

No. 749,736.

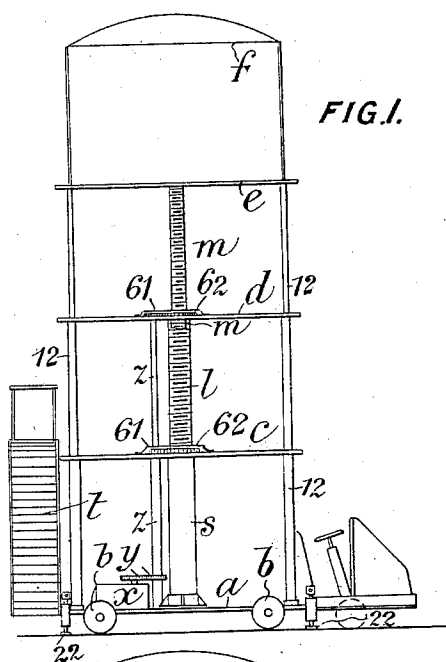
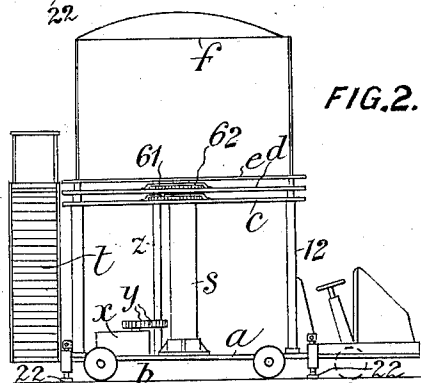
PATENTED JAN. 19, 1904.

V. JETLEY.
FIRE ESCAPE.

APPLICATION FILED JAN. 19, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:
Attest:
P. M. Lominer

Inventor:
by Victor Jetley:
Harry M. Mow
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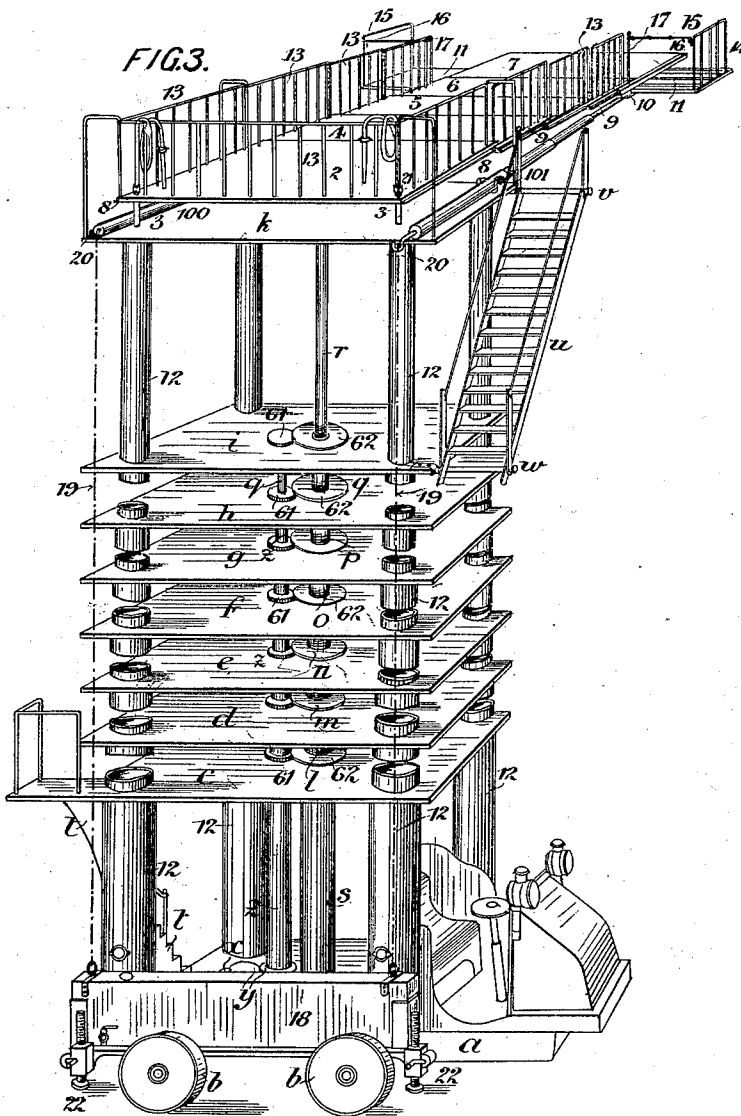
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3 SHEETS—SHEET 2.



