

Dec. 13, 1955

F. E. HYSLOP, JR., ET AL

2,726,845

PORTABLE ELEVATOR

Filed April 29, 1952

FIG. 1.

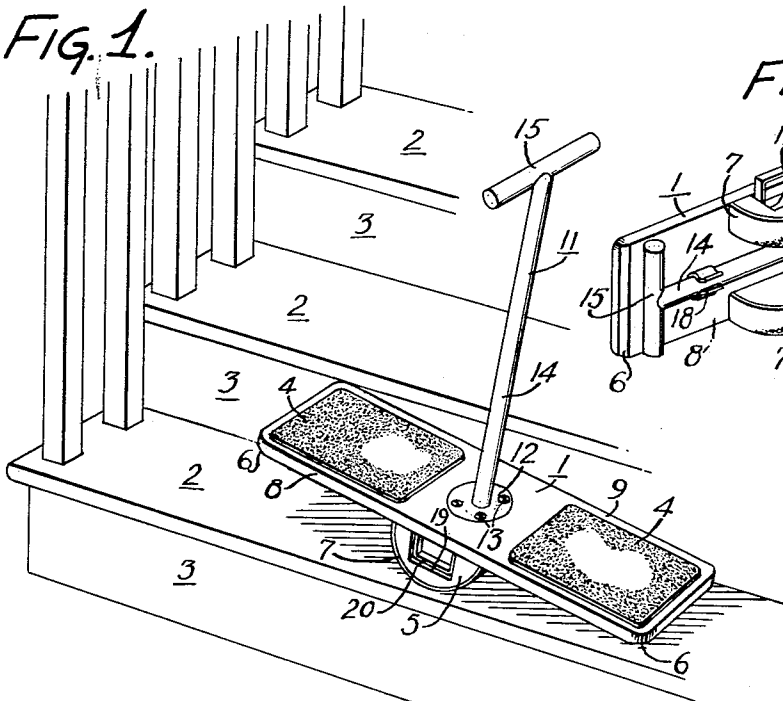


FIG. 5.

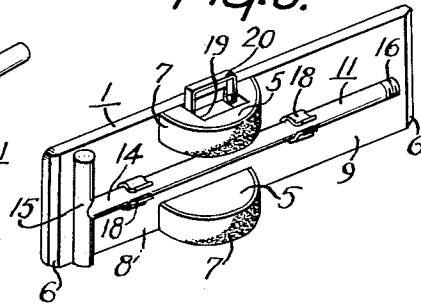


FIG. 2.

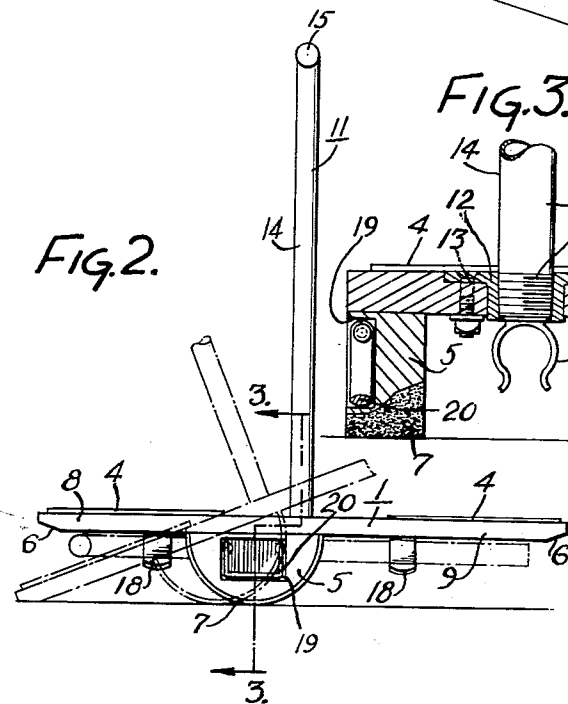


FIG. 3.

