

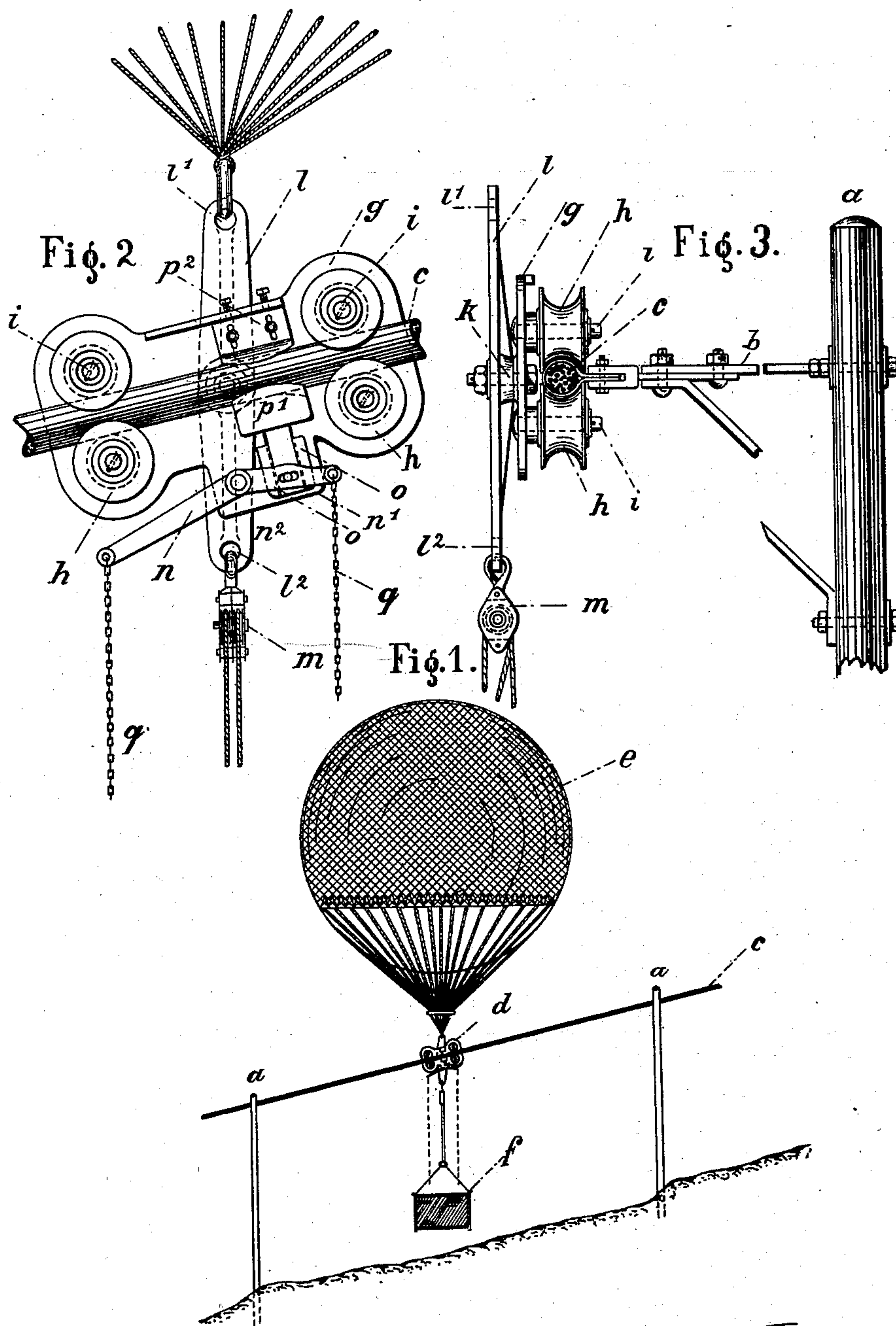
No. 654,687.

Patented July 31, 1900.

H. SUTER.
AERIAL RAILWAY.

(Application filed May 6, 1899.)

(No Model.)



Witnesses.
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UNITED STATES PATENT OFFICE.

HEINRICH SUTER, OF KAPPEL, SWITZERLAND.

AERIAL RAILWAY.

SPECIFICATION forming part of Letters Patent No. 654,687, dated July 31, 1900.

Application filed May 6, 1899. Serial No. 715,837. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH SUTER, a citizen of the Republic of Switzerland, residing at Kappel, Canton of Zurich, Switzerland, have invented new and useful Improvements in Aerial Railways, (for which I have made applications for patents in Switzerland, No. 20,859, dated April 8, 1899; in Germany, No. 1,230, dated April 10, 1899; in Austria, dated April 11, 1899; in Italy, No. 45/79, dated April 10, 1899, and in France, No. 275,717, dated April 13, 1899,) of which the following is a specification.

This invention relates to improvements in aerial railways, and has for its object to provide means whereby an aerial car can be propelled up an inclined ropeway by a balloon and down the same by receiving ballast or reducing the pressure of gas in the balloon. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an aerial railway constructed in accordance with my invention, and Figs. 2 and 3 are respectively a detached side view and an end view thereof on an enlarged scale.

Similar letters refer to similar parts throughout the several views.

Referring to the figures generally, *a* are pillars formed with arms *b*, the free ends of which support the ropeway *c*, upon which a trolley *d* is adapted to run, having a balloon *e* secured to the top and a car *f* suspended from the bottom. The trolley *d* consists, chiefly, of a plate *g*, (see Figs. 2 and 3,) furnished at its inner side with studs *i*, upon which are mounted four grooved pulleys *h*, one above the other, two by two, adapted to receive between them the ropeway *c*, which pulleys partially embrace the said ropeway and prevent the car leaving the same. The outer side of the said plate is furnished with a stud *k*, carrying a double-armed lever *l*, to the upper end *l'* of which is secured the

balloon *e*, and to the lower end *l''*, by means of pulley-blocks *m*, the car *f* is suspended. The inner side of the plate *g* carries also a double-armed lever *n* and two brake-jaws *p'* *p''*, having grooved faces adapted to grip the ropeway *c* when required, the latter jaw being stationary and formed in guides *o*, rendered relatively movable through the medium of the lever *n*, which is furnished with chains *q*, manipulated from the car *f*, and its shorter arm formed with a slot *n''*, engaging a stud *n'* on the jaw *p'*.

It is obvious that owing to the ropeway *c* being at an incline and the tendency of the balloon to rise vertically the car *d* will be drawn by the balloon up the ropeway and permitted to run down by the reception of ballast or the reduction of gas-pressure in the balloon.

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

1. In an aerial railway worked by a captive balloon, a car-trolley adapted to run on an inclined rope and guided thereon by grooved pulleys *h*, arranged on the said car two by two one above the other, the said car-trolley having a plate *g* to which is fixed at a right angle to the said rope, the stud *k* carrying a double-armed lever *l*, to the upper end of which is secured the balloon and to its lower end the car, all substantially as set forth.

2. In the balloon-propelled car-trolley *d*, the double-armed chain pull-lever *n* fulcrumed to the plate *g* in combination with two brake-jaws *p'*, *p''* having grooved faces adapted to grip the ropeway *c*, of which *p''* is stationary and *p'* rendered relatively movable on the plate *g*, through the chain pull-lever *n*, all substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HEINRICH SUTER.

Witnesses:

A. LIEBERKNECHT,
E. STEIGER-DIEZIKER.