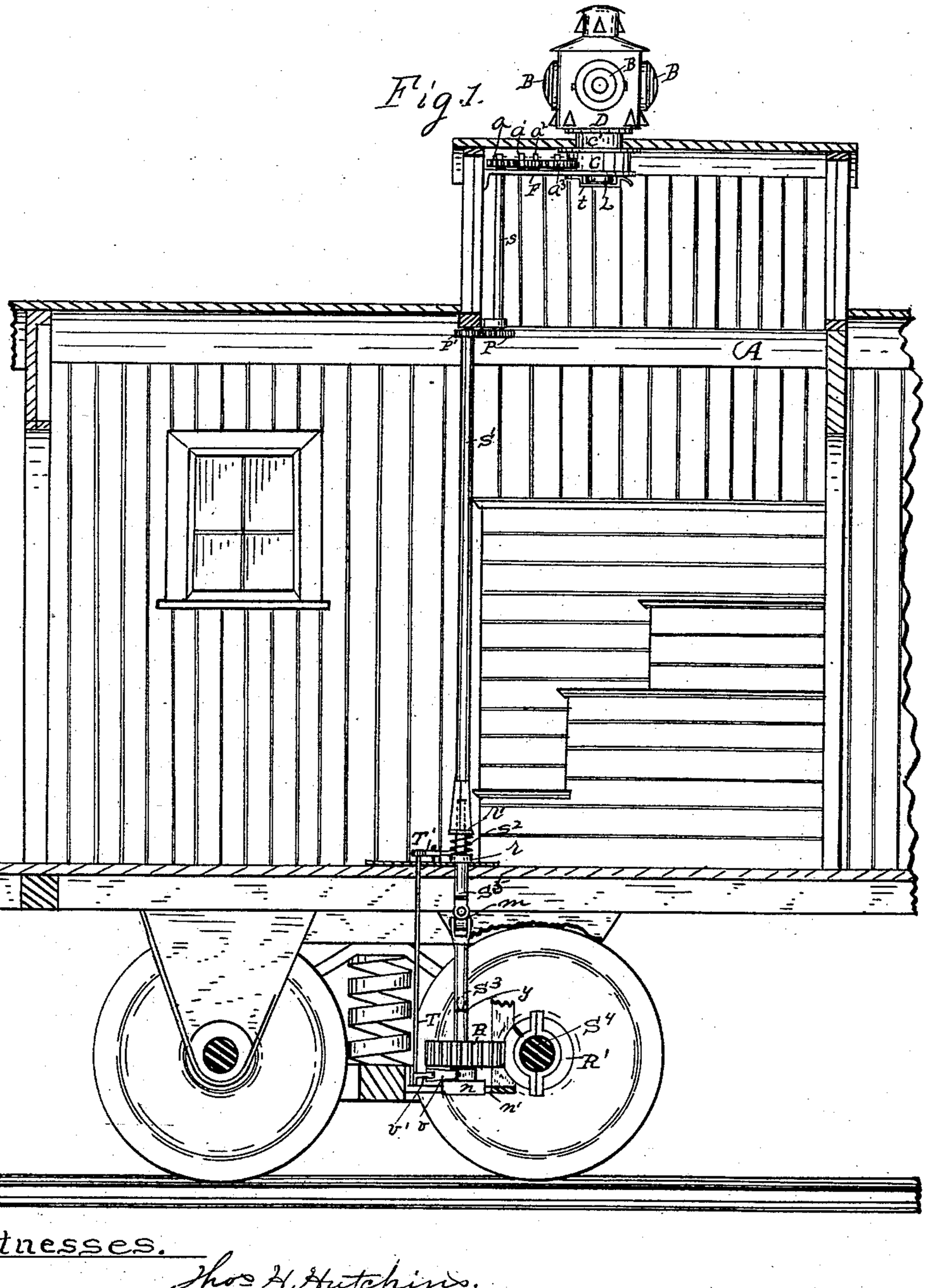
(No Model.) 2 Sheets—Sheet 1.

A. A. BISSELL.

REVOLVING CAR SIGNAL.

No. 285,380. Patented Sept. 25, 1883.

Fig. 1.



Witnesses.

Thos H. Hutchins.

