

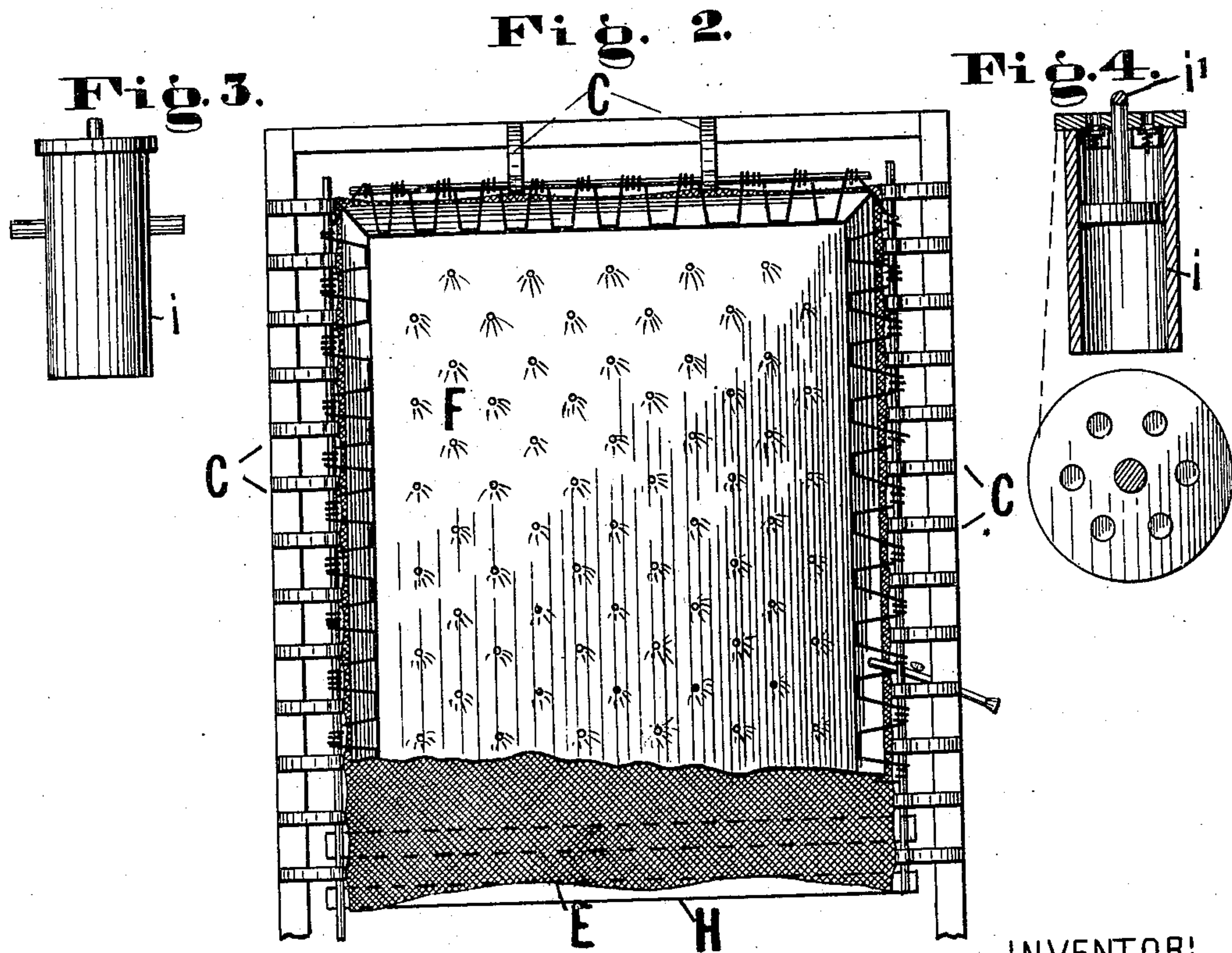
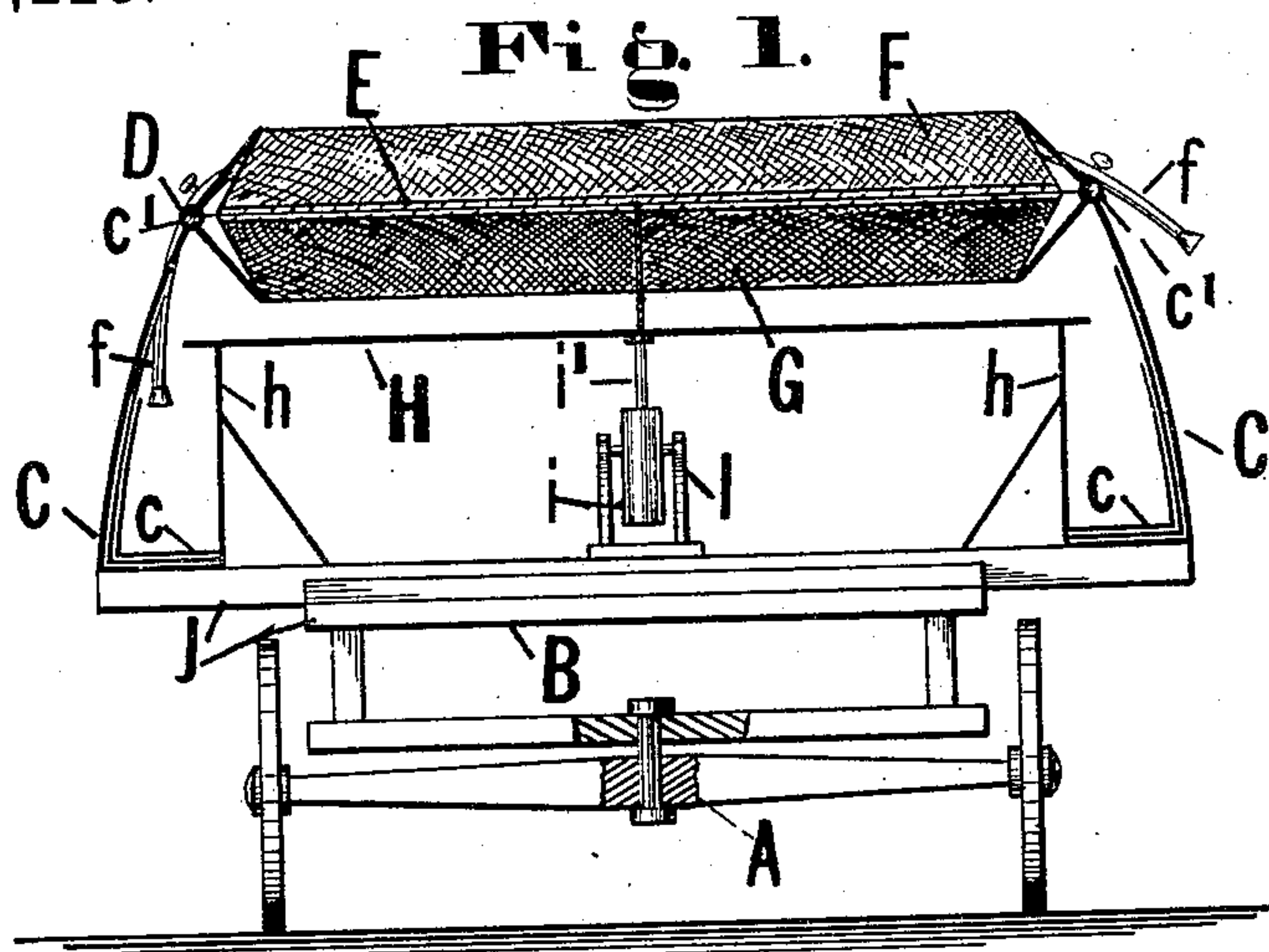
(No Model.)

