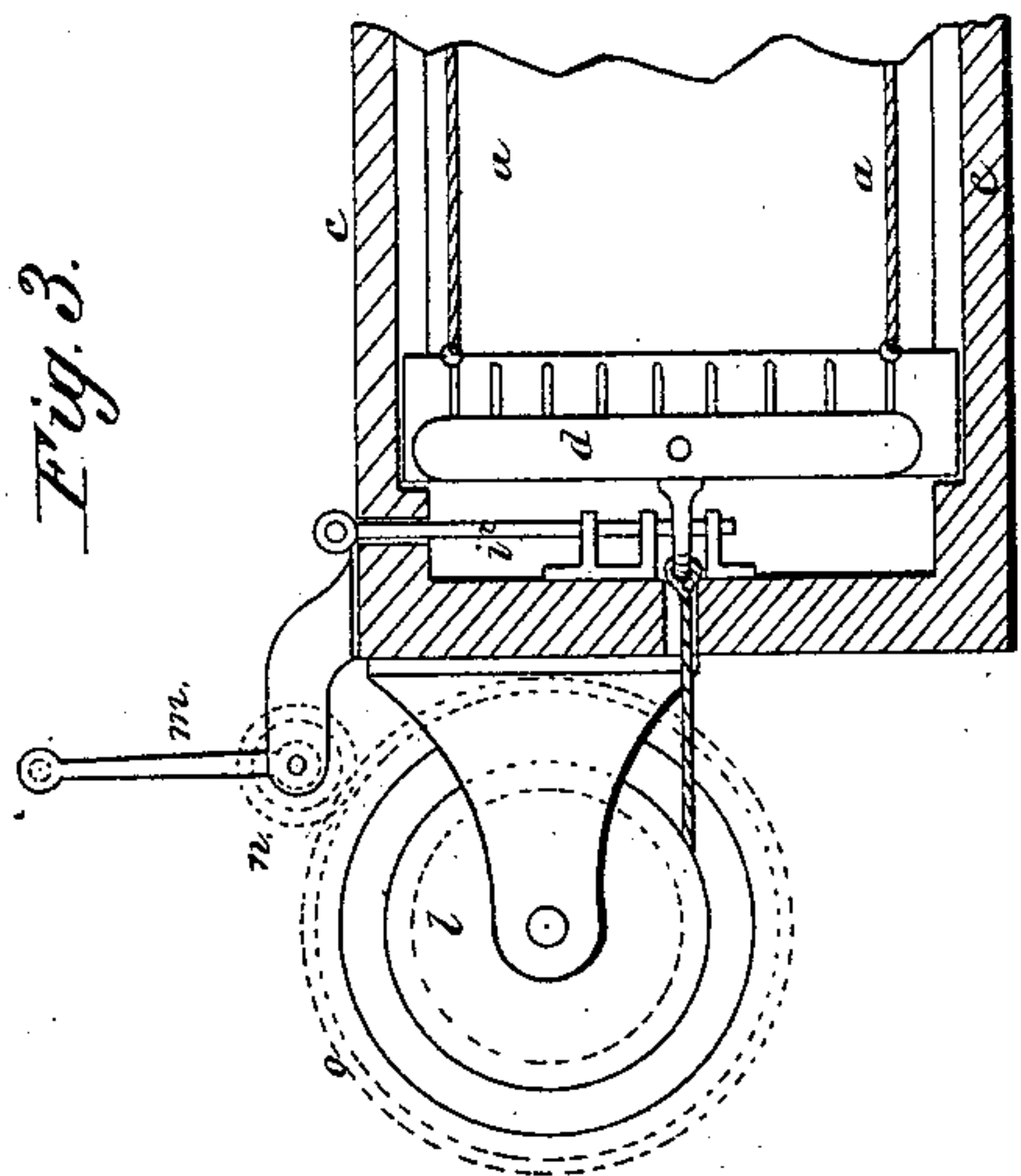
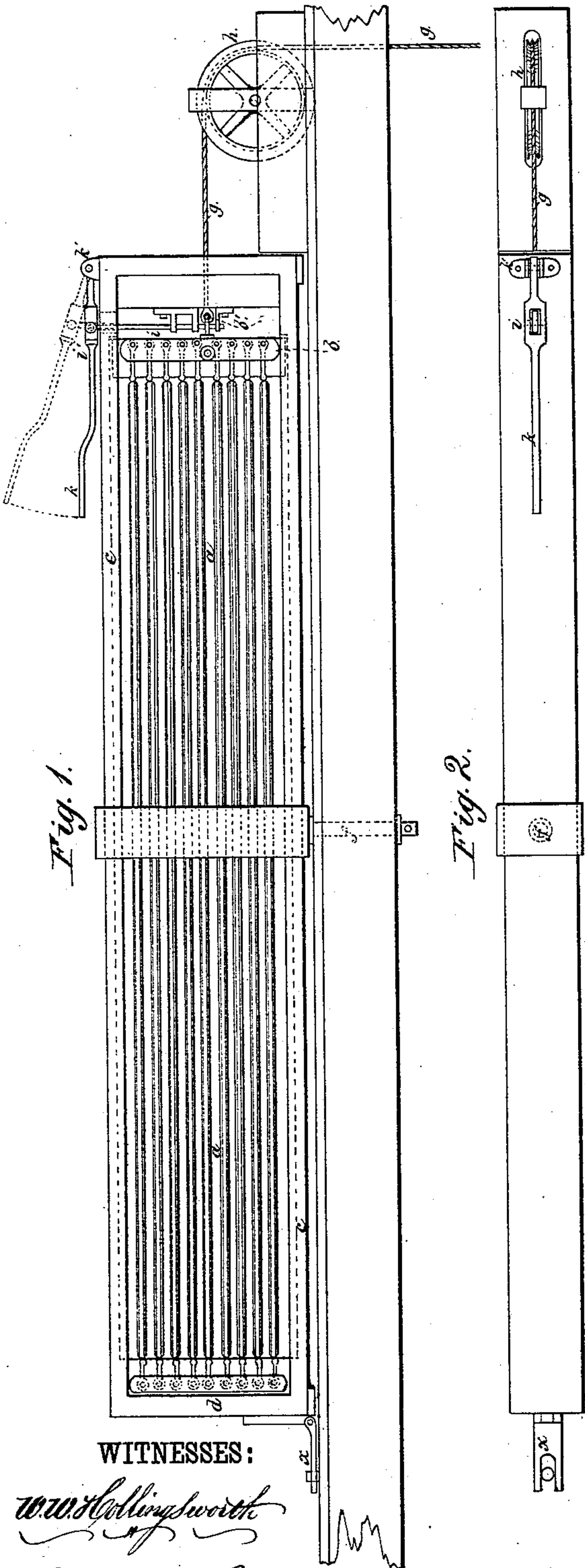


