

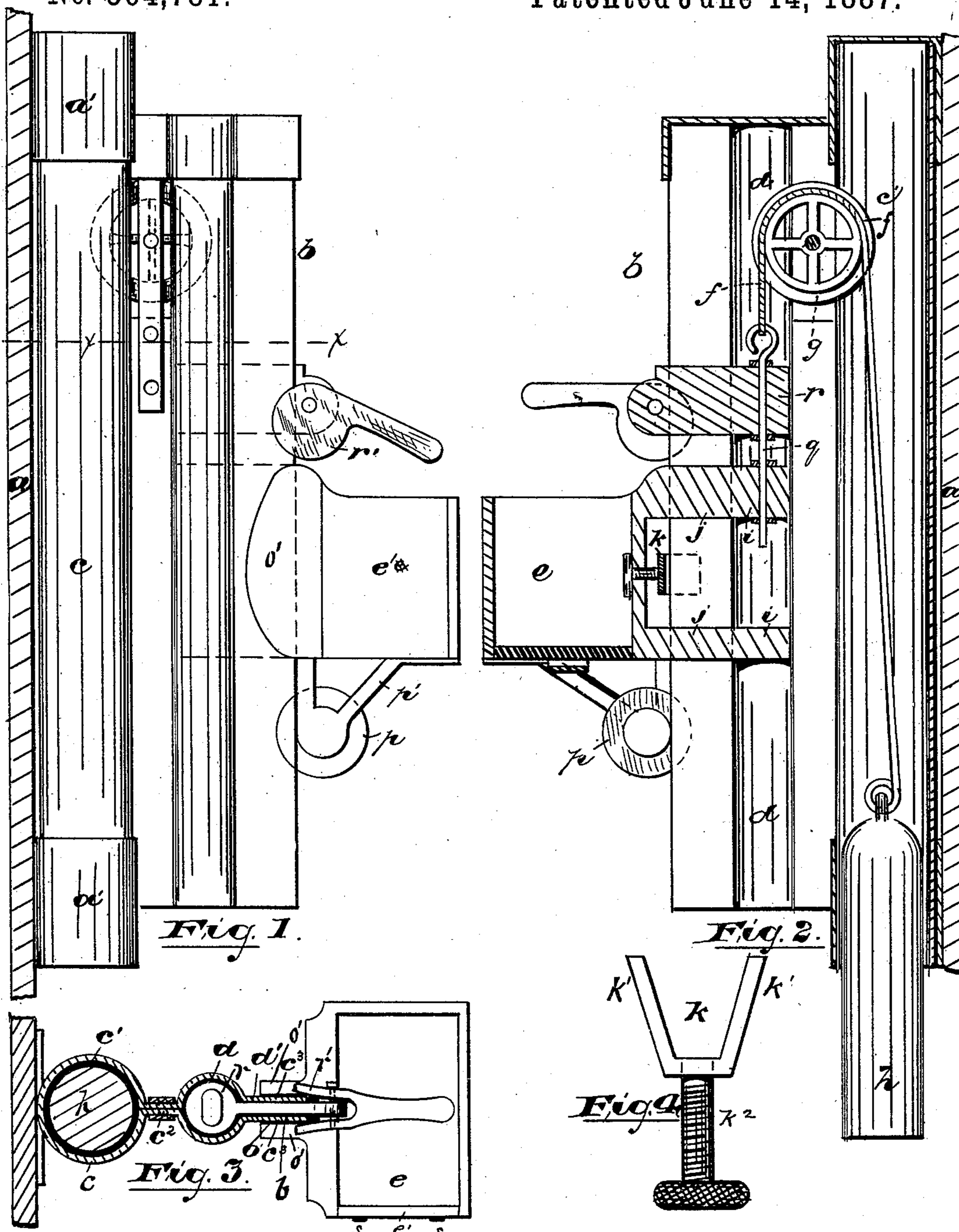
(No Model.)

A. STODDARD.

FIRE ESCAPE.

No. 364,781.

Patented June 14, 1887.



WITNESSES:

INVENTOR

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UNITED STATES PATENT OFFICE.

ALFRED STODDARD, OF NEWARK, NEW JERSEY.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 364,781, dated June 14, 1887.

