No. 857,630. PATENTED JUNE 25, 1907.

H. L. KEELER.

STATION INDICATOR.

APPLICATION FILED MAY 10, 1906.

3 SHEETS—SHEET 1.

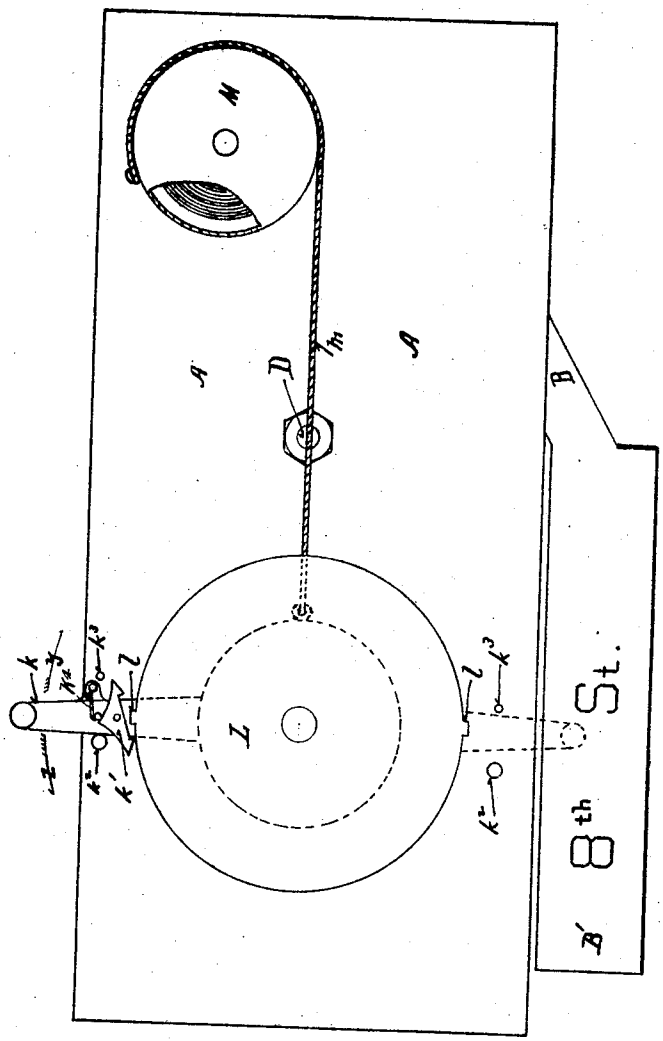


Fig. 1.

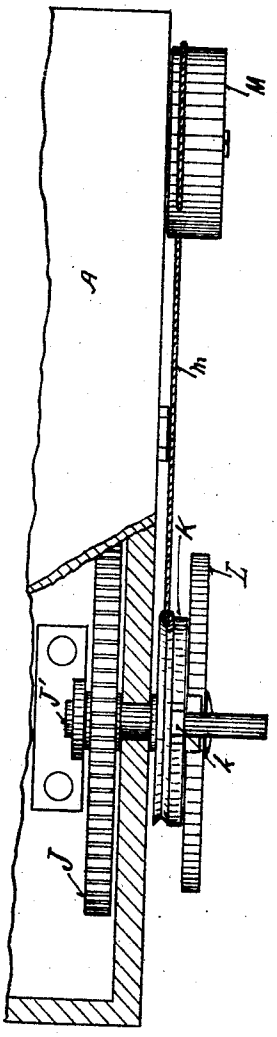


Fig. 2.

Witnesses.

G. J. Mund

Florence Stockert.

Inventor

Henry L. Keeler

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His Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

