

No. 665,707.

S. H. TROMANHAUSER.
FIRE ESCAPE.

Patented Jan. 8. 1901.

(Application filed Mar. 19, 1900.)

3 Sheets—Sheet 1.

(No Model.)

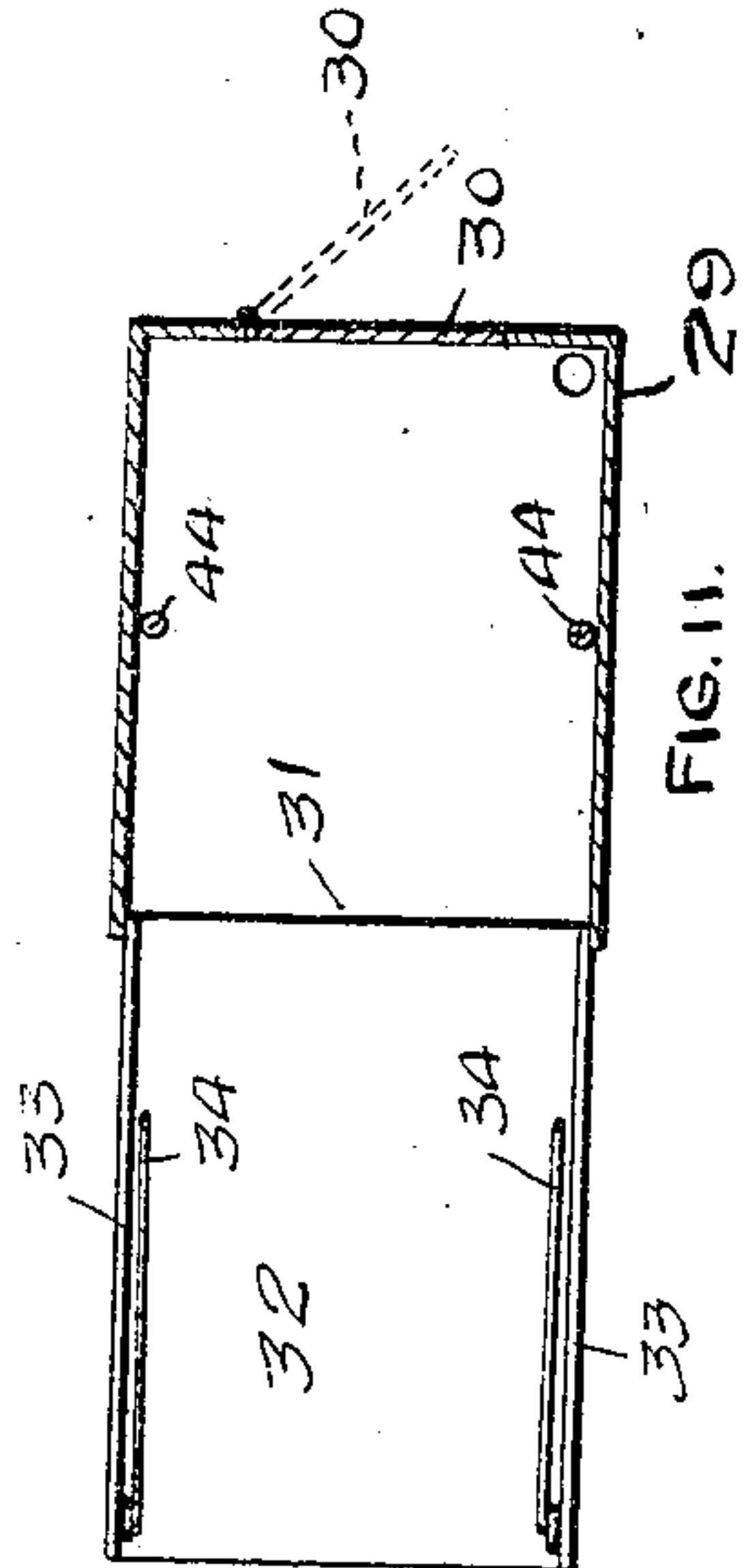


FIG. 11.

