

R. ALEXANDER-KATZ.
 APPARATUS FOR TESTING FLYING MACHINES AND LEARNING THE ART OF AVIATION.
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975,196.

Patented Nov. 8, 1910.

Fig. 1.

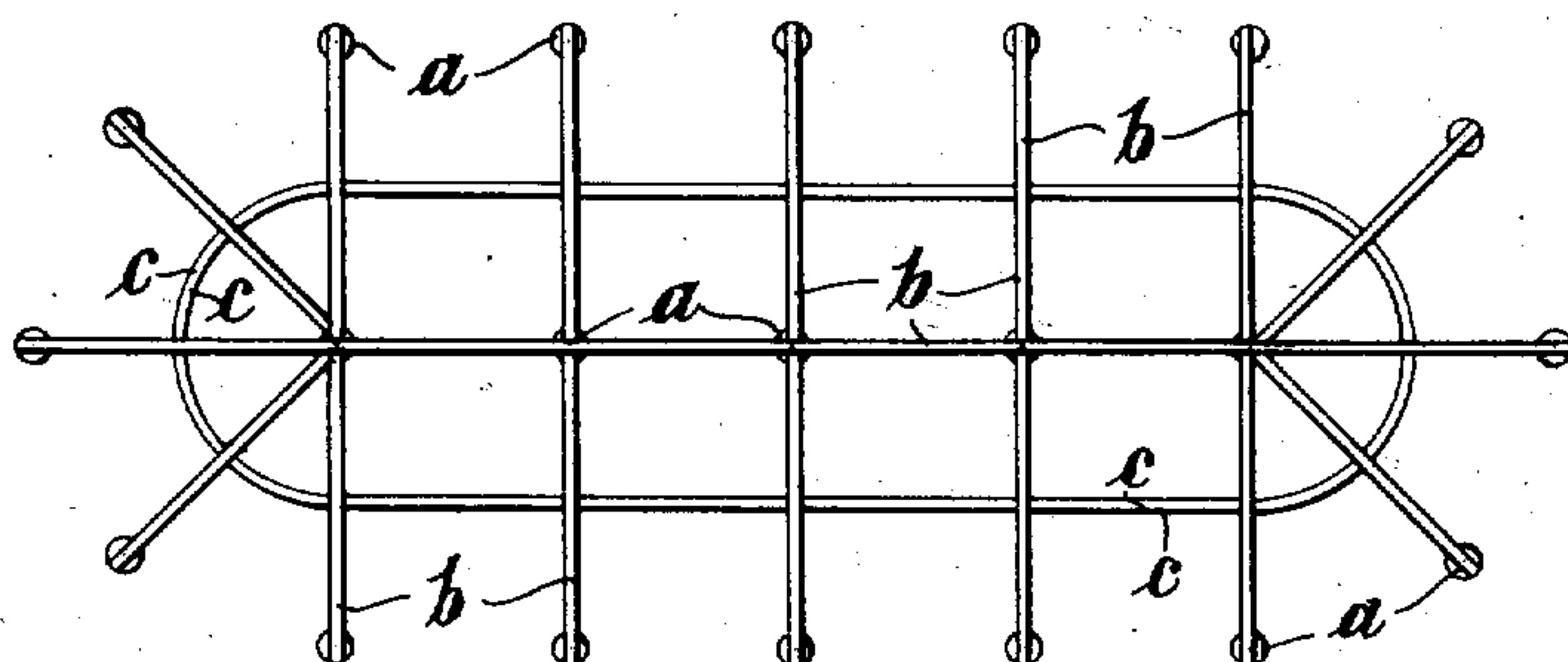
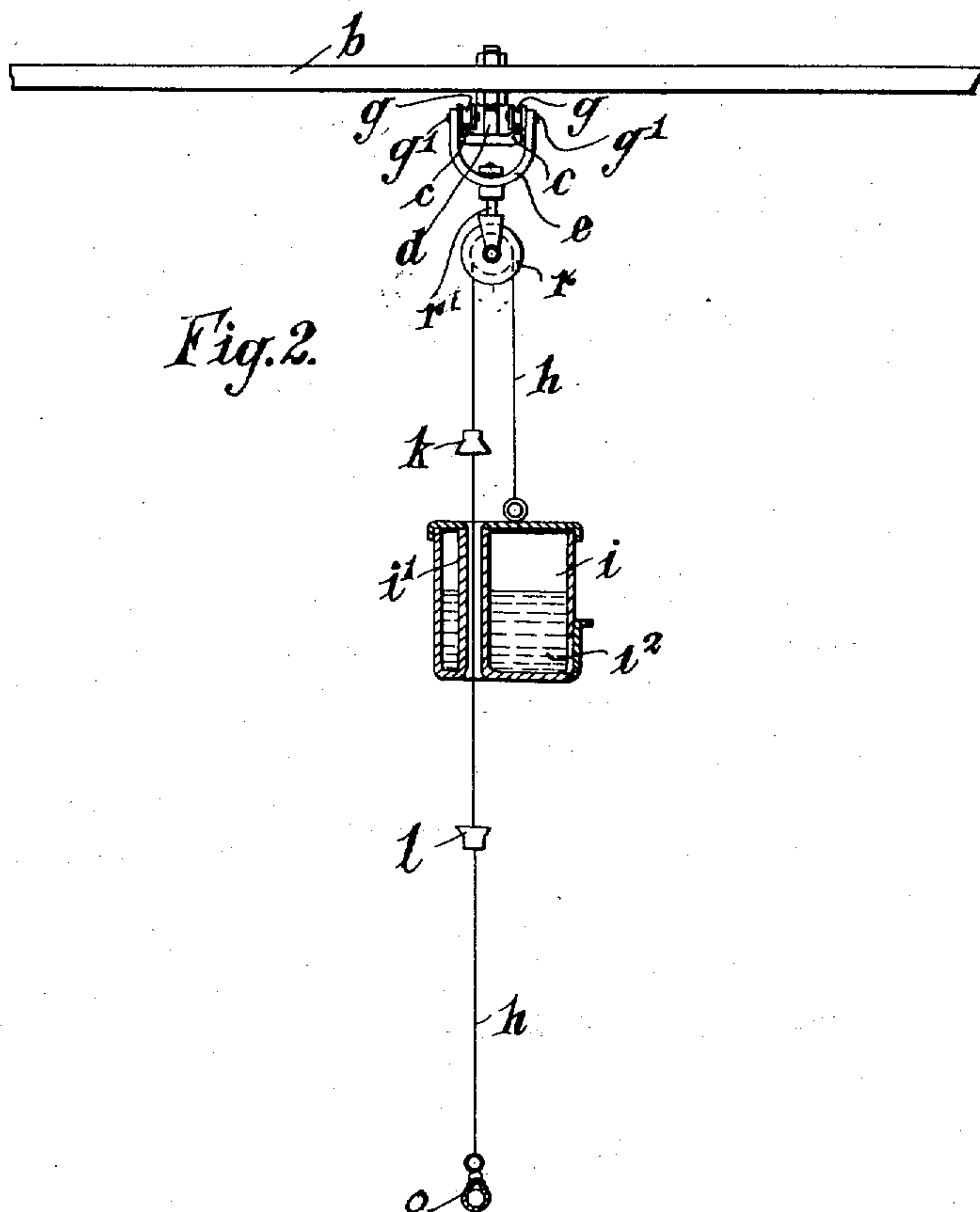