Wm J Hutchins.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

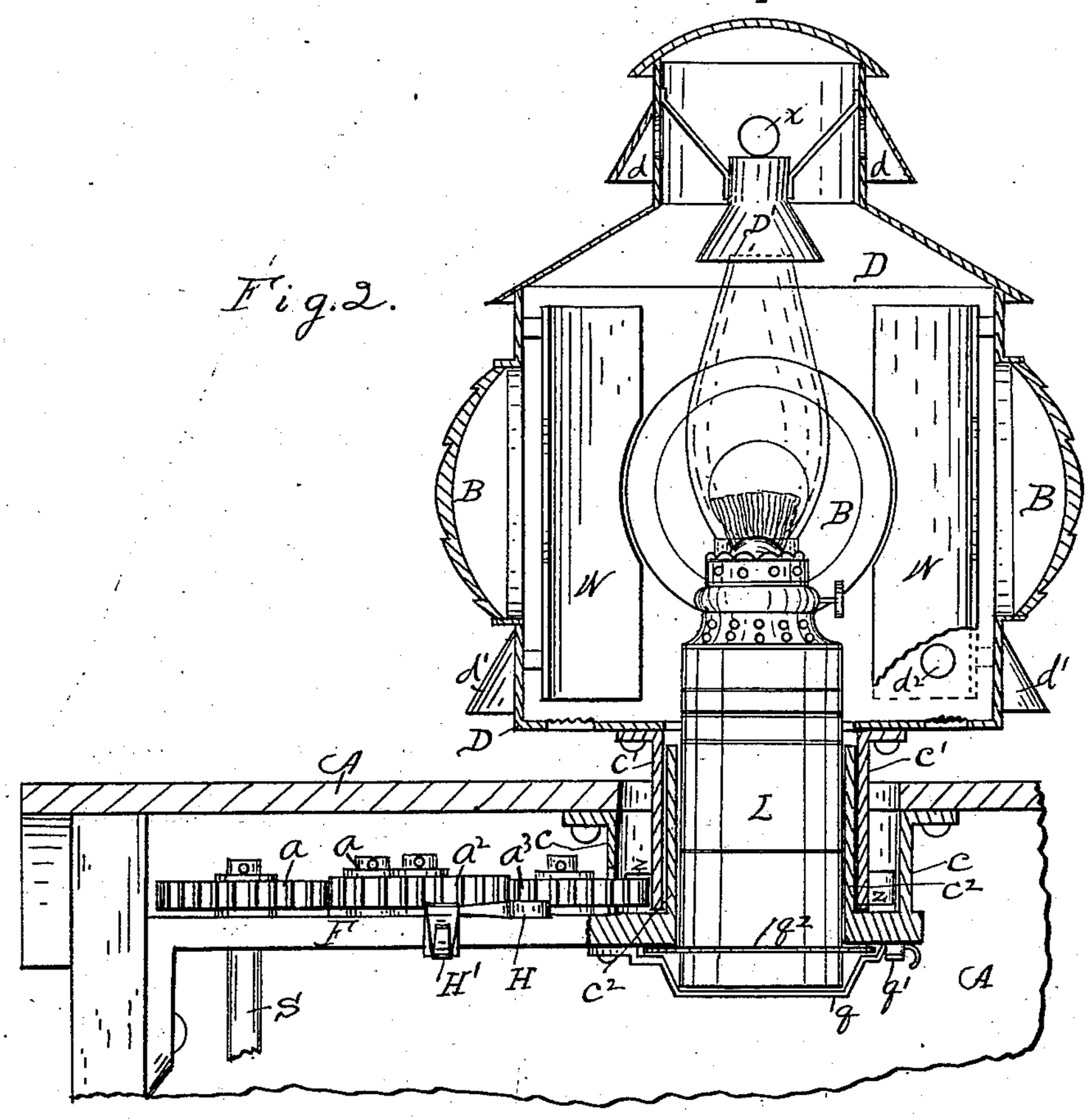
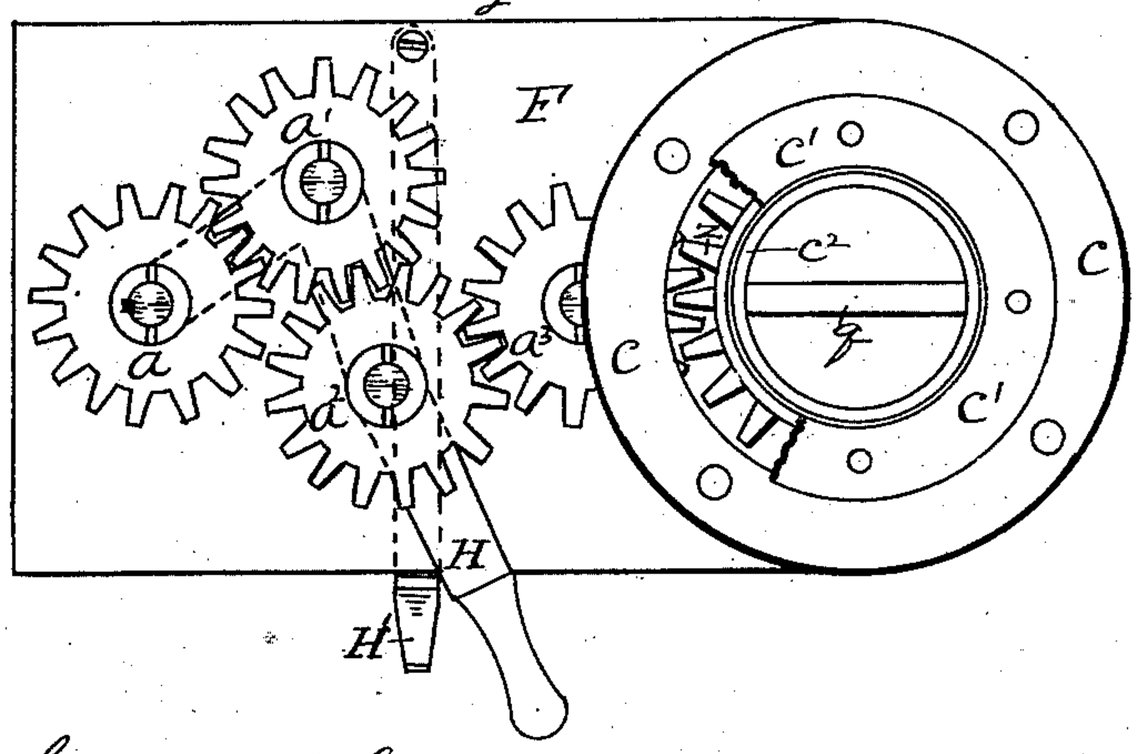