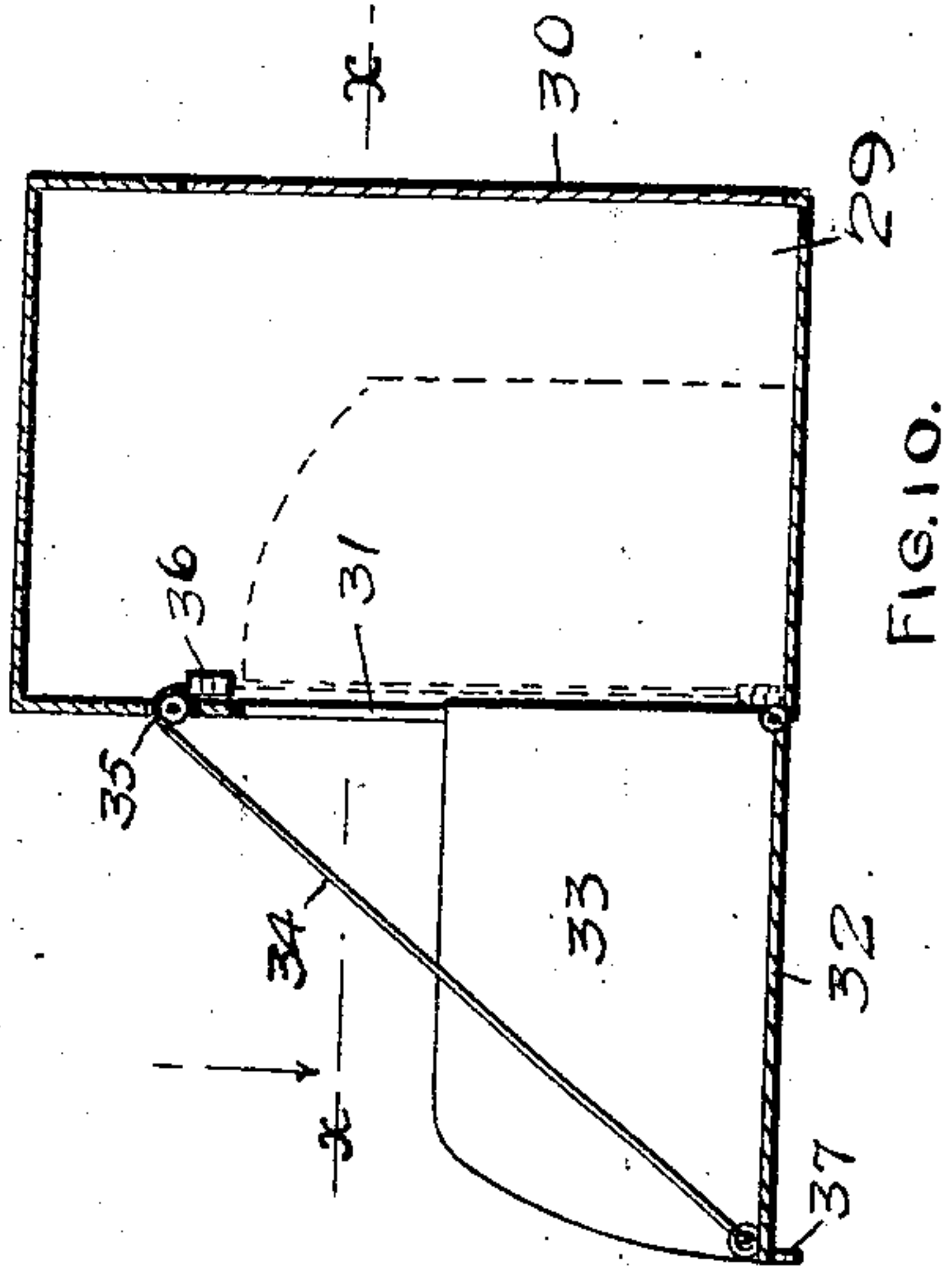


FIG. 10.

