

(No Model.)

C. G. WHEELAND.

FIRE ESCAPE.

No. 435,874.

Patented Sept. 2, 1890.

Fig. 1.

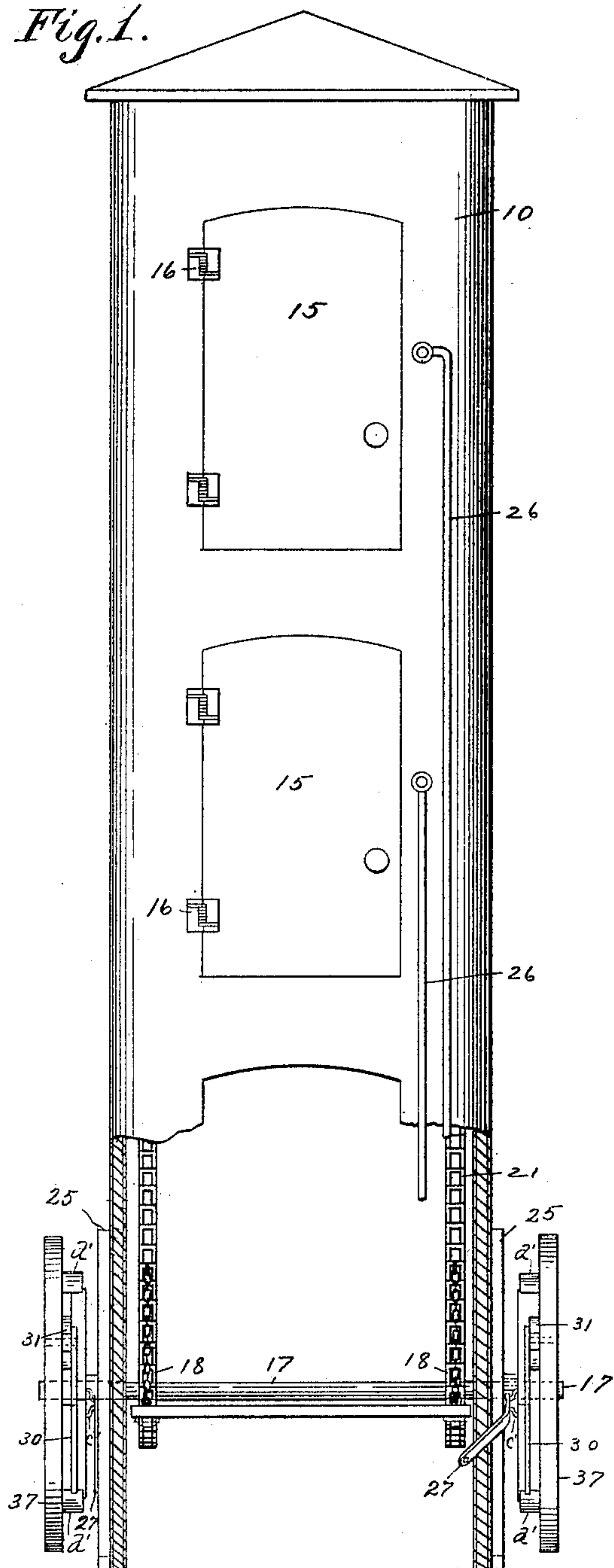
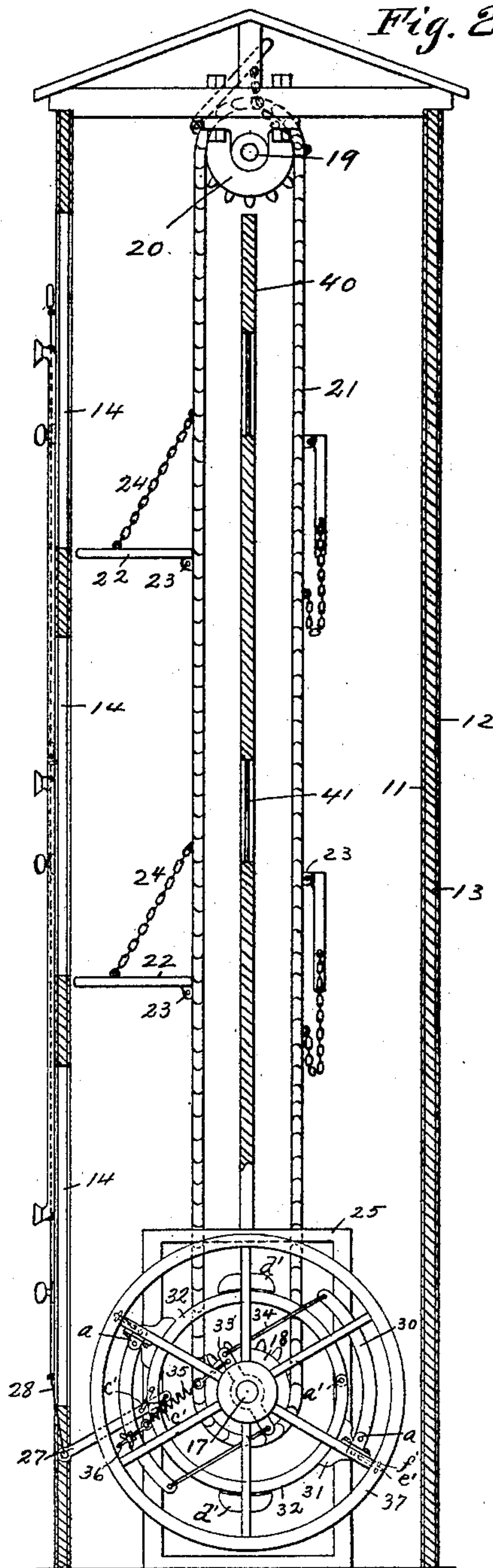