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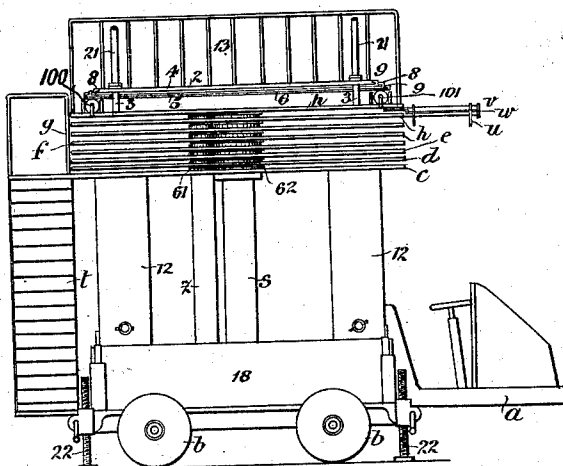
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FIRE ESCAPE.

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NO MODEL.

3 SHEETS—SHEET 3.

FIG.4.



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Inventor.
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UNITED STATES PATENT OFFICE.

VICTOR JETLEY, OF LONDON, ENGLAND.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 749,736, dated January 19, 1904.

Application filed January 19, 1903. Serial No. 139,701. (No model.)

To all whom it may concern:

Be it known that I, VICTOR JETLEY, a subject of the King of Great Britain and Ireland, residing at London, in the county of Middlesex, England, have invented a new and useful Fire-Escape or Elevator, of which the following is a specification.

This invention relates to apparatus which in its simplest form is capable of being employed as an elevator and with slight modification is applicable as a fire-escape.

Briefly, it consists of a fixed frame or platform having mounted thereon and above same a platform or platforms which is or are adapted to be raised and lowered by means of a number of vertical screws, each of which (except perhaps one end one) is made hollow and screw-threaded externally in such manner that each screw slides into the next one and one of the end screws is fixed to one platform, while at the other end there is a tube adapted to receive the next screw and connected to the framework. The screws consequently form one composite or telescopic screw and are suitably operated by means of gearing operated by hand, but preferably by a motor of any suitable construction. The upper platform may be supported and raised and lowered by more than one composite screw—say by three or four—or it may only have one composite screw and be guided at its four corners by telescopic or other guides or stanchions. The upper platform may form the floor of a cage, such as is usual in lifts, or the said platform may have guard-rails or a balustrade around same. In addition to the upper platform there may be other movable platforms, of which each one is connected to one of the screws aforesaid.

Figure 1 of the accompanying drawings illustrates, partly in elevation and partly in section, an elevator or lift mounted on wheels, shown in the raised position. Fig. 2 is an elevation of the same, showing it in the lowered or closed position. Fig. 3 is a perspective view of a fire-escape constructed according to this invention and shown in an extended position, while Fig. 4 is an elevation of the said escape in the lowered position.

Referring to Figs. 1 and 2, the elevator con-

sists of a frame or platform *a*, provided with road-wheels *b*, if it is to be moved from place to place; but if it is to be a fixture naturally the road-wheels are not required. Above the frame *a* there is a fixed platform *c*, and above the latter there are movable frames *d* and *e*, the latter being provided with a cage and having sides and a roof *f*, if desired. The frames may be rectangular or oval or round or of other suitable shape, as desired. The frame *d* and platform *e* are arranged to be raised to any suitable height by means of screws *l* and *m*, the former of which is supported in a tube *s*. The screw *m* is adapted to slide or telescope into the screw *l* and the screw *l* to slide into the tube *s*. The tube *s* is suitably fixed to frames *a* and *c*, the screw *m* is fixed underneath the platform *e*, and the screw *l* is fixed underneath the frame *d*. The platform *e* is consequently capable of being elevated or lowered from one position to another, according to the direction in which certain nuts 62 62, with spur-teeth thereon, are caused to revolve. Motion is communicated to the nut 62 by means, for example, of a motor *x*, spur-wheels *y y*, a telescopic shaft *z*, and spur-wheels 61 61. The latter spur-wheels are keyed to the telescopic shaft *z*—that is to say, one spur-wheel 61 is keyed to one section of the shaft and the other to the other section, the two sections being arranged to revolve together and to slide one within the other. A suitable means of effecting this is to provide one hollow shaft with a feather and the other shaft with a feather-way to correspond. The shaft *z* may be made to revolve in either direction by means of any suitable and well-known gear, and clutches are also provided for this purpose and to throw the shaft *z* out of gear altogether when required. If the elevator is intended to be self-propelled, the motor *x* may also be used to propel the elevator along the road or on rails, if so arranged, or there may be one motor for propelling the vehicle and another for raising and lowering the cage. The platform *e* and the frames *c* and *d* are suitably guided by, say, four telescopic guides or stanchions, one at each corner, of which those at the bottom are fixed between the frame *a* and the platform *c*, the next are fixed at the top to the frame *d*,

