

No. 709,343.

Patented Sept. 16, 1902.

A. H. MAYHEW.
SUSPENSION RAILWAY.

(Application filed Jan. 8, 1902.)

(No Model.)

4 Sheets—Sheet 1.

Fig: 1.

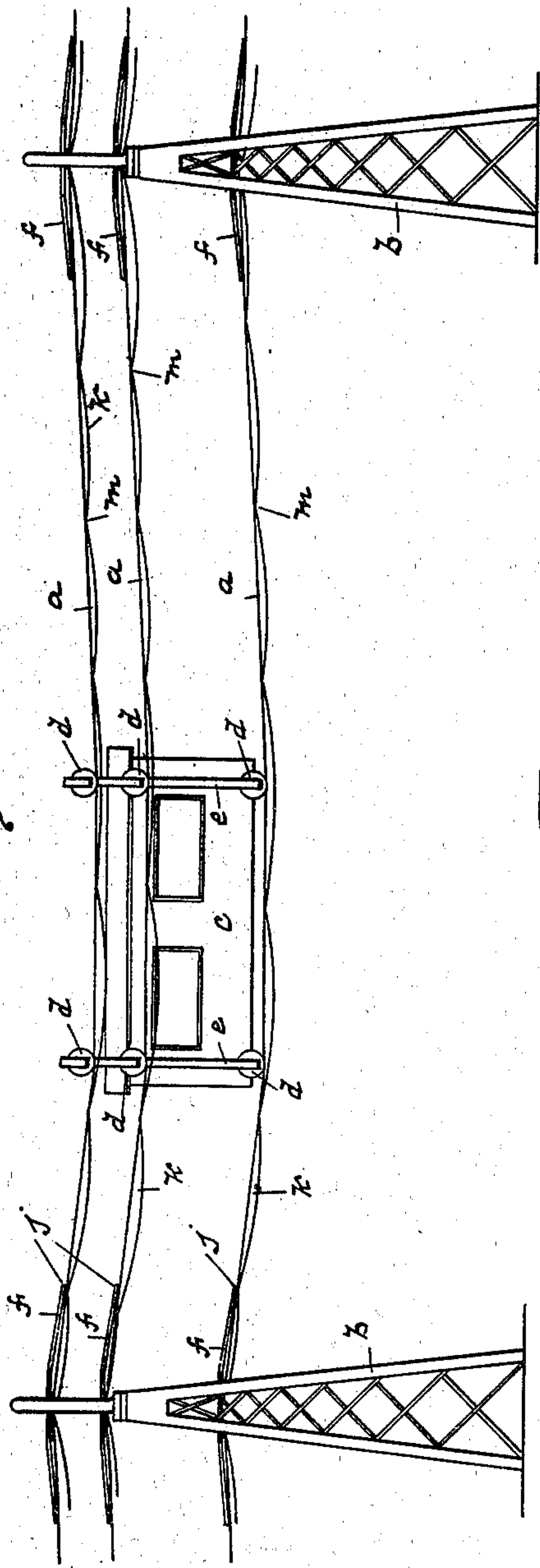
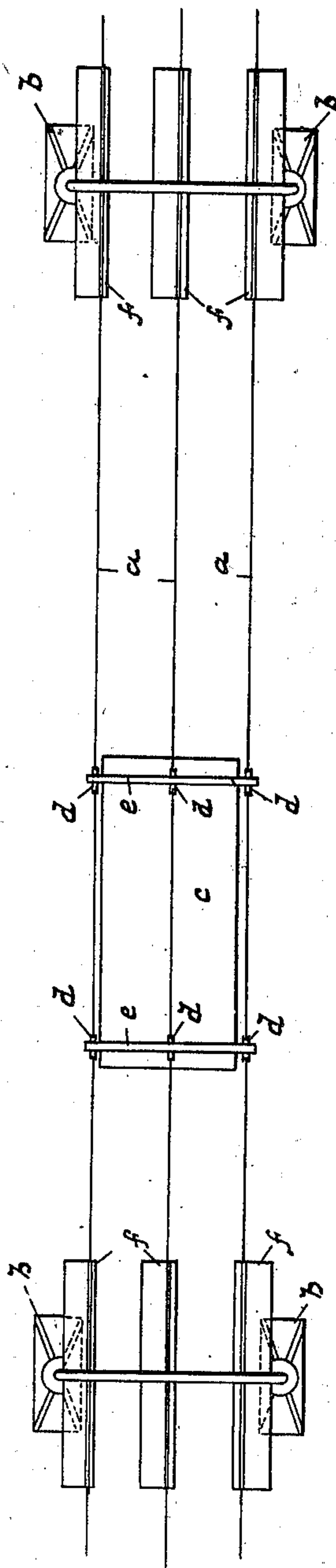


Fig: 2



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Fig. 4.

