

(No Model.)

H. G. KRASKY.
STATION INDICATOR.

No. 502,625.

Patented Aug. 1, 1893.

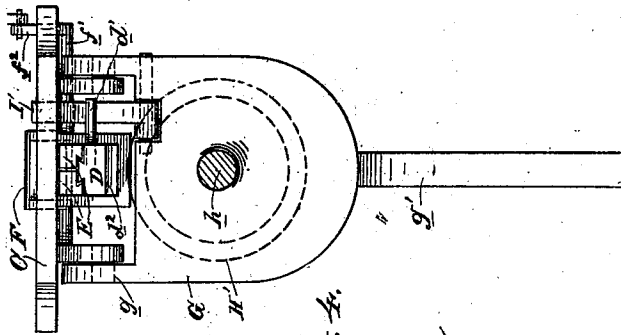


Fig. 4.

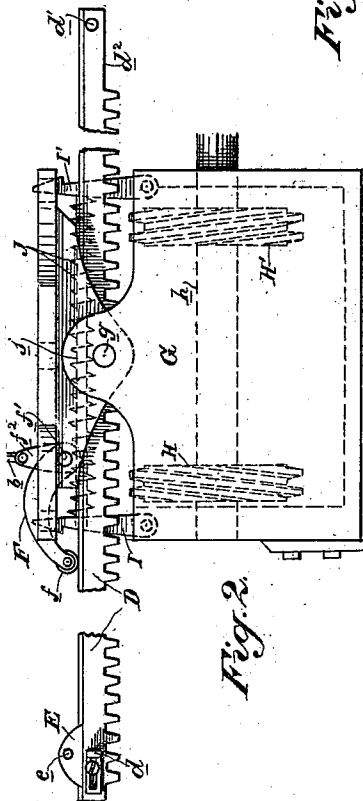


Fig. 2.

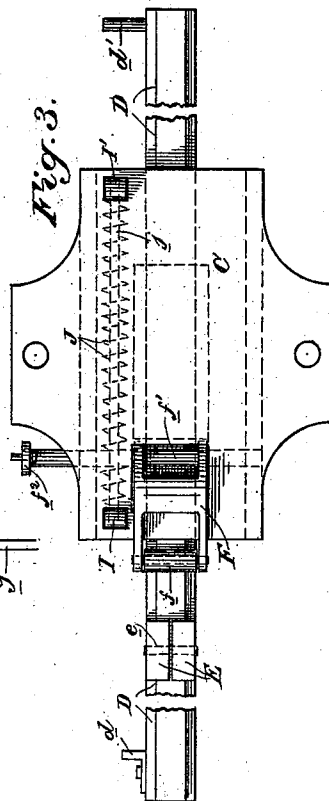


Fig. 3.