and the highest are fixed at the top to the platform *e*.

Referring to Figs. 3 and 4, *a* is, as before, a suitable frame provided with road-wheels *b* for traveling and a number of platforms, such as are designated by the letters *c*, *d*, *e*, *f*, *g*, *h*, *i*, and *k*, of which platform *c* is fixed and *d* to *k* are arranged to be raised to any suitable heights by means, for example, of a number of hollow externally-threaded screws *l*, *m*, *n*, *o*, *p*, *q*, and *r*, each of which is screw-threaded externally, and the lowermost screw *l* takes into a tube *s*, fixed in the frame *a* and the platform *c*. Each screw fits easily into the next one, and each screw is attached to a platform. Thus the screw *l* is fixed to the platform *d*, the screw *m* to the platform *e*, and so on, the screw *r* being finally fixed underneath the platform *k*. Each screw is provided with a nut 62, having spur-teeth gearing with a spur-wheel 61, mounted on a telescopic shaft *z*. The platforms consequently are capable of being elevated or lowered one above the other, and it is evident that each platform will rise relatively to the one beneath it at the same speed as the others. Therefore assuming there are eight platforms with a travel of ten feet each, the highest platform will be elevated to a height of eighty feet, although it only travels itself ten feet above the next platform. Means, such as fixed stairs or steps *t*, are employed for obtaining access from the platform or frame *a* to the platform *c*, and steps or ladders, such as *u*, pivoted above to a horizontal rod *v*, attached to a movable platform and resting below on another horizontal rod *w*, fixed to the platform below, are employed for giving access from the movable platforms to the platform *c*. Only one of such platforms is shown in order not to render the drawings unnecessarily complicated; but one of such ladders suitably connects each two adjacent platforms and being only pivoted to one platform permits of the platforms being raised and lowered without the ladders requiring to be otherwise fastened in any way. It is, however, to be distinctly understood that other forms of ladders or means of access between the platforms may be employed without departing from the invention. The screws are suitably operated by means of worm and worm-wheel gearing either by hand or by means of a motor or motors of any known and approved construction, and in the example motion is communicated from the motor *x* by means of spur-gearing *y*, a shaft *z*, and spur-wheels 61 to the nuts 62 of the screws *l*, *m*, *n*, and so on.

Each platform or some of the platforms is or are provided with laterally-sliding subsidiary platforms or only one platform adapted to be moved out either by hand or by power in such a way as to approach the burning building or another fire-escape standing adjacent thereto. In the example only the platform *k* (shown with a raised floor 2 on sup-

ports 3) is provided with laterally-sliding platforms 4, 5, 6, and 7 to push out on one side; but it is evident that there may be also another set of platforms to push out on the other side as well. However, the platforms are only shown on one side, so as not to unnecessarily complicate the drawings. The platform 2 has L-shaped guides 8 at its ends, and the platforms 4, 5, and 6 have guides 9, with two horizontal parts and one vertical part. Of these parts the upper horizontal part slides on the lower horizontal part of the guide of the platform above it, and the lower horizontal part serves as the guide for the platform below. The end platform is provided at each end and below with guides 10 at right angles to the others, in which guides 10 slide subsidiary platforms 11. Although the subsidiary sliding platforms are shown as being connected to the central platform by means of L-shaped guides, other means may be employed without departing from the invention, and, further, the form or shape of the sliding platforms may be modified, if desired.

