J. N. WIGGS.

FIRE ESCAPE.

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Fig. 1.

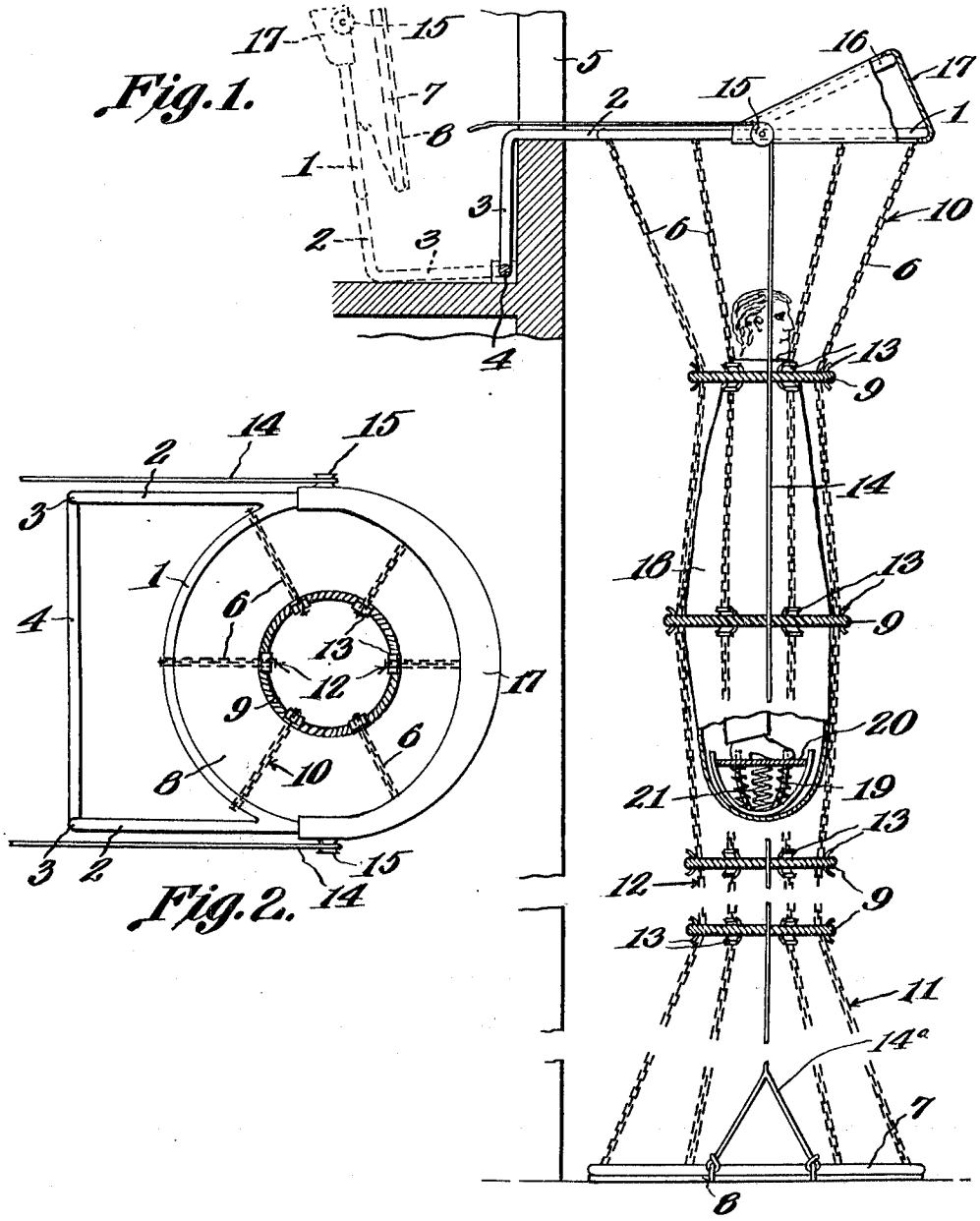


Fig. 2.

Witnesses

J. R. Downey

M. E. McCarthy

Jonathan N. Wiggs,
Inventor

by C. A. Snow & Co.
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JONATHAN N. WIGGS, OF SENATH, MISSOURI, ASSIGNOR OF ONE-HALF TO WILLIAM T. CANEER, OF SENATH, MISSOURI.

FIRE-ESCAPE.

1,116,189. Specification of Letters Patent. Patented Nov. 3, 1914.

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To all whom it may concern:

Be it known that I, JONATHAN N. WIGGS, a citizen of the United States, residing at Senath, in the county of Dunklin and State of Missouri, have invented a new and useful Fire-Escape, of which the following is a specification.

The present invention appertains to fire escapes, and aims to provide a novel and improved apparatus of that character.

The invention contemplates the provision of a fire escape embodying a chute of unique construction, and adapted to be dropped from a window, exit or other opening in a building, to enable the occupant or occupants of the building to readily descend through the chute to the ground in safety.