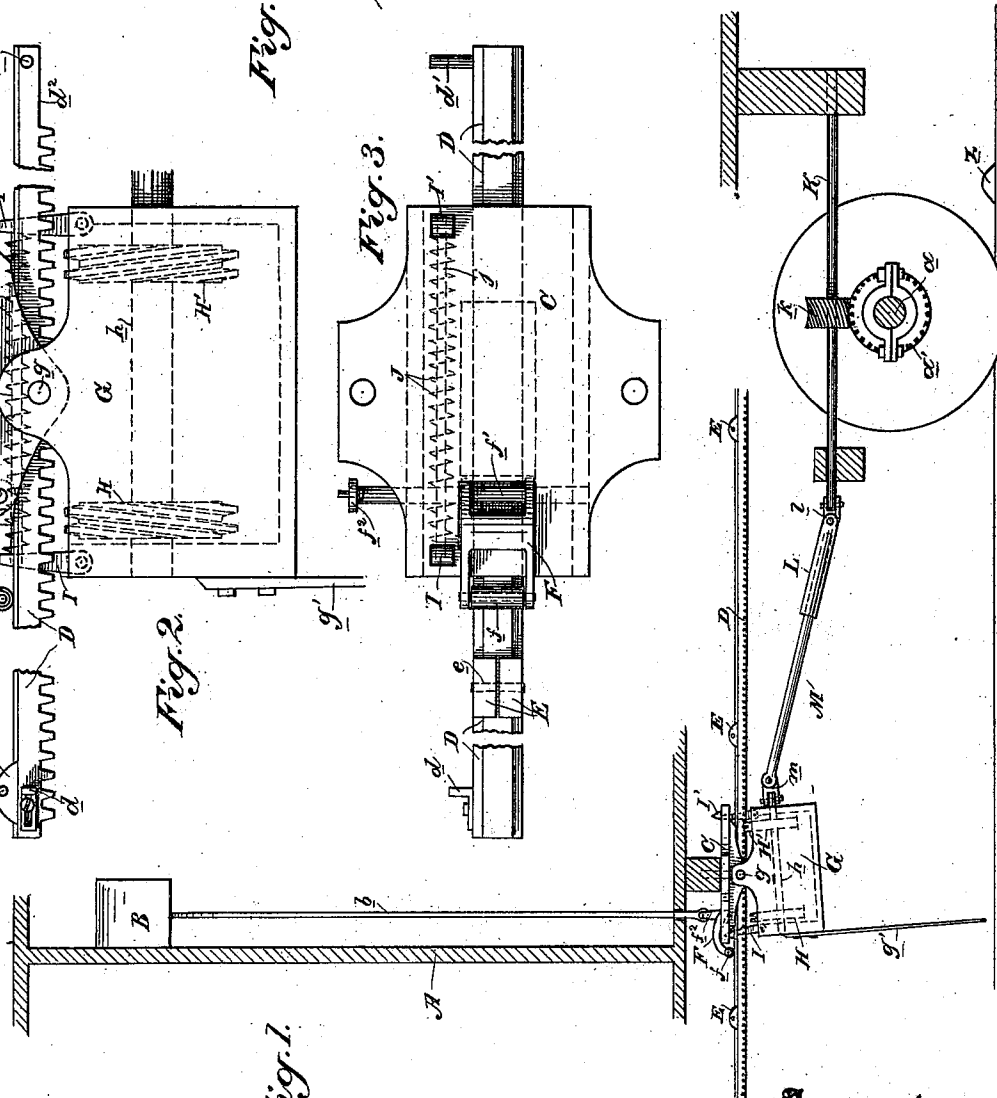


Fig. 7.

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UNITED STATES PATENT OFFICE.

HENRY G. KRASKY, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE UNITED STATES INDICATOR COMPANY, OF CALIFORNIA.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 502,625, dated August 1, 1893.

Application filed October 1, 1892. Serial No. 447,526. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. KRASKY, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Railway-Car Indicators and Exhibitors; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of exhibiting devices for railway cars, either for street or station indicating or advertising purposes, in which the indicator or exhibitor mechanism is operated by power transmitted through suitable connections from the axle.

My invention consists in the novel construction, arrangement and combinations of the power transmitting mechanism from the axle to the indicator or exhibitor, which I shall hereinafter fully describe and specifically point out in the claims.

The object of my invention is to provide a simple, effective, durable and accurate indicator or exhibitor. Also to compensate and provide for any inaccuracy due to "slipping," by so constructing the power transmitting connections from the axle, that they shall be automatically thrown out of and into action at given times and points, and set initially at the beginning of each round trip.

Referring to the accompanying drawings for a more complete explanation of my invention,—Figure 1 is a side elevation of my device. Fig. 2 is a side elevation of the rack, the rocking frame and connected parts. Fig. 3 is a plan of same. Fig. 4 is an end view.

A is a car in which at any suitable point is located the box B of the indicator or exhibitor. This box may be of any suitable character adapted to successively exhibit the names of streets or stations, or advertising placards. It is unnecessary herein to show any particular form of indicator or exhibitor, it being sufficient to show the box B, and the movable rod *b* by which the internal mechanism of the box is operated.

Under the car is bolted a bracket C, in which is mounted and adapted to move a rack D. This rack may be of any suitable form or shape, though I have here shown it as a straight bar. On the upper surface of this rack are the cams E, which in the movement

of the rack are adapted to pass under and to raise a roller *f* of an arm F pivoted to the bracket C and carrying a shaft *f'* having a crank arm *f''* extending under and adapted to move the rod *b* of indicator B. By imparting movement to rack D, and by setting the cams E thereon in required numbers and separated by proper intervals, it is evident that through the arm F and its crank shaft *f'* the indicator or exhibitor will be repeatedly operated.

To provide for the proper positions of the cams E on the rack, they are connected therewith adjustably, by being each in separable sections or halves, mounted on the rack by a dovetail joint and clamped together to fix them in place by means of a cross bolt *e*. Thus the cams may be set in any position on the rack to effect the timely operation of the indicator or exhibitor.

