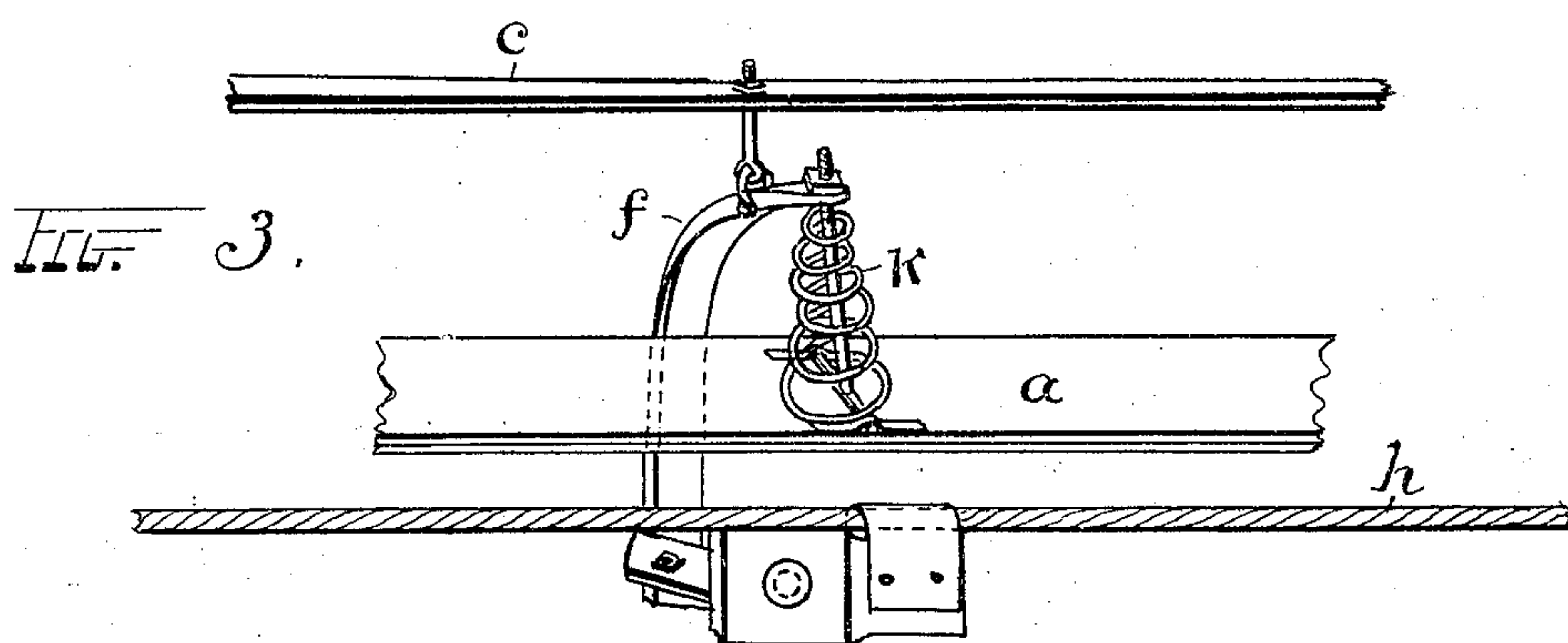
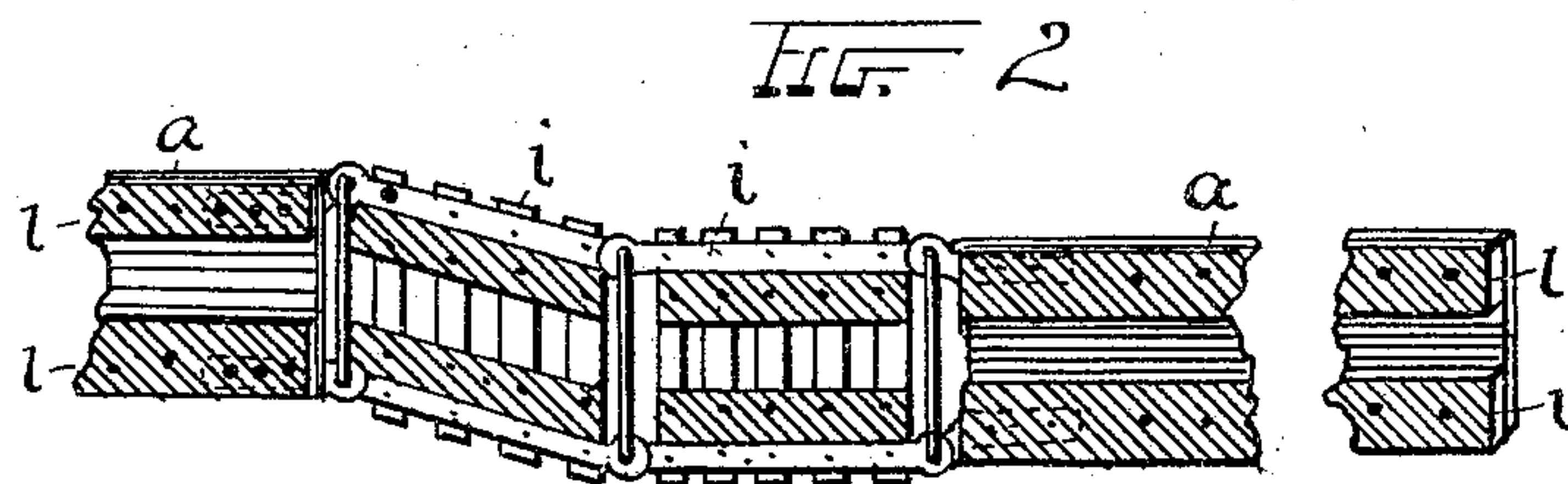
