

(No Model.)

J. A. MILLER.

CAR SIGNAL.

No. 271,348.

Patented Jan. 30, 1883.

Fig. 1.

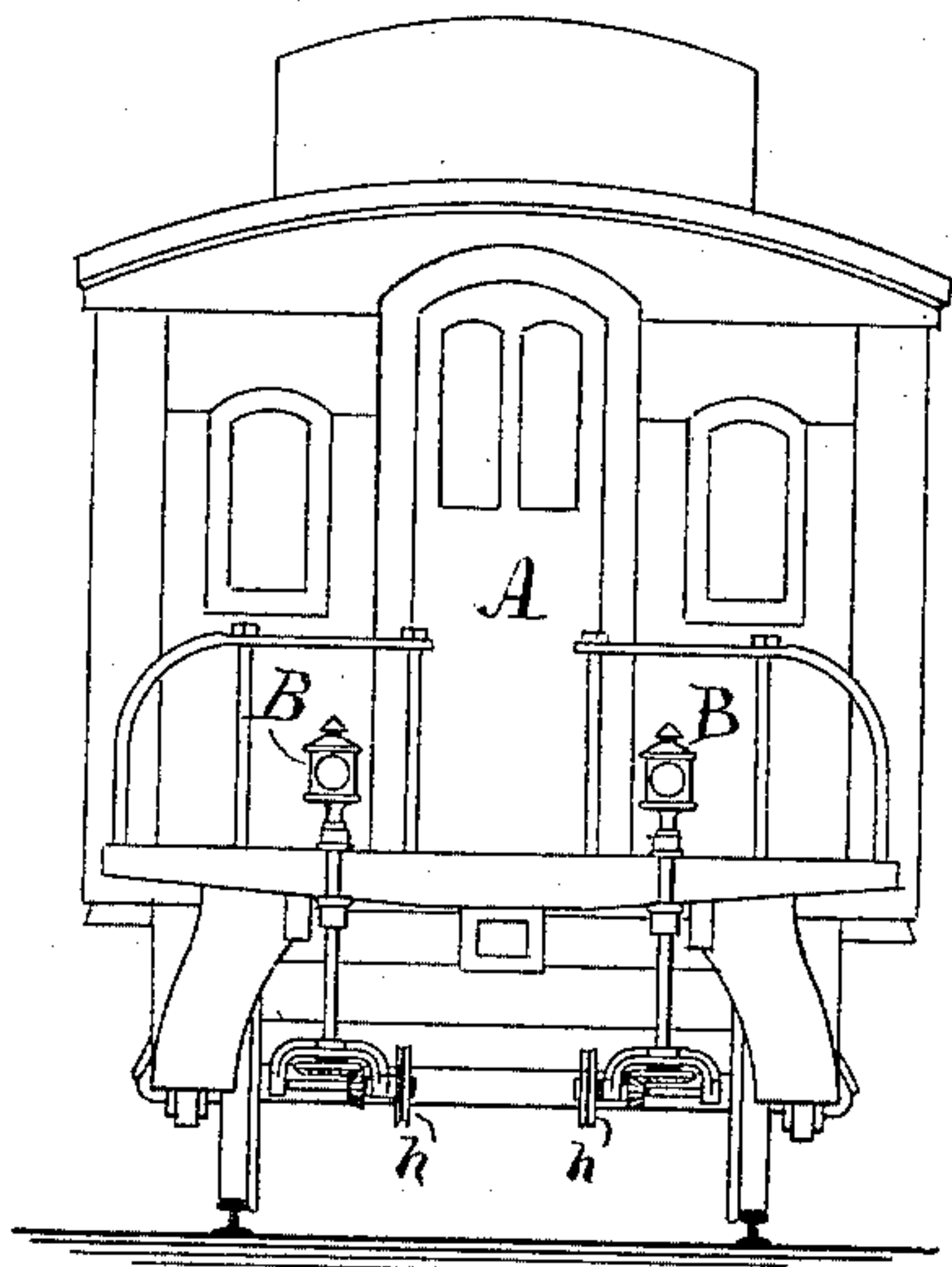


Fig. 2.