(No Model.)

G. OLIVER.

Apparatus for Use in Theatrical and Other Performances.  
No. 233,540.

Patented Oct. 19, 1880.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE OLIVER, OF THE CITY ROAD, COUNTY OF MIDDLESEX, ENGLAND.

APPARATUS FOR USE IN THEATRICAL AND OTHER PERFORMANCES

SPECIFICATION forming part of Letters Patent No. 233,540, dated October 19, 1880.

Application filed June 19, 1880. (No model.) Patented in England September 25, 1875.

*To all whom it may concern:*

Be it known that I, GEORGE OLIVER, of the City Road, in the county of Middlesex, England, have invented a new and Improved Apparatus for use in Gymnastic and other Performances, (Case B;) and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to apparatus for use in gymnastic and other performances and exercises.

In an application for a patent marked "Case A," and filed of even date herewith, I described an apparatus for suddenly raising a performer to a considerable height from the stage, the apparatus consisting, mainly, of an assemblage of vertical springs arranged overhead, the performer being connected thereto by a fine wire or rope.

The object of my present invention is to render the apparatus available for use in theaters or other buildings where there is not sufficient height to admit of the springs being placed in a vertical position, as described in another application. With this object the cross-head to which the springs are attached at one end is fitted to move along horizontal or inclined guides in a frame or box, the other ends of the springs being attached either to the end of the frame or to a second movable cross-head sliding between the said guides, for the purpose hereinafter mentioned. The wire by which the performer is raised is attached to the first-mentioned cross-head, and is carried over a pulley in the overhead staging, from which it hangs downward to the stage.