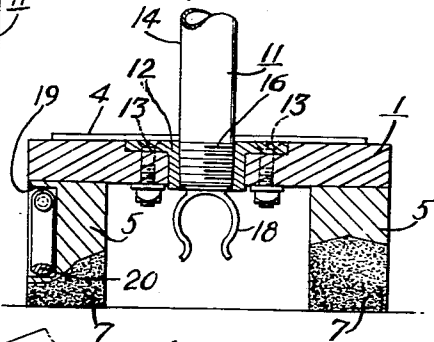
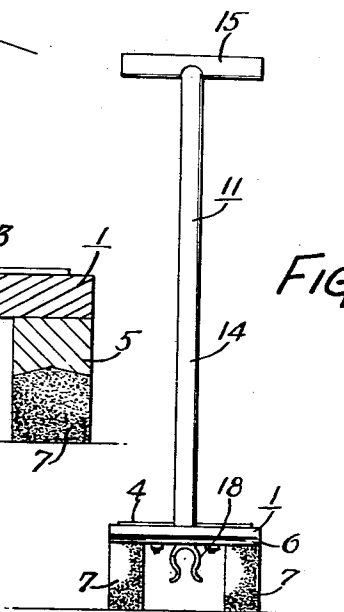


FIG. 4.



Inventors:
Francis E. Hyslop Jr.
Lois Boe Hyslop
by their Attorneys
Howson & Howson

1

2,726,845

PORTABLE ELEVATOR

Francis E. Hyslop, Jr., and Lois Boe Hyslop,
State College, Pa.

Application April 29, 1952, Serial No. 285,033

5 Claims. (Cl. 254—131)

The present invention relates to elevators and more particularly to a manually operated portable elevator for aid in climbing steps.

A primary object of the invention is to provide a simple and practical portable elevator device operative without strain by one individual to elevate another step by step without requiring movement on the part of the latter other than those involved in locomotion in an approximately flat plane.

Another object is to provide an elevator of the stated class which utilizes the weight of one individual to raise another from the level of one step to that of another.

A further object is to provide an elevator device which is relatively light in weight so as to minimize exertion by the operator in shifting the device from step to step.

Still another object is to provide an elevator which may be reduced to the form of a compact package for transportation.

A still further object is to provide an elevator of the stated class wherein the exact weight of the operator is not a critical factor in the operation of the device.

In the drawing:

Fig. 1 is a perspective view of an elevator made in accordance with the present invention in position for use on a staircase;

Fig. 2 is a side elevational view of the elevator illustrated in Fig. 1;

Fig. 3 is an enlarged sectional view taken on the line 3—3 of Fig. 2;

Fig. 4 is an end elevational view of the elevator; and,

Fig. 5 is a perspective view of the elevator when broken down into a compact package for carrying.

Referring to the drawing the elevator comprises a platform 1 which is adapted to rest as hereinafter described on the steps of a staircase comprising conventional treads 2 and risers 3. The platform is generally rectangular in shape being sufficiently long to allow two persons to stand comfortably thereon and of a width corresponding approximately to the width of the treads 2. In the present instance each end of the platform 1 is provided on its upper surface with a tread pad 4. The platform is supported in an elevated position on the tread 2 by a pair of semi-cylindrical rocker elements 5, 5 which underlie the platform along opposite edges at a point offset in the present instance from the transverse center line.

The rockers thus divide the platform into a short side 8 and a long side 9 affording a favorable leverage as hereinafter described.

The rockers 5, 5 serve as a fulcrum to permit the platform to be rocked alternately from the position illustrated in Fig. 1 to the position illustrated in broken lines in Fig. 2, wherein the extremities of the long and short sides respectively of the platform engage the upper surface of the stair tread 2. Preferably each extremity of the platform is beveled as indicated at 6, 6 to permit the upper surface of the platform to lie substantially flush with the surface of the tread. To prevent slipping on the stair tread, each rocker may be provided along its

2

peripheral edge with a scuff strip 7. The scuff strips not only prevent the rockers from slipping on the stair tread but also compensate for any unevenness of the upper surface of the tread, providing a stable seating surface for the elevator.

Centrally of the platform 1, a handle 11 projects upwardly to a height suitable for convenient manipulation of the elevator. The handle is detachably secured to the platform by means of an internally threaded socket 12 which, in the present instance, is secured to the platform by bolts 13. In the present instance the socket is inset in a recess in the platform so as to present a substantially flat upper surface when the handle is disengaged from the socket. The handle 11 comprises a rod 14 which has at its outer extremity a suitable cross arm 15 providing hand grips for those using the device. The rod is threaded at its lower extremity 16 for releasable engagement with the internal threads of the socket 12.

