March 10, 1925. 1,528,803

J. TOCK ET AL

FIRE ESCAPE

Filed May 6, 1924 2 Sheets-Sheet 1

Fig. 1.

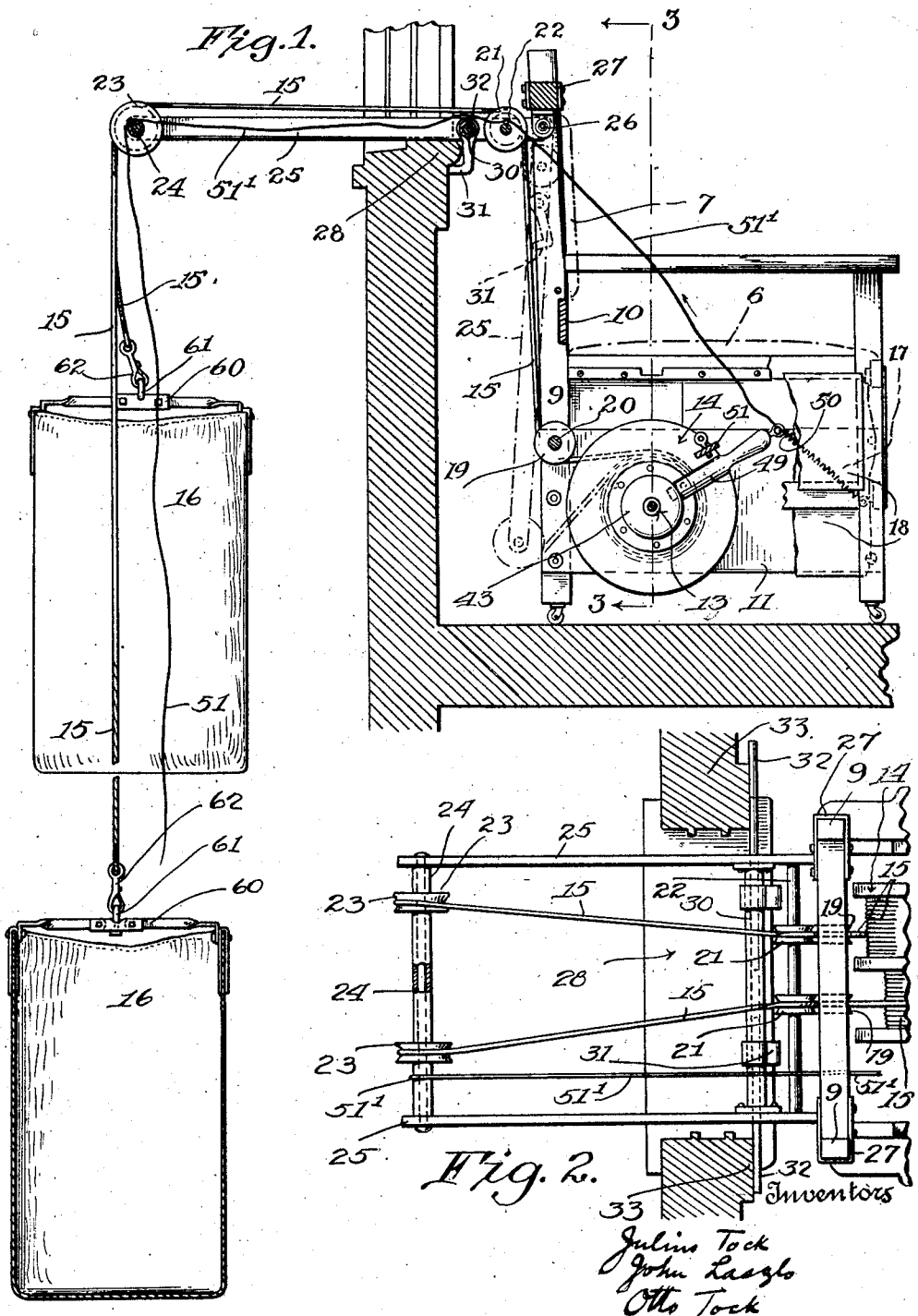


Fig. 2.