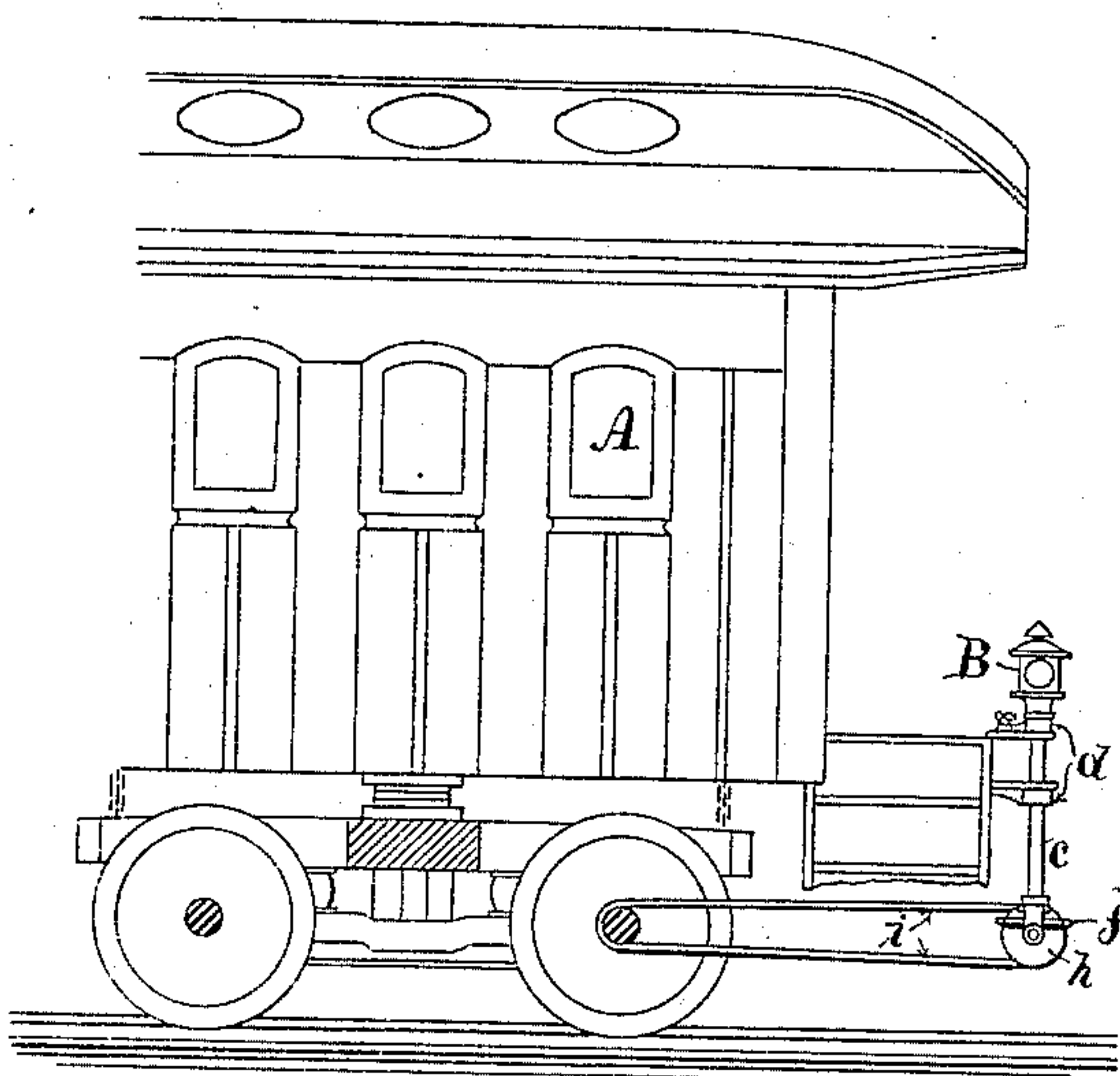


Fig. 5.