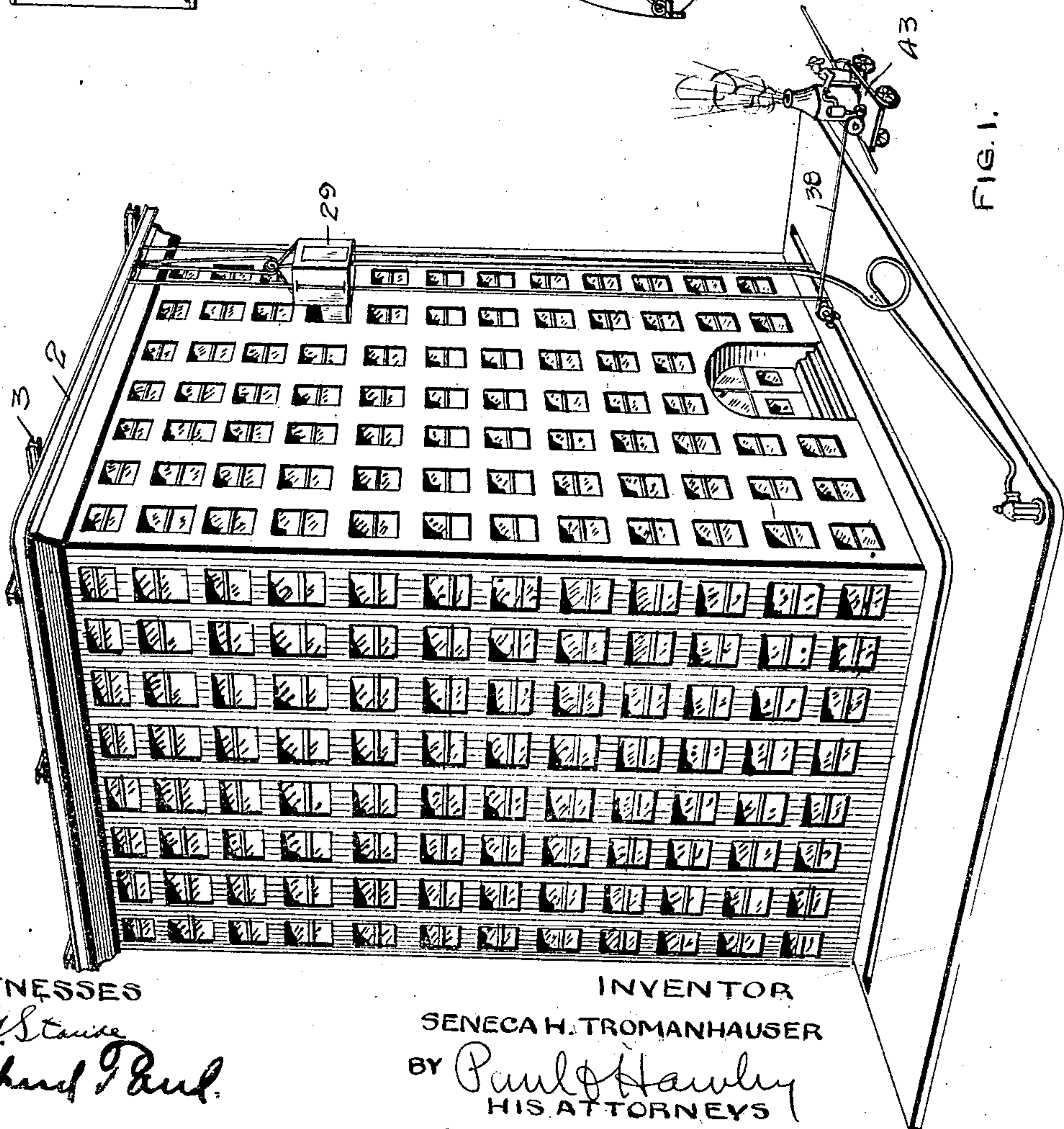


FIG. 1.

WITNESSES

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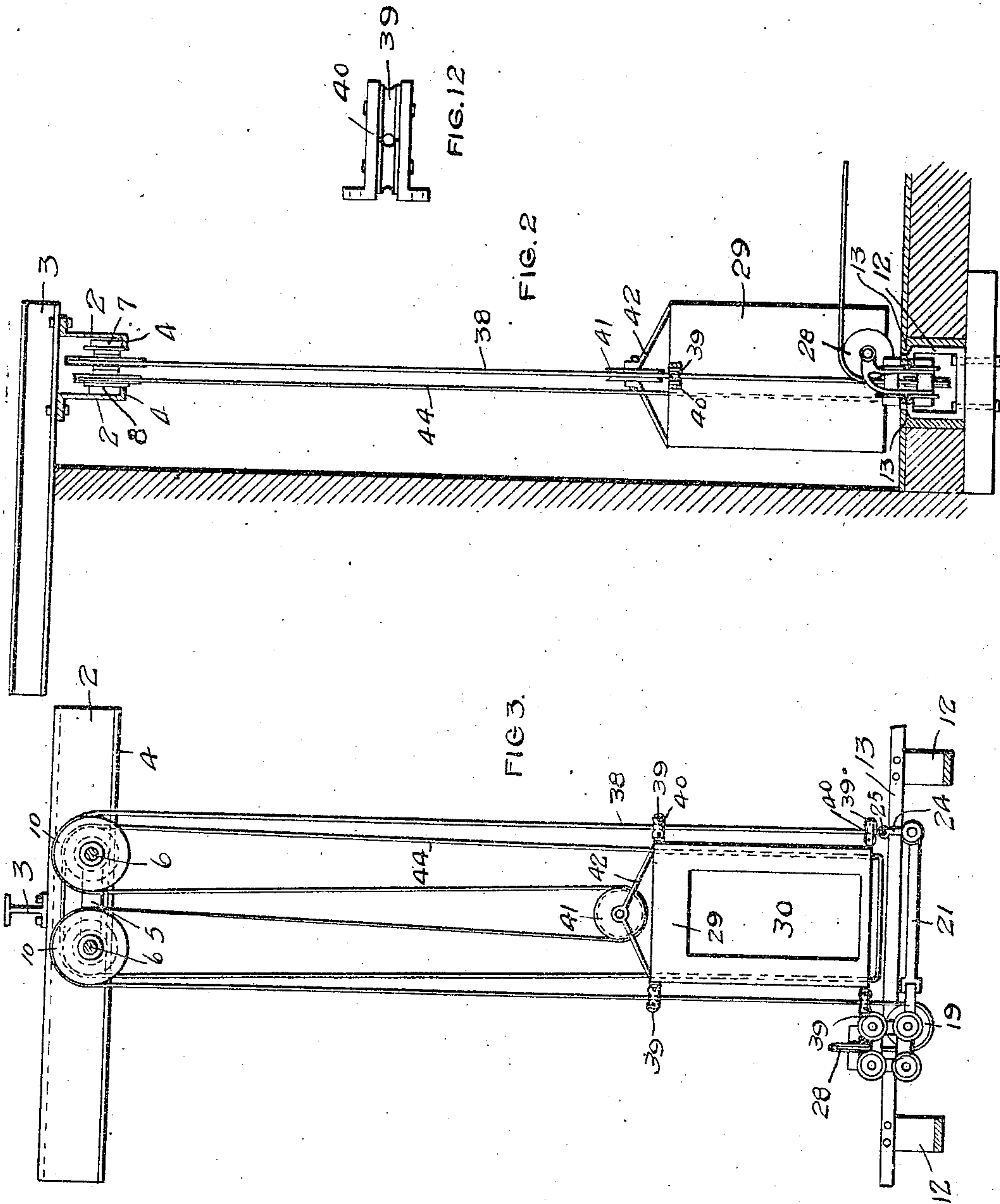
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3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

FIG. 4.