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALBERT A. BISSELL, OF JOLIET, ILLINOIS, ASSIGNOR OF ONE-HALF TO EDWARD R. KNOWLTON.

REVOLVING CAR-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 285,380, dated September 25, 1883.

Application filed July 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALBERT A. BISSELL, a citizen of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Revolving Signal-Lamps for Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a central vertical section of a car, showing a side elevation of the lamp and its operating attachments; Fig. 2, a side elevation of the gearing that runs the lamp and a central vertical section of the lamp-case, and Fig. 3 a plan view on the top of the gear-wheels that rotate the lamp-case.

This invention relates to certain improvements in revolving signal-lamps for railroad-cars, so arranged as to stand on the roof of the car and receive its rotary motion by means of suitable gearing connected to the car-axle, the object of which is to in this case rotate the lamp-case, having several sides provided with different-colored dials, the rotation of the lamp-case being designed to indicate whether or not the car is in motion, and the direction of its rotation to indicate the direction in which the car is traveling.

Referring to the drawings, A represents the body of the car proper, having the elevated portion in the roof known as the "lookout," as shown in Fig. 1, on the top of which the lamp is located.

Referring to Fig. 2, D is the lamp-case, provided on its several sides with the dials B. The case D stands on the annular tube C′, and is firmly bolted or riveted thereto, as shown in Fig. 3, by the flange c', having proper holes for rivets. The lower end of tube C′ is furnished externally with cog-teeth Z, to engage with the train of cogs a a' a^2 a^3, as shown in Fig. 3. The tube C′ sleeves down over the tube C, around which it rotates to rotate the lamp-case D above. The lamp proper, L, sits within the tube C^2 on a spring, q, below which is a latch, q', so the latch can be removed to permit the lamp L to be removed. A slot in the side of the tube C permits the teeth Z to extend through it to mesh with the cog-wheel a^3, as shown in Fig. 3. The frame or floor F supports all the cog-wheels and the lamp and case by being bolted to the sides and roof of the car, as shown. The axle S^4 of the car is provided with a worm, R′, which is made in two halves, so it can be applied to any car-axle, which worm meshes with and rotates the worm-wheel R on the shaft S^3, which stands in the step n. The shaft S^3 is provided with a point, y, to render it flexible to accommodate it to the movement of the car. Shaft S^3 connects with shaft S^5 by means of the universal joint m for the same purpose, and the square upper end of shaft S^5 sleeves into the lower end of shaft S′ to some little distance, so the vertical motion of the car above the truck will not disconnect said shafts. The coil-spring S^2 sleeves on over the upper end of shaft S^5, and stands on the collar r between it and the lower end of shaft S′, for the purpose of supporting shaft S′ and holding it up to its work. The upper end of shaft S′ is provided with the pinion P′, which meshes with and drives the pinion P on the lower end of shaft S. The upper end of shaft S is provided with the pinion a, which drives pinions a' a^2 a^3 Z and the lamp-case D, so that the lamp-case D is driven or rotated by means of the parts described, receiving their motion from the screw R′ on the axle S^4.

The worm-wheel R may be thrown out of gear with worm R′ by moving the step n on the way n', on which it slides. This is accomplished by means of the shaft T, the lower end of which is connected by means of a crank, v', to the arm v, boxed on the lower end of shaft S^3. By rotating shaft T by means of the crank T′ on its upper end, it will move worm-wheel R to or from worm R′ to connect or disconnect them, as may be desired, so as not to rotate the lamp-case when not desired, as in the day-time, when a signal-light is not needed. Contrary motion may be given the lamp-case D by shifting the pinions a' and a^2, as shown in Fig. 3. Pinions a' and a^2 are pivoted on the side of the bell-crank H, the outer end of which bell-crank H is pivoted to the journal of pinion a as its center of motion. In Fig. 3 the pinions are all shown as meshed consecutively with each other. By moving the handle of the bell-crank to the left, pinion a' will

be brought down so as to mesh with pinions *a* and a^3, thus reversing instantly the motion of the lamp-case D if for any cause desired; but it is intended that the lamp-case shall always revolve in the same direction, no matter which direction the car is traveling, and for that reason it is necessary to reverse the motion or change the position and relation of the cog-wheels as stated. The crank H is held by the catch H′, which springs down to permit the lever H to lie on either side of it, to hold the said lever so the cogs can be shifted in and out of gear, as stated, and stay in the position they are placed.

The lamp-case D is provided with the reflectors W in each of its inner corners, to throw the reflected light out of the dials diagonally opposite them. The lamp-case D is also provided with draft-inlets, covered by the hoods *d′ d′*, and draft-outlets, covered by the hoods *d d*.

The pinions *a a′* a^2 a^3 may be substituted by a bevel-gear when it is necessary that the lamp-case D should stand at a greater distance from the shaft S. The dials B are intended to be of different colors, so that the revolution of the lamp-case can be more distinguishable.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. In a car-signal, the combination of the car-axle S^4, worm R′ thereon, worm-wheel R, intermeshing with the same and mounted on a shaft supported in the movable step *n*, the jointed shaft or shafts connecting said shafts with a shifting train of gearing, and the revolving signal operated thereby, whereby the signal may be operated in the same direction by either backward or forward motion of the train.

2. In a car-signal, in combination with suitable operating mechanism, the revolving lamp-case D, its supporting geared sleeve *c′*, intermeshing with the train of gearing *a a′* a^2 a^3, the gear-wheels *a′* a^2 arranged on a bell-crank lever, H, so that by shifting said lever all, or all but the gear a^2, may be included in the train, whereby the lamp may be revolved in the same direction during either forward or backward motion of the train.

ALBERT A. BISSELL.

Witnesses:
WM. J. HUTCHINS,
THOS. H. HUTCHINS.