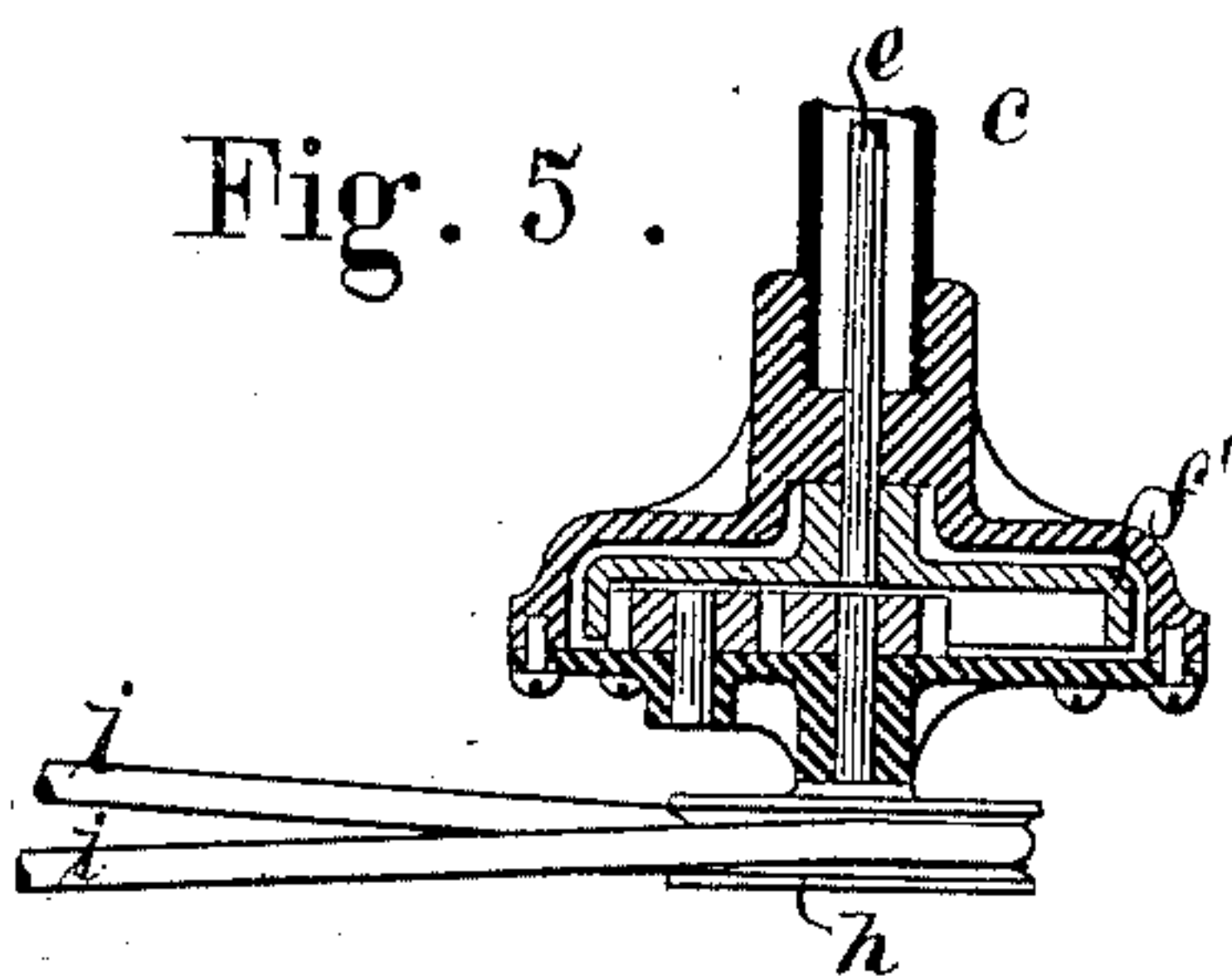


Fig. 6.

