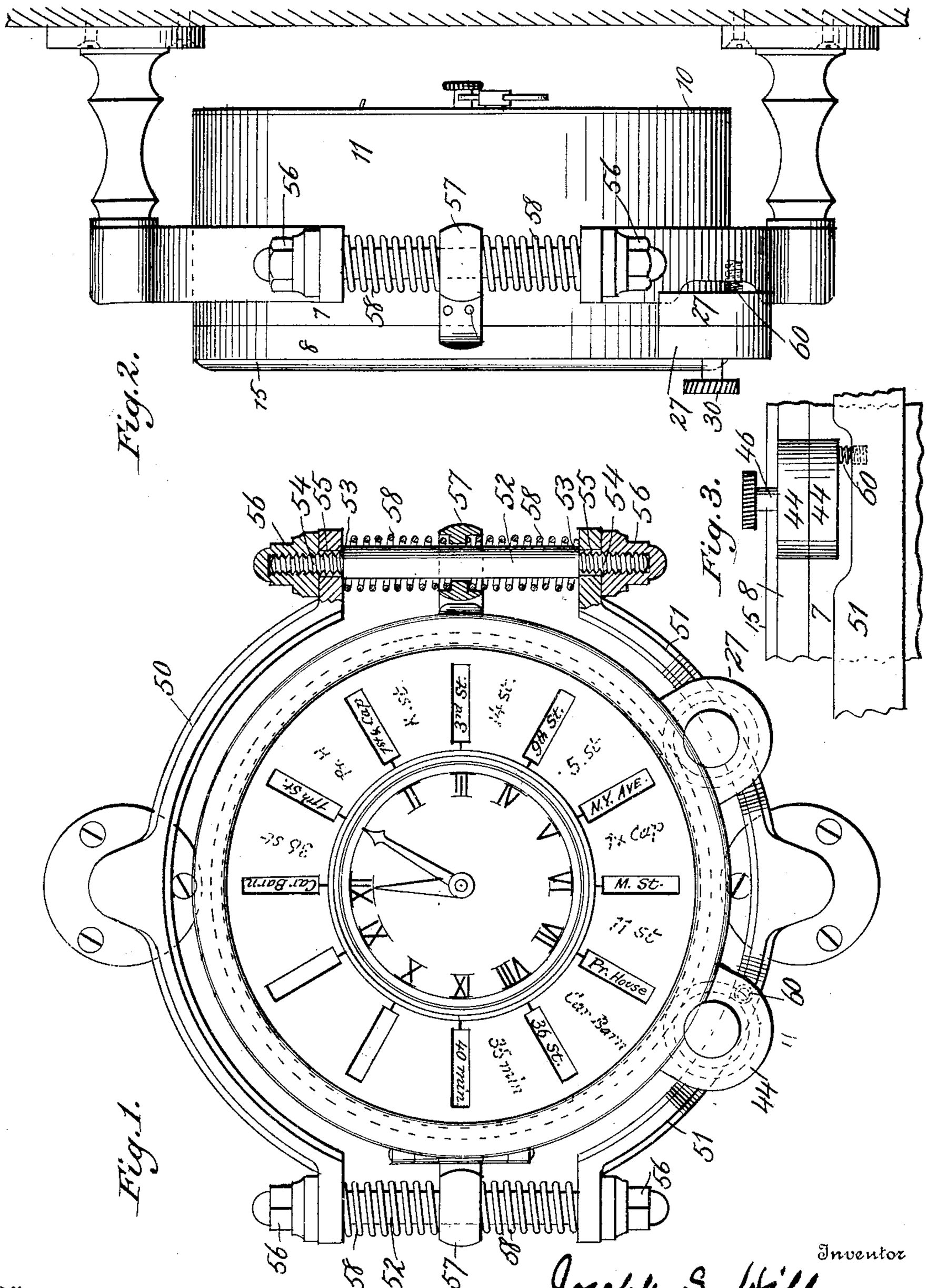
No. 659,396. Patented Oct. 9, 1900.

J. S. HILL.

SCHEDULE INDICATOR.

(Application filed Apr. 17, 1900.)

(No Model.) 2 Sheets—Sheet 1.



Witnesses

F. H. Schatz.

Chas. H. Bates.