I. BUCKMAN.

FIRE ESCAPE.

No. 287,228.

Patented Oct. 23, 1883.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

IRA BUCKMAN, OF BROOKLYN, NEW YORK.

## FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 287,228, dated October 23, 1883.

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

*To all whom it may concern:*

Be it known that I, IRA BUCKMAN, of Brooklyn, county of Kings, and State of New York, have invented new and useful Improvements in Fire-Escapes; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 This invention relates to that class of fire-escapes which are provided with elastic or yielding surfaces for receiving persons jumping or falling from burning buildings; and it consists, mainly, first, in the combination, 15 with a truck having pivoted axles at each end, of a frame-work supporting an elastic or yielding surface; and, second, in the combination, with an elastic surface, of certain air-cylinders adapted to prevent rebound.

20 It consists, further, in certain details of construction, which, in connection with the foregoing, will be fully described hereinafter.

In the drawings, Figure 1 represents a transverse sectional view of my invention; Fig. 2, a partial plan view, partly broken away; Fig. 25 3, a side elevation of one of the air-cylinders detached, and Fig. 4 a vertical sectional elevation and plan of the same.

To enable others skilled in the art to make 30 my invention and properly use the same, I will now proceed to describe fully its construction and the manner of employing the same.

A represents a truck, which may be constructed, generally, in any proper manner, but is essentially provided at each end with pivoted axles, like those upon the ordinary hook-and-ladder truck.