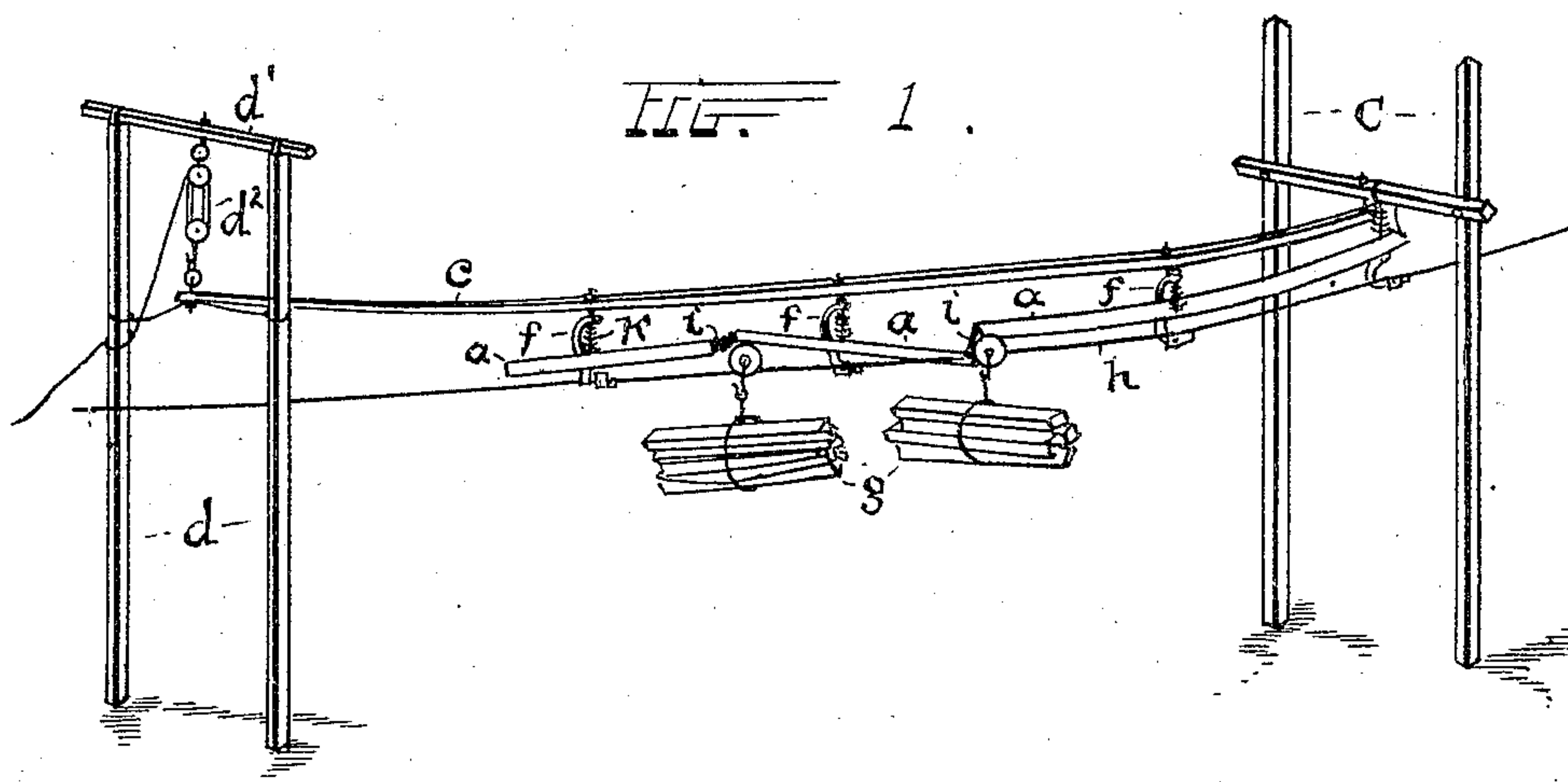


