

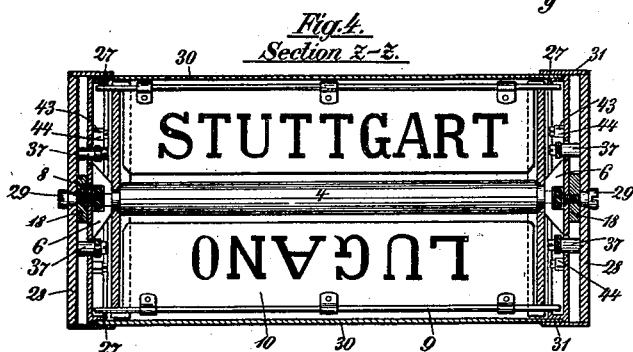
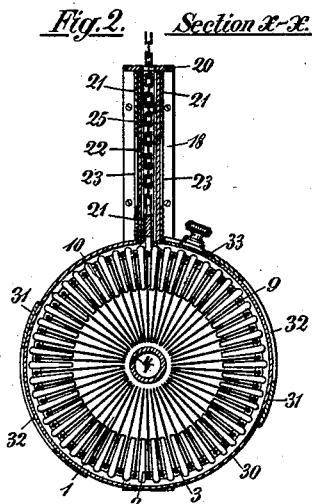
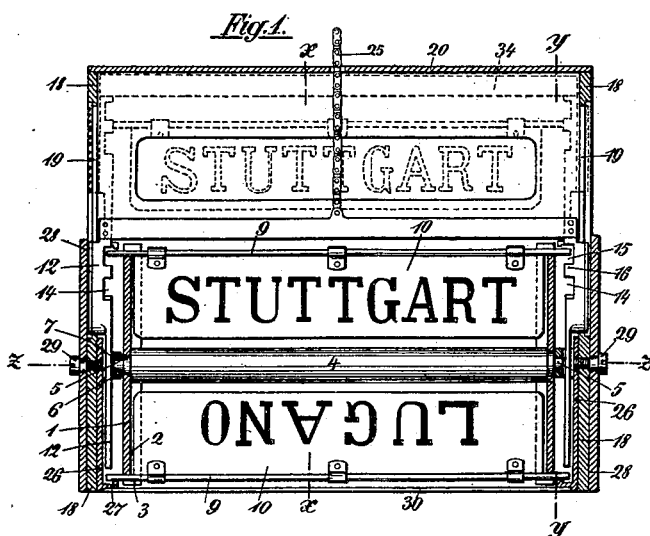
No. 648,587.

Patented May 1, 1900.

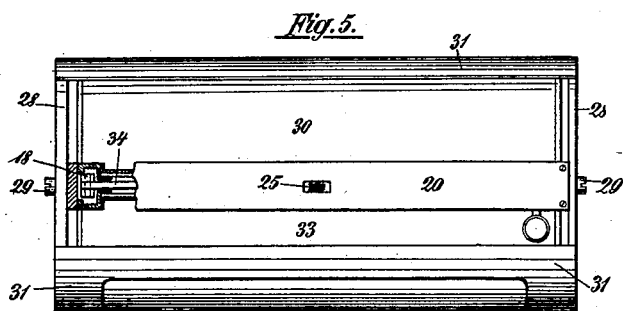
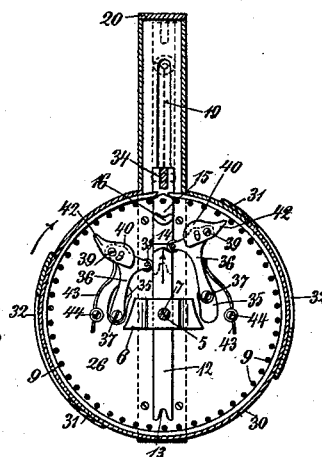
R. BÜRK.  
STATION INDICATOR.  
(Application filed Nov. 10, 1899.)

(No Model.)