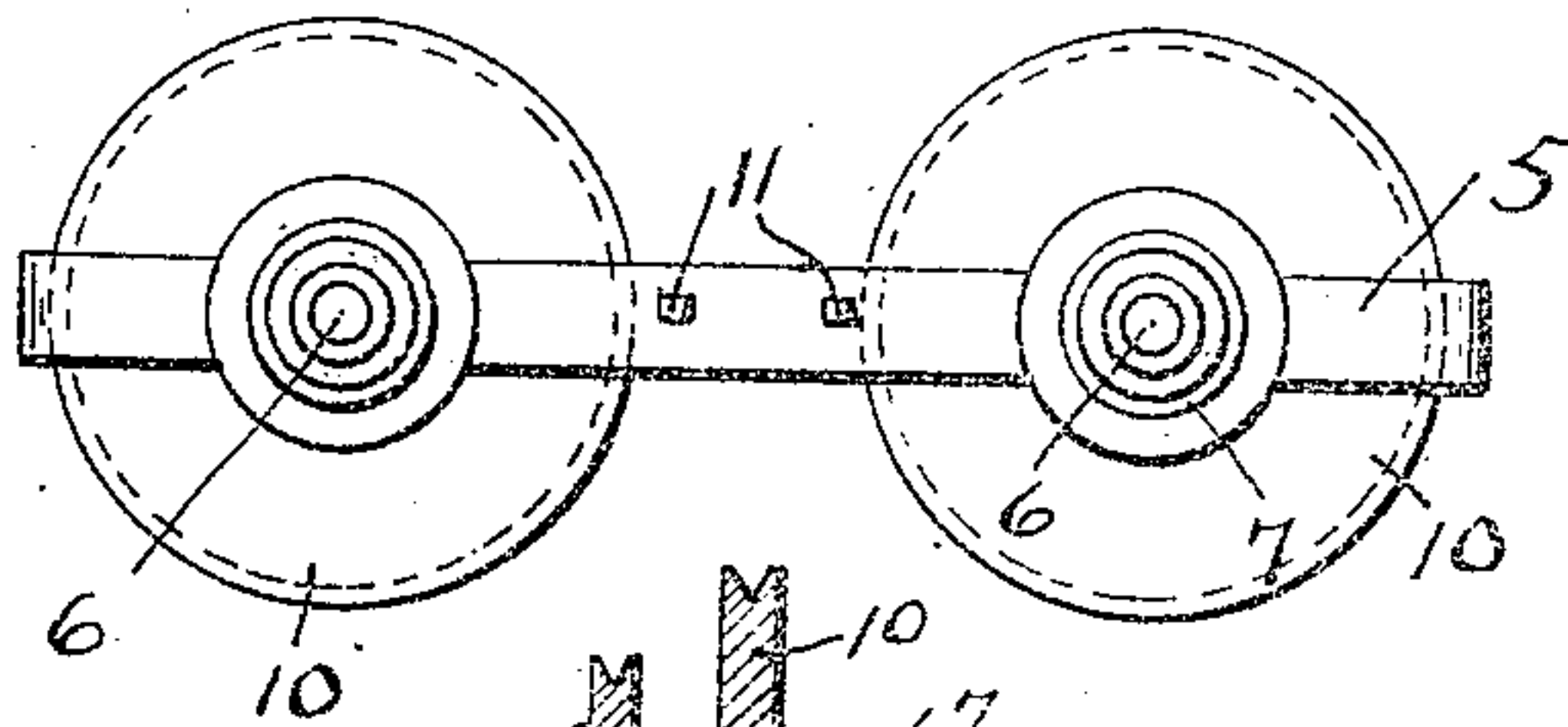


FIG. 6.