40 B represents a frame supported directly upon the truck, or indirectly by means of an intermediate frame-work, as shown, which frame-work may consist of two or more longitudinal beams united by a number of cross-beams in any proper manner.

45 C C represent leaf-springs, each of which is provided with a right-angled base, *c*, by means of which and a proper clip-iron the spring is strongly secured to the end of the cross-beam of the frame.

50 *c'* represents an eye which is formed at the upper end of the outer leaf of each spring, for the purpose of holding the steel rod D, here-

inafter referred to. A series of these springs is located upon each side of the frame-work and upon each end of the same, the members 55 of the series upon the side being located close together, and those upon the end at a little distance apart.

D represents a steel rod or steel rope extending through eyes upon each side and up- 60 on each end of the frame.

E represents a strong netting or canvas, such as is used under acrobats and trapeze performers in circuses and theaters, which is strongly secured at its edges to the rod D in 65 any proper manner.

F represents a loosely-packed curled-hair mattress upon the netting or canvas, which is suitably secured to the mattress below and to the rod by any proper means. This is made 70 as nearly air-tight as possible, and is provided on each side with one or more inflating-tubes, *ff*, having proper stop-cocks, as shown.

G represents a tightly-packed hair mattress, properly secured to the netting or canvas above 75 and to the steel rod D by any suitable means.

H represents one of a series of slats located below the mattress, either in close proximity thereto or removed at a little distance therefrom, each slat of which is supported at its 80 ends by rigid standards *h*, as shown.

I represents one of a series of standards centrally located upon the frame of the machine, which is provided with proper bearings for supporting the trunnions of the air-cylinder *i*, 85 as shown.

*i'* represents the piston of the cylinder, the upper end of which is secured to the slat H above it in any proper manner.

*i'' i''* represent openings in the cylinder located in the piston-head, as shown. 90

J J represent ways upon the truck, by means of which the entire superstructure of the machine may be given a lateral movement in either direction, within certain limits, when 95 desired.

This machine may be made of any proper dimension—say ten by twenty feet, or twenty by twenty—according to the circumstances of the place where it is to be used. 100

The operation is substantially as follows: One or more of these machines, constructed in the manner described, having been supplied to the fire department, the same is drawn



rapidly to the fire by a horse or horses when an alarm is sounded. If an occasion arises for its use, the machine is adjusted in the precise position required, the pivoted axles at each end permitting any desired movement to be quickly and accurately made. If the firemen in charge of the machine observes that a person jumping has miscalculated the distance, and is about to fall upon the edge of the machine, the entire superstructure may be swung to one side a certain distance for the purpose of avoiding this result. The weight of the person falling is first received by the upper surface, which is made yielding by the leaf-springs C C, and then, if the distance is great, by the lower surface, which is made yielding by the air-cylinders *i i*. The pistons of the cylinders are permitted to descend without resistance when the weight is brought to bear upon them by the escape of the air through the opening in the piston-head. The rebound of the yielding surfaces after the same have been depressed, however, is checked by the pistons of the air-cylinders, which are held against rapid upward movement by the gradual escape of the air through the openings in the piston-head.

Some of the advantages of the described construction are as follows: By combining a yielding surface with a truck having pivoted axles at each end, a fire-escape is obtained which is capable of accurate and rapid adjustment relative to the burning building. By the employment of an upper and lower yielding surface in the manner described, a gradually increasing power of resistance is obtained as the weight is increased. By the use of the air-cylinders an injurious rebound of the elastic surfaces is effectually prevented.

By the use of the upper mattress, constructed as described, the resistance of the curled hair is united to that of compressed air.

If desired, instead of the air-cylinders, a system of pulleys and ratchets and pawls may be employed.

If desired, the netting may be united to the slats, so as to move with them, as the latter are controlled by the pistons of the air-cylinders.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a truck having pivoted axles at each end, a frame-work supporting an elastic or yielding surface, substantially as described.

2. In combination with a yielding surface, air-cylinders, substantially as described, adapted to prevent the rebound of the elastic surface.

3. In combination with a netting and mattress, the series of leaf-springs C C, as described.

4. The machine described, consisting of the frame-work supported upon a truck, the leaf-springs, the netting, the upper and lower mattresses, the slats, and air-cylinders, as described.

5. In combination with a frame-work mounted upon wheels, the elliptical leaf-springs C C, supporting the surface for receiving the person jumping.

This specification signed and witnessed this 9th day of February, 1883.

IRA BUCKMAN.

Witnesses:

JOHN FELLOWS,  
E. McNAMARA.