Inventor

Joseph S. Hill

by

Grant Burroughes.

Attorney

No. 659,396. Patented Oct. 9, 1900.

J. S. HILL.

SCHEDULE INDICATOR.

(Application filed Apr. 17, 1900.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

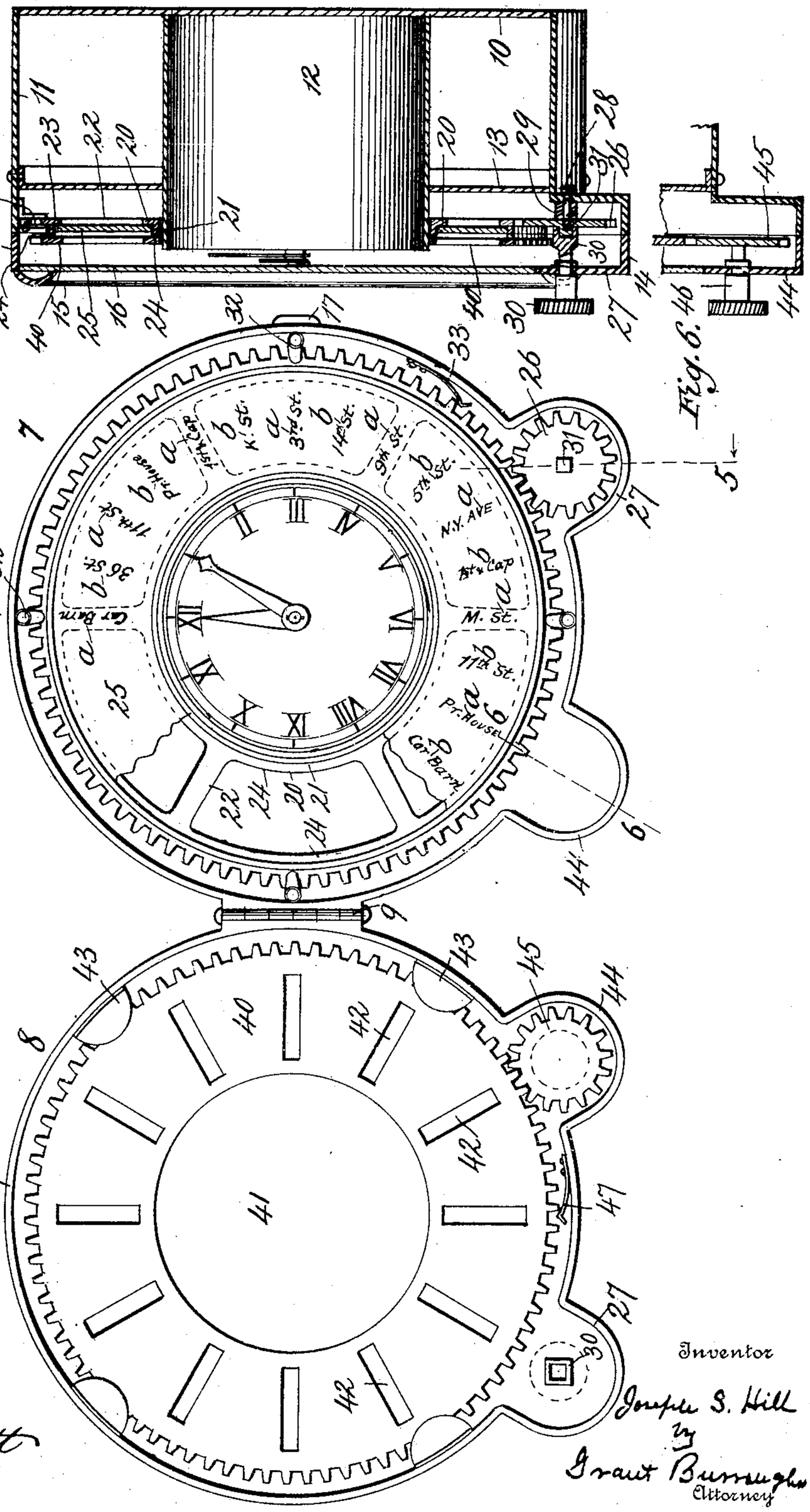


Fig. 6.