Application filed March 30, 1887. Serial No. 232,988. (No model.)

To all whom it may concern:

Be it known that I, ALFRED STODDARD, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Fire-Escapes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to secure a more reliable and efficient fire-escape, to enable a person in charge of the escape apparatus to raise himself from the ground to one of the upper windows or platform of a building, and there to receive a load of persons escaping from the building and from thence to lower them to the ground, and, generally, to secure a more durable, certain, and rapid operating escape device, whereby the escape operation may be repeated as often as may be necessary, and, finally, to more perfectly control the speed of the escape-car as it is lowered upon its vertical track or way.

The invention consists of the improved fire-escape, and in the arrangement and combinations of parts thereof, substantially as will be hereinafter set forth, and finally be embodied in the claims.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is a side elevation of the improved fire-escape attached to the building. Fig. 2 is a central vertical section of the same. Fig. 3 is a horizontal section through line X of Fig. 1, and Fig. 4 is a detail of a holding device to retard or stop the movement of the car.

In said drawings, *a* indicates a portion of a building to which the apparatus is applied.

b is a way or vertical track, in or on which the escape-car is secured, and rises and falls in its movements to and from the upper portions of said building. The said track or way consists more particularly of a bent sheet or plate of metal, as shown in Figs. 1 and 3, in which said plate is shown to be doubled, as at

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ber, *c'*, for the weight which regulates and controls the operation of the escape-car. Said plate is bent together, as at *c''*, to form a web through which bolts or rivets may be passed to hold the doubled metal together. After forming said web the flanges of the said bent plate are again caused to separate and afterward to approach one another to form a chamber or vertical way, *d*, Fig. 3, the edges of the bent plate lying somewhat apart, as in said figure, to form a vertical passage, *d'*, to said way or chamber *d*. Said edges are preferably formed to provide flanges *c'''*, which lie in parallel planes, and are adapted to be brought together to close or partially close the passage *d'* to the said chamber *d*. The track thus described is preferably formed of three plates bolted together to enable the same to be more readily formed by rollers or other tools; but said track may be all of one piece. The said track or way *d* is secured at various points in its length to the building by brackets *a'* or other appropriate holding devices of any kind. A cap preferably covers the upper end of the track and protects the chambers therein from the rain or frost. The car and track are entirely of metal, (preferably wrought-iron,) so that adequate strength is secured, and there is no danger of the device being affected by the fire. On the said track or way *b* is arranged a car, *e*, of appropriate construction, and of sufficient capacity to receive a number of persons at one time, the one shown being small in proportions for purposes of illustration. Said car is suspended on a suitable wire rope, *f*, which passes over a pulley, *g*, having its bearings at the upper end of the track or way in any suitable manner, the periphery of the said wheel extending from a point at about the center of the chamber *d* to the center of the chamber *c'*. Over said pulley-wheel is arranged the said wire rope secured at one end to the car, as above referred to, and at the opposite end to the weight *h*, which works in the chamber *c'* and counterbalances the weight of the car. Said weight may be of iron or any other suitable material, and preferably is sufficient when falling to not only raise the car, but also a single occupant or conductor having charge of the matter of escape from the building. The said car is provided with heads or slides *i*, *i'*,

which work in the chamber d and prevent the car from falling or separating from the track or way, said heads being larger than the passage d' , and conforming more or less closely to said chamber d . The necks j of the slides work in the passage and hold the said heads to the body of the car.

