B. F. McCAULEY.

STREET CAR INDICATOR.

APPLICATION FILED JAN. 15, 1908.

907,265. Patented Dec. 22, 1908.

Fig. 2.

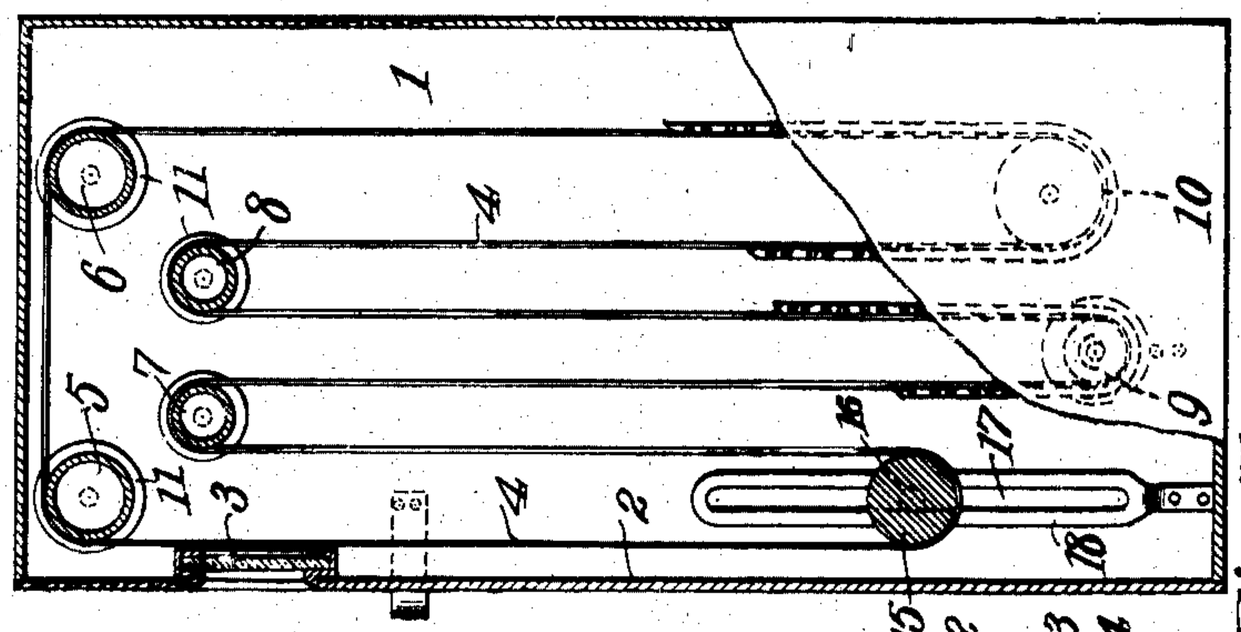


Fig. 1.

