

S. C. COX.
MAIL BOX.

APPLICATION FILED MAR. 5, 1910.

961,212.

Patented June 14, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

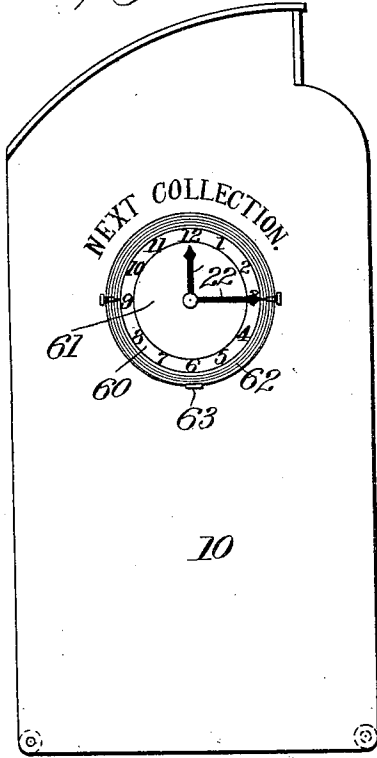


Fig. 2.

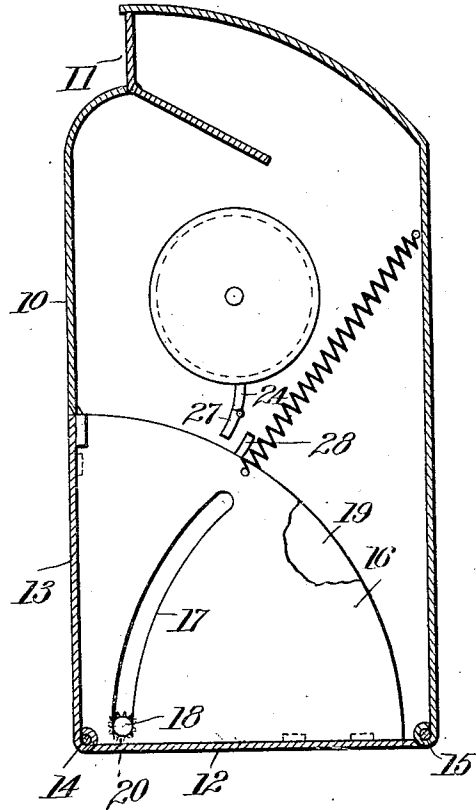


Fig. 3.

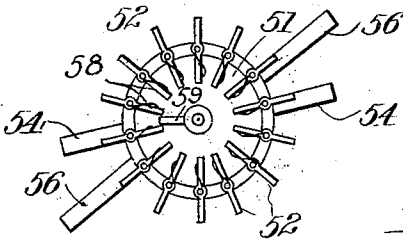


Fig. 9.

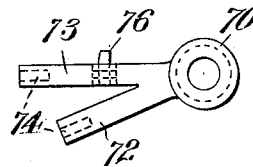
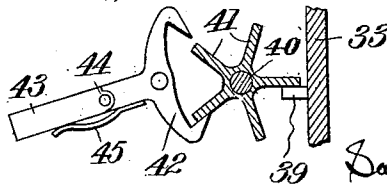


Fig. 10.



Witnesses

B. N. Walker.
Elmer Kintz.

Inventor

Samuel C. Cox

By

Rodgers & Rodgers
Attorneys

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3 SHEETS—SHEET 2.

Fig. 3.

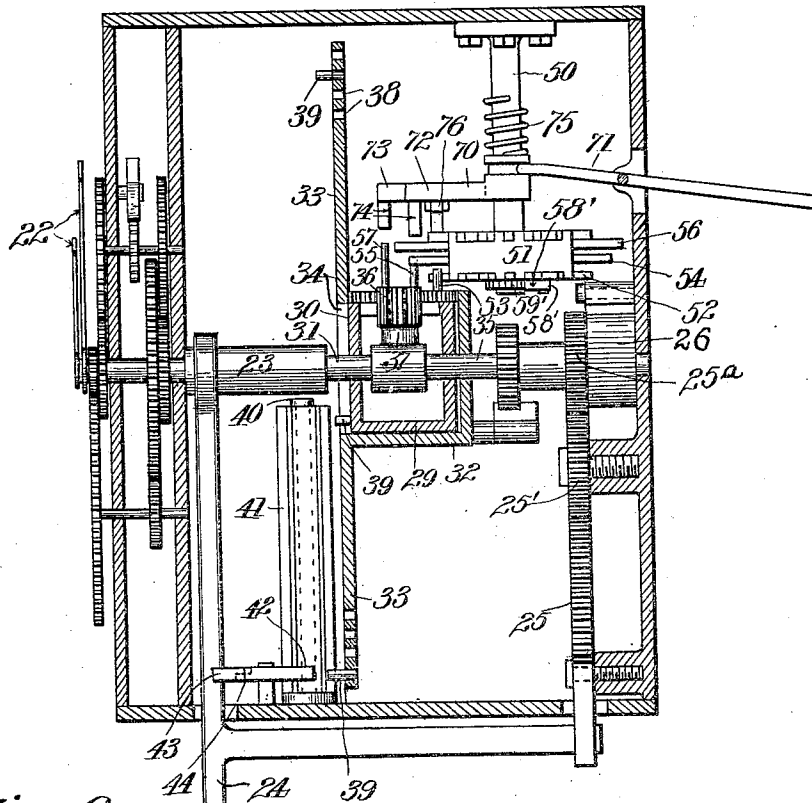


Fig. 6.