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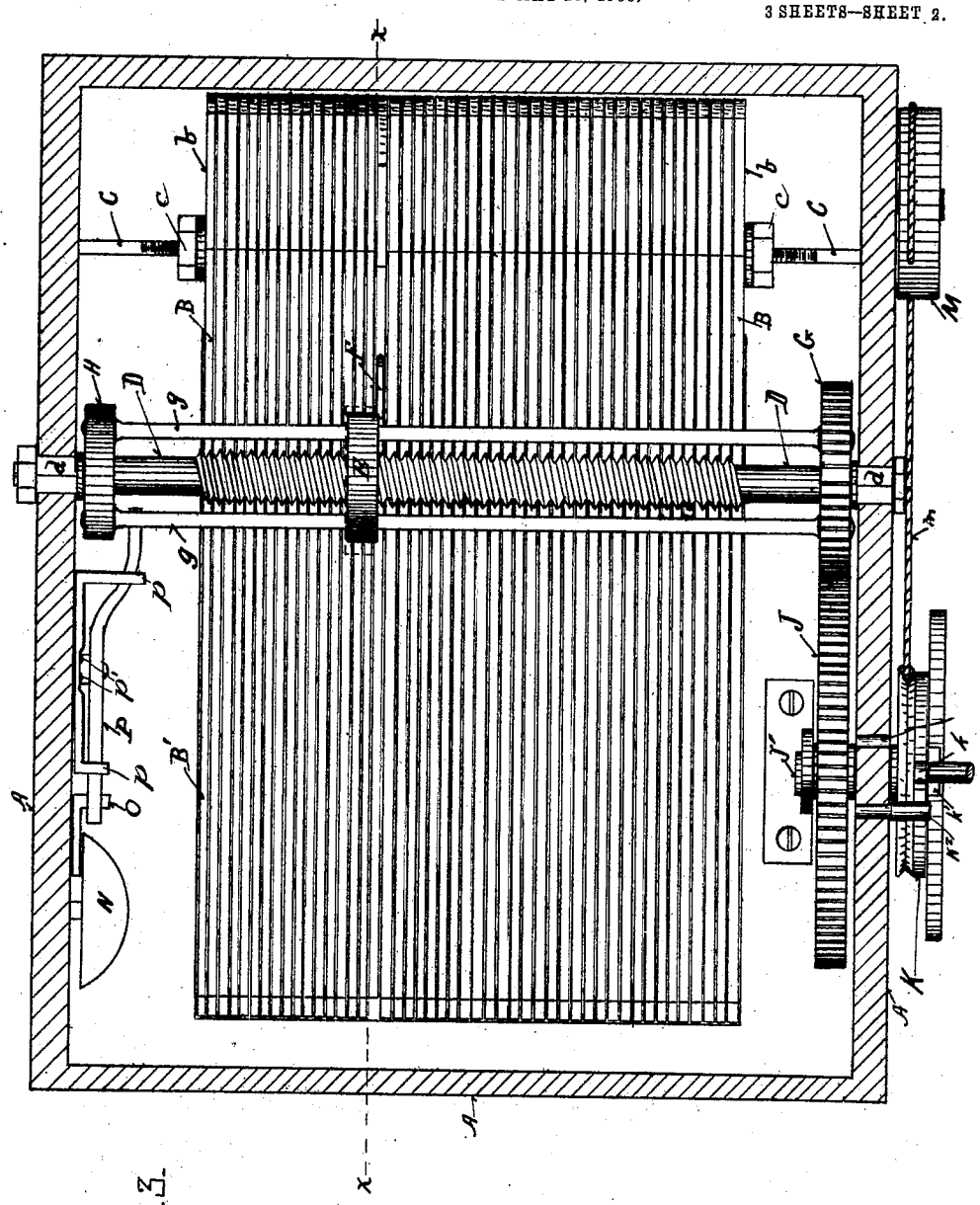


Fig. 3.

Witnesses
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3 SHEETS—SHEET 3.