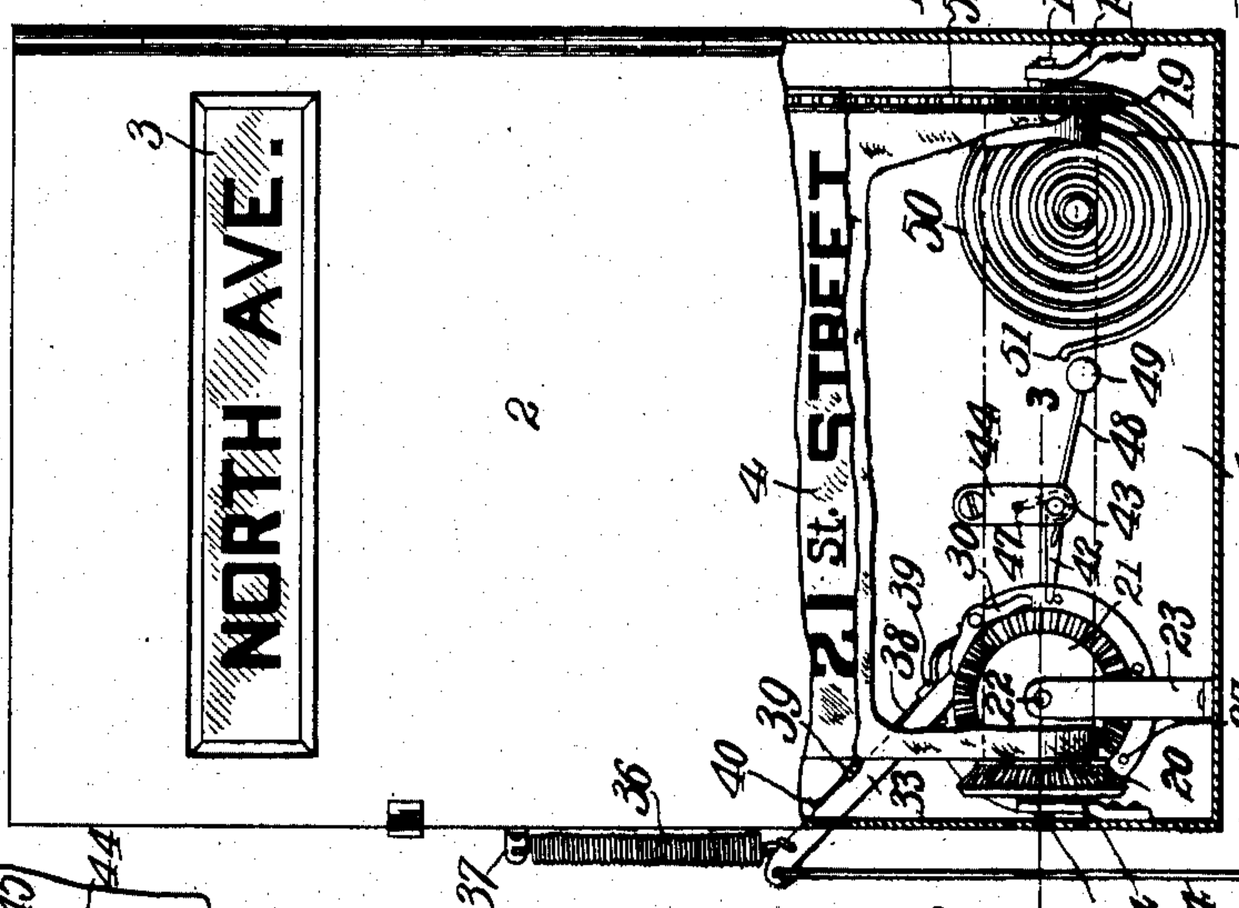


Fig. 7.

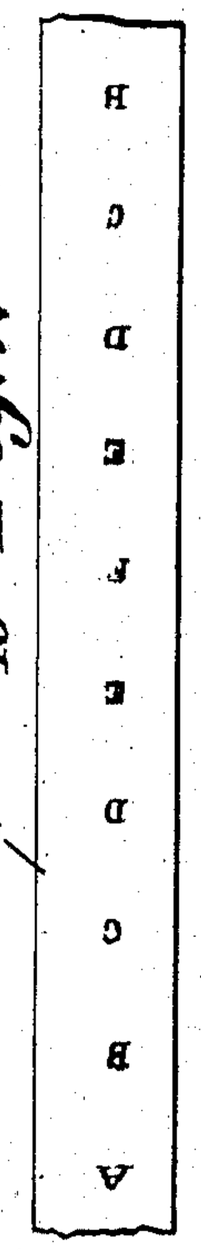


Fig. 3.

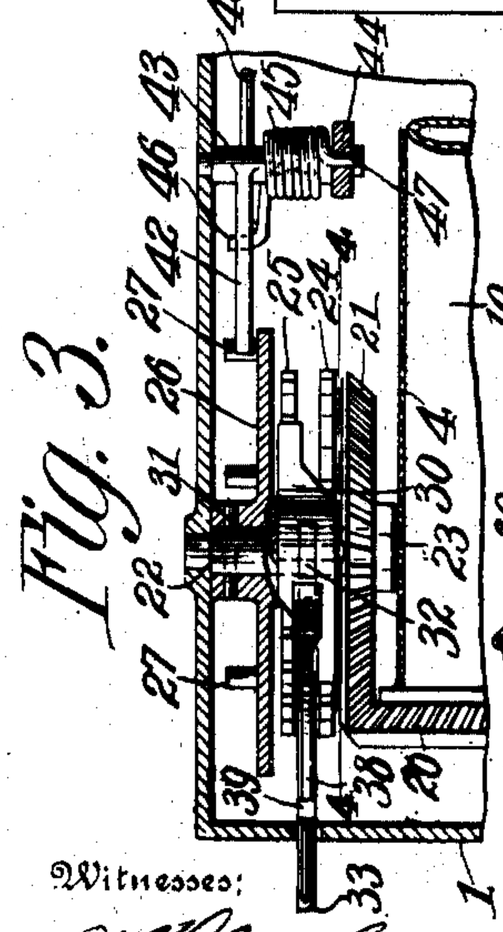


Fig. 4.