Operation of the device is relatively simple. The individual to be elevated takes a stand adjacent the first step of the staircase and the elevator is placed alongside the riser and is rocked to the left so that the short side 8 is disposed flush with the supporting surface, as indicated in broken lines in Fig. 2. The said individual then steps on to the tread pad 4 and supports himself thereon by grasping the banister of the staircase or the hand grip 15. The operator then brings his weight to bear on the outer end of the long side 9 thereby pivoting the device on the rockers 5 until the long side rests on the supporting surface as indicated in Fig. 1. By reason of the favorable leverage afforded by the offset rocker elements, the operator may be lighter than the passenger without adversely affecting the operation. The outer end of the short side 8 will then be approximately on a level with the tread of the first step whereby the passenger may step off laterally on to the tread. The operator then lifts the elevator by the handle to the tread of the first step and the aforescribed operation is repeated, the final position of the elevator being shown in Fig. 1. This series of operations continues until the passenger has been elevated one step at a time to the top of the stairs. The handle may then be removed to afford a compact package for transportation, as illustrated in Fig. 5.

To provide a compact package the platform is provided on its under side with means for securing the detachable handle 11 to the platform. To retain the rod in position on the underside of the platform, a pair of spring clips 18, 18 is provided on the under surface of the platform as indicated in Fig. 5. The clips are so positioned and dimensioned that when the handle is removed and the elevator is in use the clips will not interfere with the operation.

To provide for carrying of the package, one rocker is cut out at one side, as indicated at 19, for reception of a pivoted handle 20. The handle is received within the recess 19 when the elevator is in use so that it will not protrude and interfere with the operation of the elevator.

In order to provide a device which is easily carried and manipulated, we prefer to fabricate the device of relatively light materials. For example, we find that sugar pine is especially suitable for the primary component of the platform 1 and the rockers 5. The handle, on the other hand, we prefer to make out of aluminum tubing which is quite sturdy and yet very light in weight. The tread pads 4 and the scuff pads 7 are preferably formed of roughened rubber so as to provide a firm gripping surface on these members. In using these materials, we find the assembled unit weighs approximately 6 lbs. and is therefore quite easily carried about and readily operated. The device is susceptible of manufacture from various other materials, however, such as metal or plastic. Metals such as steel, aluminum, or the like are preferable by

3

reason of their relatively favorable weight to strength ratio.

While we have described the invention with particular reference to a preferred embodiment, structural modification in detail is possible within the scope of the invention as defined in the appended claims.

We claim:

1. In a portable stairway elevator of the character described, an elongated platform corresponding approximately in width to the width of a conventional stair tread, rocker means of substantially shorter length than said platform secured to the bottom thereof in a zone intermediate the ends, and adapted to seat on a stair tread surface so as to serve as a fulcrum about which said platform may be rocked between alternative positions wherein the respective terminal ends of the platform contact the said tread, and a handle member projecting upwardly from the central portion of the platform, the said rocker means being dimensioned and positioned longitudinally of said platform so that when one said terminal end engages the tread supporting the rocker means, the opposite terminal end will be elevated above the tread to an extent corresponding to the vertical distance between said tread and the tread of the next higher step.

2. An elevator according to claim 1 wherein the said rocker means comprises a pair of spaced-apart rocker elements, each provided with a thin scuff strip of friction material conforming with and positioned along the outer peripheral edges of the element to constitute a seating surface for engagement with said stair tread.

4

3. An elevator according to claim 2 wherein said handle member is detachably secured to said platform, and wherein further means is provided on the undersurface of said platform for reception of said handle member when the latter is detached from said platform.

4. An elevator according to claim 3 wherein said last-mentioned means comprises resilient clips provided for positively retaining said handle member between said rocker elements.

5. A portable elevator device according to claim 1 wherein said rocker means is recessed on one side, and wherein further a hand grip is provided in said recess for carrying the device.

References Cited in the file of this patent

UNITED STATES PATENTS

604,833	Muller	May 31, 1898
745,545	Webb	Dec. 1, 1903
966,974	Williams	Aug. 9, 1910
1,244,371	Reynolds	Oct. 23, 1917
1,445,219	Larson	Feb. 13, 1923
2,038,047	Johnson	Apr. 21, 1936
2,089,336	Brown	Aug. 10, 1937
2,466,760	Buchhagen	Apr. 12, 1949

FOREIGN PATENTS

197,253	Germany	Apr. 9, 1908
659,280	Great Britain	Oct. 17, 1951