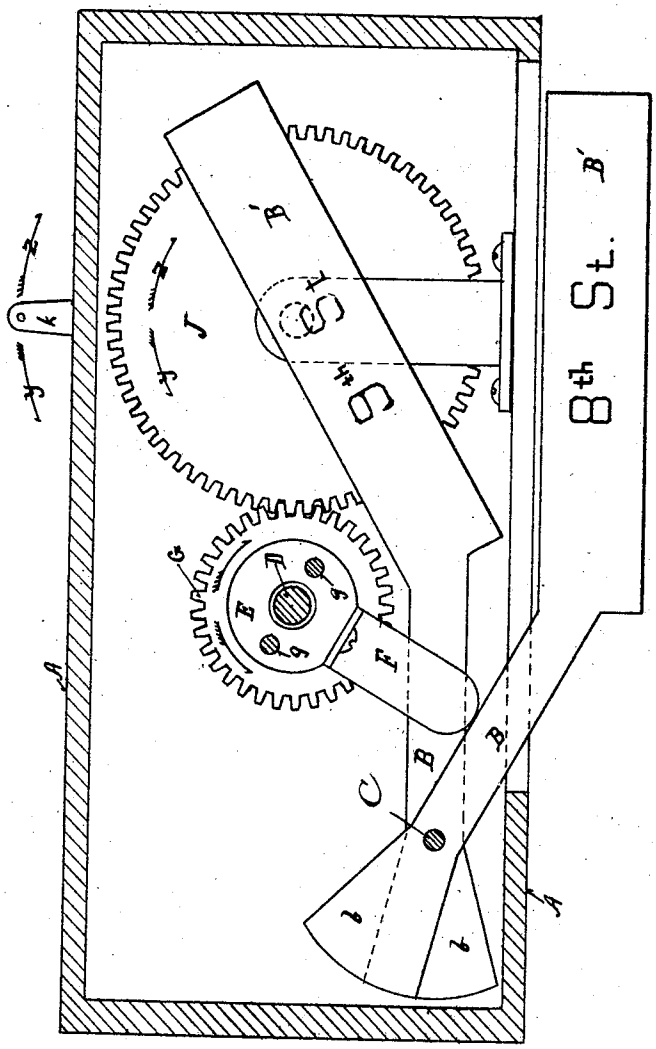


Fig 4

Witnesses.
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THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY L. KEELER, OF LUNDYS LANE, PENNSYLVANIA.

STATION-INDICATOR.

No. 857,630. Specification of Letters Patent. Patented June 25, 1907.

Application filed May 10, 1906. Serial No. 316,146.

To all whom it may concern:

Be it known that I, HENRY L. KEELER, a citizen of the United States, residing at Lundys Lane, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Station-Indicators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to station indicators for railway or street cars, and has for its object the construction of an indicator which will indicate the names of the streets or stations being approached, and which is adapted to be operated automatically or by hand.

The features of my invention will appear hereinafter, and are illustrated in the accompanying drawings, in which:

Figure 1 is a side view in elevation of my improved station indicator, showing the operating mechanism. Fig. 2 is a plan view of a portion of the same, showing the operating mechanism. Fig. 3 is a horizontal section, showing a plan view of the mechanism of my improved station indicator. Fig. 4 is a sectional view of the same on the line x—x in Fig. 3.

In these drawings A indicates the box or frame of the machine, within which are a series of arms B, having secured to the free ends thereof station cards B′. These arms B are pivoted upon a transverse rod C between the nuts c c which are adapted to secure the arms B close together. The opposite ends b of the arms B are weighted so as to retain the arms B in a raised position as shown in Fig. 4 (see 9th street card).

Transversely across the frame of the machine over the arms B, and on the opposite side of the fulcrum rod C from their weighted ends, I secure a screw-shaft D, which I secure in the frame A against rotation, by means of its square ends d. Upon the threads of the screw-shaft D I place a nut E, and to one side of the nut E I secure an arm F which, when the nut E is rotated on the screw D is adapted to contact with one of the station-card arms B, and operates to force it downward, thus causing the station card attached thereto to be displayed outside of the case A as shown in Figs. 1 & 4.

For operating the nut E there is mounted upon the shaft D beyond the end of the threads thereon, a gear pinion G, and upon the other end of the shaft D beyond the end of the threads at that end is mounted a rotatable collar H. The pinion G and the collar H are preferably secured together so as to rotate in unison, by means of rods g g which pass through holes in the nut E, as shown in Figs. 3 & 4. But they may be connected by any other suitable means.

For operating the gear-wheel G, I provide a spur-wheel J which is of greater relative circumference than the pinion G. This spur gear J is secured to a shaft J′ which passes out through the frame A of the machine. Upon the shaft J′ outside of the frame A is loosely mounted a grooved wheel K having an operating crank lever k upon one side thereof, and upon the end of the shaft J′ outside of the grooved wheel K, is a ratchet disk L, having studs l on its periphery.

The crank lever k is provided with a reversible pawl k' adapted to hook over one of the studs l on the periphery of the disk L. The reversible pawl k' is provided with a spring k^4 adapted to bear on the pawl on either side of the fulcrum thereof so as to cause either end of the pawl k' to contact with one of the studs l on the periphery of the disk L. When the pawl k' is in the position shown in Fig. 1, and the crank lever k is moved in the direction of the arrow y to the position thereof shown by dotted lines, it operates to force the disk L, the shaft j' and spur-wheel J to turn one half of a revolution, and the spur-wheel J being relatively of twice as great circumference as the pinion G operates to turn the pinion G, rods g g, and nut E, a complete revolution on the screw-shaft D.

The threads on the screw-shaft D are of sufficient pitch to carry the nut E and arm F secured thereto lengthwise of the shaft D far enough to cause the arm F to contact with each succeeding arm B, and thereby cause the next succeeding station card to be displayed.

