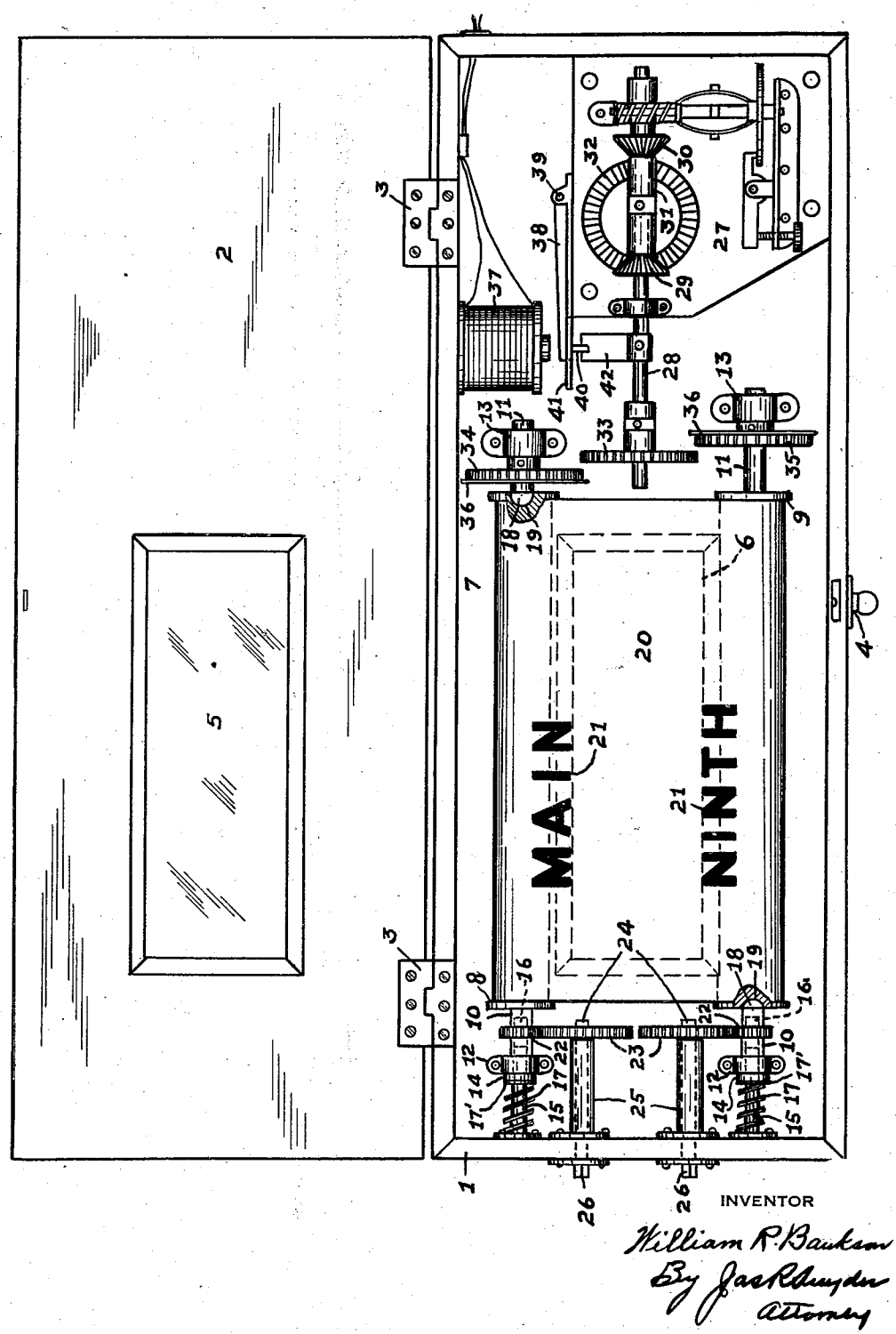
April 12, 1932. W. R. BANKSON 1,853,841

STREET INDICATOR

Filed June 24, 1931



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Patented Apr. 12, 1932 1,853,841

UNITED STATES PATENT OFFICE

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STREET INDICATOR

Application filed June 24, 1931. Serial No. 546,496.

My invention relates to an indicating device, and while primarily designed for indicating the street stops on street railway routes, it will be obvious that the device may be successfully employed for various other purposes wherein it is found to be applicable.

Important objects of the invention are to provide an indicator of the character described which will visibly indicate to a passenger, the street being next approached by the street car; which is conveniently operable for remote control, and which may be readily installed into any type of street car now in use, as well as form a component part of a new car structure.