Fig. 2.



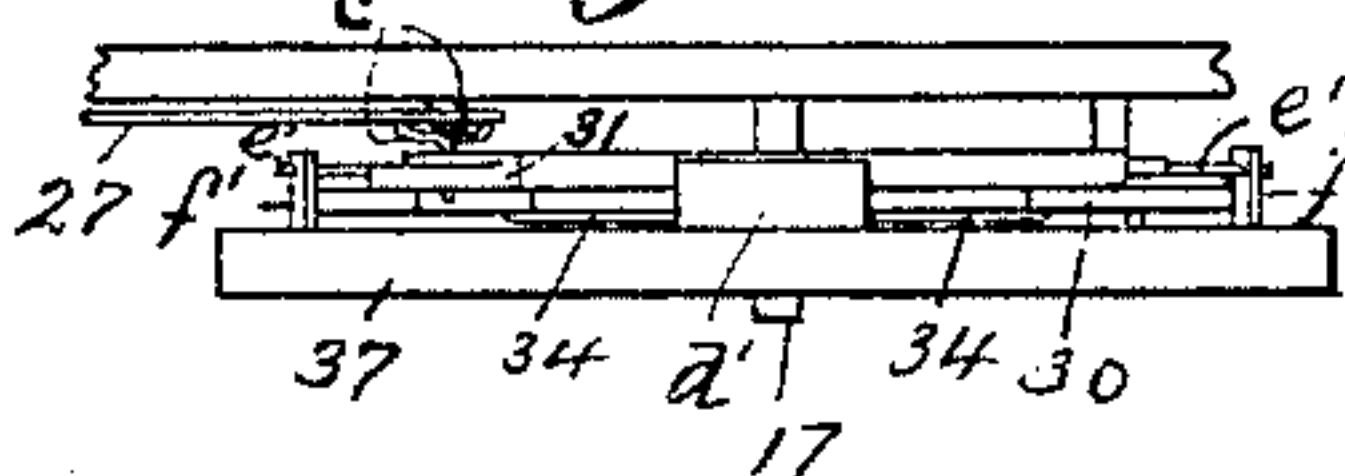
WITNESSES:

*J. Henry Prebterath*  
*G. Sedgwick*

INVENTOR:

*C. G. Wheeland*

Fig. 3.