2 Sheets—Sheet 1.



*Fig. 6.* *Section Y-Y.*



Witnesses:

*Anton Gloeckner*  
*H. Mitchell*

*Inventor:*  
*Richard Bürk*  
*by Max George*  
*his attorney*

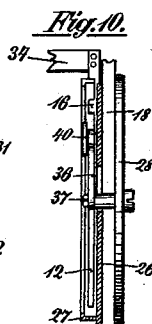
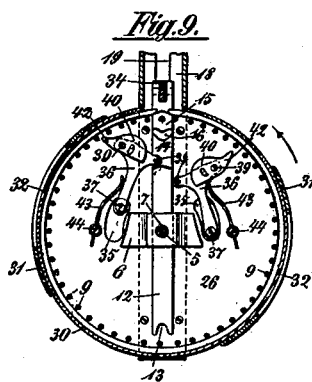
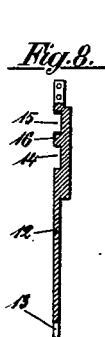
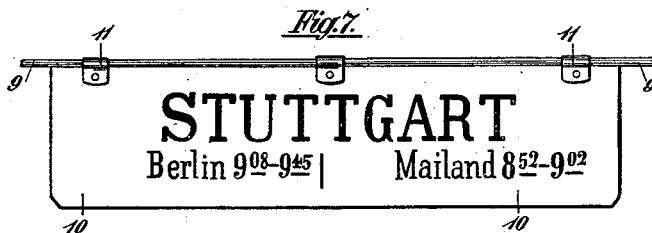
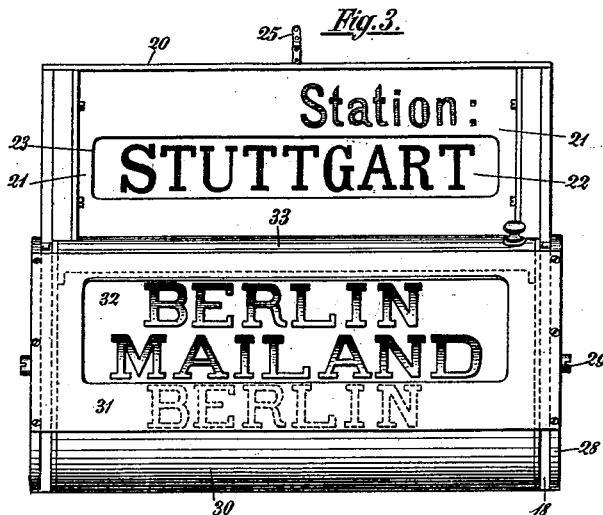
R. BÜRK.

STATION INDICATOR.

(Application filed Nov. 10, 1899.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

RICHARD BÜRK, OF SCHWENNINGEN, GERMANY.

## STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 648,587, dated May 1, 1900.

Application filed November 10, 1899. Serial No. 736,532. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD BÜRK, a citizen of the German Empire, residing at Schwenningen, in the Kingdom of Württemberg, Germany, have invented a certain new and useful Improvement 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.

This invention relates to an apparatus which indicates during a railway journey in the carriage the next stopping-station, and also, if desired, the time of arrival and departure of the train and the places where other lines branch off in such a way that any traveler can ascertain in the simplest manner where he is at the moment and how long the stoppage will be at the next stopping-station. He does not require to first ask the guard, who is not always to be found on the spot when any one desires information, as to the stopping-station or length of stoppage of the train.

The apparatus is shown in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of the indicator, certain parts being shown in plan. Fig. 2 is a transverse section on the line  $xx$  of Fig. 1. Fig. 3 is a front elevation of the indicator. Fig. 4 is a section on the line  $zz$  of Fig. 1. Fig. 5 is a longitudinal plan view showing certain parts in section. Fig. 6 is a section on the line  $yy$  of Fig. 1. Fig. 7 shows one of the indicating-tablets. Fig. 8 is a vertical section of one of the reciprocating bars. Fig. 9 is a view similar to that shown in Fig. 6, but with the operative parts in different position. Fig. 10 is a transverse section of the view shown in Fig. 9, certain parts being shown in plan.