Further objects of the invention are to provide a device of the class stated which is simple in its construction and arrangement, strong, durable and efficient in its use, compact, positive in its action and comparatively inexpensive to manufacture, install and maintain.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention hereinafter disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing wherein like numerals of reference designate corresponding parts, the figure is a side elevational view of a street indicator with the door in the open position, and constructed in accordance with the invention.

Referring in detail to the drawing 1 denotes an oblong, rectangularly shaped casing, including a front side door 2, which is hinged, as at 3, and securable in the closed position by a suitable latching element 4. The door 2 is provided with a rectangularly shaped, horizontally extending, transparent glass panel 5, and a similarly shaped transparent glass panel 6 is mounted in the rear wall 7, of the casing 1. The glass panels 5 and 6 extend parallel and are directly opposed to each other.

A pair of flanged spools, respectively indicated at 8 and 9, are mounted in the casing 1, and extend horizontally parallel to each other, with the former disposed above the latter. Each of the spools 8 and 9 is carried by a pair of supporting shafts 10 and 11, which are disposed at respective ends thereof and journaled for rotation in respective bearings 12 and 13. The latter are fixed in position to the casing rear wall 7.

Each of the supporting shafts 10 is also longitudinally shiftable in its bearing 12, and is formed with a flanged outer end 14, which engages the bearing 12 and limits the shiftable movement of the shafts 10 in the inward direction.

Each of the supporting shafts 10 is further provided with a spring rod 15, one end of which is fixed to the adjacent end wall of the casing 1, while the other end thereof extends into an aperture 16, provided therefor in the supporting shafts 10. A spiral spring 17 is mounted on each of the spring rods 15 and abuts against a washer 17′, which is loosely mounted on the spring rod 15 and is positioned flatly against the flanged shaft end 14. The normal action of the springs 17 tends to maintain the supporting shafts 10 in their inward engaging positions in the associated bearings 12.

The supporting shafts 10 and 11 are provided with flattened inner ends 18, which engage in correspondingly shaped pockets 19, formed in both ends of each of the spools 8 and 9, and effects the rotation of the latter with the supporting shafts 11 and 12.

In mounting either of the spools 8 and 9 on its supporting shafts 10 and 11, the pocket 19, at one end thereof is first positioned to engage the flattened inner end 18 of its shaft 10. The latter is then forced outwardly in its bearing 12 against the action of the spring 17. The picket 19 at the other end of the said spool may now be positioned to engage the inner flattened end 18 of the associated shaft 11, and the action of the spring 17 will force the shaft 10 inwardly to its normal position, whereby the said spool will be properly engaged for operation by the associated supporting shafts

10 and 11. The spring rod 15 will not interfere with the outward movement of the shafts 10, in the manner and for the purpose stated, as the shaft apertures 14 are of sufficient depth to compensate therefor.

A signal strip 20, constructed from paper, cloth or any other suitable strip material, is mounted on the spools 8 and 9. The signal strip 20 is provided, on both sides, with the proper street designations 21, which extend transversely across the former at properly spaced intervals. The street designations 21 on one side of the signal strip 20 are identical to and positioned similarly to the street designations 21 on the other side of the signal strip 20, so that corresponding signal designations 21 are displayed simultaneously from the front and rear of the indicator.

The registering street designation 21, on the front side of the signal strip 20, would be visible through the glass panel 5 in the door 2, and the same street designation 21 on the rear side of the signal strip 20 would likewise be visible through the glass panel 6 mounted in the casing rear wall 7.

Each of the supporting shafts 10 carries a fixed small gear 22, which is constantly in mesh with a large gear 23, except when mounting or removing a spool in the manner stated. The large gear 23 is fixed to the inner end of a shaft 24, which is journaled for rotation in a suitable bearing 25 fixed to the adjacent end wall of the casing 1. The shafts 24 are formed with projecting squared ends 26 adapted for the engagement of a suitable turning handle.

The manual operation of the gears 22 and 23 permits of the expeditious winding of the signal strip 2 from one spool to the other if required. The constant engagement of the associated gears 22 and 23, in conjunction with the action of the spring 17, further provides a retardant action preventing the location of the spools 8 and 9 from momentum, and maintains the signal strip in a taut condition on and intermediate of the spools 8 and 9, during the operation of the device as hereinafter described.

The spools 8 and 9 are preferably operated by a hand-wound spring motor 27 of any suitable construction. The motor 27 includes a motor shaft 28, which carries a pair of small opposed bevel gears 29 and 30 fixedly connected by a sleeve 31. The latter rotates with but is longitudinally shiftable on the motor shaft 28 to bring either of the small bevel gears 29 and 30 into mesh with the bevel gear 32 of the spring motor 27 to rotate the motor shaft 28 in either direction.