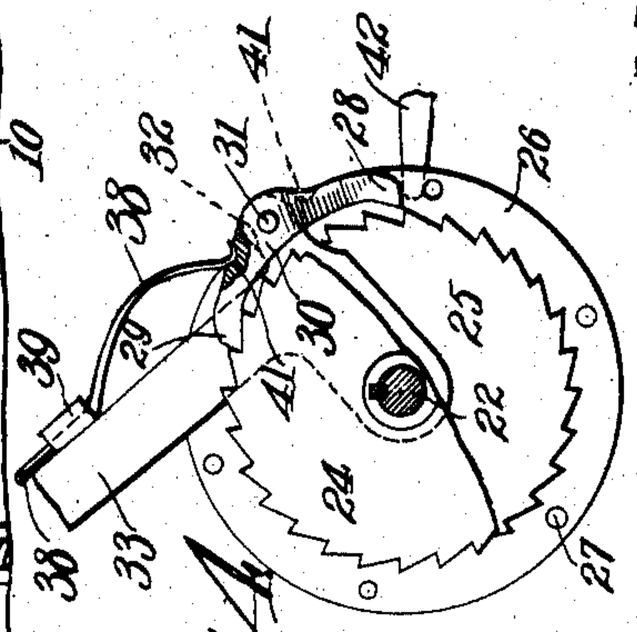
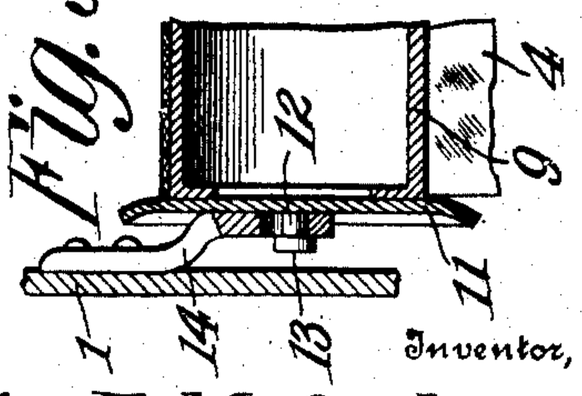


Fig. 5.

Fig. 6.



Witnesses:

E. F. Thurston

R. M. Elliott

Inventor,

Benjamin F. McCauley.

By Church & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

BENJAMIN F. McCAULEY, OF ALTOONA, PENNSYLVANIA.

STREET-CAR INDICATOR.

No. 907,265. Specification of Letters Patent. Patented Dec. 22, 1908.

Application filed January 15, 1908. Serial No. 410,988.

To all whom it may concern:

Be it known that I, BENJAMIN F. McCAULEY, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented a new and useful Street-Car Indicator, of which the following is a specification.

This invention relates to street car indicators.

The object of the invention is to provide an apparatus of this character that shall be simple of construction, efficient and durable in operation, in which the coöperative parts shall be so constructed and arranged as to be practically proof against derangement from long continued and rough usage, and in which the shifting of the curtain to expose the names of the successive streets or stations shall be accompanied by an audible signal of a character to attract attention, and thus insure the carrying out of the object for which the device is designed.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a street car indicator, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in front elevation, partly in section, of an indicator constructed in accordance with the present invention. Fig. 2 is a view in side elevation, partly in section. Fig. 3 is a horizontal sectional view, on an enlarged scale, taken on the line 3—3 of Fig. 1. Fig. 4 is a detail view, on an enlarged scale, of a portion of the operating mechanism. Fig. 5 is a sectional detail view of another portion of the apparatus, on an enlarged scale. Fig. 6 is a fragmentary detail view of a portion of the curtain. Fig. 7 is a detail view of one of the endless curtains spread out flat to show the arrangement of the names of the streets thereon.

The indicating mechanism is housed within a casing, designated generally 1, which is constructed of metal, of any preferred character, and is provided with a hinged door 2 near the top of which is formed a transverse slot, back of which is supported, in any preferred manner, a narrow strip 3 of glass. It is through the sight opening thus provided that the name of the street or station appears, as shown in Fig. 1, and as all of the remainder of the door is opaque, there will be no danger of the occupants of the car making a mistake in reading the directions.