BY

*Munn & Co*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

CHARLES G. WHEELAND, OF BRUSH CREEK, IOWA.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 435,874, dated September 2, 1890.

Application filed April 2, 1890. Serial No. 346,308. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES G. WHEELAND, of Brush Creek, in the county of Fayette and State of Iowa, have invented a new and useful Improvement in Fire-Escapes, of which the following is a full, clear, and exact description.

My invention relates to an improvement in fire-escapes, and has for its object to provide a structure adapted to be erected either without or within a dwelling or other edifice, and so arranged that any number of persons may be carried from any floor or from the roof to the lower portion of the dwelling; and a further object of the invention is to provide an automatic brake, whereby the rapidity of the descent of the person or persons carried may be regulated, and wherein, also, the escape will be in constant readiness for effective service.

The invention consists in the novel construction and combination of these several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is an exterior or front elevation of the fire-escape, a portion of the casing being broken away. Fig. 2 is a central vertical section through the escape, and Fig. 3 is a plan view of the brake mechanism.

The casing 10 of the escape is made in the form of a tower, of any suitable size in cross-section, and preferably of a height to extend from the ground to the roof of the structure in connection with which it is to be used. This tower is preferably constructed of an inner shell 11 of zinc, and an outer shell 12 of galvanized iron, the space between the two shells being adapted to contain a cement filling 13. The face of the tower contiguous to the building is provided with a number of openings 14, corresponding in number and location with the floors and the roof of the house, each of which openings is normally closed by a door 15, hung to the tower by spring-hinges 16. The spring-hinges are provided in order that the doors may be kept closed at all times until the escape is needed.

In the lower portion of the tower a shaft 17 is journaled, which projects beyond two opposite sides, and upon the said shaft, within the tower near each end, a sprocket-wheel 18 is secured. A similar parallel shaft 19, not quite so long, is mounted in suitable bearings in the upper portion of the tower, and the upper shaft is also provided with two sprocket-wheels 20, aligning the sprocket-wheels of the lower shaft, and over the said aligning sprocket-wheels of the upper and lower shafts endless-chain belts 21 are passed.

At intervals preferably corresponding to the distance between the floors of the building, platforms 22 are pivoted between the endless-chain belts, the said platforms being preferably pivoted to lugs 23, formed upon the belts or to bars connecting the belts, and the pivotal connection of the platforms to their lugs or bars is such that the platforms upon the descending side of the chain belts—that is, the side opposite the openings 14—will normally assume the horizontal position shown in Fig. 2, being retained in such position by side chains or link-braces 24. When, however, the platforms have passed beneath the lower shaft 17 and have arrived at the rear of the tower and are carried upward again by the moving chain belts, the platforms are free to drop downward to a vertical position parallel with the chain, as is also shown in Fig. 2. The platforms automatically assume their horizontal position immediately after passing the upper shaft.

In the operation of the escape, when a platform in its vertical position is practically upon the level of the floor of the room from which the escape is to be made, the party or parties desiring to escape step upon the platform, and this operation is repeated upon any of the floors or the roof. The brake A, below referred to, is so constructed that the time of the descent of the parties upon the platforms will be the same whether the weight of one or of more persons is sustained by the endless-chain belts.