A driving gear 33 is keyed to but longitudinally shiftable on the inner end of the motor shaft 28, to engage either the gear 34 fixed on the shaft 11 of the spool 8, or the gear 35 fixed on the shaft 11 of the spool 9.

The gear 34 is disposed inwardly of the driving gear 33, and the gear 35 is disposed outwardly of the latter. When the driving gear 33 is shifted inwardly to engage the spool gear 34, the spool 8 will be driven to wind the signal strip 20 thereon from the spool 9. When the driving gear 33 is shifted outwardly to mesh with the spool gear 35, the spool 9 will be driven to wind the signal strip 20 thereon from the other spool 8.

Each of the spool gears 34 and 35 is provided with an annular flange 36 to limit the movement of the driving gear 33 when shifted into engagement therewith. As shown in the drawing, the driving gear 33 may be shifted to a neutral position intermediate of the spool gears 34 and 35. Such neutral position is necessitated to permit of the manual winding of the signal strip 20 from one spool to the other when required, and in the manner hereinbefore described.

A solenoid 37 is suspended from the top wall of the casing 1, and when energized elevates the free end of an armature bar 38. The latter is pivotally connected at one end, as at 39, to the top of the spring motor 27. The free end of the armature bar 38 carries a depending stop pin 40, which extends through a fixed apertured bracket 41.

A stop leg 42 is fixed to the motor shaft 28 for engaging the stop pin 40 to suspend the further operation of the spring motor 27. When the solenoid 37 is energized the free end of the armature bar 38 will be elevated causing the disengagement of the stop pin 40 from the stop leg 42 and allowing the operation of the spring motor 27.

However, when the solenoid 37 is de-energized the free end of the armature bar 38 will drop by gravity causing the lowering of the stop pin 40, into the path of travel of the stop leg 42, to engage the latter and suspend further operation of the spring motor 27.

The operation of the solenoid 37 is controlled by any suitable control switch element (not shown) operated by the operators of the street car.

In practice, my improved street indicator is preferably disposed transversely near the top center of the street car, so that the street designation 21 will be visible to passengers in both ends of the car through the respective glass panels 5 and 6 in the casing 1. The solenoid control element is positioned within convenient reach of the car conductor or operator.

The names of all the street stops over any particular car route will be shown in sequence on both sides of the signal strip 20. Assuming that the signal strip 20 is completely wound upon the lower spool 9, the free end of the former is connected to the upper spool 8, and the motor gear connections are shifted to drive the upper spool 8 in the clockwise direction.

Upon approaching the first stop on the car

route, the operator will manipulate the control to momentarily energize the solenoid 37. The operation of the latter will cause the release of the stop leg 42 and allow only one complete turn of the motor shaft 28 as the stop pin 40 will have dropped by gravity to engage the stop leg 42 as soon as the solenoid 37 is de-energized. The operation of the motor 27 will have caused the rotation of the spool 8, whereby the attached signal strip 20 winds upon the latter from the spool 9 a distance to position the proper designation 21 in registration with the glass panels 5 and 6.

As soon as the car leaves one stop the operator manipulates the control to momentarily energize the solenoid 37 to cause the display of the street designation of the next car stop. If the operator inadvertently fails to operate the indicator, in the manner stated, it will only be necessary for him to intermittently operate the solenoid 37 until the proper display of street designated is effected.

When the run of the route is completed, the driving gear 33 is shifted into the neutral position, and the signal strip 20 is rewound from the spool 8 to the spool 9 by the manual operation of the gears 22 and 23 associated with the latter. If a return trip of a car is made over the same route, driving gears are shifted to drive the spool 9 and wind the signal strip 20 on the latter from the spool 8. If time permits, the motor 27 may be operated to rewind the signal strip 20, from one spool to the other, instead of using the gears 22 and 23, but such operation is rather slow and necessitates the frequent rewinding of the spring motor 27.

Ordinarily, the street designations 21 on the signal strip 20, will be so spaced relatively to each other, as to compensate for the constantly varying diameters of the spools 8 and 9 during the winding and unwinding of the signal strip 20, for positioning the street designations 21 in proper registration with the glass panels 5 and 6.

If the signal strips 20 are of no great length, the differential positioning of the designations 21, due to such diametrical variations, would be barely perceptible. It will, of course, be obvious that by providing a plurality of stop legs 40 instead of but one, as illustrated, the intermittent travel of the signal strip 20 is accordingly reduced, and requires signal strips of correspondingly less length.

The present invention provides a most efficient street indicator, being conveniently operable to uniform passengers of the streets in the sequence in which they are approached on the route of the conveyance, thereby entirely eliminating the inconvenience occasioned by the travel of passengers past their intended destination.

