

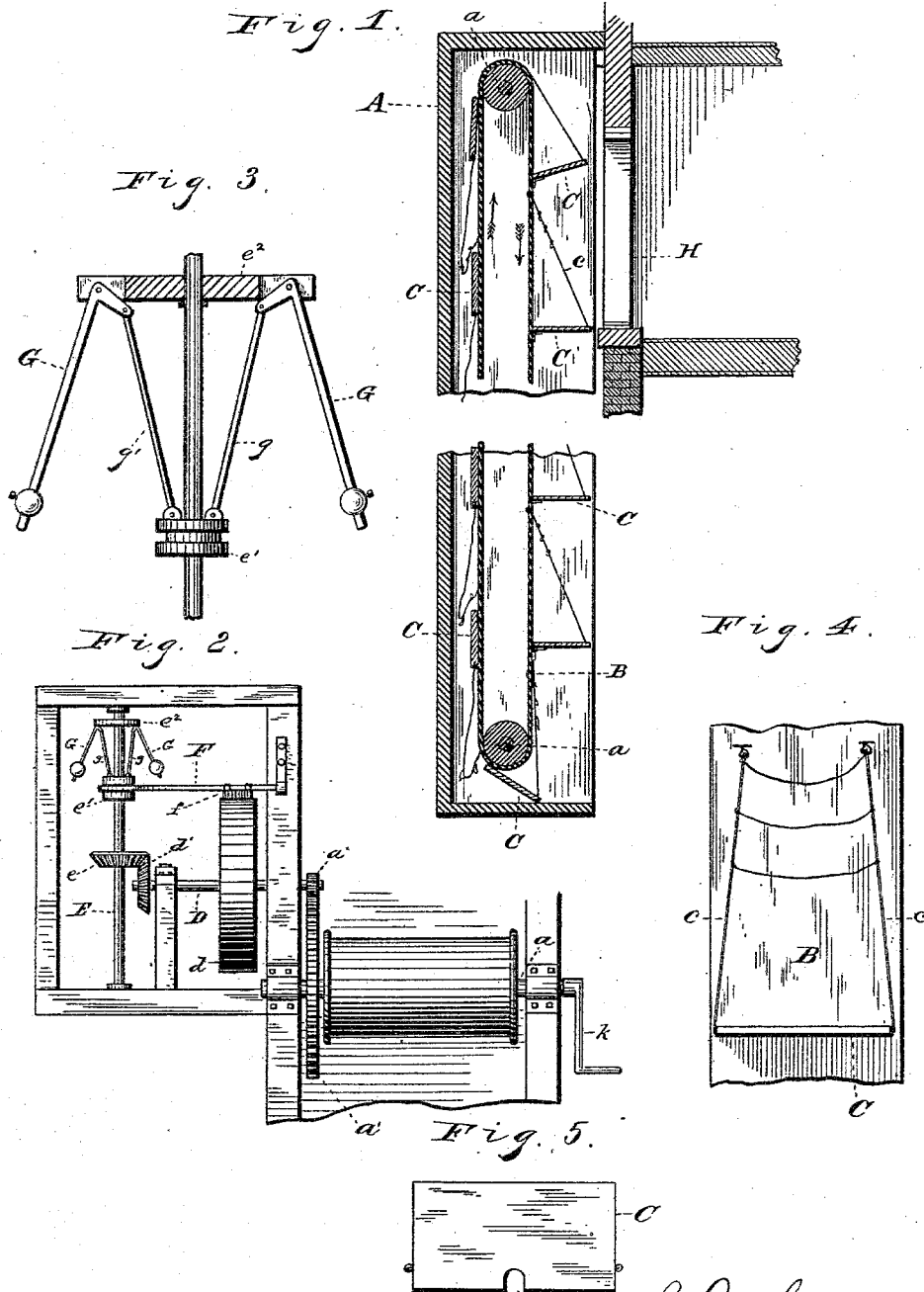
(No Model.)

J. S. ORAM & H. R. DICKERMAN.

FIRE ESCAPE.

No. 301,387.

Patented July 1, 1884.



WITNESSES
H. Engel
C. H. Row

H. R. Dickerman
 INVENTORS
John S. Oram
By Leggett & Leggett
 ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN S. ORAM AND HENRY R. DICKERMAN, OF CLEVELAND, OHIO.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 301,387, dated July 1, 1884.

Application filed April 14, 1883. (No model.)