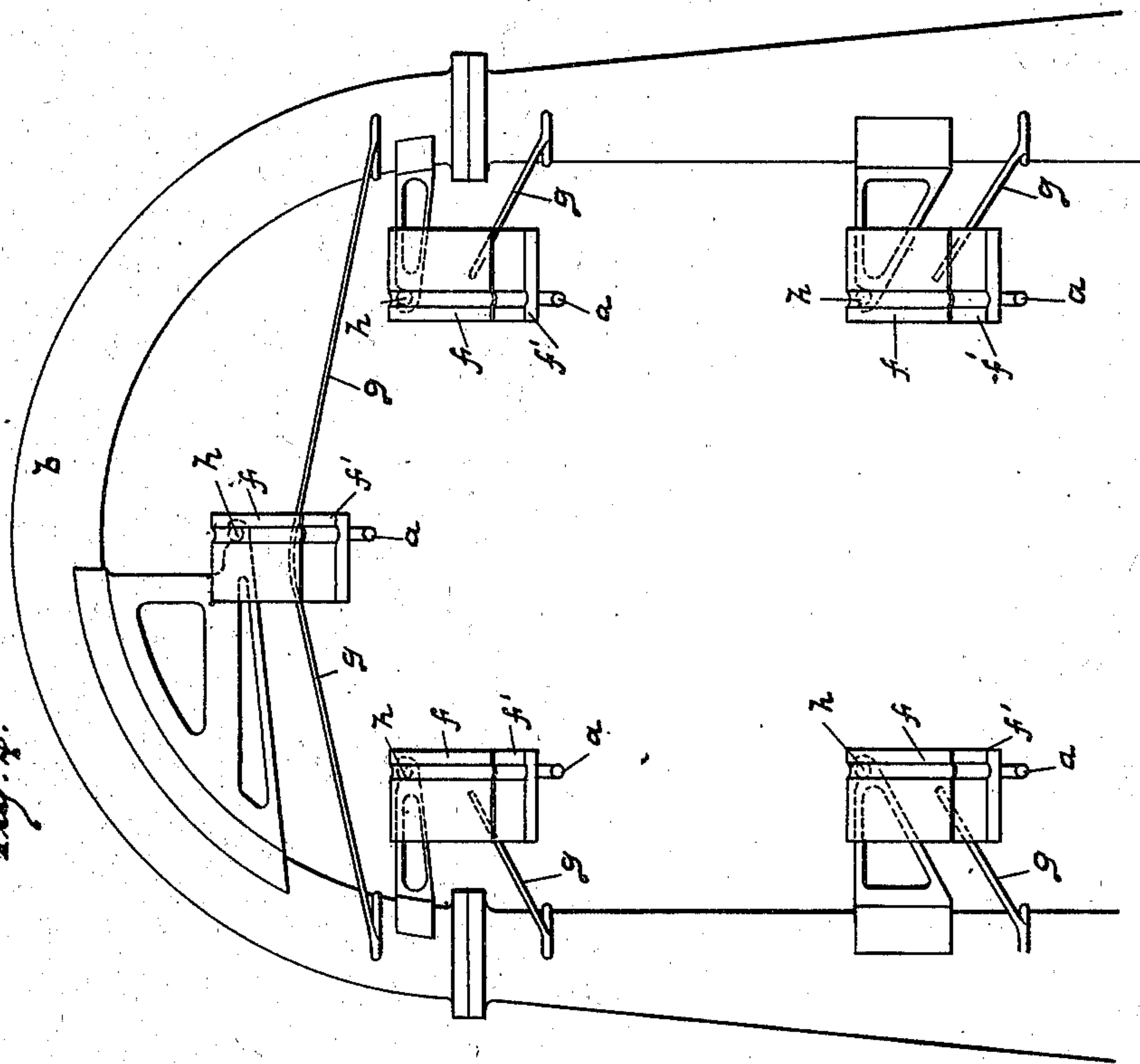