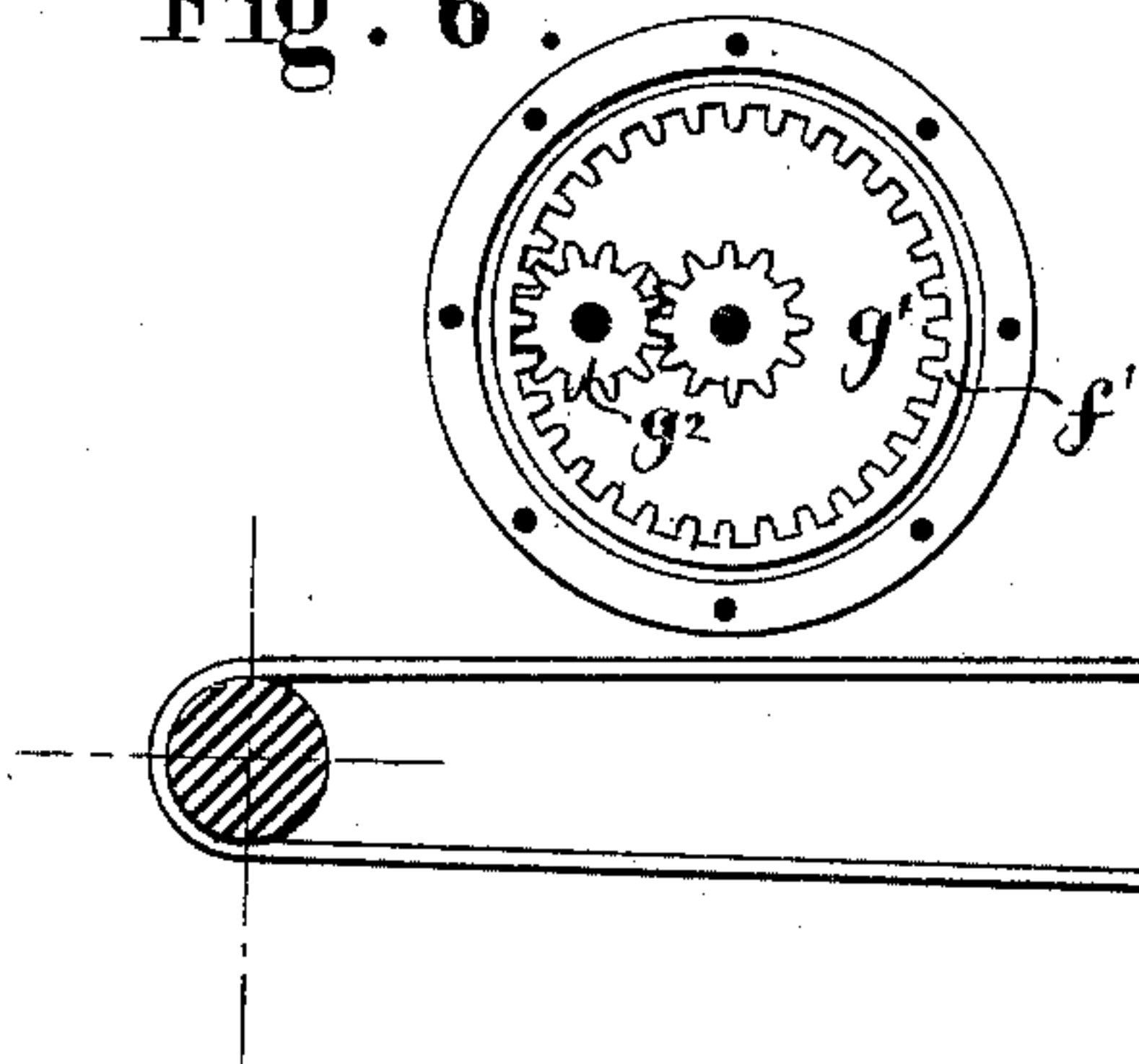


Fig. 4.