The indicating mechanism comprises, in part, an endless curtain 4, of any suitable material, and upon which is printed, or otherwise exhibited, the names of the streets across which the car carrying the apparatus passes. This curtain is supported upon a plurality of rollers 5, 6, 7, 8, 9 and 10, the latter of which is the driven roller. Each of these rollers is, by preference, made of a cylinder of sheet metal, or a tube, and each, with the exception of the roller 10, has at each end a dished guard 11. These guards may be secured with the rollers or cylinders in any preferred manner and carry pintles 12 that constitute shafts of the rollers. These pintles are headed, as shown at 13 in Fig. 5, and work in bearings formed in brackets 14 riveted, or otherwise secured, to the sides of the casing, as shown in Fig. 5.

In addition to the rollers above described, there is a plain cylindrical tension roller 15 employed, which is preferably of solid metal, and has its journals 16 mounted within the slots 17 of a pair of guides 18 (one only being shown) that are firmly secured to the sides of the casing adjacent to the front thereof. It will be seen that this tension roller will operate always to hold the curtain drawn tightly and smooth and will thereby prevent the formation of wrinkles.

The roller 10 has secured at one end a sprocket wheel 19, and at its other end a miter gear 20 that is adapted to mesh with a similar gear 21 rigid with a stub shaft 22 that is loosely journaled at its inner end in the back wall of the casing, and at its outer end in a standard or bracket 23 bolted or otherwise secured to the lower wall of the casing, as shown in Fig. 1. Rigidly secured to the miter gear 21 is a ratchet wheel 24 and spaced therefrom and rigid with the shaft is a second ratchet wheel 25, and a disk 26 carrying a plurality of strikers or toes 27 disposed at right angles to its face. As shown in Fig. 4, the teeth of the two ratchet wheels 24 and 25 are oppositely pitched, and the two wheels are engaged by the toes 28 and 29 of a two-armed pawl 30 that is pivoted at 31 upon an extension 32 of an L-shaped rock lever 33 which is journaled upon the shaft 22 between the two ratchet wheels, as shown in Fig. 4. The outer end of this lever projects

through a slot in one of the side walls of the casing, and has connected with it a pull rod 34 terminating in a looped handle 35. In order to retain the lever 33 in the position shown in Fig. 1, which is the normal one, a coiled spring 36 is employed, one end of which is secured to an arm 37 attached to one of the side walls of the casing, and the other end to the lever at a point adjacent to that of the attachment of the pull rod.

As above stated, the pawl 30 is double acting in character, that is to say, it is adapted to be shifted to cause its toes 28 and 29 to engage with the respective ratchet wheels 25 and 24, and, in order to retain the toes in engagement with the required ratchet wheel, a spring 38 is provided which is held for longitudinal sliding movements upon the lever 33 by keepers 39 rigid therewith. One end of the spring is provided with a fingerhold 40 by which the former may be adjusted upon the lever, and its other end is outwardly curved and its terminal is adapted to engage with either of a pair of notches or seats 41 in the pawl 30. When the spring is in the position shown in Fig. 4, under which conditions the toe 29 of the pawl is in engagement with the ratchet wheel 24, the terminal of the spring rests in the notch of the arm of the pawl carrying the toe 29, but, when it is desired to bring the toe 28 into engagement with the ratchet wheel 25, the spring is shifted longitudinally of the lever to bring the said terminal into engagement with the notch of the arm carrying the toe 28. It may be noted at this point that this is all the adjustment necessary to the machine to effect reverse movements of the curtain.

The strikers 27 are adapted to engage with a trip lever 42 that is carried by a shaft 43 supported at one end in a bearing in the rear wall of the casing and at its other end in a hanger 44 also supported from the rear wall of the casing. Upon the shaft 43 is wound a coiled spring 45 one terminal 46 of which projects through an opening in the lever 42 and the other terminal 47 through an opening in the hanger 44. The shaft also carries a rearwardly projecting arm 48 terminating in a hammer 49 that is adapted to strike the terminal whirl of a cathedral gong 50 supported by the rear wall of the casing, it being observed that the end of the said whirl is provided with an out-curved toe 51 arranged in the path of movement of the hammer.