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Julius Tock

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by Geo. E. Dew Attorney

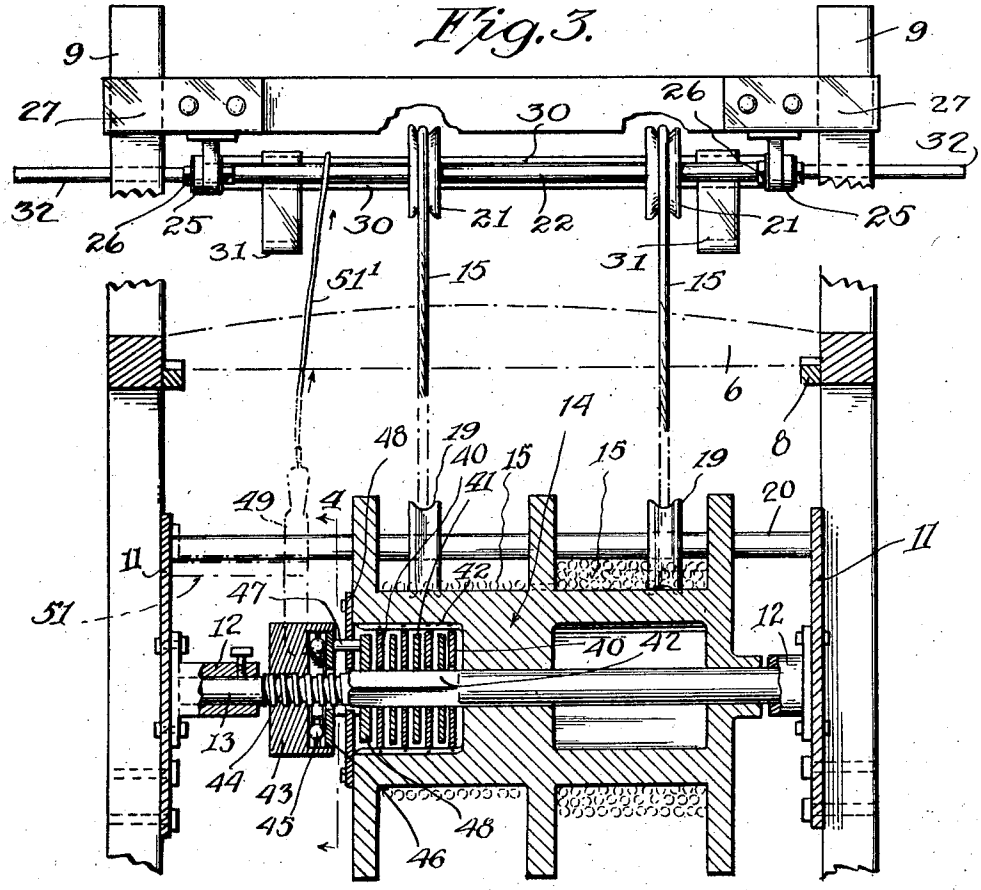
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Fig. 3.



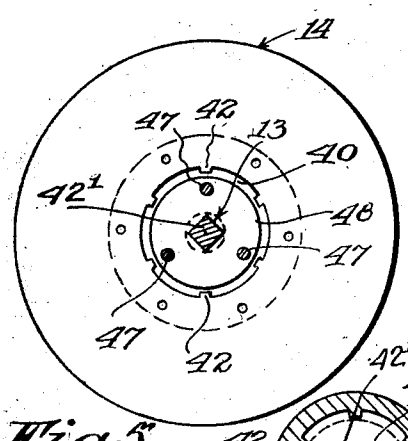


Fig. 5.

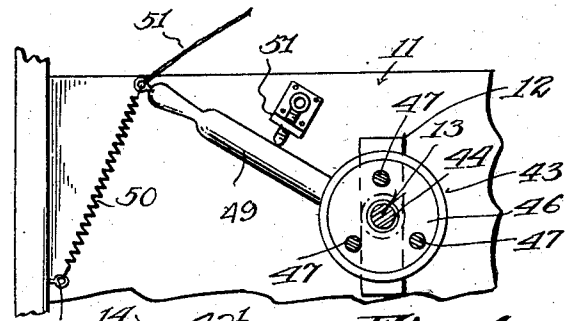


Fig. 4.