Assuming the main platform—such as *a*, *c*, and *d*—to be oblong or rectangular, the screws may be mounted, as shown, in the middle and perpendicular, and they are guided by means of telescopic stanchions 12, or there may be more than one screw for each platform—say two or four screws with the necessary gearing—in which case the stanchions or guides may be dispensed with. In order to steady the platforms when they have been raised to the desired position, each screw or the stanchions, or both, may be provided with pawls or stops which take into racks or recesses, and thus automatically lock the platforms in position; but this is not generally necessary.

The platforms 2, 4, 5, 6, and 7 are provided with guard rails or balustrades 13, which are conveniently made fixed and always in position, and the subsidiary sliding platforms 11 also have guard-rails 14, which are adapted to hinge to the said platforms 11, so as to be capable of folding flat down or to be in position for use, as shown. If desired, each rail 14 may have an eye 15 for receiving a hook 16, hinged to a post 17 on the platform 7, or other suitable means may be employed for adding safety and preventing firemen or other persons from falling off the platforms. In using several of these sliding platforms and in order to give additional security to the balance of the sliding platforms I employ a counterweight. This may consist of a number of sliding platforms disposed on the side nearest the observer and opposite to those shown, or a tank 18 may be provided, which is hung on chains 19, hooked to hooks 20, fixed to the ends of tubes 100, which are pivoted at 101 to the upper platform *k*. These tubes contain each a set of telescopic tubes sliding one in the other, the other ends of which are attached to or support the end platform 7. By this means the

sliding platforms are supported in an efficient manner and additional security is obtained. If there are two sliding platforms, it naturally follows that there are two sets of pivoted telescopic tubes 100, one set for each side, and two tanks 18. The tank or tanks may be normally empty and only be filled when required as a counterweight, or the tank may serve as a receptacle for batteries if an electric motor is used for propulsion and other purposes in connection with the fire-escape, or the tanks 18 may be entirely dispensed with by providing automatic or other shores or struts mounted on an outside frame or elsewhere to steady the entire apparatus and also to balance or support the sliding platforms, or any other means might be adopted without departing from the invention.

Several of the platforms or only the upper platform *k* are or is provided with a hydrant or hydrants 21, which are in connection with the lowest platform *a* or merely with a street-hydrant by means, for example, of telescopic pipes, such as the stanchions 12, or special telescopic pipes may be used or merely a hose, which is then suitably wound round a drum on the lower or some other platform.

In any case if water is intended to pass through telescopic pipes or stanchions it is evident that tight joints are made between the different pipes by means of cup-leathers or stuffing-boxes. Speaking-tubes may also be employed on fire-escapes of this kind consisting of telescopic pipes, like the stanchions 12, but of smaller diameter, or of flexible pipes, all as found most convenient.

The platforms and so on may be operated or caused to work from the upper platform or from below or both from above and from below.

As it is essential that such fire-escapes should stand as nearly vertical as may be, say two spirit or other levels are provided on the frame *a* and a screw-jack 22 near each road-wheel or each corner of the said frame *a*, to level it on uneven or sloping ground. The elevating-gear is, as aforesaid, all suitably operated by a motor *x* or motors mounted on the vehicle, and the latter may either be self-propelled by the motor or be drawn by horses. In the ex-

amples shown the transmission is not shown, as any suitable motor and gear may be employed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A fire-escape or elevator, comprising a portable rigid framework, a number of platforms movable up and down above the rigid framework, a number of laterally-movable platforms and a number of subsidiary platforms arranged to slide at right angles to the last-named platforms, substantially as set forth.

2. A fire-escape or elevator comprising a rigid framework on wheels, a number of platforms movable up and down, a number of laterally-movable platforms and telescopic rods extensible laterally for supporting the laterally-movable platforms, substantially as set forth.

3. A fire-escape or elevator, comprising a rigid framework on wheels, a number of platforms movable up and down, a number of laterally-movable platforms, telescopic rods pivoted to the first-named platforms and extensible laterally for supporting the laterally-movable platforms at one end, and counterweights suspended from the opposite ends of the said rods, substantially as and for the purpose set forth.

4. A fire-escape or elevator, comprising a rigid framework on wheels, a number of platforms movable up and down, a number of laterally-movable platforms, telescopic rods pivoted to the first-named platforms and extensible laterally for supporting the laterally-movable platforms at one end, and tanks suspended from the opposite end designed to receive a liquid to act as a counterweight to the laterally-sliding platforms and to serve for storage of batteries and implements when emptied of said liquid, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

VICTOR JETLEY.

Witnesses:

M. MARKS,
M. FAUCETT.