The invention consists, essentially, of station-indicating tablets lying in the notches of two disks, which disks are firmly connected one with another by means of a spindle. The tablets contain in correct order the names of the consecutive stations. These tablets lie in a radial position by means of bars engaging in notches, which tablets stand at regular intervals apart in said disks and form a tablet-cylinder which is revolvably mounted

in a hollow cylindrical casing. This casing has at the top a hollow box-like projection which communicates through a slit in the casing-wall with the interior of the hollow casing. In both sides of this projection apertures or slots are provided, which are closed to the outside, however, by means of glass or other transparent material. One of the tablets contained in the cylinder of station-tablets is raised out of the cylinder by means of a special shifting mechanism, and thus moved into the projection, so that the name of the station, and also the times of arrival and departure of the train at this station, appears legible from each side in order that the indication of the next station shall simultaneously be apparent outside and inside the carriage or may be shown in two adjacent compartments. When the stopping-station has been left by the train, the respective tablet is again lowered into its notch in the cylinder, after which, by the operation of the shifting mechanism for raising another tablet, the cylinder is first moved forward one notch. For instance, in the apparatus shown in the drawings a station-tablet cylinder for forty-eight tablets is shown for a journey by express from Berlin to Mailand, (Milan,) the next stopping-station being Stuttgart. The station-tablets are hinged on wire rods by means of sheet-metal clamps, Fig. 7, and lie in correct sequence of the stopping-points of the express between Berlin and Mailand, (Milan,) with the ends of their hinge-rods in notches and with the ends of their tablets in radial slots or grooves in disks. These disks are connected to form a cylinder by means of a spindle. The said cylinder is mounted by means of trunnions in bearings of a stirrup, which are fixed on the end disks of the hollow casing 30 which surrounds the cylinder and the station-tablets. The two disks of the hollow casing engage by means of their side edges the ends of the hinge-rods and hold these latter firmly in their position in the cylinder. The hollow casing is fixed on the outside of these edges. A bar is fixed outwardly on each of the disks to project above the casing, which bars are connected with one another by means of a rod and are covered laterally with sheet-metal plates, provided with aper-

tures 23. These apertures are closed to the outside by means of transparent plates 22. The hollow chamber formed thereby is in communication with the interior of the round hollow casing by means of a slot in the casing-wall 30. Lift-rods 12 are arranged internally on both disks 26 and are guided in grooves 8 of the stirrups 6 and also in slots 19 of the bars 18. These lift-rods are connected above with one another by means of a connecting-rod 34, on which a chain 25 is arranged, by which both lift-rods may be raised or lowered together. These lift-rods 12 have in their lower part notches 13, which engage the projecting ends of the lowest hinge-rod 9 of the respective station-tablet at the lowest position of the rods. These lift-rods have two lateral recesses 15 and 14 in their upper part, between which two recesses there is a projection 16, which is hollowed out dome-shaped above. The upper recess 15 is so situated that when the lift-rods 12 are at their lowest position the ends of the rods 9 projecting over the tablet-cylinder can pass by the lift-rods 12 on the rotation of the roller. The rod 9 of the tablet 10 thus lies always over the projection 16 of the lift-rod, so that on the lift-rods 12 being raised by means of the chain 25 a station-tablet 10 is always raised with them and becomes visible in the apertures 23 of the plates 21 on both sides. The rod 9 of the raised tablet again drops into its notch 3 in the cylinder-disk after the lift-rods 12 have descended.

