

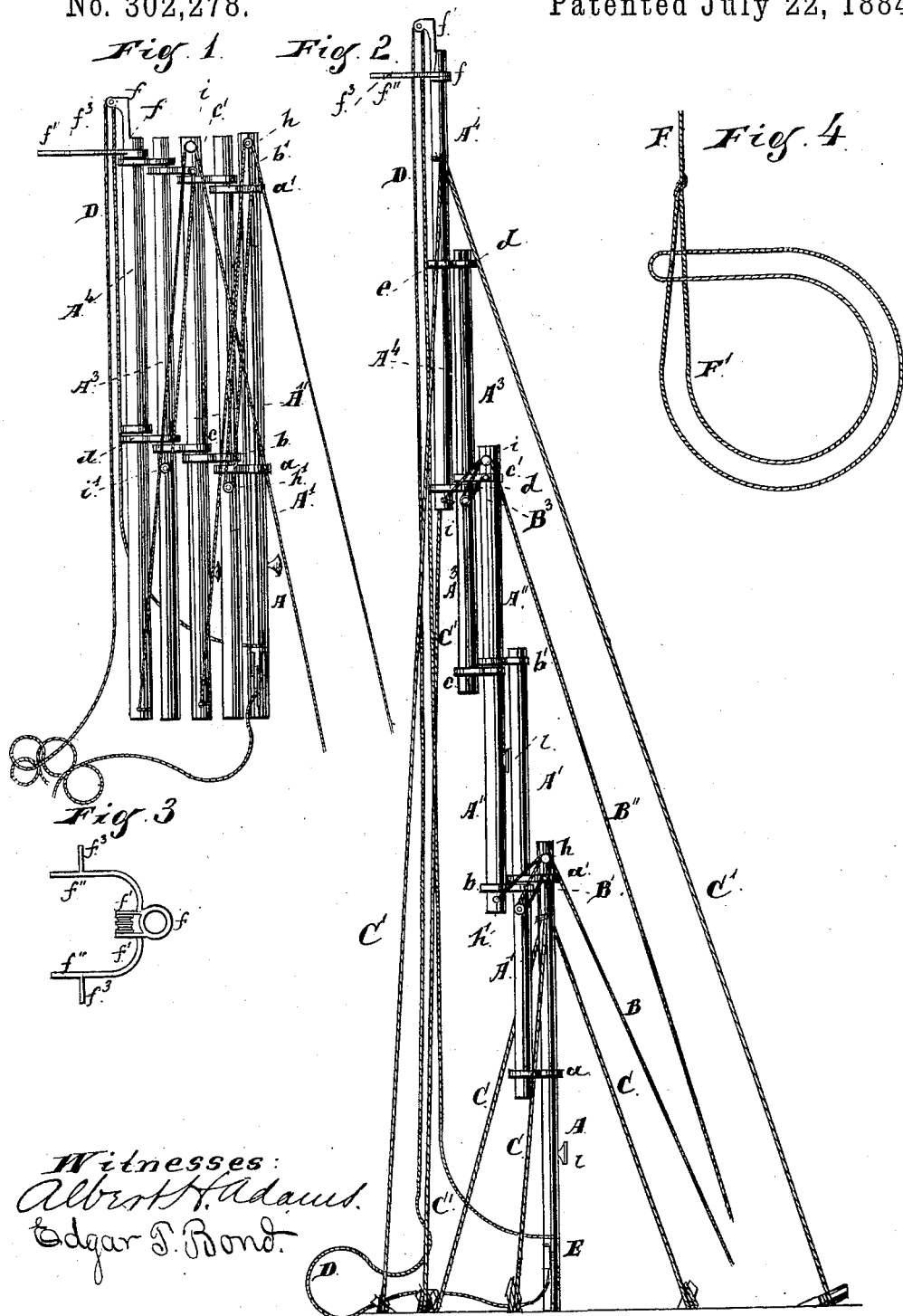
(No Model.)

2 Sheets—Sheet 1.

C. J. & E. J. O'SULLIVAN.
FIRE ESCAPE.

No. 302,278.

Patented July 22, 1884.



Witnesses:
Albert H. Adams.
Edgar T. Bond.

Inventor:
Cornelius J. O'Sullivan
Eugene J. O'Sullivan
By West & Bond
Attys.