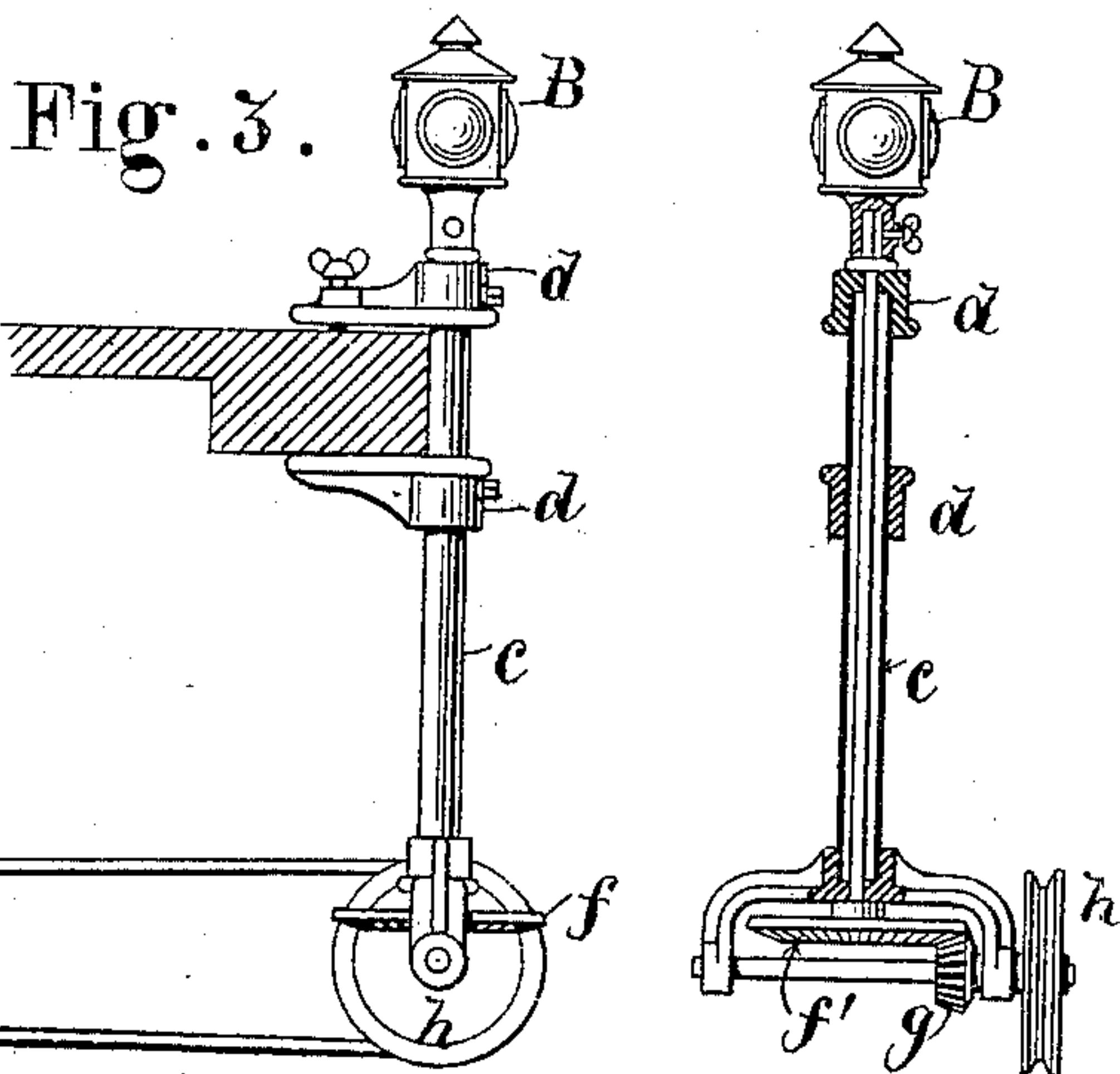