The invention has for another object, to provide in connection with the peculiar chute, a bag adapted to hold the person descending in the chute, and especially adapted to pass readily down the chute and to enable the occupant of the bag to control the velocity of his descent.

A still further object of the invention is to provide novel means for supporting the chute, both when it is collapsed or extended, and means for folding the apparatus in compact collapsed condition, whereby the same may be normally positioned upon the inner side of the window, exit, or the like, and whereby the apparatus may be readily projected through the window and then released to drop the chute.

It is also within the scope of the present invention to provide a fire escape of comparatively simple and inexpensive construction, which may be applied to various buildings, which may be compactly folded or collapsed and swung to inoperative position when not in use, and which will be simple, convenient, practical and efficient in its use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention has been illustrated in its preferred embodiment in the accompanying drawing, wherein—

Figure 1 is a side elevation of the apparatus in unfolded condition, parts being broken away, and the idle or inoperative position of the apparatus being indicated in dotted lines. Fig. 2 is a plan view of the apparatus.

The present apparatus embodies an upper ring or supporting member 1, which has attached to opposite sides thereof, a pair of brackets 2, which project tangentially in the same direction from the ring 1 and which are parallel. Those ends of the brackets 2 remote from the ring or annulus 1, are bent angularly, as at 3, and are fulcrumed or pivoted as at 4, below the sill of the window or opening 5 in the building, whereby the supporting frame constituting the ring 1 and brackets 2 may be swung inwardly and outwardly within the room and through the window 5 as seen in the dotted and full line positions in Fig. 1.

The chute which is hung from the ring 1, comprises an annular series or plurality of chains or flexible elements 6 which have their upper ends attached to the ring 1, and which have their lower or free ends attached to a second ring or annulus 7. A plate or disk 8 of any suitable character is secured to the bottom of the ring 7 and constitutes the bottom of the chute which is adapted to rest upon the ground, sidewalk, or lower surface, when the chute is dropped as seen in Fig. 1.

It is of course understood that the chains or flexible elements 6 are of sufficient length so as to extend to the ground from the upper or supporting ring 1 and that they may be constructed in various lengths, according to the height of the window 5. Any suitable number of chains 6 may be used.

The chains or flexible elements 6 are surrounded or girdled at longitudinally or vertically spaced points or at suitable intervals, with annular elastics or coiled wire springs 9. These elastics or springs 9 are spaced suitably apart, according to the circumstances, and are normally of a diameter considerably smaller than the diameters of the rings 1 and 7, and are adapted to be expanded when the person descends through the chute as will hereinafter appear. The

chains 6 diverge from the upper elastic or spring 9 to the ring 1, as designated at 10, and diverge from the lower elastic or spring 9 to the lower ring 7, as indicated at 11, while those portions of the chains 6 between the uppermost and lowermost elastics or springs 9 are normally parallel, and provide a constricted expansible body portion for the chute, as indicated at 12. The chains 6 pass through the annular elastics or springs 9, and the chains and elastics or springs are fastened together to hold the elastics in place. To this end, vertically curved plates 13 are preferably secured to the inner sides of the elastics or springs 9, and have the chains 6 attached thereto, and these plates 13 also serve as deflectors for preventing the chains 6 being bent excessively over the elastics or springs 9 when a person is descending through the chute, and which would be liable to prove injurious or detrimental.

The chute constituting the spaced and yieldably connected chains or flexible elements is adapted to be collapsed within a small compass, when the ring 7 and bottom 8 are moved upwardly adjacent the ring or supporting member 1, as will be evident, and to facilitate handling the chute, a plurality of cables 14 have lower crotch portions 14ª attached to the ring 7 and bottom 8 and the cables are trained over pulleys 15 carried by the supporting ring 1 so that the upper ends of the cables 14 may be extended through the window 5. Thus, when the cables 14 are drawn upwardly, the lower ring 7 and bottom 8 may be pulled up against the supporting ring 1, to collapse the chute, and the cables 14 may then be tied to hold the apparatus in collapsed or folded condition when not in use.

The outer portion of the ring 1 is equipped with a guard, which embodies an arcuate inclined rod 16 having its terminals secured to the sides of the ring 1, and a fabric gore 17 attached to the rod 16 and outer portion of the ring 1. This guard facilitates the entrance of persons into the upper end of the chute, and also prevents accidents which might occur if the outer portion of the ring were unprotected.

In connection with the chute, there is employed a bag 18, constructed of asbestos or other fire proof material, and in which the person descending the apparatus may be held. Within the bottom of the bag 18 is disposed a dished spider 19, which holds the lower end or bottom portion of the bag in a rounded or somewhat pointed form, to enable the bag to pass down the chute without interference. A supporting plate 20 is preferably disposed within the spider 19 for supporting the person within the bag 18, and one or more springs 21 are disposed between the supporting plate and the center of the spider 19 for yieldably supporting the plate 20 in connection with the flexibility of the arms of the spider, to reduce the shock or concussion when the bag strikes the bottom of the chute or the ground.