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

RICHARD ALEXANDER-KATZ, OF BERLIN, GERMANY.

APPARATUS FOR TESTING FLYING-MACHINES AND LEARNING THE ART OF AVIATION.

975,196.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed October 11, 1909. Serial No. 522,139.

To all whom it may concern:

Be it known that I, RICHARD ALEXANDER-KATZ, a subject of the German Emperor, residing at Berlin, W. 35, in Germany, have
5 invented certain new and useful Improvements in Apparatus for Use in Testing Flying-Machines and Learning the Art of Aviation, of which the following is a specification.

10 This invention relates to apparatus for use in testing flying machines and learning the art of aviation. Its object is to provide a traveling, suspensory support for the aviator and his machine, and broadly comprises an
15 aerial track from which the flying machine is rotatably suspended from one end of a rope or equivalent, the other end of which is attached to a suitable counterweight.

20 A construction embodying the invention is shown in the accompanying drawing, in which—

Figure 1 is a diagrammatic plan view of the track and Fig. 2 an elevation of the suspensory appliance on an enlarged scale.

25 Pillars *a* support horizontal bearers *b* to which are bolted supports *d* and the track is formed by one or two parallel rails or wire ropes *c* resting upon the supports *d*. The
30 axles *g*¹ of one or more rollers *g* placed upon the rail or rails or ropes *c* are provided with a yoke *e*. From said yoke *e* a pulley *r* is suspended by means of a swivel hanger *r*¹. A rope *h* passing over the pulley *r* has attached to one of its ends a vessel *i*, and to the
35 other end a snap-hook *o*. The vessel *i* is traversed by a vertical tube *i*¹, for the orifices of which openings are provided in the lid and bottom of the vessel. The rope *h* traverses the tube *i*¹ and has attached to it, above
40 and below the vessel *i*, abutments *k* and *l* respectively, which are incapable of passing through the tube *i*¹, so that they limit the travel of the rope *h* on the pulley *r*, and consequently limit the upward and downward
45 movement of the vessel *i* and hook *o*. The purpose of the vessel *i* is to serve as a weight which can be regulated by more or less charging the vessel with shot or with a liquid, as at *i*².

50 The flying machine is attached to the rope *h* by means of the hook *o* and while the machine is quiescent its weight drags the vessel *i* upward, until the said vessel is stopped by the abutment *k*. Suspended in this manner the aviator and machine are capable of
55 rotating about the axis of the hanger *r*¹, and

also of traveling in the direction of the track *c c* or back. If the machine, when working, is capable of ascent, it is free to rise until the abutment *l* strikes the vessel *i*, the ascent
60 being of course assisted by the weight of the vessel *i*. This weight may be so regulated that for a beginner in the art of aviation the weight of the machine and aviator is nearly balanced, the balancing weight being gradu-
65 ally reduced as progress is made in the art.

It is preferred that the track should not be of circular form, but composed of straight lines and curves since on one hand centrifugal force would unfavorably influence the
70 steering of the aviator, and on the other hand the practice of passing from the straight flight to that of a curve is of high importance. This straight line and curved structure is shown in Fig. 1 of the annexed
75 drawing.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. A device of the character described
80 comprising an aerial track, a suspensory device rotarily supported by and adapted to travel on said track, a flexible member passing over said suspensory device and to one
85 end of which the flying machine or aviator may be suspended, a counterweight attached to the other end of said flexible member, and means for limiting movements of ascent and descent of said counterweight and object
90 suspended from said member.

2. A device of the character described comprising an aerial track, a trolley adapted to travel thereon, a swivel pulley rotatably supported by said trolley, a rope passing
95 over said pulley to one end of which rope the flying machine or aviator may be suspended, a counterweight attached to the other end of said rope, and means carried by the latter for limiting movements of ascent and descent of said counterweight and
100 object suspended from said rope.

3. A device of the character described comprising an aerial track, a trolley adapted to travel thereon, a swivel pulley rotatably supported by said trolley, a rope passing
105 over said pulley to one end of which rope the flying machine or aviator may be suspended, a counterweight attached to the other end of said rope and provided with a channel through which a portion of the rope
110 passes, and abutments on said rope coacting with the lower and upper portions of the

counterweight to limit the movements of ascent and descent of the counterweight and object suspended from said rope.

4. A device of the character described comprising an aerial track, a suspensory device rotarily supported by and adapted to travel on said track, a flexible member passing over said suspensory device and to one end of which the flying machine or aviator may be suspended, a counterweight attached to the other end of said flexible member, said counterweight comprising a hollow body and

loose ballast contained therein, and means for limiting movements of ascent and descent of said counterweight and object suspended from said member. 15

In witness whereof I have signed this specification in the presence of two witnesses.

RICHARD ALEXANDER-KATZ.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.