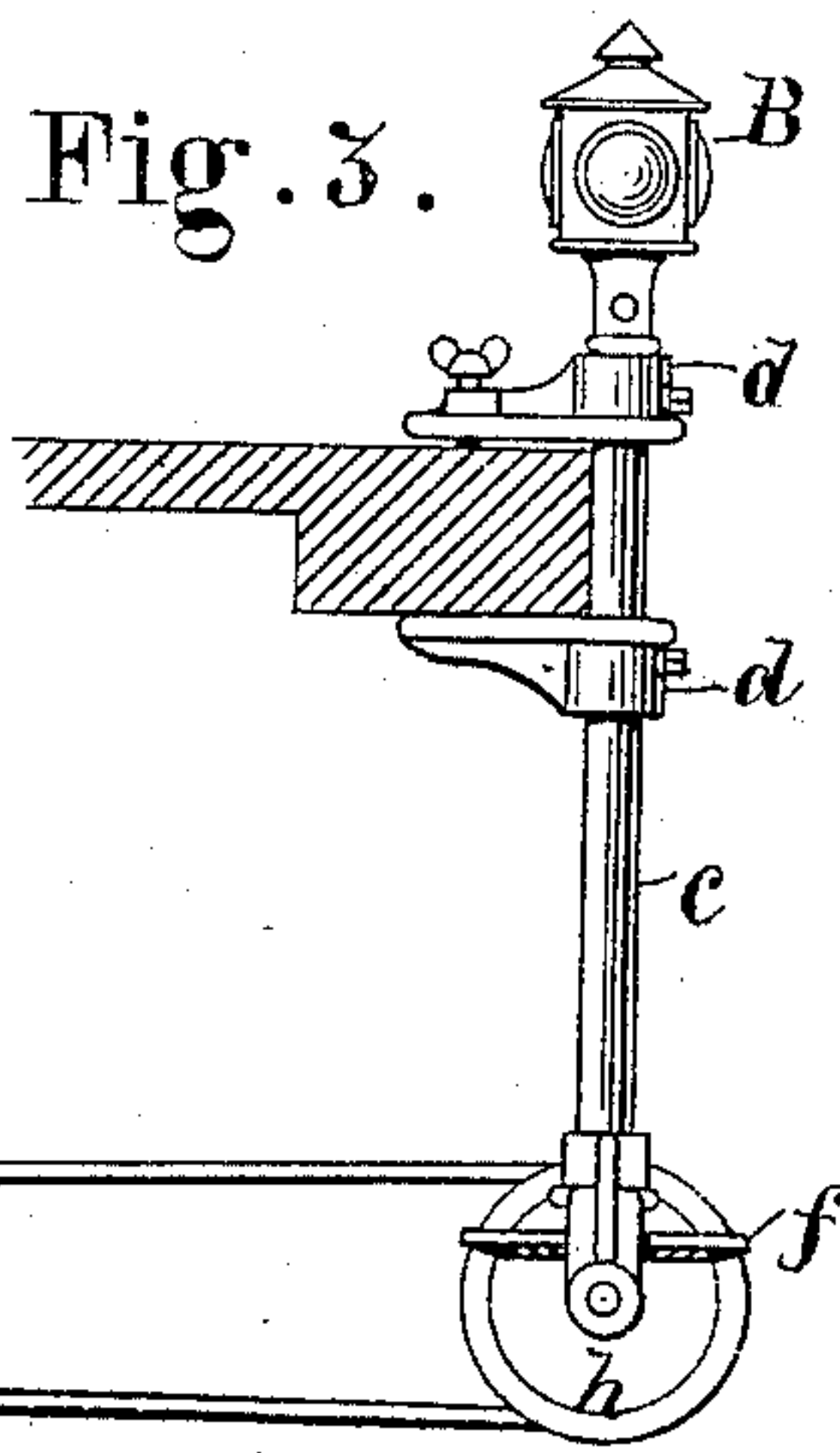


