(No Model.)

J. COXEN.

STATION INDICATOR.

No. 262,932. Patented Aug. 22, 1882.

FIG. 1.

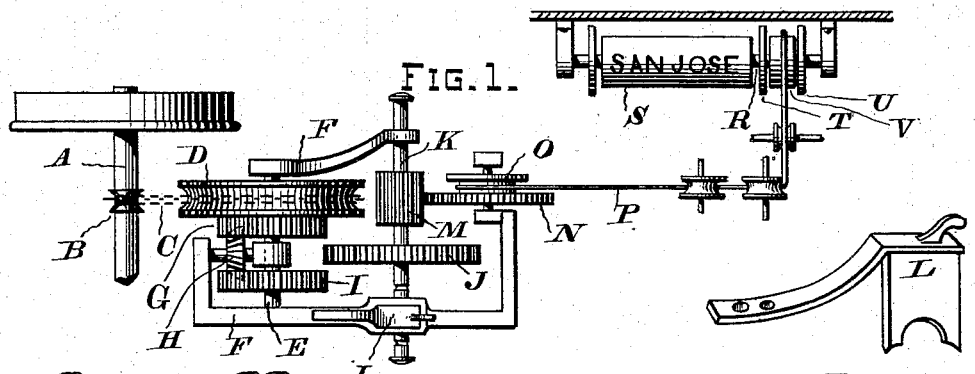


FIG. 4.

FIG. 3.

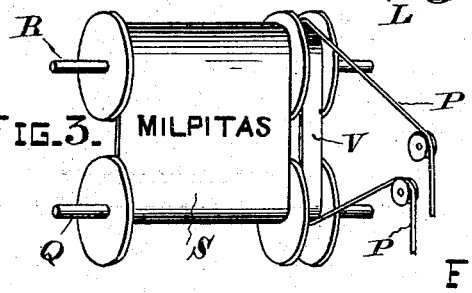
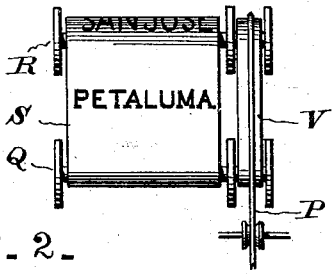


FIG. 2.



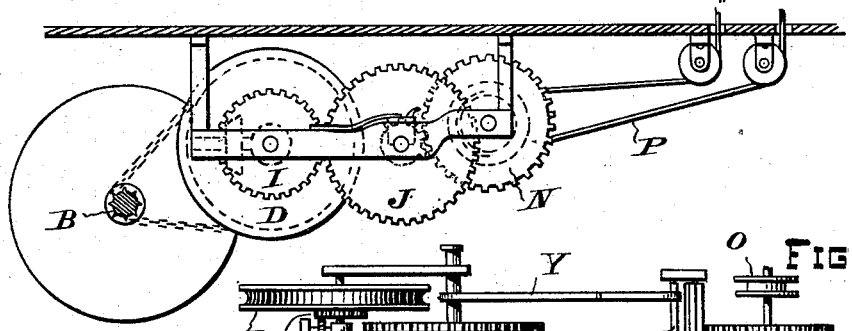


FIG. 5.

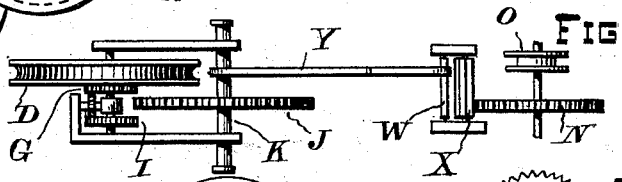
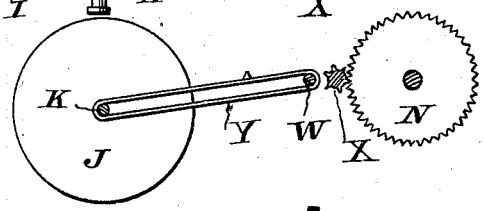


FIG. 6.



WITNESSES

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JOHN COXEN, OF SAN FRANCISCO, CALIFORNIA.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 262,932, dated August 22, 1882.

Application filed May 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN COXEN, a subject of the Queen of Great Britain, and residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Station-Indicators, of which the following is a specification.