No. 791,091.

PATENTED MAY 30, 1905.

J. E. GAMALIELSON.  
BRAKE FOR TROLLEY WHEELS.  
APPLICATION FILED OCT. 8, 1904.



WITNESSES:

*A. M. Moyer.*  
*R. B. Moyer*

INVENTOR.

*Johan Edward Gamalielson*  
BY *H. J. Fisher*  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

JOHAN E. GAMALIELSON, OF KAUMANA, TERRITORY OF HAWAII.

## BRAKE FOR TROLLEY-WHEELS.

SPECIFICATION forming part of Letters Patent No. 791,091, dated May 30, 1905.

Application filed October 8, 1904. Serial No. 227,697.

*To all whom it may concern:*

Be it known that I, JOHAN EDWARD GAMALIELSON, a citizen of the United States, residing at Kaumana, in the district of Hilo, Territory of Hawaii, have invented certain new and useful improvements in brakes for trolley-wheels running on wire cables, carrying bundles of fire-wood, sugar-cane, &c., for transportation from one point to another by gravitation; and I hereby declare the following to be a full, clear, and exact description of the same, which will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in a brake used in connection with wire trolley-cables to check and regulate the speed of the trolleys running by gravitation on said wire cable carrying the loads for transportation, as shown in the accompanying drawings, wherein—

Figure 1 shows the brake in operation and giving a general view of same. Fig. 2 shows hinges whereby the several sections or parts of the brake are successively connected. Fig. 3 shows means of holding the brake properly near the cable above the same to frictionally engage the trolley-wheels as they pass with the loads and retard their motion to a safe speed, which is very necessary on long lines, especially in the proximity of a switch for transferring the load to another line of the trolley-cable.

Hitherto two ways have been used to check the speed of the trolleys. One was to have men stationed at several places with ropes across the path of the trolley, holding onto the rope when it had caught the trolley till it had slowed down and then letting it go past. The other way was to bring the trolley-cable so near the ground that the load would be dragging on the ground till it stopped and then start it again, both of which were very laborious and expensive.