Fig. 4.

Witnesses
F. J. E. Schott
Chas. H. Yates.

Inventor
Joseph S. Hill
by
Grant Burroughs
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH S. HILL, OF LOS ANGELES, CALIFORNIA.

SCHEDULE-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 659,396, dated October 9, 1900.

Application filed April 17, 1900. Serial No. 13,258. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH S. HILL, a citizen of the United States, and a resident of Los Angeles, in the county of Los Angeles, State of California, and temporarily residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Schedule-Indicators, of which the following is a full, clear, and exact description, such as will enable those skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The invention relates to improvements in schedule-indicators which are used on railway-cars.

It has for its object the provision of a device whereby the operator of a car before he starts out on a trip can adjust the same so that he can tell at what time he should be at a predetermined point, and thereby be enabled to regulate the speed of his car accordingly.

The invention consists in the novel construction, combination, and arrangement of parts, such as will be hereinafter fully described, pointed out in the appended claims, and illustrated in the accompanying drawings.

In the accompanying drawings, in which similar reference characters designate corresponding parts, Figure 1 is a front elevation, partly in section, of a device embodying the invention. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged detail view showing the spring for preventing the case from vibrating on its trunnions. Fig. 4 is a front elevation, partly in section, showing the device with the door open. Fig. 5 is a sectional view on the line 5 5 of Fig. 4. Fig. 6 is a detail sectional view on the line 6 6 of Fig. 4 with the door closed.

The indicating mechanism is mounted in a cylindrical case, comprising the main body 7 and the door 8, joined to the main body by the hinge 9. The main body consists of the base 10 and the cylindrical wall 11. From the inner side of the base a cylindrical shell 12 extends concentric with the cylindrical wall and is stayed by the plate 13, secured to the said wall. The door consists of the cylindrical wall 14, the rim 15, and the glass face 16, secured therein by suitable means. A catch 17 is provided for securing the door.

A time mechanism of any construction suitable in the premises is mounted in the shell 12. For the purpose of illustrating the invention it is only necessary to show the dial and hands of such mechanism.

The end of the shell 12, outside of the plate 13, forms a bearing about which the circular plates 20 and 40, respectively, rotate. The inner plate 20 has a hub 21 mounted on the said shell. From this hub radial arms 22 project and carry at their outer ends the rim 23. Between the flanges 24, projecting from the hub and the rim, is placed the card 25, on which is designated the schedule of places which the car passes during a trip. There may be several schedules on the same card and the names of one schedule placed between the names in another. For the purpose of illustrating the invention, however, only two schedules will be shown. One of these schedules *a a*, for instance—designates the places which a car will pass in going in one direction, and another—*b b*, for instance—designates the places which the car will pass on its return trip. The names in each schedule are placed at regular intervals on the card and so arranged that the lettering extends in radial lines. It is to be observed that the card is removable, so that it can be replaced by cards having different schedules.

The periphery of the plate 20 is provided with teeth, with which the gear-wheel 26 engages. The latter is mounted in the offset 27 of the case, and it is held by the screw 28 passing through the bottom of the offset and the collar 29 and by engaging with said gear-wheel. The gear-wheel is rotated by the key 30, journaled in the rim of the door, having a square recess in its inner end adapted to register with the square lug 31 of said gear-wheel. When the door of the case is closed, the key engages with the lug, and by turning the same the plate 20 may be moved to any adjustment desired. The said plate is held in place upon the shell by the brackets 32. A spring 33 is secured to the inner side of the main body of the case and bears on the

periphery of the plate 20 and serves to retard the movement of the latter and to hold it in place after it has been adjusted.

The outer plate 40 has a central opening 41, adapted to fit over the end of the shell 12, about which it is rotatable. This plate has a series of radial slots 42, adapted to be brought into register with the names of the places indicated on the card 25, mounted on the inner plate 20. The intervals at which these slots are arranged and those at which the names in each schedule are placed are the same, so that if one of the names of a schedule should be brought into register with one of the slots then all the names of that schedule will be in register with the other slots. This plate is carried by the door of the case and it is held in place therein by the brackets 43.