Fig. 3.



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CAR-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 271,348, dated January 30, 1883.

Application filed December 22, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. MILLER, of Paducah, in the county McCracken and State of Kentucky, have invented a new and useful Improvement in Railroad-Signals; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improved signal that may be placed on any part of a railroad-train, and will indicate the speed at which the train is running.

The object of this invention is to enable the engineer of a train, when approaching or following another train of cars, to know approximately, or, when sufficiently skilled, with absolute certainty, at what speed the other train is moving, and thereby regulate the speed of his own train and prevent collisions or accidents.

The invention consists in certain novel combinations of devices, which will be hereinafter particularly described, and pointed out in the appended claims.

Figure 1 is an end view of a railroad passenger-car, showing two lanterns on the rear platform, one or both of which may be made to revolve by connecting the same with the axle of the car. Fig. 2 is a side view of the end of a railroad-car, showing the revolving lantern connected with the rear axle of the car. Fig. 3 is an enlarged view showing the manner of connecting and driving the revolving lantern. Fig. 4 is an end view, partly in section, of the device for operating the revolving lantern. Fig. 5 is a sectional view of a compound driving-gear for driving the revolving lantern, inclosed in a dust-tight case; and Fig. 6 is a plan view of the compound gear.

In the drawings, A represents a railroad-car, and B a lantern, which may be provided with one or more bull-eyes or apertures to show the light. These apertures may be covered with white or colored glass, and when two or more are used they may be made of different colors.

C is a tube or sleeve provided at the top and bottom with bearings, in which the shaft *e* is placed, to the upper end of which the lantern B is secured by a thumb-screw or similar device.

d d are clamps constructed to be adjustable

on the tube C, so as to be quickly set to fit the platform or other part of the car to which the tube and lantern are to be secured.

f is a beveled gear secured to the lower end of the shaft *e*, and *g* is a pinion gearing into the beveled gear. On the shaft carrying the pinion *g* the grooved pulley *h* is secured, over which the elastic belt *i* passes, and this communicates motion from the axle to the lantern.

The rotation of the lantern may correspond to the rotation of the car-axle—that is to say, such proportion of pulleys and gears may be used as will impart one revolution to the lantern for each revolution of the car-wheels; or one revolution of the lantern may correspond with any desired number of revolutions of the car-wheels by properly proportioning the pulleys or gears. A fixed standard should, however, prevail in all the fixtures, so that for each fixed number of revolutions of the lantern a certain well-known distance is traveled over by the car-wheel.

Starting with the proposition that the highest practical speed of a railroad-train is sixty miles an hour, and that the lantern is so connected with the car-axle as to give at that speed one flash each second, then, if running at a speed of forty miles, the lantern will give one flash in one and a half second; when running at a speed of twenty miles, one flash in three seconds, and so on, the time between the flashes increasing as the speed of the train diminishes and decreasing as the speed of the train increases, or, stating it in other words, the flashes increase in frequency with the increase of the speed of the train.

Referring now to Figs. 5 and 6, showing a modification of the gearing, the grooved pulley *h* is placed on a vertical axle, the elastic belt connecting it with the axle or with any rotating part of the running-gear. The pinion *g'* is secured to the shaft of the grooved pulley *h*, and drives, through the fixed intermediate pinion, *g''*, the toothed rim *f'*, which is part of a disk secured to the shaft *e*. The whole is inclosed in a dust-proof and practically oil-tight case, and as the tube C is also connected tightly with the case, oil may be poured into the tube C to supply lubrication to all the gears and bearings.

The gears shown in Figs. 1, 2, 3, and 4 may

also be placed into a dust and oil tight case, to protect the same against injury, dust, and the weather; or they may be supported in a bracket, as shown.

5 The whole device may form a permanent fixture on each end of each car, if desired, and the lantern may be set on and secured to the shaft of the last car of a train, or on any other part of the train, and connected with the running-gear by the elastic belt *i*. The belt *i* 10 should be made with a connecting device, so that it can be passed around the axle or a pulley driven from the axle (I prefer to use the axle) and around the driving-pulley, when it 15 is secured together by any of the well-known devices. The belt should be made elastic, so that it can accommodate itself to the changes in the position caused by the load and the springs of a car, and also adapt itself to any 20 varying lengths between the axle and the driving pulley on different cars.

The operation of the improved signal is as follows: When the train is made up the lantern is secured to the rear end of the train, (unless some other part is preferred,) the elastic 25 belt is placed over the axle nearest the lantern, and when the train starts the lantern will revolve and flash light in any direction at such intervals as will indicate the speed of the train 30 to any one informed of the relations sustained between the flashes and the speed of the train.

It is obvious that, if desired, the signal-lantern may be connected permanently with the running-gear of the locomotive or tender, and indicate the speed at which they are traveling. 35

When all trains of a road have been provided with this signal the running of one train into another will be avoided and railroad travel made more safe than at present.

It is obvious that the light may be arranged 40 so as to be fixed, and a case provided with apertures made to revolve around the light to produce the same effect as the revolving signal-lantern shown.

Having thus described my invention, I claim 45 as new and desire to secure by Letters Patent—

1. The combination, with the tube *C*, adapted to be secured to a railroad-car, of the shaft *e*, carrying the lantern, the gears *f g*, and the belt arranged to transmit motion to said gears 50 from the car-axle, substantially as described.

2. The combination, with the rotary shaft carrying the lantern, of the tube *C*, surrounding said shaft, and the adjustable clamps *d d*, substantially as described.

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