The action of my brake, as shown and described, is practically automatic, requiring only to be adjusted to suit different grades or to allow for changes in the wind. This brake also serves to keep the several bundles or loads of wood, &c., separate from one another; but when it is subjected to very much strain in this connection it may need more attention, espe-

cially if it is desirable to have a uniform distance between the trolleys for any reason. To these several ends I employ a suitable board or plank *a* of some flexible wood from one to two inches thick and from ten to twelve inches or more wide, to be fastened to and suspended above the trolley-cable *b*, in true line with and a suitable distance above said trolley-cable, to allow the trolley-wheels, with their loads *g*, to get between the trolley-cable and the brake, and then to afford the proper pressure to frictionally engage the trolley-wheels and check their speed or stop them, if desirable. For this purpose the cable-support *f*, spiral spring *k*, and beam *c* in Fig. 3 are used. The board or plank *a* is provided with two guard ribs or rails *l* on the under side near the trolley-cable, bolted to said plank near its edges, running the full length of said plank, and so fixed as to leave a space about three inches wide in the middle of the plank, through which space the trolley-wheels pass, and said rails, one on each side, serve as guard-rails to prevent the trolley-wheels from tipping on the side by reason of the pressure of the brake and slipping off the cable. Three or more planks constructed as described, with guard-rails, &c., of a length to suit the work to be done, from six up to thirty feet long, are hinged together by triplex-action hinges *i*, as shown in the drawings, so that the ends of each plank can move from three to six inches above or below the end of the plank to which it is hinged, as shown, in order to prevent a number of trolleys from passing together under the brake.

In order to hold the brake properly in place and to secure true alinement of same with the trolley-cable and path of travel of the trolley-wheels, a beam or bar *c* is used, to which the cable-supports *f*, holding the brake-planks, are fastened by means of a bolt or the like. The brake is fastened at its upper end where the trolley-wheels enter to one of the sets of posts or towers *C* from which the trolley-cable is suspended and extends for its full length in alinement with the trolley-cable, and one or more extra sets of posts *d* are used, from the cap-piece *d'* of which a pair of tackle-blocks *d''* and rope may be operated, fastened



to the brake beam or bar *c*, holding the brake in line, and by means of which the brake may be raised out of the way when not in use.

Several of these brakes may be used in succession on the same line, according to the length of the line and the grade down which it runs.

What I claim as of my invention is the above-described trolley-cable brake, whereby the speed of the trolleys can be checked and regulated by gradual friction without any shock to the trolleys, keeping the trolleys on their tracks and allowing them to pass on on its way or to the next brake, if several are used, and where the trolleys are to be switched off from one line to another running at an angle to the first one the brake can be so adjusted as to nearly stop the trolleys and then let them start anew on the other line, one or two at a time, at moderate speed without the angle in the line causing the load to swing around and throw the trolleys off the line, as they always used to do when allowed to run at full speed at an angle.

What I claim is—

1. In brakes for trolley-cable transportation systems, a suitable friction-plank provided with guard-rails suitably placed above the trolley-cable, and a cable-support to hold said plank at a proper distance above the trolley-cable and the line of travel of the trolley-wheels and a spiral spring around the rod on said plank to give pressure to the plank for its frictional action on the trolleys, substantially as described.

2. In brakes for cable-trolleys, a frictional plank provided with suitable hinges for connecting it with the other planks in the brake and a hinged inverted-T rod, on which there is a spiral spring to give pressure, and a cable-support holding same, and fastened suitably to a brake-beam above substantially as described.

3. In brakes for cable-trolleys a suitable beam or rod, provided with means for holding the brake-planks in place, and for being fastened to the trolley-cable towers or set of supporting-posts, and with a separate set of posts suitably arranged, with a cap piece or beam on top from which said brake-beam is suspended and held in alinement with the path of the trolley-wheels substantially as described.

4. In brakes for cable-trolleys, a set of hinges suitably mounted for connecting the brake-planks and made to swing both ways up and down and allowing the free motion of the brake-planks, each plank above or below its mate according to what part of the plank is engaging the trolley-wheel for the purpose of acting as a stopper to any trolley that may come, while there is one under the brake substantially as described.

Witness my hand to the foregoing specification this 10th day of August, 1904.

JOHAN E. GAMALIELSON.

Witnesses:

FRANK PAVAO,  
CHAS. HITCHCOCK.