Means for rotatably adjusting the plate 40 are provided. In the offset 44 of the case is mounted the gear-wheel 45, adapted to engage with the periphery of the plate, which is provided with teeth for the purpose. The gear-wheel is carried by the shaft 46, journaled in the rim of the door and provided with a finger-piece for turning it. A spring 47 is secured to the inner face of the wall of the door and bears on the periphery of the plate to retard the movement of the latter and to hold it in place after it has been adjusted.

The operation of the device is as follows: The schedule is prepared by designating on the card 25 the names of some of the prominent places along the line of travel which will be passed at regular intervals when the car is running at the proper rate of speed—say schedule *a a*, for instance. Before the car starts the plate 40 is adjusted until one of the slots 42 is directly opposite the hour and minute indicated on the dial of the time-indicating mechanism at which the car is to start—say at twelve o'clock, for instance. Then the inner plate 20 is turned until the first place on the schedule—the "car-barn," for example—registers with the slot opposite twelve o'clock on the dial. This will cause the other places of the schedule to register with the other slots. After the car has started its operator by observing the indicator can tell if he is traveling at the required rate of speed. For instance, when he passes "11th St." it should be five minutes after twelve, and so on. When the car reaches the end of the route, the return schedule, such as *b b*, can be brought into register.

Means for protecting the indicator against undue jarring are provided. Two yokes 50 and 51 are secured to a suitable support and have their ends connected by the bolts 52. The latter are shouldered near their ends, as at 53, and at their extreme ends have reduced diameters and are screw-threaded, as at 54. The apertures 55 in the ends of the yokes fit over the reduced ends of the bolts and are held between the shoulders 53 and the nuts 56 turned onto the ends of the said bolts. Projecting from opposite sides of the case are the trunnions 57, apertured at their outer ends. Through the apertures the bolts 52 pass. Surrounding each bolt and on opposite sides of the trunnions are the springs 58. These springs are under compression and support the indicator, so that it will not be liable to injury from the jarring of the car. Any tendency that the case may have to oscillate on its trunnions is limited by the spring 60, interposed between the yoke 51 and the offset 44.

To protect the time-indicating mechanism from the action of any electricity that might escape and magnetize the spring mechanism, the shell 12 is made of non-magnetic metal.

It is obvious that when the door of the case is opened, as the outer plate 40 is carried by it, the inner plate 20 can be readily removed for the insertion of another card with different schedules.

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

1. In a schedule-indicator, the combination of a time-indicating mechanism, a plate rotatable about said time-indicating mechanism and having a schedule of places indicated thereon, and a second plate also rotatable about said time-indicating mechanism and placed over the first-mentioned plate and provided with slots adapted to register with the names of places indicated on the first-mentioned plate.

2. In a schedule-indicator, the combination of a case comprising a main body and a door, a shell projecting from the inner side of the base of the said main body, a time-indicating mechanism located in said shell, a plate rotatable about said time-indicating mechanism and having a schedule of places indicated on the same, a second plate rotatable about said shell outside of the first-mentioned plate and having a series of slots adapted to register with the names of the schedule on the first-mentioned plate.

3. In a schedule-indicator, the combination of a case comprising a main body and a door, a time-indicating mechanism located in said case, a plate located in the main body of the case and rotatable about said time-indicating mechanism and having a schedule of places designated thereon, and a second plate carried by the door of said case over the first-mentioned plate and provided with slots adapted to register with the names of the schedule on the first-mentioned plate and rotatable about said time-indicating mechanism.

4. In a schedule-indicator, the combination of a case having offsets, a time-indicating mechanism mounted in said case, a plate having its periphery provided with teeth and having a schedule of places designated on its face and rotatable about said time-indicating mechanism, a second plate with its periph-

ery provided with teeth rotatable about said time-indicating mechanism and provided with slots adapted to register with the names of said schedule, and gear-wheels located in said offsets and respectively engaging with the peripheries of said plates.

5. In a schedule-indicator, the combination of a time-indicating mechanism, two plates rotatable about said time-indicating mechanism one outside of the other, the inner of said plates having different schedules designated thereon and the outer of said plates having a series of slots adapted to be brought into register with any one of said schedules, and means for rotatably adjusting said plates independently of each other.

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

JOSEPH S. HILL.

Witnesses:

GRANT BURROUGHS,

H. R. HOWENSTEIN.