that is movable along the wall to enable a person to escape from any of the windows in any story.

A further object is to provide a fire-escape by means of which a fireman can easily and conveniently enter any window in the side of the building and carry a hose up to any height desired.

A further object is to provide a fire-escape by means of which a person overcome by the heat or smoke can be easily and quickly removed from the burning building.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation, partially broken away, of a building, showing my invention applied thereto. Fig. 2 is an end view of my improved fire-escape. Fig. 3 is a side elevation showing the endless moving ladder. Fig. 4 is a horizontal section illustrating the lower traveling car and the means for operating the same. Fig. 5 is a plan view of the car. Fig. 6 is a side view of the same. Fig. 7 is a detail of a mechanism by means of which the operator can move the endless ladder while the cars are stationary.

In the drawings, 2 represents a building of the ordinary type and provided with the usual windows 3, arranged one above the other and carried up to any desired height. Below and near the sills of the second-story windows I provide parallel horizontal rails 4 and 5, the former secured to the wall of the building by any suitable means and the latter suspended on brackets 6, that are supported on said walls by inclined braces 7, the outer ends of said braces being connected with the building by

cross-bars 8. At a suitable distance below the rails 4 and 5 I provide another set corresponding to those described and similarly arranged, and between these pairs of rails I arrange a horizontally-movable carriage consisting of a suitable frame 9, preferably of angle-iron on account of its strength and rigidity, wherein flanged wheels 10 are mounted, and these wheels are adapted to travel upon the rails resting upon the lower pair and being held thereon and prevented from accidental derailment by the upper set, which while preventing the carriage from leaving the track permits its free longitudinal movement thereon. At the top of the building, between the eaves and the upper-story windows, I provide another track having rails corresponding to those described, the outer one supported by hangers 11, secured to the wall of the building. This upper track is also provided with a car similar to the one described. At each end of the upper and lower tracks I provide vertical bars 12 and 13, supported by the building-wall and by the braces 7 and 8, as described, and having bearings for horizontal shafts 14 and 15, which are provided with sprocket-wheels 16, centrally arranged thereon. The shafts 14 and 15 project beyond the bars 12 at each end of the horizontal tracks and are provided with sprockets 17, connected by drive-chains 18. Drive-chains 19 pass over the sprockets 16 and have their ends attached to loops 20 on the frames 9 of the horizontally-moving carriages.

In the frame 9 of each carriage a transverse shaft 22 is mounted, provided with sprockets 23, and these sprockets are connected by chains 24, which, with the cross-bars 25, form an endless ladder between the horizontally-moving carriages. This ladder will travel in a vertical plane as the carriages are moved back and forth across the wall of the building in front of the windows or openings therein and in so doing will afford means of escape for a person that may be at any window and at the same time allow a fireman to ascend to any story with or without a fire-hose. It is desirable, however, in using this endless ladder to provide means for removing persons that may have become unconscious

from the heat and smoke without the necessity of the firemen climbing back and forth on the ladder, and it is also desirable to provide means for aiding the fireman in raising
 5 a hose, particularly where the building is high and it is necessary to elevate a heavy hose very quickly. I therefore provide means for moving the endless ladder so that a person can be secured thereon and quickly low-
 10 ered to the ground, or a fireman taking his position at the foot of the ladder can be quickly raised to any window of the building. This operating means consists in providing sprockets 26 and 26', loosely mounted
 15 on the extended ends of the shafts 14, and a similar sprocket 27, secured on the projecting end of the shaft 22. A drive-chain 28 connects these sprockets, being held in engagement with the sprocket 27 by idle sprockets 29.
 20 The sprocket 26' has a hub 30 provided with a set-screw 31, that is adapted to travel in an annular groove 32 in the shaft and prevent longitudinal movement of the sprocket thereon, while permitting it to freely revolve.
 25 An operating-crank 33 is also secured on said hub, by means of which the sprockets 26 and 26' may be revolved independently of the operating-shafts 14 to revolve the shaft 22 and move the endless ladder without moving
 30 either of the carriages. This allows the fireman or other operator, having set the ladder in the desired position, to operate it for the purpose of removing persons from the burning building without changing its position
 35 during the operation. The hub 30 is provided with a clutch member 34, arranged to be engaged by the other clutch member 35 on a collar 36, that is splined on the shaft 14 and is provided with a groove 37, engaged by the
 40 end of a pivoted lever 38. By operating this lever the collar is moved back and forth on the shaft to lock the sprocket 26' or release the same. When the sprocket is locked, the shaft will be revolved and the cars moved
 45 back and forth on their tracks from one end of the building to the other, and at the same time the ladder will be moved across the face of the building and also be actuated to allow a person standing thereon to be raised or
 50 lowered, as desired.