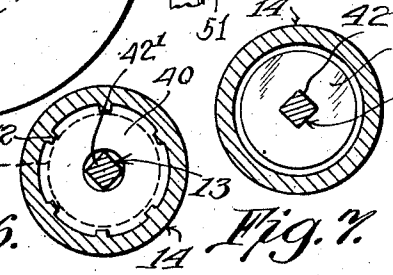


Fig. 6.

Fig. 7.

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by [illegible]
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Patented Mar. 10, 1925. 1,528,803

UNITED STATES PATENT OFFICE.

JULIUS TOCK, JOHN LASZLO, AND OTTO TOCK, OF GREIG, NEW YORK, ASSIGNORS TO THE PORTABLE FIRE ESCAPE COMPANY, OF LOWVILLE, NEW YORK, A CORPORATION OF NEW YORK.

FIRE ESCAPE.

Application filed May 6, 1924. Serial No. 711,407.

To all whom it may concern:

Be it known that we, JULIUS TOCK, JOHN LASZLO, and OTTO TOCK, LASZLO being a subject of the Government of Hungary and JULIUS and OTTO TOCK being citizens of the United States, residing at Greig, in the county of Lewis and State of New York, have invented certain new and useful Improvements in Fire Escapes, of which the following is a specification.

This invention relates to fire escapes and particularly to that class thereof in which the fire escape mechanism is associated with an article of furniture, such as a chair, the construction being such that the fire escape mechanism may be stored or contained in large part within the limits of the body of the chair, so as to not interfere with the use of the chair as an article of furniture, but on the occasion of a fire, the chair may be moved to a window, and the fire escape mechanism then set up in a manner to be hereinafter described for the purpose of lowering persons from the window, the lowering devices including two bags connected to a reel in such manner that as one bag descends on the outside of the building the other ascends. The operation of the reel is controlled by a brake which can be manipulated at the chair itself by means of a handle, or from the ground below, or by a person descending in one of the bags, by means of a rope connected to said handle.

The apparatus includes a pivoted frame which normally hangs behind the back of the chair but which can be swung up in position to be extended out of the window, and the fall ropes pass over pulleys on this frame so that the bags are held out far enough to clear the building. The frame may be adjusted on the chair back to suit window sills of various heights. The bags referred to, when not in use, can be stored under the seat of the chair, the seat and back being removable to permit quick access to the parts when a fire occurs.

The mechanism also includes an improved reeling arrangement and a multiple disk brake which controls the unwinding of the reel.

The construction will be more fully evident from the following description and the accompanying drawings in which Fig. 1 is a side elevation, partly in section, showing the apparatus as in use. Fig. 2 is a plan view of the extensible frame projecting thru the window. Fig. 3 is a vertical section on the line 3—3 of Fig. 1. Fig. 4 is a detail in section on the line 4—4 of Fig. 3. Figs. 5, 6 and 7 are details in cross-section of the drum brake.

Referring specifically to the drawings, a chair is shown having a removable seat 6 and a removable back 7. These fit in suitable recesses in the chair frame, the seat being supported on the side bars 8 and the back fitting between the back frames 9 and the cross bar 10.

Under the seat, a pair of plates 11 are bolted to the side frames of the chair, and these plates support brackets 12 in which the ends of a shaft 13 are mounted and fixed in any suitable way. A drum 14 is mounted to turn on this shaft, and it is divided into two sections each of which receives a cable 15 wound thereon, in opposite directions. To each cable is or may be connected a bag 16 and these bags, when not in use, may be collapsed and confined in a space indicated at 17 under the front part of the seat and behind a leather or other cover 18 forming a finish for the front of the chair. From each drum section each cable passes over a pulley 19 mounted on a cross rod or shaft 20 supported between the back posts of the chair, and thence each cable extends over a pulley 21 on a shaft 22 and a pulley 23 on a hollow shaft 24, these shafts being supported by a swinging frame consisting of two side bars 25 pivoted at their inner ends at 26 to adjustable brackets 27 mounted on the upper ends of the back posts 9 of the chair. Each bracket 27 has a sliding fit upon the post, and when occasion arises it may be adjusted up and down so that the height of the swinging frame 25 can be made to agree with the height of the window sill indicated at 28. When not in use the frame 25 is swung down behind the chair as indicated in dotted lines in Fig. 1. When in use, it is swung up, adjusted for height, and extended out of the window as shown in full lines in Fig. 1, the chair being moved up toward the window for this purpose. The frame is also provided with a hollow shaft 30 extending between the bars 25, and pivotally mounted upon this are a pair of hooks 31 which may be engaged under the lip of the window sill to hold the frame in place, and said hollow