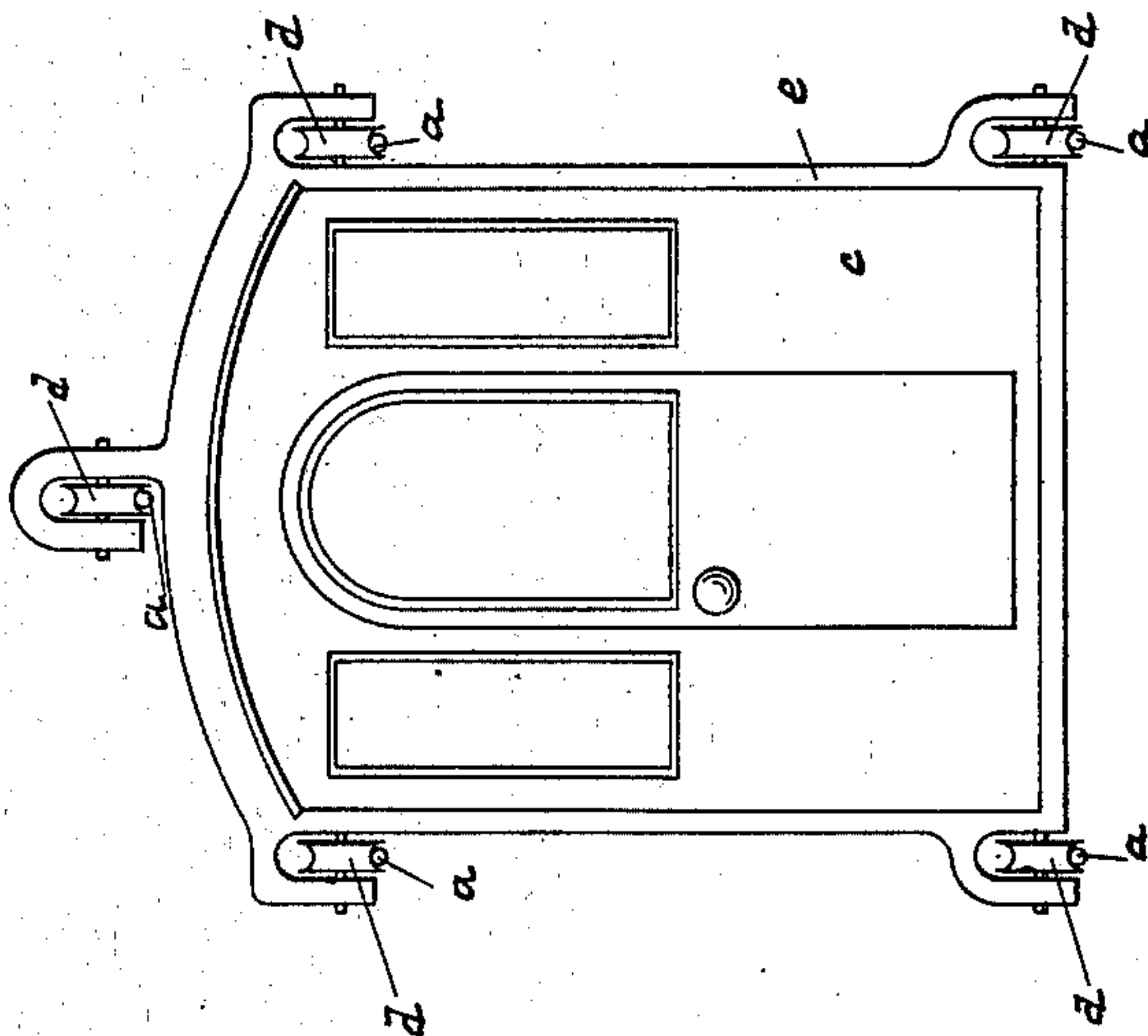