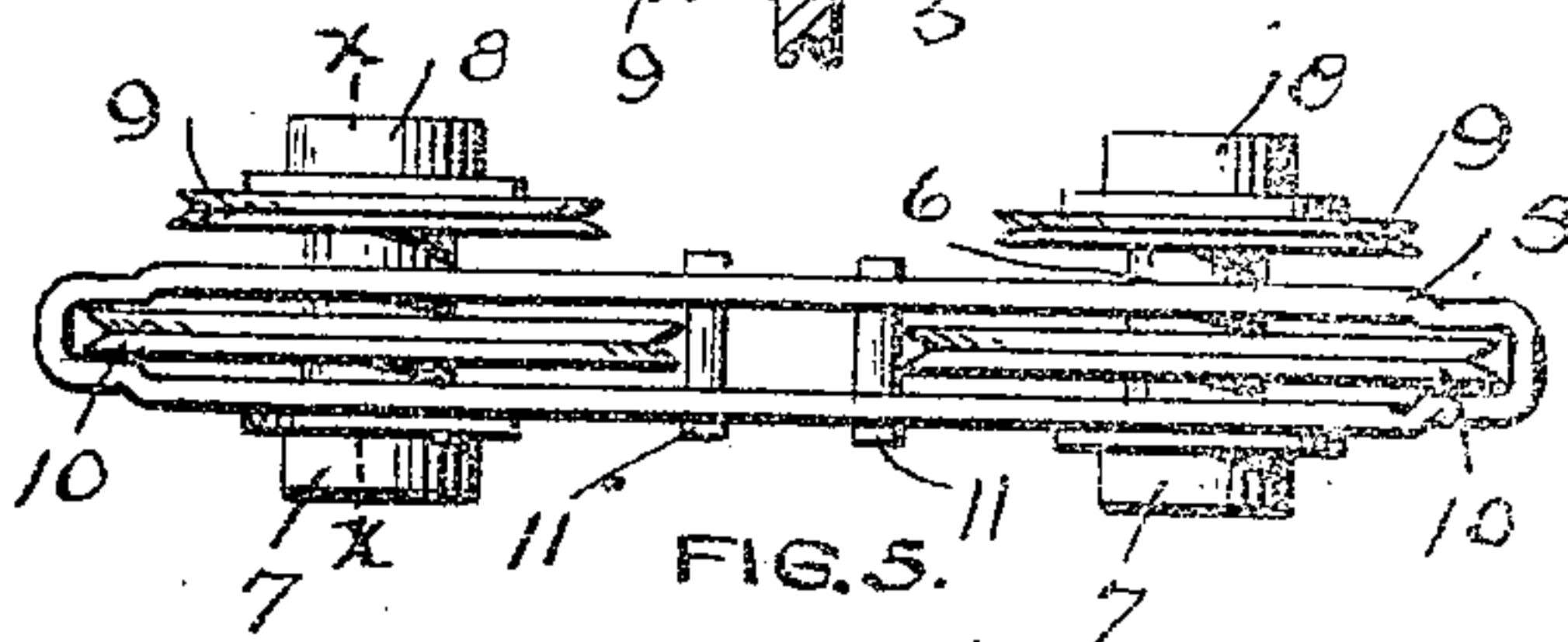
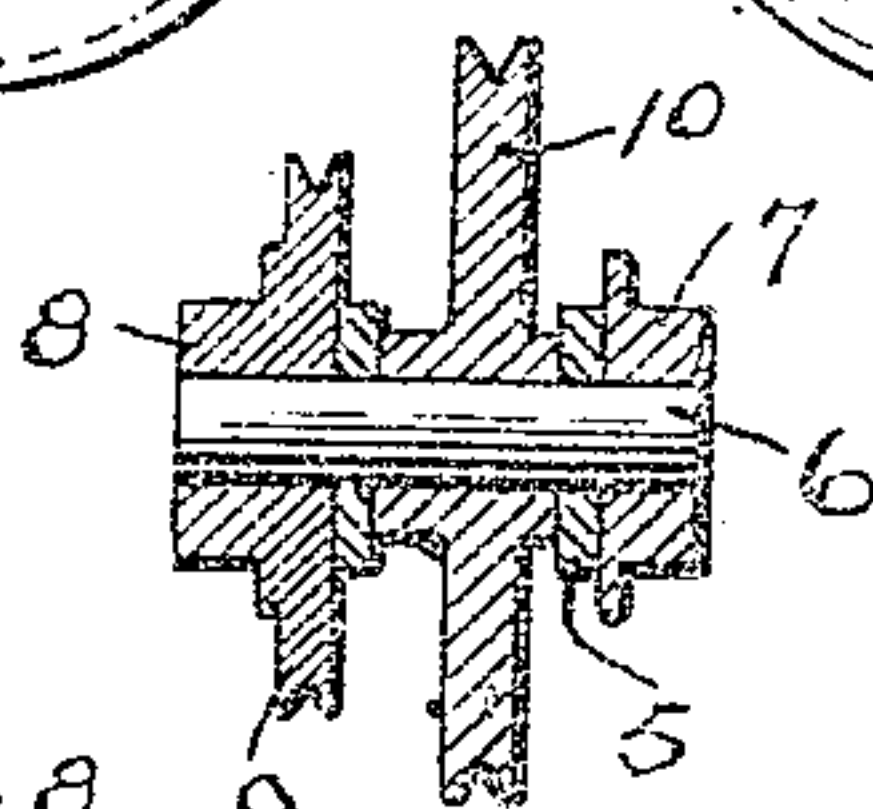


FIG. 5.

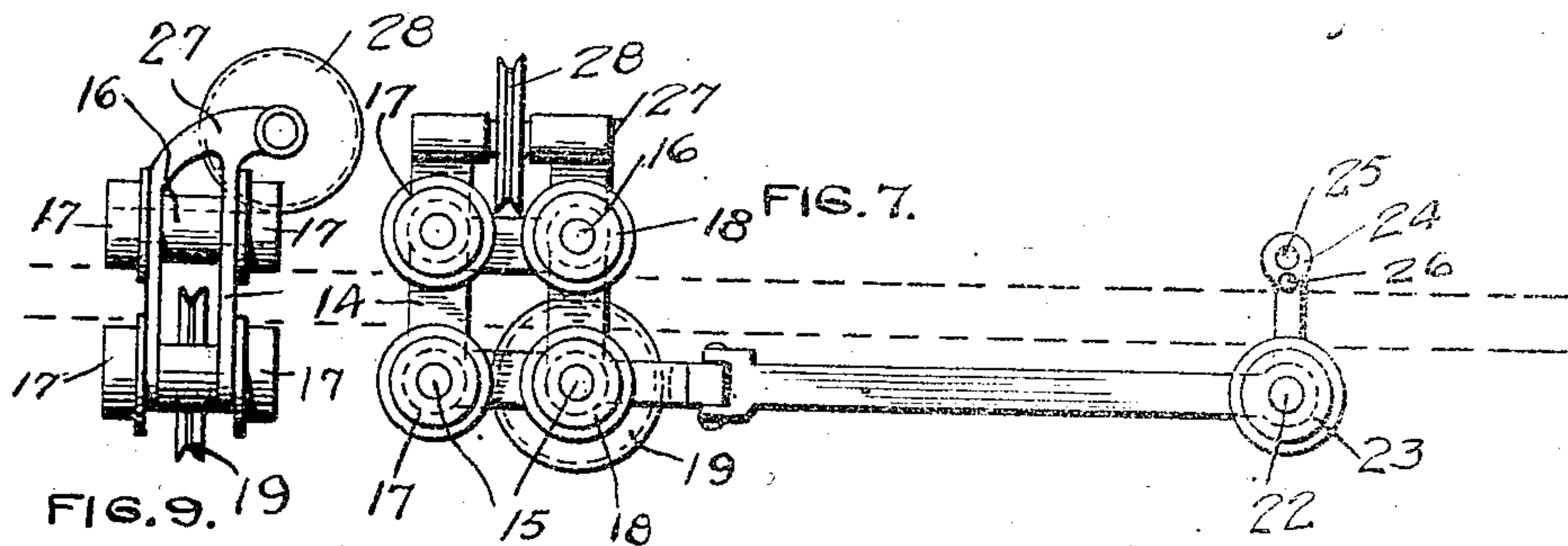


FIG. 7.