As will be evident, the apparatus may be readily installed by simply anchoring or pivoting the angular end portions 3 of the brackets 2 within the room below the sill of the window 5, in order that the same may be swung into and out of the window.

It is of course understood that any number of the fire escapes may be distributed throughout various portions of a building, according to the dictates of necessity. In this connection, it will also be evident that any number of the bags 18 may be distributed throughout the building in order that the bags as well as the fire escapes will be conveniently accessible by the occupants in cases of emergency.

When the apparatus is not in use, the same may be held in compact folded position, by means of the cables or elements 14, and the entire apparatus may be swung within the room clear of the window 5, as seen in dotted lines in Fig. 1. The angular portions 3 of the brackets 2 will then rest upon the floor, and the other parts of the apparatus will stand upwardly in order that they may be readily pushed through the window 5 when the apparatus is to be unfolded or extended. In case of fire or other disaster, the occupant who wishes to escape, may readily push or swing the frame and collapsed chute outwardly through the window so that the brackets 2 will seat upon the sill of the window to thereby support the ring 1 in a horizontal outstanding position. By untying or releasing the cables 14, the chute will drop to the ground and will hang from the ring 1, as seen in Fig. 1. A person escaping can slip one of the bags 18 over his limbs and body, and then after sitting upon the sill of the window 5 and the inner portion of the ring 1, he may readily enter the chute to descend therethrough. It is desirable for the occupant of the bag to hold his head as well as his arms within the bag, while descending the chute, although the arms as well as the head may be left exposed if it is not necessary to pass through the flames in descending. The diverging portions 10 of the chains 6 which are attached to the ring 1 and which provide an enlarged or flared upper end for the chute, will enable the person after passing through the ring 1, to readily enter the contracted body portion of the chute. Then, the bag 18 containing the person escaping, will descend and gravitate through the chute, and in doing so will pass through the successive elastics or springs 9 which are of such constricted diameter as to necessitate their expansion as the bag 18 passes therethrough.

In this manner, the descent of the bag 18 will be retarded, and it is an easy matter for the person to control the speed of descent, by spreading his arms more or less, to cause the elastics or springs 9 to expand and contract with more or less tension. Then, when the bag 18 reaches the lower end of the chute, it will land upon the bottom 8, the spring or springs 21 and resilient spider 19 reducing the concussion or shock to a minimum, to avoid injury to the occupant of the bag, and the occupant may then readily pass through the portions 11 of the chains 6, or may be drawn out of the lower end of the chute by bystanders.

It will be noted that the spider 19 will properly direct the bag in its downward course through the chute, and to prevent the chains 6 from being flexed excessively immediately above the elastics 9, which might check or arrest the downward movement of the bag, this action also being facilitated by the deflecting plates 15 as above intimated.

Having thus described the invention, what is claimed as new is—

1. In a fire escape, the combination with a chute comprising a plurality of flexible elements, and elastics yieldably connecting them, of a bag adapted to hold a person and descend through the chute, whereby the occupant of the bag in spreading his arms may control the descent of the bag through the elastics.

2. In a fire escape, the combination with a chute comprising a plurality of flexible elements, and elastics yieldably connecting them, of a bag adapted to hold a person and depend through the chute, and a member carried by the bottom portion of the bag to direct the bag through the chute.

3. In a fire escape, the combination with a chute comprising a plurality of flexible elements, and elastics yieldably connecting them, of a bag adapted to hold a person and depend through the chute, a member carried by the bottom portion of the bag to direct the bag through the chute, and a yieldably supporting plate carried by the said member within the bag.

4. In a fire escape, a supporting ring, and a chute hung therefrom and including a plurality of flexible elements attached to the said ring and spaced elastics yieldably connecting the said elements, the elastics being of smaller diameter than the said ring, the upper portions of the flexible elements diverging from the upper elastic to the said ring.

5. In a fire escape, a supporting ring, a chute hung therefrom and including flexible elements and spaced elastics yieldably connecting them, the elastics being of smaller diameter than the said ring, the upper portions of the flexible elements diverging and being attached to the said ring, and a bottom plate, the lower portions of the said flexible elements diverging and being attached to the said bottom plate.

6. In a fire escape, a supporting ring, a chute hung therefrom and including flexible elements and spaced elastics yieldably connecting them, the elastics being of smaller diameter than the said ring, the upper portions of the flexible elements diverging and being attached to the said ring, a bottom, the lower portions of the said flexible elements diverging and being attached to the said bottom, means for supporting the bottom adjacent the said ring to hold the chute collapsed, and a bracket to which the said ring is attached and adapted to be anchored within a room through the window of which the ring and bracket are projected.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JONATHAN N. WIGGS.

Witnesses:
A. J. HARKEY,
R. W. TUCKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."