Fig. 3.



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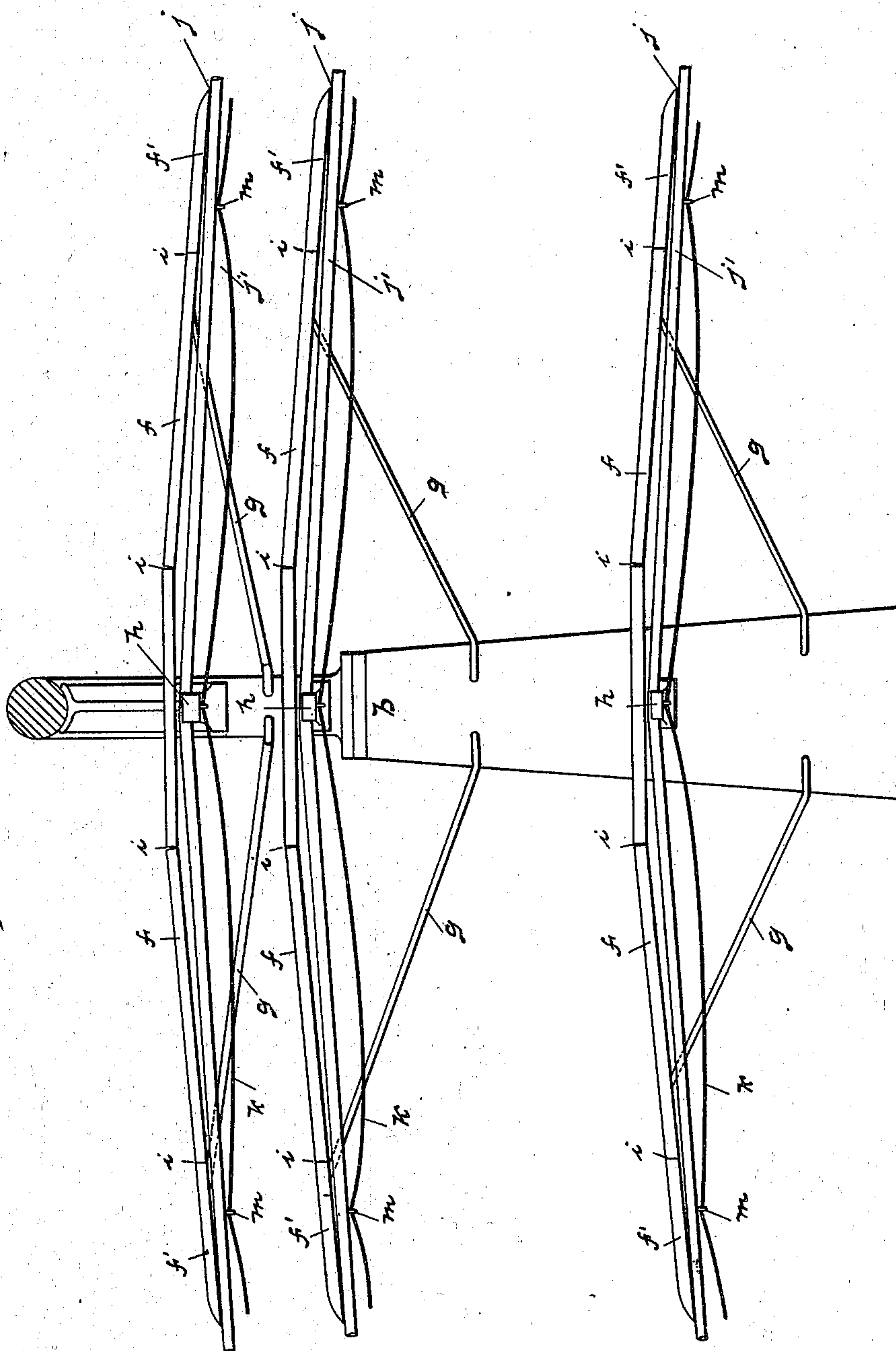
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