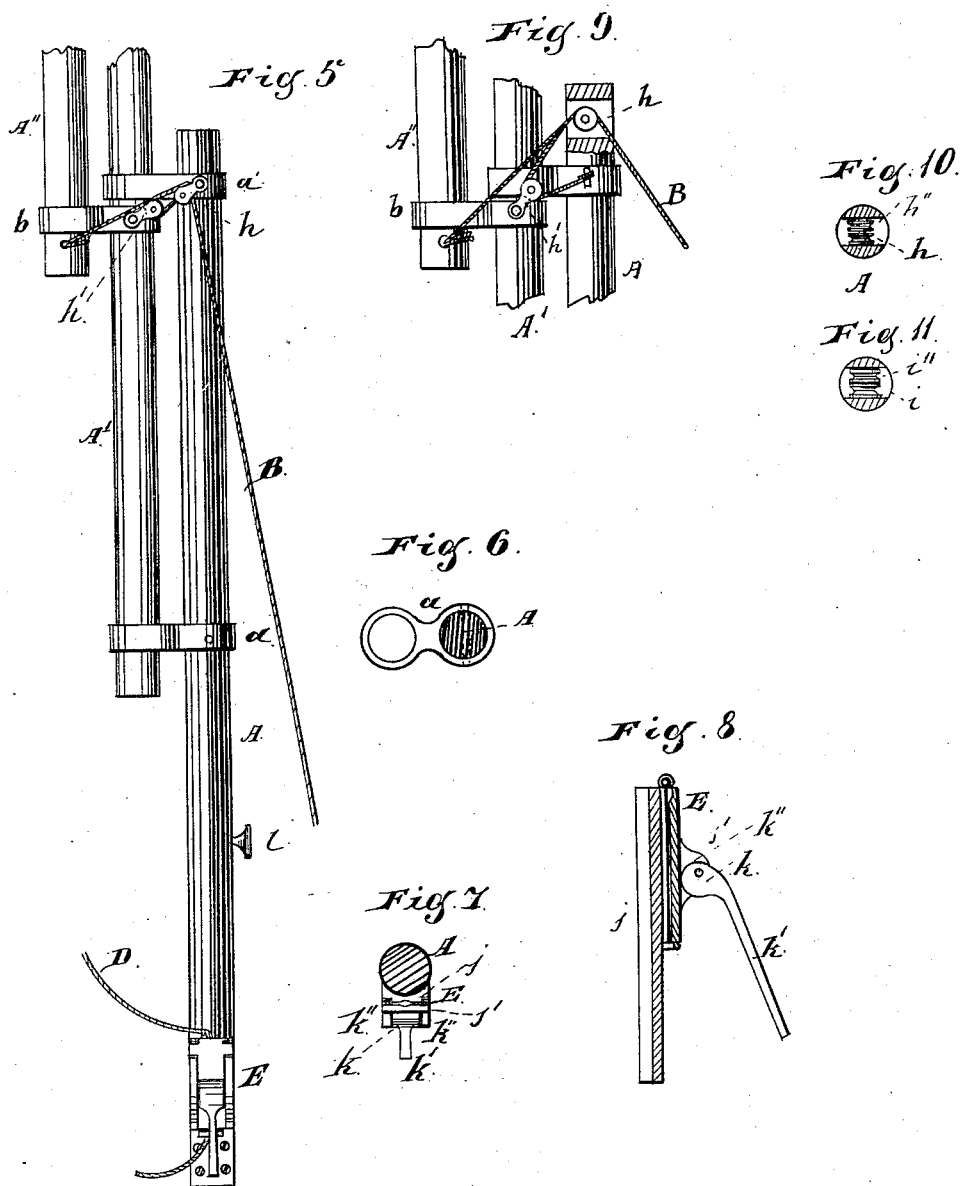
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Their Atty's-

UNITED STATES PATENT OFFICE.

CORNELIUS J. O'SULLIVAN AND EUGENE J. O'SULLIVAN, OF CHICAGO, ILL.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 302,278, dated July 22, 1884.

Application filed April 2, 1883. (No model.)

To all whom it may concern:

Be it known that we, CORNELIUS J. O'SULLIVAN and EUGENE J. O'SULLIVAN, residing at Chicago, in the county of Cook and State of Illinois, and citizens of the United States, have invented a new and useful Improvement in Fire-Escapes, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation showing the parts lowered; Fig. 2, a side elevation showing the parts elevated; Fig. 3, a detail showing the bracket for attachment to the window-sill or other part of the building; Fig. 4, a detail showing a rope with a loop for passing around the body of a person to assist in the descent; Fig. 5, an enlarged detail showing the arrangements of three masts and illustrating the manner of applying the elevating-ropes thereto; Fig. 6, a detail showing one of the loops or guides for the masts; Figs. 7 and 8, details showing the clamp for attaching an endless rope to the lower end of the first mast; Fig. 9, a detail illustrating another way of applying the hoisting rope and pulley; Figs. 10 and 11 details of the rope rollers or pulleys.