Assuming that flames are coming out of the windows of the lower stories, the operator can set the mechanism in motion and move the carriages to a point opposite the upper-
 55 story windows to allow persons to escape therefrom and stand or be secured upon the ladder, and then by moving the carriages in the opposite direction the ladder, with its load, can be moved away from the burning portion
 60 of the building to a point where the occupants of the ladder can be lowered to the ground in safety.

The mechanism for operating the cars can be very readily thrown in or out to enable
 65 the person manipulating the operating crank or wheel to set the cars at any desired point

and then to disconnect the driving mechanism therefor and operate the endless ladder independently of movement by the cars. In case a fireman or other person should desire
 70 to climb up or down the escape independently of the endless ladder I prefer to provide a stationary ladder at each end of the apparatus consisting of rungs 39, connecting
 75 the rails 12 and 13.

I have shown my improved fire-escape apparatus secured to one side of a building. It will be understood, however, that several sides may be similarly equipped, and while I have shown a crank for operating the shafts
 80 and drive-chains a wheel may be used in place thereof, if preferred, and in various other ways the details of the mechanism herein shown and described may be modified without departing from my invention.
 85

I claim as my invention—

1. A fire-escape, comprising parallel rails supported on the walls of a building near the top and bottom thereof, respectively, cars supported on said rails and movable there-
 90 over, an endless ladder connecting said cars, a shaft, a sprocket-and-chain mechanism connecting said shaft with said cars, and a similar mechanism connecting said shaft with said ladder and operable independently of
 95 said car-operating mechanism.

2. The combination, with the wall of a building, of tracks provided near the top and bottom of the same, carriages movable over said tracks, a sprocket-and-chain mechanism
 100 for operating said carriages simultaneously to move them over said tracks, an endless ladder connecting said carriages, and means for operating said endless ladder independently of said carriages or simultaneously
 105 therewith.

3. A fire-escape, comprising tracks secured on the walls of a building near the top and bottom thereof, carriages arranged upon said tracks and movable thereover, an endless
 110 ladder connecting said carriages and operating in a plane substantially at right angles to the wall of the building, and a mechanism for operating said ladder without moving said carriages or for moving said carriages
 115 simultaneously with said ladder.

4. The combination, with the wall of a building, of the pairs of tracks secured horizontally thereon near the top and bottom of the wall, carriages mounted upon said tracks
 120 to travel thereover, operating-shafts, sprockets thereon, chains connected respectively to the ends of said carriages and passing over said sprockets, a suitable drive-chain connecting said operating-shafts, and a ladder
 125 connecting said carriages.

5. The combination, with the wall of a building, of the tracks provided near the top and bottom of the same, guard-rails provided above the bottom track, a carriage mounted
 130 upon said bottom track between it and said guard-rails, a second carriage upon said up-

per track, a sprocket wheel and chain mechanism for operating said carriages simultaneously to move them over said tracks, an endless ladder connecting said carriages, and
5 means for operating said endless ladder independently of said carriages simultaneously therewith.

In witness whereof I have hereunto set my hand this 20th day of December, 1902.

SAMUEL M. HUNT.

In presence of—

RICHARD PAUL,
M. C. NOONAN.