What I claim is:

1. A street indicator of the character described comprising in combination, a casing provided with a pair of opposed transparent panels, a pair of spools mounted in said casing and extending horizontally parallel to each other, a drive shaft detachably supporting one end of each of said spools, a longitudinally shiftable shaft detachably supporting the other end of each of said spools, said shafts being rotatably journaled in said casing, a signal strip provided with street designations on both sides thereof mounted on said pair of spools, manually operated means operatively connected with the shiftable shaft of each of said spools for winding said signal strip from one of said spools to the other of said spools, a spring engaging each of said shiftable shafts for retarding the rotation of respective spools and further for normally maintaining said shiftable shafts in engagement with respective spools, supports for said springs, an operating motor including an operating shaft mounted in said casing, a spool gear fixed on each of said drive shafts, a drive gear mounted on said operating shaft and shiftable on the latter to engage either of said spool gears for driving said spools to shift said signal strip on the latter, a stop leg fixed to said operating shaft, and electro-magnetically operated means engaging said stop legs for controlling the operation of said operating motor when operating said spools in shifting said signal strip to positon said street designations in registration with said transparent panels.

2. A street indicator of the character described comprising in combination, a casing provided with a pair of opposed transparent panels, a pair of spools mounted in said casing and extending horizontally parallel to each other, a drive shaft detachably supporting end of each of said spools, a longitudinally shiftable shaft detachably supporting the other end of each of said spools, said shafts being rotatably journaled in said casing, a signal strip provided with street designations on both sides thereof mounted on said pair of spools, manually operated means operatively connected with the shiftable shaft of each of said spools for winding said signal strip from one of said spools to the other of said spools, a spring engaging each of said shiftable shafts for retarding the rotation of respective spools and further for normally maintaining said shiftable shafts in engagement with respective spools, supports for said springs, an operating motor including an operating shaft mounted in said casing, a spool gear fixed on each of said drive shafts, a drive gear mounted on said operating shaft and shiftable on the latter to engage either of said spool gears for driving said spools to shift said signal strip on the latter, flanges carried by said spool gears for limiting the engagement movement of the said drive gear with the latter, a stop leg fixed

to said operating shaft, and electromagnetically operated means engaging said stop leg for controlling the operation of said operating motor when operating said spools in shifting said signal strip to position said street designations in registration with said transparent panels.

3. A street indicator of the character described comprising in combination, a casing provided with a pair of opposed transparent panels, a pair of spools removably mounted in said casing and extending horizontally parallel to each other, a drive shaft detachably supporting one end of each of said spools, a longitudinally shiftable shaft detachably supporting the other end of each of said spools, said shafts being rotatably journaled in said casing, a signal strip provided with street designations on both sides thereof mounted on said pair of spools, manually operated means operatively connected with the shiftable shaft of each of said spools for winding said signal strip from one of said spools to the other of said spools, a spring engaging each of said shiftable shafts for retarding the rotation of respective spools and further for normally maintaining said shiftable shafts in engagement with respective spools, supports for said springs, an operating motor including an operating shaft mounted in said casing, a spool gear fixed on each of said drive shafts, a drive gear mounted on said operating shaft and shiftable on the latter to engage either of said spool gears for driving said spools to shift said signal strip on the latter, a stop leg fixed to said operating shaft, and electro-magnetically operated means engaging said stop leg for controlling the operation of said operating motor when operating said spools in shifting said signal strip to position said street designations in registration with said transparent panels.

4. A street indicator of the character described comprising in combination, a casing provided with a pair of opposed transparent panels, a pair of spools removably mounted in said casing and extending horizontally parallel to each other, a drive shaft detachably supporting one end of each of said spools, a longitudinally shiftable shaft detachably supporting the other end of each of said spools, said shafts being rotatably journaled in said casing, a signal strip provided with street designations on both sides thereof mounted on said pair of spools, manually operated means operatively connected with the shiftable shaft of each of said spools for winding said signal strip from one of said spools to the other of said spools, a spring engaging each of said shiftable shafts for retarding the rotation of respective spools and further for normally maintaining said shiftable shafts in engagement with respective spools, supports for said springs, an operating motor including an operating shaft mounted in said casing, a spool gear fixed on each of said drive shafts, a drive gear mounted on said operating shaft and shiftable on the latter to engage either of said spool gears for driving said spools to shift said signal strip on the latter, flanges carried by said spool gears for limiting the engagement movement of the said drive gear with the latter, a stop leg fixed to said operating shaft, and electro-magnetically operated means engaging said stop leg for controlling the operation of said operating motor when operating said spools in shifting said signal strip to position said street designations in registration with said transparent panels.

In testimony whereof I affix my signature.

WILLIAM R. BANKSON.