FIG. 9.

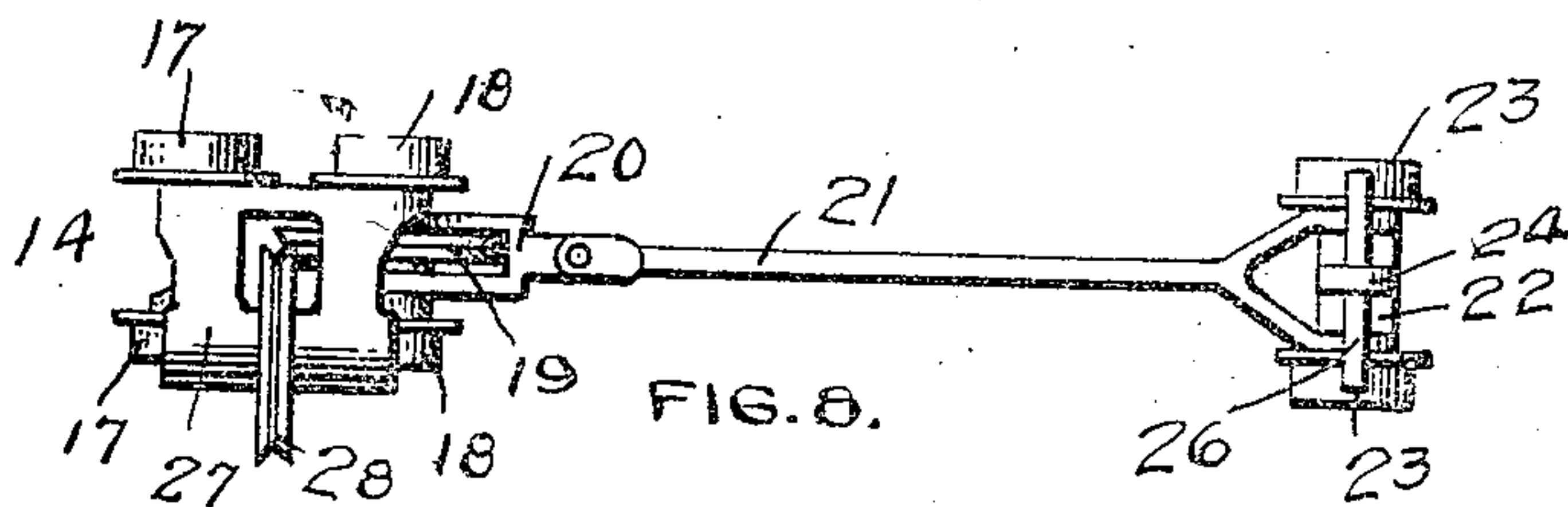


FIG. 8.

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UNITED STATES PATENT OFFICE.

SENECA H. TROMANHAUSER, OF MINNEAPOLIS, MINNESOTA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 665,707, dated January 8, 1901.

Application filed March 19, 1900. Serial No. 9,156. (No model.)

To all whom it may concern:

Be it known that I, SENECA H. TROMANHAUSER, of the city of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

The invention relates to fire-escapes; and one object of the invention is to provide horizontally-adjustable means attached to the outer walls of office or apartment buildings or hotels to permit the escape, in case of fire, of the occupants of any office or room on any floor which, owing to the height of the building or for any other reason, cannot be reached by a ladder.

A further object is to provide means whereby books and merchandise of various kinds may be quickly and safely removed from the upper floors of the burning building.

A further object is to provide means for quickly elevating one or more fire-hose to the top of a building.

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

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective of an office or apartment building with my improved fire-escape attached thereto. Fig. 2 is a sectional view showing the car or cage, the track supporting the same, and the conduit at the base of the building. Fig. 3 is a side elevation of the car, the supporting-track, and the conduit-rail. Fig. 4 is a side elevation of the truck or carriage supported at the top of the building. Fig. 5 is a plan view of the same. Fig. 6 is a sectional view on the line *xx* of Fig. 5. Fig. 7 is a side elevation of the carriage or truck provided in the conduit. Fig. 8 is a plan view of the same. Fig. 9 is an end view. Fig. 10 is a vertical section of the cage or car. Fig. 11 is a horizontal section on the line *yy* of Fig. 10. Fig. 12 is a detail of the guide on the side of the elevator-car.