In order that the motion of the driven shaft 10 shall be transmitted to the curtain 4, the latter has combined with it a sprocket chain 52, the links of which carry laterally projecting perforated ears 53, and through these ears and the curtain 4 are passed stitches 54, as clearly shown in Fig. 6, thereby to secure a stable connection between the parts. The material from which the stitches 54 are formed may be a thread or a wire, as preferred, and, owing to the space between the ears 53, the flexibility of the curtain will in no wise be interfered with. The sprocket chain 52 is adapted to engage the sprocket wheel 19 on the shaft 10, so that as the latter is driven, positive motion will be imparted to the curtain.

The operation of the device is as follows: Assuming that the car is running to its terminus, the parts will be in the position shown in Fig. 1, with the toe 29 of the pawl in engagement with the ratchet wheel 24. Upon a downward pull being imparted to the lever by the pull rod 34, and through its entire extent, the roller 10 will be turned one-third of a revolution, and as there are six of the strikers 27, it follows that two strokes of the gong will be made, which will insure attention being called to the device. The relation between the parts of the apparatus is such that a third revolution of the roller 10 will cause the name of the next succeeding street to appear opposite the sight opening 3. When the parts are adjusted as described, the hammer 49 will contact with the underside of the toe 51 of the gong, and thereby sound the alarm. It will be observed by reference to Fig. 7, that the names of the streets are duplicated in reverse order on the curtain, and this arrangement renders it unnecessary to shift the pawl at each end of the route, so that as long as the car runs from terminus to terminus, the adjustment of the parts remains undisturbed. Should the car, from any reason, fail to run to either terminus, then it will be necessary to shift the pawl, and to effect this the operator will draw down upon the lever 33 a sufficient distance to cause the fingerhold 40 to be brought exteriorly of the casing, whereupon the spring 38 will be moved in a forward direction, thereby bringing the toe 28 into engagement with the ratchet wheel 25. Now, upon a downstroke of the lever 33, the toe 28 will merely ride over the teeth of the ratchet wheel 25, and effect no movement of the curtain, but upon the pull rod being released, the spring operates to return the lever to its normal position and thus effect the rotation of the roller 10 and the shifting of the curtain. During this latter operation of the apparatus, the hammer 49 is forced above the toe 51 and, in falling, strikes upon the upper side thereof and sounds the gong, the spring 45 under both operations of the lever 42 serving to return it to its normal position.

While seven of the curtain supporting rollers are herein shown, it is to be understood that the invention is not to be limited to this number, as it will vary with the number of streets that are crossed. In other words, the longer the route from terminus to terminus, the longer the curtain and the greater the number of rollers, and vice versa.

It will be seen from the foregoing descrip-

tion that while the improvements herein defined are simple in character, they will be thoroughly efficient for the purposes designed, and will result in the production of an accurate and thoroughly reliable street car indicator.

I claim:—

1. A car indicating device embodying an endless curtain bearing the names of the streets or stations, a sprocket chain carried by the curtain, a roller carrying at one end a sprocket wheel to engage the chain and at its other end a miter gear, a shaft, a second miter gear rigid with the shaft and meshing with that of the roller, a pair of oppositely toothed ratchet wheels rigid with the shaft, and means for driving the second miter gear in either direction comprising a double pawl, a rock lever upon which the pawl is mounted, and a longitudinally shiftable spring carried by the lever for rocking the pawl to bring it into engagement with one or the other of the ratchet wheels.

2. A car indicating device embodying an endless curtain bearing the names of the streets or stations, a sprocket chain carried by the curtain, a roller carrying at one end a sprocket wheel to engage the chain and at its other end a miter gear, a shaft, a second miter gear rigid with the shaft and meshing with that of the roller, a pair of oppositely toothed ratchet wheels rigid with the shaft, means for driving the last-named gear in either direction comprising a double toothed pawl, a rock lever upon which the lever is mounted, a longitudinally shiftable spring carried by the lever for rocking the pawl to bring it into engagement with one or the other of the ratchet wheels, and means for sounding an alarm as the curtain is shifted comprising a disk rigid with one of the ratchet wheels and carrying a plurality of strikers, a lever arranged in the path of movement of the strikers, a hammer arm carried by the lever, and a cathedral gong with which the hammer is adapted to coact.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

BENJAMIN F. McCAULEY

Witnesses:
I. H. Miller,
J. Barber Kurtz.