The frame or box may either be fixed, or it may be movable upon a vertical pivot, and be surrounded by a number of the said pulleys in various positions and directions, so that by employing but one set of springs the performer may be raised many times in rapid succession from different parts of the stage, the spring apparatus being quickly turned on its pivot in the required direction and connected to the wire which passes over the pulley that is immediately above the performer.

In order to more easily effect the withdrawal of the bolt by which the springs are held distended, I connect the bolt to a hand-lever suitably arranged.

When it is required to use the apparatus several times in quick succession, I provide a winch, pulley, or other means of distending all the springs at once instead of separately, as described in my former patent. In this case the springs will be permanently attached to the cross-head, and both cross-heads will move in the guides, the winch being preferably attached to the rear cross-head.

Figure 1 is an elevation, and Fig. 2 a plan, of my improved arrangement of apparatus.

*a* are the india-rubber springs, attached by hooks at one end to a cross-head, *b*, moving along guides *c*, forming part of the frame of the apparatus, and at the other end to a stationary cross-head, *d*, fixed to the end of the frame. The frame is fixed or supported in the horizontal position shown (or at any convenient angle) on a suitable platform at a proper height above the stage. It may either be a fixture, or, which is most convenient if it is desired to raise the performer from different places on the stage, the frame may be mounted to turn on a central pivot, *f*.

*g* is the wire rope by which the performer is raised. It is attached to an eye in a bolt, *b'*, fixed to a cross-head, *b*, and passes over a pulley, *h*, mounted on the platform. This wire descends to the stage, and to its other end the performer is attached by means of the harness and connections described in my other application.

With an apparatus movable about a pivot for a center a number of pulleys, *h*, would be used, disposed in different positions, each pulley being placed radially to the said pivot, so that by moving the spring apparatus round to the different pulleys, and successively attaching the wires *g*, passing over the different pulleys, the performer may be raised in different places.

The springs are kept distended by a bolt, *i*, passing through an eye in *b'*, the said bolt being fitted to slide in staples attached to the end frame, as shown. The bolt *i* is jointed at *i'* to a hand-lever, *k*, working on a pivot at *k'*, by means of which the bolt may be instantly withdrawn when the signal is given.

*l*, Fig. 3, is a drum or pulley operated by a winch-handle, *m*, through gear *n o*. This drum is mounted in a bracket at the rear end of the



frame of the apparatus, (or at the other end, if preferred.) In this case, the cross-head *d* is also movable between the guides *c*, and is connected by a rope to the drum *l*.

5 In order to distend the springs, the cross-head *b* is first secured by its bolt *i*, and the cross-head *d* is drawn back by the winch and similarly secured by a bolt, *i*<sup>2</sup>.

10 *x* is a latch for holding the spring apparatus in line with pulley *h*.

Instead of locating the spring apparatus overhead it might be placed on or beneath the stage, and a wire connected to part *b* led up over suitable pulleys and attached overhead 15 to the wires *g* of pulleys *h*; but this arrangement is less advantageous.

Having thus described my invention, what I claim as new is—

20 1. The frame carrying the guides in which the spring apparatus works, mounted to turn horizontally upon a pivot, to operate in combination with a number of wires, *g*, and pulleys

*h*, disposed around the same, substantially as and for the purpose set forth.

2. The combination, with the spring apparatus *a b c*, of a winch and drum for distending the springs, connected by a rope to a movable cross-head, substantially as shown and described.

3. The combination of the horizontal frame 30 carrying horizontal and parallel springs *a* and the cross-head *b*, the rope *g*, and the pulley *h*, as and for the purpose described.

4. The combination of bolt *i*, hand-lever *k*, guide-frame *c c*, cross-head having eye *b'*, and 35 the attached rope *g*, as shown and described.

The above specification of my invention signed by me this 28th day of May, 1880.

GEORGE OLIVER.

Witnesses:

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