The apparatus which I have herein shown and described is designed particularly for use in connection with very high buildings, the upper floors of which frequently cannot be reached by ladders, to be permanently attached to the building and ready for use at a

moment's notice. The fire-escapes in general use on the outer walls of buildings are usually located at the end of a hall or corridor and are frequently inaccessible to the occupants of rooms at a little distance therefrom on the same floor owing to the hall being filled with smoke or certain of the rooms cut off from the main hall leading to the fire-escape by the progress of the fire. To obviate this difficulty and render the fire-escape accessible from any room in the building, I prefer to make it horizontally as well as vertically adjustable, and to this end I provide a continuous track running around the building on the outside upon which the elevator car or cage is supported. In Fig. 1, I have shown the track supported at the top of the building, said track consisting, preferably, of Z-bars 2, bolted securely to I-beams 3, arranged at intervals on the roof of the building and overhanging its walls. The inwardly-turned flanges 4 at the lower edges of the Z-bars form a continuous track around the building, and resting upon these flanges, which are spaced from each other, is a track or carriage comprising an elongated frame 5, the axles 6 loosely mounted therein; and the wheels 7 and 8 secured on said axles. I prefer to provide sheaves 9 on the wheels 8 for the purpose hereinafter described; and I also provide large sheaves 10, loosely mounted on the axles 6 within the frame 5, and between said sheaves, connecting the sides of the frame, I provide bolts 11, which prevent the frame from spreading and the cable from accidentally slipping off the sheaves. In the sidewalk, near the base of the building, I provide a conduit running entirely around the building, wherein I arrange at intervals yokes or knees 12, bolted securely to the bottom of the conduit and supporting parallel bars 13, arranged substantially on a level with the sidewalk and forming a track for the conduit car or carriage. This car comprises a casing or frame 14, wherein axles 15 and 16 are mounted, provided with wheels 17 and 18, secured thereon. A sheave 19 is loosely mounted on the axle 15, and a tongue 20 is provided on said axle and is pivotally connected with a bar 21, provided with a fork at its opposite end, which connects the tongue 20 with the axle 22, having wheels 23 to bear upon the under side of the rails 13. A link 24 is pro-

vided on the axle 22, projecting up through the slot in the conduit and having a hole 25 and a pin 26 to rest upon the top of the rails.

At the top of the frame 14 I prefer to provide
5 a bracket 27, wherein a sheave 28 is mounted with its axis substantially at right angles to that of the sheave 19.

The cage or car which I prefer to use in connection with the apparatus heretofore described consists of a box 29, of wood or metal, as preferred, preferably rectangular in form, having a closed top and a door 30 in one of its side walls. I prefer to provide a large opening 31 in the side of the cage next to the
15 windows of the building, and over said opening, hinged to the floor of the car, I provide a plate 32, having side boards 33 and provided with a cord 34, passing over a pulley 35 and connected to a counterbalance 36. A
20 flange 37 is provided on the outer end of the plate 32 to drop over the inner edge of the window-sill and hold the car to prevent its swinging away from the window as the occupants of the room pass over the plate into
25 the car.

Various means may be employed for raising and lowering the car; but I prefer to provide the mechanism herein shown, which consists in attaching a cable 38 to the link 24 and
30 passing the same between the idler-rollers 39, mounted in the brackets 40, secured to the side walls of the car upon each side, preferably at the top and bottom of the same. From the idle rolls the cable passes up over
35 one of the sheaves 10 on the frame 5 and down to a sheave 41, provided on a bail 42 on the top of the car. From the sheave 41 the cable passes up over the second sheave 10 and down between the idle rolls on the opposite side of the car from the starting-point of
40 the cable to the sheave 19 in the conduit and from thence over the sheave 28 to a suitable hoisting-engine 43. This engine I prefer to make an adjunct of the fire-department apparatus, to be kept in the engine-house ready
45 for use whenever there is a fire in a large building that is equipped with my improved life-saving apparatus.

By arranging the cable in the manner heretofore described I am able to utilize it to raise
50 and lower the car and at the same time act as a guide for the car to prevent it from swaying or swinging from side to side and striking the walls of the building during its ascent or descent and causing damage to the car or injury to its occupants.

As heretofore described, the track at the top of the building and the conduit below are continuous to permit the elevating apparatus
60 to be adjusted in front of any window in the building, and in order that the apparatus may be properly adjusted before the hoisting mechanism is put into operation I prefer to provide an endless cable 44, passing over the
65 sheaves 9 and down through and under the bottom of the car, as shown in Fig. 3, by means of which the operator can move the appara-

tus entirely around the building. In moving the car from one side of the building to another the bar 21, connecting the two sections
70 of the carriage in the conduit, will swing on its pivot and permit the carriage to make the turn around the corners of the building without binding between the rails. I prefer to provide trucks above as well as below the conduit-rails, so that when strain is applied to
75 the cable the conduit-carriage will be braced by the trucks bearing upon the under side of one rail and upon the upper side of the opposite rail.

If desired, the apparatus may be used for raising a fire-hose to the top of a building, as shown in Fig. 1, wherein the hose is represented as inserted through a hole in the bottom of the car and being raised therewith to
85 the top of the building. This feature of the invention will be found to be of great advantage for elevating fire-hose to the upper stories of a building which cannot be reached by ladders or where a considerable amount of
90 time would be wasted in dragging the hose up a ladder or a stairway on the inside of the building.

When not in use, the apparatus may be moved around to the alley side of the building and the car raised to the top of the blank wall, where it will be protected by the cornice and not offer any obstruction to the view from the windows or detract from the ornamental
100 appearance of the building.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the walls of a building, of a track supported thereon, a carriage adapted to travel over said track, a conduit provided near the base of the building beneath said track, a second carriage provided in said conduit, sheaves provided on said first and said second named carriages, a cable passing over said sheaves, and a car or cage suspended by said cable and adapted to be raised or lowered by the movement of the same, substantially as described.

2. The combination, with the building-walls, of a continuous track supported thereon and extending around the outer walls of the building, a car adapted to move over said track, a conduit provided near the base of said building and extending around the same, a second carriage movable therein, sheaves provided on said first and second named carriages, a cable passing over said sheaves, and a car suspended by said cable and adapted to be raised or lowered thereby, substantially
125 as described.