Between the two heads, or below the upper one, is placed a clamping device adapted to bring the two flanges of the track together, so that the upper neck, j , cannot pass between. Said clamping device consists, preferably, of a V-shaped head, k , the oppositely-inclined prongs or forks k' of which pass on opposite sides of the separated flanges. Said head is held upon a screw, k^2 , which has its bearings on the car, and is operated from the inside of the car, so that as the said screw is turned the inclined forks bear against the outer sides of the two flanges of the track or way and so press them together as to prevent the passage of the head and neck between. By bringing the flanges of the track or way together or nearly together at a point below the necks j , or either of them, the necks j of the heads are prevented from descending through contracted portions, and as a result the car is prevented from lowering. The said flanges are prevented from spreading, and thus allowing the withdrawal of the heads and the disconnection of the car from the track or way, by working in slots or recesses o in the frame or body of the car, or between flanges o' of said frame or body. A roller, p , suitably journaled on hangers p' beneath the car, bears against the edge of the track or way and takes the downward pressure or weight of the car, and thus prevents the said car from being jammed in its downward movement. Said roller may be provided with peripheral grooves to receive said edges and hold them in position. Above the car is a friction device to be controlled by the conductor, and prevent the car filled with escaped passengers from lowering at an undue rate of speed. Said friction device is preferably arranged on the bolt or shaft q , to which the wire rope f is secured, though it may be arranged in connection with any other portion of the car. Said friction device consists, preferably, of a lever fulcrumed on the head r , attached to said shaft, which lever is provided with wings r' , which flare or tend to separate as they extend from the handle.

Said wings drop from the line of the handle and approach one another toward their lower limits, as shown. By this construction, when the lever is raised by the conductor, the wings free themselves from a frictional contact with the track; but when the handle of the lever is lowered the lower portion of said wings binds against the sides of the track, and thus produces friction sufficient to control the speed of the car. The car is provided with an adjustable side, e' , which, when the car is in position on the track to receive its passengers, may be lowered to form a platform leading from a window (for example) to the passenger cham-

ber of the car. Said side may be of any construction, and may be adjusted to secure the result in any suitable manner; but I prefer to secure said side to the car by means of spring-hinges s , of any of the well-known constructions, adapted to close said side automatically.

Having thus described the invention, what I claim as new is—

1. In combination with a track or way having a weight-chamber, a chamber, d , and a passage, d' , a car provided with a head to work in said chamber d , and means, substantially as described, to raise the said car, substantially as set forth.
2. In combination, a vertical track having laterally-adjustable parts adapted to be operated by a clamp in stopping the progress of the car, a car, weight, rope, and pulley, a clamp for stopping the car, and friction devices for controlling the speed of the car, substantially as set forth.
3. In combination with a car having a head, i , and clamp k , a track having flanges between which the said head operates, substantially as set forth.
4. In combination with a car having a head, friction-roller, clamp k , and friction device r , a track having flanges and chamber d and passage d' therebetween, substantially as set forth.
5. In combination with a track having chambers c' and d , and passage d' , and flanges c^3 , a car having recesses o , a head, i , a rope, pulley, and weight, all said parts being arranged and adapted to operate substantially as and for the purposes set forth.
6. In combination with a track having flanges, a car having a V-shaped clamp and a head, said parts being arranged and adapted to operate substantially as and for the purposes set forth.
7. In combination with a track having flanges and chambers and passage therebetween, a car having a head, i , and a V-shaped clamp with a threaded shank, k^2 , said parts being arranged and adapted to operate substantially as and for the purposes set forth.
8. The improved fire-escape consisting, essentially, of a vertical track having a chamber, c' , chamber d , passage d' , flanges c^3 , a pulley, g , a weight, h , rope f , bolt q , head r , friction-lever r' , car e , roller p , clamp k , having prongs k' , and screw-shank k^2 , said car having a hinged side, e' , all said parts being arranged and combined substantially as and for the purposes set forth.
9. In a fire-escape, a track or way having a chamber and flanges, and a car provided with a head and neck inseparably held in said chamber, and means, substantially as described, for operating said flanges and causing them to enter into holding engagement with said head and neck, substantially as and for the purposes set forth, said parts being in combination.
10. In a fire-escape, a track or way having

clamping or contracting flanges and a car sliding on said track or way, and provided with means, substantially as described, for causing said flanges to contract or draw together
5 to limit or control the downward progress of the car, substantially as set forth, said parts being in combination.

11. In combination, in a fire-escape, a track having means, as described, for holding said
10 car inseparably in sliding relation thereto, and a car provided with means, substantially

as described, for stopping the downward progress of the car and for controlling the speed thereof, substantially as set forth.

In testimony that I claim the foregoing I 15
have hereunto set my hand this 1st day of March, 1887.

ALFRED STODDARD.

Witnesses:

CHARLES H. PELL,
OSCAR A. MICHEL.