The forward movement of the cylinder 1 after each lift of the lift-rods 12 is effected in the following manner: On the flat sides of the disks 26 of the hollow casing shifting levers 36 are mounted pivotally on other disks 28 by means of pivots passing through slots 36 in the disks 26. These shifting levers 36, which are pivoted on pins 37, lie left and right of the lift-rods 12 and are pressed by means of springs 43 with their rollers 38 against these lift-rods. The disks 28, firmly connected with one another by means of two curved sheet-metal strips 31, are revolvably mounted on screws 29, fixed on strips 18, and may be turned in common to a given extent, the shifting levers 36 turning with them, the springs 43, fixed on the disks 26, remaining stationary. On turning the disks 28 alternately one shifting lever 36 will stand higher than another. The shifting lever at the time which stands higher than the other and which, for instance, in Fig. 6 lies on the right hand and in Fig. 9 on the left hand, engages, by means of its roller 38, in the lowest positions of the lifting-rods 12 in the notches of the same, and on the lift-rods being lifted the lever 36 is pressed with its roller 38 outward and turns the tablet-cylinder, together with the station-tablets lying thereon, one notch farther by means of a pawl 40, pivotally mounted on the lever 36 and engaging with its point 42 with one hinge-rod 9. According as the left-hand or right-hand shifting lever

36 comes into action the rotary movement of the roller takes place to the left or to the right. After the completion of this rotary movement, which takes place on the lifting of the lift-rods 12, the station-tablets 10 on the further movement of the lift-rods 12 are lifted by their projecting rod ends 9 by means of the projection 16 so far that the station's name becomes visible. There thus takes place at each operation of the apparatus first a rotation of the tablet-cylinder and then a lifting of the station-tablet 10 which lies over the projection 16. On the sinking of the lift-rod the slot 13 engages over the ends of the lowest hinge-rod 9 and secures the tablet-cylinder in position. If, for instance, the train be traveling in the direction from Berlin to Milan, the station-tablet roller is intermittently turned in the one direction of rotation in which the names of the stations lie on the successive station-tablets in correct succession. On the journey in the opposite direction—that is to say, from Milan to Berlin—the shifting lever 36 which was previously in operation is thrown out of action by turning the disk 28, and the other shifting lever 36 is then thrown into action in a reverse direction of the roller in such a way that the station-names are successively raised in an opposite succession.

In order that on the changing of the shifting levers 36 the direction of travel is also changed, recesses 32 are provided in the plates 31, connecting the two disks 28, and under the plates 31 on the protective casing the names of the two end stations, one of which is in duplicate, are placed in the following manner: On one side there stand on the casing the station-names "Berlin," "Milan," "Berlin," on the other the names "Milan," "Berlin," "Milan," so that two of these names are visible over one another through the recesses 32—for instance, "Berlin" and "Milan"—in the position shown in the drawings. If the disks 28 are turned, the recesses 32 of the two connecting-plates 31 are turned with them, and after the turning is completed on both sides of the apparatus the names "Milan" "Berlin" stand over one another.

The rotation of the shifting-lever disks 28 and the connecting-plates 31 of course only takes place at the end of the journey before commencing the return journey, while the operation of the lift-rods 12 must be effected at each stopping-station. This operation may take place in each separate apparatus, or a suitable number of apparatuses may be operated simultaneously by coupling their chains 25 to a rod, cord, chain, or the like running through the carriage or the whole length of the train.

It is evident that the cylinder may be arranged for any suitable number of station-tablets. The apparatus may be permanently connected with the carriage, and when the latter is used for another section of railway the station-tablets may be changed, for which

object the cover 33 is made removable, or the apparatus may be provided with the station-tablets permanently for a given section of railway, and the whole apparatus in that case may be removed. For this object ordinary suspension devices are employed in the apertures in the carriage-walls.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a station-indicating device the combination of a cylinder, a pair of disks connected by a spindle and adapted to be rotated inside of said cylinder and axially thereto, radial slots on the inner opposite sides of said disks, indicating-tablets having their ends resting normally in said slots, a casing projecting upwardly from said cylinder and opening into said cylinder, said opening adapted to register with the uppermost of the oppositely-disposed pairs of slots, horizontal projections on said tablets located on the corners thereof and in proximity to the peripheries of said disks, a bar reciprocating vertically in proximity to the outer ends of each of said disks and into said upper casing, a notch in each of said bars, through which pass when said bar is in its lowermost position said projections on said tablets upon the rotation of said tablet-supporting disks, a rod connecting the upper ends of said bars, and means for vertically reciprocating said rod and bars to cause said projections on the uppermost of said tablets to be engaged by the lower walls of said slots in said bars and be elevated into said upper casing and lowered again into its normal position, substantially as set forth.