Upon the outer sides of the tower through which the lower shaft projects, a rectangular frame 25 is attached, and from each story of the tower a speaking-tube 26 is carried downward to the base, so that communication can



be held with the party stationed at the brake, if it is found desirable for any purpose to stop the movement of the belts; and from a lever 27, connected with the brake, a series of wires, chains, or cords 28 is carried upward, one of them through each tube 26, the object of these wires being, if no one is stationed at the brake below and the belts are traveling too fast, to enable a person to step upon a platform, that by pulling upon any one of the wires the brake-lever will be made to act to stop the revolution of the lower shaft 17. Any form of brake may be used, but I prefer to employ the brake shown in the patent of L. D. Carpenter, No. 281,018, July 10, 1883, and which consists of a couple of centrifugal levers 30, pivoted at *a* to the arms of a fly-wheel 37, attached to the shaft 17, and upon the shorter ends of said levers a brake-shoe 31 is secured, which brake-shoes are adapted to act upon a friction-rim 32, attached to the frame 25. The long arms of the levers are connected with a rocker-bar 33 by rods 34, and one of the said levers is connected with the said rocker by a coiled spring 35 and an adjusting-sleeve and set-screw 36, which latter devices tend to keep the brakes off of the rim 32 when the speed is not too high, but when excess of speed throws out the centrifugal levers the shoes will be pressed upon the rim until the speed is slowed down to the proper limit. The adjusting device 36 enables the tension of the spring to be regulated according to the desired speed.

For a stop device or positive brake, the rim 32 is made in two sections jointed together at *a'*, where they are also joined to one of the posts of the frame 25, and connecting the opposite ends to the brake-lever 27 by short links *c'*, so contrived that by swinging the lever in one direction the rim 32 will be expanded against brake-blocks *d'*, rigidly attached to some of the arms of the fly-wheel.

The brake-shoes 31 have a rod *e'* rigidly fixed to them and extending out to the rim of the balance-wheel through a staple *f'* attached to the said wheel, to prevent the shoes from turning on the pivots by which they are connected to the levers 30, and thus also prevent them from tilting against the rim 32.

Between the upper and lower shafts, within the structure, I preferably erect between the opposed sides of the chain belts a partition 40, which may be provided with a series of windows 41, if desired, the object of the partition being to prevent people descending from seeing the ascending side of the chain belts and the ascending platforms. It will be understood that the chains may be tightened

by any approved mechanism when occasion may require.

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

1. In a fire-escape, the combination of a tower-like structure provided with spring-pressed doors, an upper and lower shaft mounted in the structure, endless belts carried by the shafts and provided with hinged platforms, a brake attached to the lower shaft, and wires connected to the operating-lever of the brake and carried upward to the doors, substantially as described.

2. In a fire-escape, the combination, with a tower-like structure provided with spring-pressed doors, and a shaft journaled at the top and bottom, each provided with sprocket-wheels, of chain belts passing over the sprocket-wheels of the shaft, platforms secured to said chain belts adapted to assume a horizontal position in descending and a vertical position in ascending, speaking-tubes attached to the structure and leading from the several doors to the base, a friction-brake secured to the lower shaft, and wires attached to the lever of the said brake, which wires are carried upward, one to each door, substantially as shown and described.

3. In a fire-escape, the combination, with a tower-like edifice provided with a series of openings, and spring-pressed doors closing the same, shafts journaled one at the top and the other at the bottom of the edifice within the same, sprocket-wheels secured upon the said shafts and endless-chain belts passing over the said sprocket-wheels, of platforms hinged to the chain belts and provided with side brace links or chains, the said platforms being so hinged that they will assume a horizontal position in descending and a vertical position in ascending, a brake connected with the lower shaft consisting of a fly-wheel mounted upon the shaft, centrifugal levers pivoted upon the fly-wheel, a friction-rim attached to the outer face of the structure, a rocking bar, a spring and rod connection between the said rocking bar and the levers, and a brake-lever adapted to exert a positive pressure upon the friction-rim, and a chain or wire connection between the said lever and the several openings in the structure, substantially as shown and described, and for the purpose specified.

CHARLES G. WHEELAND.

Witnesses:

L. I. WALRATH,  
G. R. OSBORN.