3. The combination, with the building-walls, of a track supported thereon, a carriage adapted to move over said track, sheaves 10 mounted in bearings in said carriage, a conduit provided near the base of said walls, a second carriage arranged therein, a sheave 19 mounted in said conduit-carriage, a sheave 28 also mounted in said conduit-carriage and
130

having its axis substantially at right angles to the axis of said sheave 19, a link pivotally connected with said conduit-carriage, an elevator cage or car, a sheave 41 provided thereon and a cable connected to said link and passing over said sheaves 10 and 41 and said sheaves 18 and 28 to a suitable hoisting apparatus, substantially as described.

4. In a device of the class described, the combination, with an elevated track and the carriage thereon having the sheaves 10, of the elevator cage or car provided with the idle or guide pulleys 39 and the sheave 41, a conduit provided beneath said elevator-track, a carriage adapted to travel in said conduit, sheaves 19 and 28 mounted in said carriage, a link connected with said carriage, a cable having one end secured to said link and adapted to pass between said guide-pulleys and over said sheaves to a suitable hoisting apparatus, substantially as described.

5. The combination, with the building-walls, of the elevated track supported thereon, a carriage provided on said track, the sheaves 10 arranged on said carriage, a conduit provided near the base of the building, a carriage provided in said conduit, sheaves 19 and 28 arranged on said conduit-carriage, a cage or car, a sheave provided thereon, a cable connected to one end of said conduit-carriage and passing over the sheaves on said car and said conduit-carriage to a suitable hoisting apparatus, substantially as described.

6. In a device of the class described, an elevated-track carriage, comprising a frame 5, the axles 6 having the wheels 8, the sheaves 9 provided on said wheels on one side of said frame, the cable 44 the sheaves 10 loosely mounted on said axles within said frame 5, the cable 38 and an elevator cage or car, substantially as described.

7. The combination, with a frame 14, of axles 15 having the wheels 17 adapted to bear upon the under side of the conduit-rails, axles 16 also mounted in said frame and having wheels 18 to rest upon the tops of said rails, sheaves 19 mounted on said axle 15, a sheave 28 also supported on said frame and having its axis substantially at right angles to the axis of said sheave 19, a cable, an elevator cage or car, an axle 22 having its wheels 23 and the bar 21 pivotally connecting said axle 22 with the lower of said axles, 16, for the purpose specified.

8. The combination, with an elevated track secured to the walls of a building, of a carriage arranged upon said track and movable horizontally thereon, suitable sheaves provided on said carriage, a car or cage, cable-guides thereon, a cable connecting said car with said sheaves and passing through said guides, and means for securing the lower or ground end of said cable against vertical movement to prevent swaying or swinging of the car, substantially as described.

9. The combination, with an elevated continuous track, of a carriage arranged thereon and movable over the same, suitable sheaves provided on said carriage, a cage or car, cable-guides thereon a cable connecting said cage or car with said sheaves and whereby said car is raised or lowered, a device provided at the lower or ground end of said cable and whereby it is secured, said device being movable only in a direction parallel with said track, whereby outward swaying or swinging of the elevator-car is prevented, substantially as described.

10. The combination, with an elevated track, of a carriage arranged thereon, an elevator car or cage, cable-guides provided thereon, a cable connecting said car with said carriage and whereby said car is rendered horizontally as well as vertically adjustable, and means provided at the lower or ground end of said cable for securing the same to prevent horizontal movement of said car except in a direction parallel with said track, substantially as described.

11. The combination, with an elevated track secured to the walls of a building, of a carriage provided on said track, a conduit or guideway provided near the base of the building beneath said track, a second carriage provided in said conduit or guideway, a cable connecting said conduit-carriage and said elevated-track carriage, and a car or cage suspended by said cable and adapted to be raised or lowered thereby, substantially as described.

12. The combination, with the elevated track, of a carriage thereon, sheaves provided on said carriage, a cable supported on said sheaves, a cage or car having a sheave over which said cable passes, guides provided on the sides of said car to receive said cable, and a device movable in a horizontal direction only provided at the ground or lower end of said cable for securing one end of the same its other end being attached to a suitable hoisting apparatus, substantially as described.

13. The combination, with an elevated track, of a carriage thereon, an elevator cage or car, a conduit or guideway provided beneath said track, a carriage provided in said conduit and a cable having one end secured to said conduit-carriage and passing over suitable sheaves on said car and track-carriage to a hoisting apparatus, substantially as described.

14. The combination, with an elevated track supported upon the walls of a building and extending continuously around the same, of a carriage or truck arranged upon said track, a guideway or conduit provided near the base of the building beneath said track, a truck or carriage for said conduit, a cage or car, and an operating-cable having one end secured to said conduit-carriage and passing over suitable sheaves on said car and truck-carriage to a hoisting apparatus, substantially as described.

15. A fire-escape, comprising an elevated track and a carriage thereon, a conduit or guideway provided beneath said track, a carriage arranged in said conduit, a guiding and
5 operating cable connecting said conduit-carriage to said elevated-track carriage, an elevator car or cage suspended on said cable, and suitable guides provided on the sides of

said car to receive said cable, substantially as described. 10

In witness whereof I have hereunto set my hand this 14th day of March, 1900.

SENECA H. TROMANHAUSER.

In presence of—

RICHARD PAUL,

M. C. NOONAN.