For returning the crank lever k to its normal position as shown in Fig. 1, I provide a spring drum M and to the side of the grooved wheel K I secure a cord m, the other end of which is wrapped around and is secured to the spring drum M.

For the purpose of attracting attention to the indicator when a street sign is displayed,

I provide a gong N having sounding mechanism O & P, which is operated by the rods *g g* when they revolve around the screw-shaft D.

The lever P is retained in a normally horizontal position by means of a double-ended spring *p p* which is secured to the frame A of the machine at the middle portion of the spring by means of screws *p' p'* so that each end thereof will extend over and contact with the lever P. It is obvious that this arrangement of lever and spring will retain the lever P in a horizontal position and permit its operation by either a right or left rotation of the rods *g g* around the screw D.

To limit the movement of the crank lever *k* to a complete half revolution, I provide stud-pins k^2 which are inserted in holes in the end of the frame A, so that when the lever *k* is moved in the direction of the arrow *y* it will contact against and be stopped by said stud-pins at each end of its traverse, and when it is desired to move the lever *k* in the direction of the arrow *z*, the stud-pins k^2 are changed over to the holes k^3 in the end of the case A.

In operation my improved indicator is placed in the upper portion of a street-car at a point conveniently visible to all passengers therein. It is adjusted to display the next succeeding station card after the starting point, and when that station is passed the crank lever *k* is grasped and pulled downward in the direction of the arrow *y* until it contacts with the stud k^2, which operation through the intervening mechanism hereinbefore described causes the pinion G, rods *g g* and nut E to rotate on the shaft D, and the pitch of the thread on said screw-shaft D carries the nut E forward sufficiently to place the arm F directly over the next succeeding arm carrying the card of the next succeeding station. This operation is repeated at each station until the car has reached the end of its route, when the studs k^2 are changed over to the holes k^3, the pawl *k'* reversed, and the crank arm *k* moved a half revolution in the direction of the arrow *z* which operates to reverse the action of the nut E upon the screw D, and causes the station cards to be displayed in reverse order during the return trip of the car.

Therefore having shown and described my invention so as to enable others to construct and operate the same, what I claim as new and desire to secure by Letters-Patent of the United States is:

1. In a station indicator the combination of a series of arms pivoted in a frame, station cards on said arms, a non-rotatable screw secured in said frame transversely to said pivoted arms, a nut rotatable on said screw, an arm secured to said nut adapted to contact successively with said pivoted arms when the nut is rotated on the screw, and mechanism adapted to cause said nut to rotate on said screw, substantially as set forth.

2. In a station indicator the combination of a frame, a series of station-card arms pivoted therein, means adapted to retain said arms in a normally invisible position, a screw non-rotatably secured in said frame transversely to said arms, a rotatable nut upon said screw, an arm on said nut adapted to contact successively with said arms and operate each of said arms to display the station-card thereon in succession, and means for rotating said nut on said screw, substantially as set forth.

3. In a station indicator the combination of a frame, a series of arms pivoted therein, station-cards on said arms, a screw secured in said frame transversely to said pivoted arms, a nut rotatable on said screw, an arm secured to said nut adapted, when rotated, to successively contact with each of said pivoted arms, a pinion rotatably mounted on one end of said screw, a rotatable collar mounted on the opposite end of said screw, and means for rotatably connecting said pinion and collar adapted to rotate said nut on said screw, a shaft mounted in said frame, a spur-wheel secured on said shaft intermeshing with said pinion, a crank rotatably mounted on said shaft, a ratchet disk secured on said shaft, a pawl on said crank arm adapted to engage said ratchet disk, and means adapted to return said crank arm to its normal position when it is released, substantially as set forth.

4. In a station indicator the combination of a frame, a series of station-card arms pivoted therein, means adapted to retain said arms in a normally invisible position, a screw non-rotatably secured in said frame transversely to said arms, a rotatable nut on said screw, an arm on said nut adapted to contact successively with each of said arms and operate the said arms to successively display the station-cards thereon, a rotatable collar on the end of said screw, a gear pinion rotatably mounted on the other end of said screw, means for rotatably connecting said collar and pinion and adapted to rotate said nut on said screw, a gong secured to said frame, means adapted to sound said gong when the nut is rotated on the screw, a spur-gear intermeshing with said pinion, and means adapted to cause said spur wheel to intermittently revolve in the desired direction, substantially as set forth.

In testimony whereof I affix my signature, in presence of two witnesses.

HENRY L. KEELER.

Witnesses:
V. D. HEWITT,
GEO. W. LYON.