The object of this invention is to provide a portable fire-escape that can be readily carried from place to place, and easily elevated to any desired height and connected with a building to furnish a means of escape, and which will be light and at the same time strong and well adapted for the purpose for which it is intended; and its nature consists in providing a series of sliding masts, elevating-ropes, and other appliances, as hereinafter specifically described, and pointed out in the claims.

In the drawings, A , A' , A^2 , A^3 , A^4 represent masts or pieces of wood or other suitable material. These masts or pieces may be from fifteen to twenty feet in length, or any other length that may be desired, and of sufficient diameter or size in cross-section so as not to bend or break easily in use. As shown, they are of a circular shape in cross-section, and five of them are used; but a greater or less number may be used according to the height which it is desired shall be reached and the length of the mast or pieces, and they are made round or circular in cross-section, so as to slide easily in raising and lowering. At or near the center longitudinally of the mast or

piece A is a guide or support, a , and at or near the top of this same mast is another guide or support, a' , both of which have that portion which encircles the mast firmly secured thereto by means of screws or bolts or other suitable devices. The shape of these guides or supports a , a' may be that shown in Fig. 6, or of any other suitable shape, having two openings—one to receive the mast A and the other for the passage of the mast A' —the shape of the openings to conform to the shape of the masts in cross-section. At or near the center of the respective masts A' , A^2 , A^3 is secured a guide or support, b , c , and d , the guides or supports b , c , and d being similar in construction to the guide or support a , and on the mast A^4 , at or near the center, is secured a collar or band, e , to form a stop in raising and lowering the masts. The upper ends of the respective masts A' , A^2 , A^3 have each secured thereto a guide or collar, b' , c' , d' , respectively. The mast A' slides in the guides or collars a , a' on the mast A . The mast A^2 slides in the guides or collars b , b' on the mast A' . The mast A^3 slides in the guides or collars c , c' on the mast A^2 , and the mast A^4 slides in the guides or collars d , d' on the mast A^3 , it being understood that the collars or guides of the respective masts A' , A^2 , A^3 go with the mast, they being fastened to their respective masts in the manner described of securing the collars or guides a , a' to the mast A .

B is an elevating-rope, running up and over a grooved roller or pulley, h , mounted on the upper end of the mast A , the end of the rope passing over the pulley and being secured in any firm manner to the end of the mast A^2 , and B' is another rope, one end of which is secured to the guide or collar a' on the mast A , or at any other suitable point at the upper end of the mast, which rope B' passes down and under a grooved roller or pulley, h' , mounted on the mast A' below the guide or collar b , in the form of construction shown, the rope passing around such pulley and up and over a grooved roller or pulley, h^2 , mounted on the upper end of the mast A in line with the roller or pulley h , the end of the rope being then secured to the rope B . The rope B runs from the lower end of the mast A^2 up and over the grooved roller or pulley h , and thence down to be within reach of the party operating the

escape, and the rope B' runs from its point of attachment at the upper end of the mast A down and under the pulley h' , up and over the pulley h^2 , and is attached to the rope B at a point outside or below the roller or pulley. By this arrangement it will be seen that the rope B from the point where it is attached to the mast A² to the roller or pulley h' has the same amount of travel as the rope B' from its point of attachment down under the pulley h' and up and over the pulley h^2 , so that by pulling on the rope B both masts will be raised simultaneously their full length, the rope B' traveling by its manner of attachment the same distance as the rope B, but elevating its mast A' only half as far as the mast A² is elevated. The masts A³ and A⁴ are raised in substantially the same manner by means of the ropes B² B³, the rope B² being attached to the lower end of the mast A⁴, and passing up and over a grooved roller or pulley, i , mounted on the upper end of the mast A², and thence down to be within reach of the party operating the escape, and the rope B³ being attached at the upper end of the mast A² and passing down and under a pulley, i' , on the mast A³, and thence and over a pulley, i^2 , mounted on the mast A² in line with the pulley or roller i . The arrangements of these ropes and their pulleys i i' i^2 is the same as that already described for the ropes B and B' and their pulleys h h' h^2 , and the manner of elevating the masts A³ A⁴ by means of these ropes B² B³ is the same as that described for raising the masts A' A² by the ropes B B'.