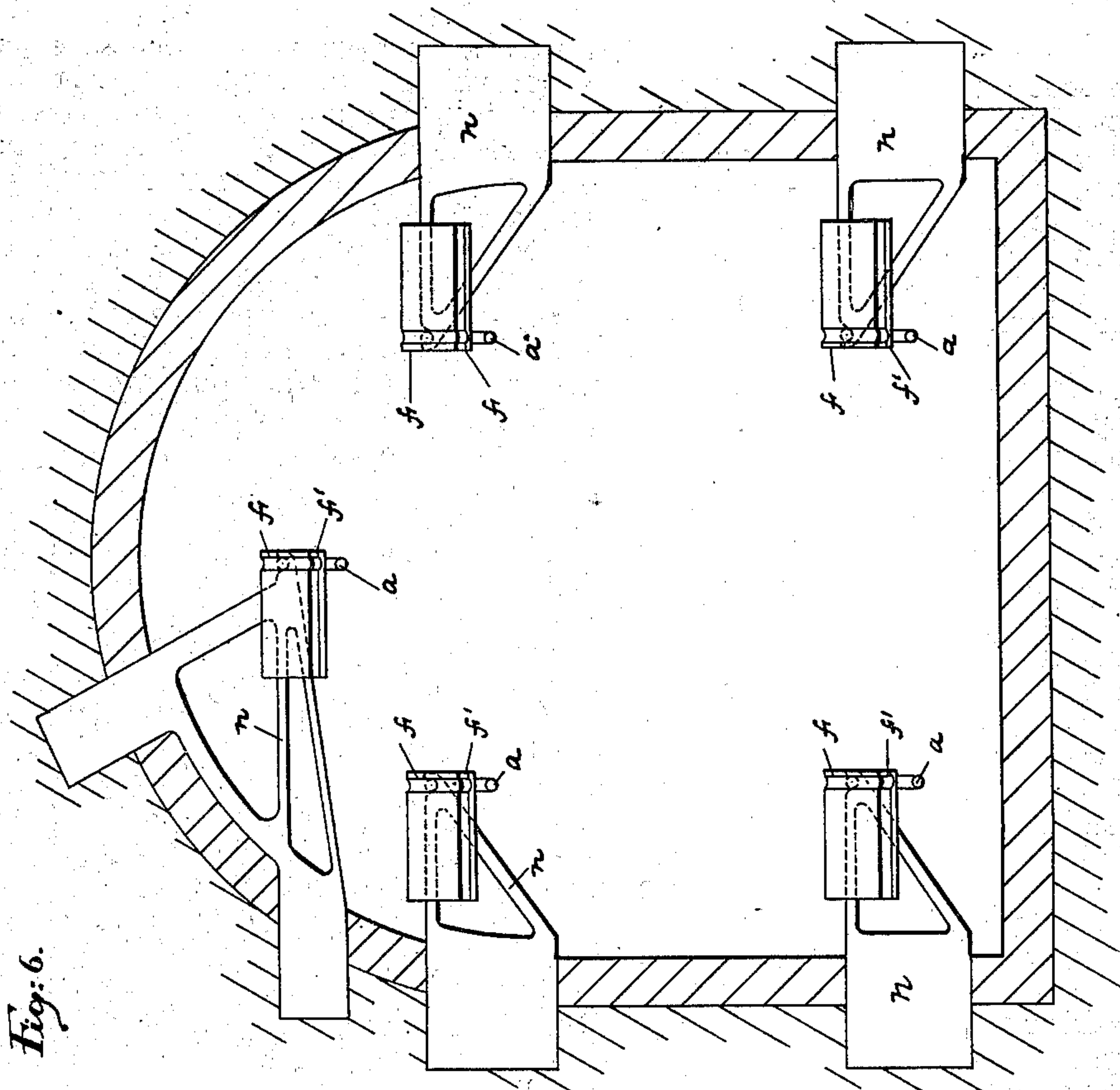
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(Application filed Jan. 6, 1902.)