shaft also contains a pair of rods 32 slidable into and out of the ends of the shaft, and when slid out these rods will bear against the sides of the window casing indicated at 33 and so prevent the chair from being upset or the frame being displaced.

The drum 14 is normally prevented from turning by a multiple disk brake consisting of plates 40 and 41 contained within a hollow in one end of the drum. The plates 40 are keyed to the drum by means of ribs 42 on the drum which engage in suitable notches in the outer edges of the plates, and the intervening plates 41 are slidably mounted on a squared part 42′ of the shaft 13. By pressing these plates together a disk braking action is effected. They are normally pressed together by means of a nut 43 mounted adjacent the end of the drum upon a threaded part 44 of the shaft. Carried within the nut is a ball bearing 45 pressing against a plate 46 which bears against three pins 47 which are fixed to a ring 48 beside the first plate 40, the pins being guided in holes in a plate 48 fixed to the end of the drum. A handle 49 projects from the nut 43 and is normally pulled by a spring 50, connected to the handle and to a bracket 51′ on the chair, in such direction that the nut travels inwardly and by pressure on the pins 47 forces the disks together so that the drum cannot turn. By pulling up on the handle 49, against the tension of the spring 50, the nut backs off and the disks then lose contact, permitting the drum to be turned by the weight of a person descending in one of the bags. The handle 49 may be operated by a person standing beside the chair, or it may be operated from the outside by a cord 51′ connected thereto, this cord extending over the shafts 22 and 24 and then dropped down to the ground or in convenient position to be grasped by a person in one of the bags.

In use, the bags as stated will be stored in the chair and the extensible frame will be folded down against the back of the chair, which may then be used for that purpose and moved around the room at will. When a fire occurs, the frame 25 is swung up and the chair is backed up to a window and the holding devices for the frame are engaged with the window casing, the frame being extended thru the window and the bags placed outside. Women or children, for example, may then be placed in the upper bag and a person beside the chair by pulling up on the handle 49 will release the brake permitting the reel to unwind and the persons to descend to the ground. The descent can be checked or controlled as desired. As the bag containing such persons descends, the other bag ascends, the drum sections being oppositely wound, and additional persons may then be lowered. The last person when descending can control the bag by means of rope 51′. By these means the device is available for the successive escape of a number of persons. The brake device is particularly effective since the use of the multiple disks avoids all shocks, and the brake being normally applied there is less chance for a panic-striken person to let it go suddenly and drop freely to the ground. The release of the brake is accomplished either by the act of a person in the building or by a person descending in one of the bags. The top frame of each bag is conveniently provided with a cross bar 60 and an eye 61 to which the rope 15 may be connected by hook 62.

The invention is not limited to the particular details shown, but may be modified in various ways within the scope of the following claims.

We claim:

1. The combination of a chair, a frame pivoted to the back of the chair and adapted to be extended thru a window, guide pulleys on the frame, a drum supported in the chair frame, a cable connected to the drum and extended over said pulleys, a bag connected to the end of the cable, and means to control the rotation of the drum, said frame being provided with a hook to engage the window sill and with extensible rods to engage the stiles of the window casing.

2. The combination stated in claim 1, the pivoted connections of the frame with the chair including brackets adjustable vertically on the posts of the chair back.

In testimony whereof, we affix our signatures in presence of two witnesses.

JULIUS TOCK.
JOHN LASZLO.
OTTO TOCK.

Witnesses:
W. F. Power,
I. S. Vale.