The rack is operated by the following mechanism: Pivotally suspended from bracket C, by the pin *g*, is a rocking frame or box G, in which is mounted a shaft *h*, said shaft carrying near one end a worm pinion H, and near the other end a worm pinion H', the pitch of the threads of the two pinions being reversed, whereby the engagement of one with the rack D will move said rack in one direction, while the other will move it in the other direction.

The box or frame G is heavier, as shown, at one end, whereby its position of equilibrium is such as to maintain the engagement of the worm pinion H' with the rack and the disengagement of pinion H therewith. Pivoted to one end of the frame or box G is a catch I and pivoted to the other end is a catch I'.

These are controlled by an intervening spring J on a guide rod *j*. The upper ends of the catches play up through holes in bracket C and are adapted to engage the top thereof.

On one end of rack D is a trip pin *d*, and on the other end is a trip pin *d'*, and at the latter end the teeth of the rack are omitted as shown at *d''*. Extending downwardly from one end of the rocking frame or box G is a contact arm *g'* which is adapted to come in contact with a fixed lug *z* located in the roadway at the starting point of the round trip of the car. The operation of these parts is as follows: When the car starts, the arm *g'* coming in contact with lug *z* rocks the box or

100

frame G so that its catch I is lifted up to its engagement with the top of bracket C, and holds said box in this position with its worm pinion H in engagement with the rack. The shaft *h* being now turned, the pinion H will move the rack forwardly, and the cams E of the rack will successively operate the indicator or exhibitor as heretofore described. When the trip pin *d* of the rack reaches catch I it will force said catch from its engagement and thereupon the frame or box G will by gravity rock to the other side, thereby throwing its other catch I' up to its engagement with the bracket C. In this position the pinion H will be out of gear with rack D, but the pinion H' will be thrown into gear with said rack. This change takes place as near as may be at the terminus of the outward bound trip. The rack now begins to return, and under the action of the returning cams E, the indicator or exhibitor continues to be operated. Now, when the trip pin *d'* comes in contact with catch I', it will release said catch, ready to permit the box or frame G to be rocked again in the other direction, under the positive contact of arm *g'* with lug *z* when the car starts on its round trip once more. But to provide for the inaccuracy, due to slipping, it will be seen that whether the car has reached the end of its journey or not the mechanism will be automatically thrown out of operation and the rack will stop when its toothless portion *d*² reaches pinion H'. The latter will continue to revolve, but will have no effect. Thus the device is always automatically set, ready for the beginning of the trip.

The trip pin *d* at one end of the rack may be adjustably connected, as shown, whereby its position may be regulated to determine the reversal of the rack movement, according to the distance of the travel of the car.

Rotation may be imparted to the shaft *h* by any suitable connection. I have here shown the following mechanism:—Upon the axle *a* of the car is mounted a worm *a'* which meshes with a worm gear *k* on a shaft K. This shaft is connected by a knuckle *l* with a square sleeve L, into which fits and slides a square shaft M, the other end of which is connected by a knuckle *m* with shaft *h*. The sliding connection between sleeve L and shaft M is to provide for the up and down movements of the car on its springs and for the swinging movements of the trucks. The knuckles also provide for these movements. Thus the rotation of the axle is transmitted to shaft *h* and the indicator or exhibitor is operated as described.

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

1. In combination with the actuating mechanism of a car indicator or exhibitor, a movable rack carried by the car, means for actuating the rack, a succession of cams thereon and intervening means actuated by the cams

to operate the indicator or exhibitor mechanism, substantially as herein described.

2. In a car indicator or exhibitor and in combination with the indicating or exhibiting mechanism thereof and a rod for operating it, a movable rack carried by the car having cams upon it means for actuating said rack and a swinging arm within the path and operated by said cams to operate the rod of the indicating or exhibiting mechanism, substantially as herein described.

3. In a car indicator or exhibitor and in combination with the indicating or exhibiting mechanism thereof and a rod for operating it, a movable rack carried by the car having cams upon it, a swinging arm located within the path and operated by said cams to operate the rod of the indicating or exhibiting mechanism, and power transmitting connections from the axle of the car to operate the rack, substantially as herein described.