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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

ALFRED HENRY MAYHEW, OF BALHAM, ENGLAND.

SUSPENSION-RAILWAY.

SPECIFICATION forming part of Letters Patent No. 709,343, dated September 16, 1902.

Application filed January 6, 1902. Serial No. 88,646. (No model.)

To all whom it may concern:

Be it known that I, ALFRED HENRY MAYHEW, a subject of the King of Great Britain, and a resident of Balham, in the county of Surrey, England, have invented certain new and useful Improvements in Suspension-Railways, (for which I have obtained a patent in Great Britain, No. 13,627, dated July 4, 1901,) of which the following is a full, clear, and exact specification.

This invention has for its object a new or improved suspension-railway formed by a train suspended from wires or ropes running over lower wires or ropes and guided or held in position by other wires or ropes, the whole railway upheld by towers or other suitable structures or by brackets or the like in tube or underground railways.

The railway consists of, first, three or more upper rails of wire, rope, or like material, to which are attached by wheels, rings, or other contrivances and therefrom suspended the car or cars of the train, which may or may not have an engine or motor attached and suspended in like manner; second, the suspended train to rest upon and run or be drawn over two or more rails of wire, rope, or like material, and, if necessary, to be guided or held in position by other wires or ropes, to which the train may also be attached by wheels or rings.

For purposes of illustration I will refer to the annexed drawings, which merely show the principle of my invention without attempting to illustrate the necessary engineering details.

Figure 1 is an elevation of my suspension-railway, two supports only being shown; Fig. 2, a plan view of same; Fig. 3, an end elevation of car; Fig. 4, a transverse elevation of top of a support, showing the arrangement of hinged platforms; Fig. 5, a sectional elevation taken at a plane at right angles to Fig. 4; Fig. 6, a section of tube or underground railway with my invention applied thereto.

As already described, the main principle of my invention is to employ three or more wire cables or ropes which are stretched between supports or structures.

In Figs. 1 and 2 I have illustrated the employment of five wires *a*. These wires are secured to and supported at convenient dis-

stances by structures of a suitable nature, (illustrated by the supports *b*, Fig. 1.) At the desired points along the line these structures are provided with a lift or any suitable means of elevation to the platform on a level with the cables. The car *c* is provided with the wheels or grooved rollers *d*, which run upon the wires *a*, as shown in Figs. 1 and 5. These wheels are carried by strong frames *e*, into which the car is built. In the illustration two of these frames only are shown; but I may employ any number that the length of the car may require.

Referring to Fig. 5, *f* represents platforms which are held by the structures at the point *h*, the parts thereof being pivoted together at the points *i*.

As the car approaches the point *j* the wire cables will slightly sag, as shown in Fig. 1, and in order to overcome the strain on the length of cable nearest the support I employ for each cable the hinged platform, as above described, these platforms being carried by the structure or support *b*. As the car approaches the structure or support *b* it will run onto the hinged platforms *f*. By this means the strain on the short length of cable between the car and support is removed from the cable, and also the jolt or jerk which would occur in passing the support is avoided.

g represents supporting-rods attached to the pivoted platform and being forked at their other end, so as to engage around or with the support *b* in the desired manner, so that when the weight of the car is at the point *j'* the outer end of the pivoted platform will be at its lowest point, at which position the forked end of the supports will engage on the structure *b*, so taking the weight of the car and platform off the cable. If desired, I may also provide a second platform *f'* on the end of the pivoted platform, so as to prevent any jolting of the car in running onto the main hinged platform *f*, as it would be likely to do when the car is very heavy.

Any convenient means of propulsion may be employed for the cars, such as overhead electric system, in which case the top cable may carry the current, or I may employ a separate conducting-wire for this purpose. I also provide a means whereby should one of the cables break it will be prevented from

falling to the ground, this being illustrated in Figs. 1 and 5.

k is a loose cord or rope connected to the structure at *l* and running underneath the cable and being connected thereto in any suitable manner at a number of points *m*. By this means it will be seen that if a cable should break it would be supported by this cord or rope *k*.

Referring to Fig. 6, in this view I have shown my invention applied to underground or tube railways. The cables are supported by the brackets *n* or any other suitable means at convenient distances, any curves being navigated by the employment of platforms or rails *j*, which may be curved, of the desired length, and may be suitably supported.

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

1. In suspension-railways in combination, three or more wire cables or ropes, secured to a series of structures or supports, a car built into strong frames carrying grooved wheels or pulleys which run on aforesaid wire cables or ropes, hinged platforms carried by said structures or supports onto which the cars

run when passing said structures or supports said hinged platforms being supported by sliding supports, a loose rope or cord running underneath each cable or rope, substantially as described and illustrated herein.

2. In tube or underground railways in combination, three or more wire cables or ropes, secured to a series of brackets or supports, a car built into strong frames carrying grooved wheels or pulleys which run on aforesaid wire cables or ropes, hinged platforms carried by said brackets or supports onto which the cars run when passing said brackets or supports, said hinged platforms being supported in lower position in a suitable manner, a loose rope or cord running underneath each cable or rope, curved rails or platforms at desired points onto which the cars run from the cables, substantially as described and illustrated herein.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of December, 1901.

ALFRED HENRY MAYHEW.

Witnesses:

JOHN NEWTON,

CHARLES H. BRIGGS.