My invention relates to certain improvements in that class of station indicators or calendars that are operated by the axles of the car; and it consists of a ribbon or map which unrolls as the car proceeds and exposes the names of streets, roads, or stations in their consecutive order from a slit or opening as the train or car approaches a station. The said map of the route or list of streets or stations is wound and unwound from a pair of rollers which receive motion from one of the car-axles; and the object of my improvement is to provide a street or station indicator operated in an automatic manner by a direct belt-connection with the revolving axle, and having its ribbon-carrying rollers so constructed and arranged as to move at an unequal rate of speed to wind or unwind the said ribbon or band and indicate the name of the various stations as the car advances upon the road, either toward or from a given point. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved station-indicator. Fig. 2 is a side elevation thereof. Fig. 3 is a perspective view of the ribbon-carrying rollers. Fig. 4 is a perspective view of the spring-clip. Figs. 5 and 6 are plan and side elevation views illustrating a modification.

Similar letters of reference are used to indicate like parts throughout the several views.

Upon one of the axles, A, of the car I place a chain-wheel, B, over which is passed a chain, C, connecting with a large chain-wheel, D, keyed upon a shaft, E, mounted in suitable bearings, F F. The shaft E has keyed upon it the pinion G, having cog-teeth upon its face, and interior bevel-teeth which engage with an intermediate transversely-journaled pinion, H, meshing with the loosely-journaled pinion I, and imparting to it a reverse motion from that had by the shaft E, upon which it freely turns. The spur-teeth of the wheels G I mesh with the teeth of the cog-wheel J, keyed upon a shaft, K, which is adapted to be slid back and forth in its bearing, so as to engage with either one of the gear-wheels G I, and is held in such position by a spring-clip, L, which fits within a slot made in one of the bearings and enters an annular groove on the shaft K. The shaft K also carries the mutilated cog-wheel M, which meshes with the spur-wheel N, upon the end of whose shaft is a flanged band-wheel, O, over which is passed an elastic endless band or belting, P, which is led up over suitable friction or guide pulleys to the rollers Q R, suitably journaled and carrying the indicating-ribbon S. These rollers are flanged at either end, and have also an intermediate flange, T, between which and the flange U is wound a narrow ribbon, V, of precisely the same material or thickness as that of the indicating-band S, and it is over this narrow ribbon that the elastic driving-belt P passes, as will be seen upon reference to Fig. 3.

The operation of my improved station-indicator will be as follows, to wit: The gear-wheel J having been thrown into contact with the pinion G and the car started, a revolution of all the connected gearing will be had and the rollers Q S operated, and the indicating-ribbon will be unwound from one roller and wound upon the other; but when the teeth of the mutilated cog-wheel M pass out of gear with the spur-wheel N the indicating-ribbon will remain stationary and exhibit the name of the station. When the end of the road is reached and the car about to start on its return-trip the spur-wheel J is slipped into gear with the pinion I and a reverse movement is imparted to the rollers and indicating-ribbon S and the names of the stations exhibited in their reversed order.

Were the axles of the rollers Q R both of the same diameter, the indicating-ribbon would wind or unwind from one roller faster than it could be wound or unwound on the other roller. To obviate this difficulty I provide the narrow strip or ribbon V, of the same length as the indicating-ribbon, and it is wound upon the rollers between the flanges, and the driving-belt P, by passing over it, causes the rollers to per-

form an unequal number of revolutions in a given time, and thus wind up the ribbon on one roller as fast as it unwinds from the other roller, and both ribbons travel in the same direction and at the same rate of speed.

In the modification shown in Figs. 5 and 6 an endless belt, Y, having a lug upon its outer face, passes over and is driven by the axle of the wheel J and over a roller, W, placed in close connection to the trundle or star-pinion X, meshing with the spur-wheel N, which drives the elastic belt P. By this construction it will be seen that an intermediate rotary motion is imparted to the pinion X by the lug on the belt Y engaging with it and moving it the distance of one tooth at a time. This modification will be found useful when the stations are a long distance apart.

The gearing, rollers, &c., may be placed in any convenient position within or upon the car and inclosed in a suitable casing.

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

In a station-indicator, the combination, with a rotating car-axle, of the chain or belt C, chain-wheel B, externally and internally toothed pinions G I, transverse pinion H, spur-wheel J, having on its shaft the mutilated pinion M, meshing with the spur-wheel N on the shaft of a band-wheel, O, the elastic belting P, and rollers Q R, carrying an indicating-ribbon, S, constructed, arranged, and operating substantially in the manner and for the purpose herein set forth and specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 28th day of April, 1882.

JOHN COXEN. [L. S.]

Witnesses:
WILMER BRADFORD,
CHAS. E. KELLY.