To all whom it may concern:

Be it known that we, JOHN S. ORAM and HENRY R. DICKERMAN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Fire-Escapes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in fire-escapes; and it consists in certain features of construction and in combination of parts, hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation in section and broken in the middle, showing more especially the ends of the device. Fig. 2 is a side elevation of the governing mechanism. Fig. 3 is an enlarged elevation, partly in section, of a portion of the governing device. Fig. 4 is a view in detail, showing in elevation a portion of the belt, with cords or straps attached for grasping with the hand for support. Fig. 5 is a plan view of a platform.

A represents a box or casing of any desired material, extending from the ground to the top floor of a building, or even to the roof, if desired. This box is provided both at the top and at the bottom with a shaft and pulley or roller, *a*, extending crosswise of the box, and around these pulleys extends an endless belt or chain, *B*, to which are attached the platforms *C*, that are made of a suitable size to accommodate one or more persons, as is desired. These platforms on the descending side of the belt are held in a horizontal position by straps, cords, or other supports, *c*, that are attached to the outside of the platform and to the belt above. The inner sides of the platforms are hinged in any suitable manner to the belt, so that on the ascending side of the belt the platforms may fold against the belt, as shown in Fig. 1. The descending platforms should so nearly fill the space in the box in which they operate that there will be no liability to accidents by persons getting their feet between the edge of the platform and the box. There should be cross straps or cords attached to the ends, *c*, as shown in Fig.

4, convenient for grasping with the hand for support.

To one of the cross-shafts *a* is attached the large gear-wheel *a'*, that engages a small pinion, *a''*, as shown in Fig. 2, that actuates the governing device. This pinion is attached to the shaft *D*, as is also the brake-wheel *d* and the bevel-gear *d'*, that engages the wheel *e* on the governor-shaft *E*. This shaft is provided with a sliding collar, *e'*, that is grooved on the periphery to engage the forked lever *F*. The shaft *E* has also a cross-arm, *e''*, rigidly attached, near the ends of which are pivoted the bent arms *G*, and are provided near the lower ends with adjustable balls. The other ends of the levers are connected by the rods *g* to the collar *e'*, already described. The lever *F* is also a stiff spring, and is fulcrumed near the brake-wheel *d*, and is provided with a brake-block, *f*, for engaging the wheel *d*. When the speed of the machine becomes too great, the balls fly out, as in ordinary governors.

The short ends of the arms *G*, in combination with the rods *g*, form toggle-joints, and the parts are so arranged that when the arms *G* are distended to their limit the parts forming the toggle-joints will be almost in a straight line, and will therefore operate with great power upon the lever *F* and the brake. The elasticity of the lever *F* prevents a too sudden or abrupt action of the brake. It will be safer to attach this governing device to the upper shaft, as the belt will act with much greater force on this pulley than on the pulley below.

Communications, as at *H*, should be provided from every floor of the building to the fire-escape.

The operation of the device is as follows: A person from any floor may step onto the platform that is most accessible to him, and as these platforms are placed only so far apart as will enable a person to stand between, some of the platforms will always be near at hand. The weight of a person sets the machine in motion, and the governor so controls the speed that the person is quickly and safely carried to the ground. As many people may be descending simultaneously as can stand on all of the platforms on the descending side of the belt. Others may follow without stopping

the machine, so that a large number may soon escape from a building.

A crank and gearing, if desired, may be attached to the lower cross-shaft, so that the machine may be turned backward, so as to elevate persons to any floor of the building in case other means of access are wanting. Also, a slot, *c'*, may be made in each platform, as shown in Fig. 5, of sufficient size to accommodate fire-hose, so that firemen may stand upon these platforms and be elevated with their hose to any floor, or even to the roof of the building.

Our device is not only useful as a fire-escape, and as a means of assisting firemen, with their accouterments, to the building, but it is a convenient way at all times to descend from the upper floors of the building, and should be always accessible for this purpose, so that every one in the building may be familiar with its workings.

What we claim is—

1. The combination, with the belt, of platforms adapted to fold against the belt on the ascending side, and to assume a horizontal po-

sition on the descending side of the belt, and provided with flexible supports and openings for the passage of hose, substantially as set forth.

2. The combination, with the brake-wheel and governor of a fire-escape, of an elastic lever, *F*, one end of which is directly connected with the governor and is raised and lowered thereby, and a brake-block secured to said lever and arranged to engage the brake-wheel, substantially as set forth.

3. The supports *c*, adapted to support the platforms in a horizontal position while descending, and provided at the upper portions with a net-work of cross-supports suitable to grasp with the hand, substantially as and for the purpose shown and described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

JOHN S. ORAM.
HENRY R. DICKERMAN.

Witnesses:

JNO. CROWELL,
CHAS. H. DORER.