4. The combination of a movable rack carried by the car, a rocking frame adjacent to said rack and carrying a revoluble shaft, reversed pinions on said shaft adapted to be thrown by the rocking of the frame alternately into and out of gear with the rack, means for rotating said pinions, catches for holding the pinions to their engagements and means on the rack for tripping said catches, substantially as herein described.

5. In combination with the actuating mechanism of a car indicator or exhibitor, a movable rack carried by the car and adapted to operate said mechanism, a rocking frame carrying a revoluble shaft, reversed pinions on said shaft adapted by the rocking of the frame to be alternately thrown into and out of engagement with the rack means for rotating said pinions, catches on the frame for holding the pinions to their engagement and trips on the rack for releasing said catches, substantially as herein described.

6. In combination with the actuating mechanism of a car indicator or exhibitor, a movable rack, carried by the car a succession of cams on said rack, a swinging arm within the path of and operated by said cams and a rod operated by said arm to actuate the indicator or exhibitor mechanism, a rocking frame carrying a revoluble shaft, reversed pinions on said shaft adapted by the rocking of the frame to be alternately thrown into and out of engagement with the rack, means for rotating said pinions, catches on the frame for holding the pinions to their engagement and trips on the rack for releasing said catches, substantially as herein described.

7. In a car indicator or exhibitor, the combination of the bracket C fixed to the car, the rack mounted in said bracket, the cams on the rack and the swinging arm actuated by said cams, the rocking frame pivotally suspended from the bracket, the revoluble shaft in said frame, the reversed worm pinions carried by said shaft and adapted to alternately

engage the rack, means for rotating said pinions, the catches alternately engaging the bracket and the trip pins on the rack for releasing the catches, substantially as herein described.

8. In a car indicator or exhibitor, the combination of the revolving shaft *h* carrying the reversed worm pinions, means for rotating said pinions, the rocking frame pivoted to the car and in which said shaft is mounted whereby the pinions are thrown alternately into and out of action, the catches for holding the rocking frame, the rack with which the pinions engage and from the movement of which the indicator or exhibitor is driven, one end of said rack being toothless whereby its engagement with one of the pinions ceases at the limit of its movement, and the trip pins on the rack for alternately releasing the catches of the rocking frame, substantially as herein described.

9. In a car indicator or exhibitor, the combination of the movable rack carried by the car for transmitting power to the indicator or exhibitor mechanism, the rocking frame or box weighted on one end whereby it swings by gravity in one direction, the contact arm and fixed lug whereby the frame or box is swung positively in the opposite direction, the revoluble shaft and reversed pinions carried by the frame or box and adapted to be alternately thrown into and out of engagement with the rack, means for rotating said pinions the catches for holding the frame or box at each limit of its rocking movement to maintain the engagement of the pinions with the rack and the trip pins on the rack for releasing the catches, substantially as herein described.

10. In a car indicator or exhibitor, the movable rack carried by the car for operating the indicator or exhibitor, said rack having at one end a toothless portion, the shaft *h* having the reversed worm pinions alternately engaging the rack, power transmitting connections

from the axle of the car to rotate shaft *h*, the rocking frame carrying said shaft and having the alternately engaging catches and the trip pins on the ends of the rack to release said catches, substantially as herein described.

11. In a car indicator or exhibitor the movable rack carried by the car for operating the indicator or exhibitor, said rack having at one end a toothless portion, the shaft *h* having the reversed worm pinions alternately engaging the rack, power transmitting connections from the axle of the car to rotate shaft *h* consisting of the adjustably connected and jointed shaft series geared to the axle, the rocking frame carrying said shaft and having the alternately engaging catches and the trip pins on the ends of the rack to release said catches, substantially as herein described.

12. In a car indicator or exhibitor, the combination of the reciprocating rack carried by the car for transmitting power to operate the indicator or exhibitor, the rocking frame with its rotating shaft and reversed pinions, means for rotating said shaft the catches for holding the frame, and the trip pins on the rack for releasing the catches, one of said pins being adjustable on the rack, substantially as herein described.

13. In a car indicator or exhibitor, the combination with the actuating mechanism of the indicator or exhibitor, of the movable rack, means for actuating the rack the succession of cams adjustably mounted on said rack whereby their positions may be regulated and suitable connections operated by said cams to actuate the indicator or exhibitor, substantially as herein described.

In witness whereof I have hereunto set my hand.

HENRY G. KRASKY.

Witnesses:

S. H. NOURSE,
J. A. BAYLESS.