Care guy-ropes attached at their upper ends to the mast A, and running down and attached to stakes or pins in the ground when the escape is in its elevated position; and C' are guy-ropes attached at their upper ends to the mast A⁴, and running down and secured to stakes or pins in the ground when the escape is extended.

D is an endless rope extending from a pulley or sheave on the upper end of the mast A⁴ down to the ground, when the escape is extended, and forming the means by which parties can descend or be lowered to the ground. As shown, the rope D passes over a pulley, g , mounted in arms f' , which extend out from a collar or band, f , on the end of the mast A⁴. As shown, the band or collar f has projecting out therefrom on each side arms f^2 , each of which has a side arm or rest, f^3 , and these arms f^2 can be placed in a window or other aperture in the building, and the side arms or rest, f^3 , be brought in contact with the window-casing or otherwise, and hold the escape from falling back when extended in position for use.

E is a clamp, located on the mast A near its lower end, and consisting of a backing-plate, j , which can be attached to the mast by screws, nails, or otherwise, and a biting plate, j' , hinged at its upper end to the plate j , between which plates j j' is a small space for the passage of the rope D, and a cam or eccentric,

k , having an arm or lever, k' , and pivoted between ears k^2 on the front face of the plate j in such manner as to bring the cam or eccentric k in contact with the front face of the plate j' . The rope D is passed between the plates j j' , the plate j being opened for this purpose, and the cam or eccentric k is forced down, forcing the plate j' inward and biting firmly the rope D, clamping it securely between these plates j j' , so that it can be maintained in a straight line, if so desired, from the pulley g down to or near the ground. The ropes B B² when the escape is lengthened or elevated, can be secured to a pin or catch, l , secured to the mast A, or these ropes may be secured in some other suitable firm manner to keep them taut and hold the several sections of the escape in their elevated position.

F is a rope, having therein a loop, F', to pass around and underneath the party's arms who is to be lowered, the other end of the rope being clamped or attached to the rope D in such manner that the party can slide down on the rope D, the object of the rope F F' being to prevent falling in case the party should accidentally loose his grip on the rope D, and other forms of supporting devices than the rope F F' can be used.

The operation is as follows: The party having the fire-escape in charge transports the same to the building or structure from which persons are to be rescued, and places the same in position so that when elevated its upper end will reach the window or aperture from which the escape is to be made. The escape is elevated or lengthened by pulling on the ropes B B², which raise, respectively, the masts A', A², A³, and A⁴, and when the desired height is reached the upper end of the escape is hooked onto the window-sill, casing, or other point of attachment by means of the arms f^2 f^3 or other attaching devices. The escape is now ready for use, the rope D depending from the upper end of the escape down to the ground, as shown in Fig. 2. The person to be rescued can take hold of this rope D, and will slide down thereon either with or without the assistance of the support F F', or such party can be lowered by persons on the ground taking hold of the opposite side of the rope D and allowing the rope to run down with the rescued party thereon. The grooved rollers or pulleys h h^2 can be mounted in a suspending hanger secured to the upper end of the mast A, or to the band a' , as shown in Figs. 2 and 5, or they could be located in a mortise in the upper end of the mast A, as shown in Figs. 9 and 10, or located in some other suitable manner, to allow the elevating-ropes to run thereover. The guy-ropes C C' can be attached to any suitable object, or in case no feasible means of attaching them is at hand persons can hold them and maintain the escape in a steady position. When the endless rope D is clamped to the lower end of the mast, that side of it which is not attached is to be used for the descent of the person to be

rescued. As shown, the masts are round in cross-section; but they could be square, triangular, hexagonal, or other shape in cross-section, so long as their shape would not interfere with the elevating and lowering, and the guides or stays by which they are secured together should have an opening corresponding in shape to the shape of the mast. The elevating-ropes could pass under a tackle or pulley-block secured to the lower end of the first mast, and could be connected with a team, engine, or other motive power, if desired, for the purpose of raising the mast.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a fire-escape having a series of sliding masts or pieces, the combination therewith of the rope B, passed from the mast A to the mast A' and connected thereto, and the rope B', connected with the mast A and passed thence to

the mast A' and back to the mast A and then connected to the rope B, substantially as described.

2. In a fire-escape having a series of sliding masts or pieces, the combination, with one of said masts, of the arms f^2 , projecting from said masts, and provided with side arms, f^3 , substantially as described.

3. In a fire-escape having a series of sliding masts or pieces, the combination, with one of said masts, of the collar f , provided with arms f' , f^2 , and f^3 , and the endless rope D, passing over a pulley attached to the arm f' , substantially as described.

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Witnesses:

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