2. In a station-indicating device the combination of a cylinder, a pair of disks connected by a spindle and adapted to be rotated inside of said cylinder and axially thereto, radial slots on the inner opposite sides of said disks, indicating-tablets having their ends resting normally in said slots, a casing projecting upwardly from said cylinder and opening into said cylinder, said opening adapted to register with the uppermost of the oppositely-disposed pairs of slots, horizontal projections on said tablets located on the corners thereof and in proximity to the peripheries of said disks, a bar reciprocating vertically in proximity to the outer ends of each of said disks and into said upper casing, a notch in each of said bars, through which passes when said bar is in its lowermost position said projections on said tablets upon the rotation of said tablet-supporting disks, a rod connecting the upper ends of said bars, and means for vertically reciprocating said rod and bars to cause said projections on the uppermost of said tablets to be engaged by the lower walls of said slots in said bars and be elevated into said upper casing and lowered again into its normal position, and an angular notch in the lower ends of each of said reciprocating bars adapt-

ed when in the lowermost position of said bar to engage the projection on the lowermost tablet and lock the tablet-containing cylinder against rotation, substantially as set forth.

3. The combination in a device of the character described of a plurality of station-indicating tablets, means for exposing said tablets in a certain predetermined sequence, means for exposing said tablets in a sequence the reverse of said sequence, means for indicating which of said sequences of exposure is in operation, and means for changing from either one of said sequences of exposure of said station-tablets to the other and simultaneously changing the sequence-indicator, substantially as set forth.

4. The combination with the cylinder, the rotating disks supporting the tablets, the upper casing, and the reciprocating bars that elevate the uppermost of said tablets into said casing, of a pair of disks located outside said cylinder and pivoted axially therewith, curved plates connecting said disks and adapted to oscillate and thereby cover and uncover indications on the convex surface of said cylinder, a pair of shifting levers mounted on each of said outer pair of disks, said shifting levers adapted to be oscillated by said reciprocating bars in proximity thereto to cause the tablet-cylinder to be oscillated to bring the next consecutive tablet in one direction to register with the opening in said casing, the shifting levers being so disposed that the pair of levers comprising one on each said end disks, which pair are so arranged as to cause a rotation of the tablet-cylinder in one direction, will be moved out of range of engagement with said reciprocating bar and the other similarly-disposed pair will be thrown into action by the oscillation of the said curved plates and their supporting-disks, which latter oscillation simultaneously exposes a sign indicating the direction of the rotation of the tablet-supporting cylinder, substantially as set forth.

5. The combination in a device of the character described, of a plurality of station-indicating tablets, means for exposing said tablets in a certain predetermined sequence, means for exposing said tablets in a sequence the reverse of said sequence, means for indicating the direction of travel of the car, and means for changing from either one of said sequences of exposure of said tablets to the other and simultaneously changing the direction-of-travel indicator, substantially as set forth.

6. The combination in a device of the character described, of a plurality of station-indicating tablets, means for exposing said tablets in a certain predetermined sequence, means for exposing said tablets in a sequence the reverse of said sequence, means on the front of the device for indicating the direction of travel of the car, and means for changing from either one of said sequences of exposure of said station-tablets to the other, and

simultaneously changing the direction-of-travel indicator, substantially as set forth.

7. The combination in a device of the character described, of a plurality of station-indicating tablets, means for exposing said tablets in a certain predetermined sequence, means for exposing said tablets in a sequence the reverse of said sequence, means for indicating the terminal stations in the sequence  
10 of travel of the car, and means for changing

from either one of said sequences of exposure of said station-tablets to the other and simultaneously changing the terminal-station indicator, substantially as set forth.

In testimony whereof I affix my signature 15  
in presence of two witnesses.

RICHARD BÜRK.

Witnesses:

AUGUST DRAUTZ,  
HERMAN WAGNER.