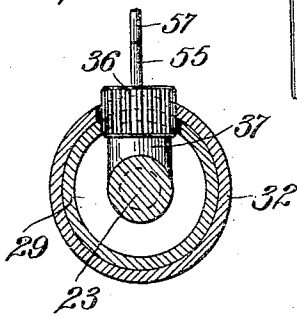
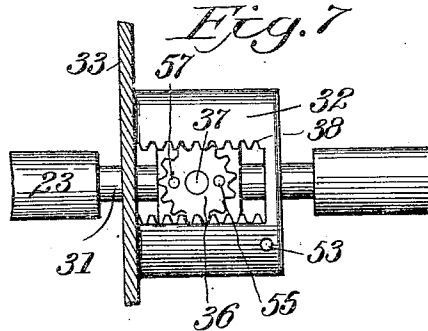


Fig. 7.



Inventor

Samuel C. Cox

By

Hodges & Hodges
Attorneys

Witnesses

W. H. Warner
Elmer King

961,212.

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3 SHEETS—SHEET 3.

Fig. 4.

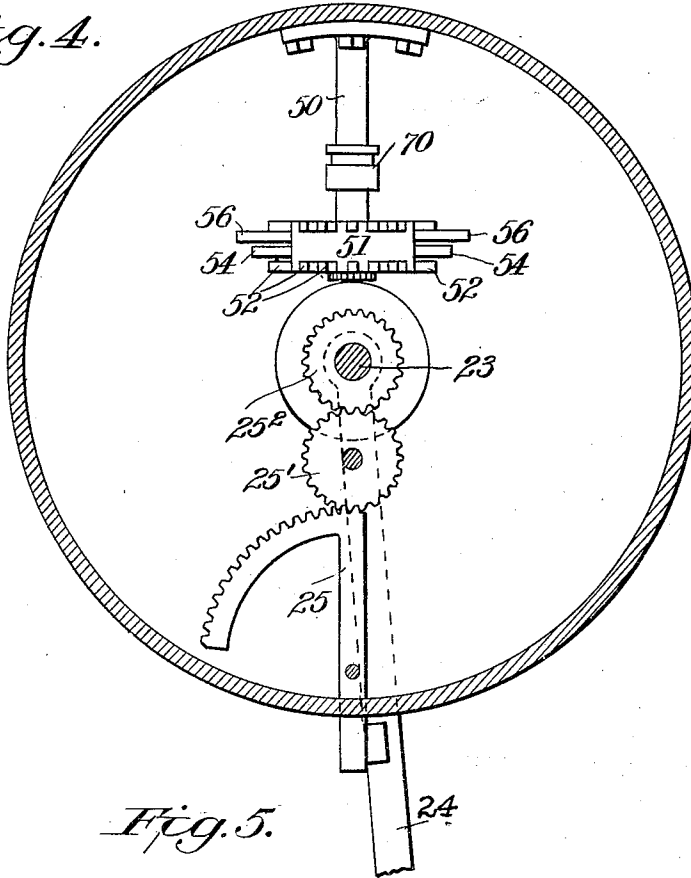
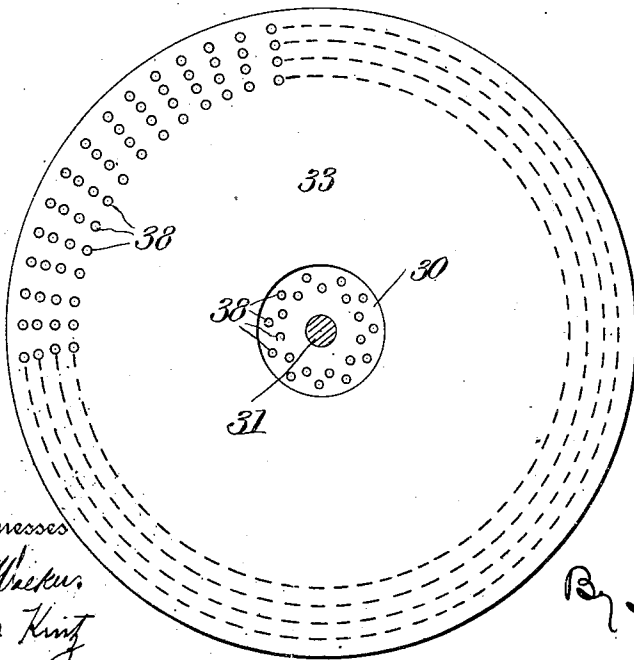


Fig. 5.



Witnesses
W. M. Wacker
Elmer King

Inventor
Samuel C. Cox
By *Hodges & Hodges*
Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL C. COX, OF WASHINGTON, DISTRICT OF COLUMBIA.

MAIL-BOX.

961,212.

Specification of Letters Patent. Patented June 14, 1910.

Application filed March 5, 1910. Serial No. 547,518.

To all whom it may concern:

Be it known that I, SAMUEL C. COX, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Mail-Boxes, of which the following is a specification.

This invention relates to certain new and useful improvements in mail boxes.

The invention has for its object to provide improved means for indicating the periods of collection of mail matter.

A further object is to provide improved means for automatically operating the indicating means after each collection.

A further object is to provide improved means for adjusting the indicating means to conform to changes in the days and hours, and daily schedules of collection.

A further object is to provide means for checking the collector in his rounds.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings:—Figure 1 is an end elevation of a mail box with my indicator attached thereto. Fig. 2 is a transverse sectional view of the mail box, illustrating the indicator mechanism in position. Fig. 3 is an enlarged longitudinal sectional view of the indicator mechanism. Fig. 4 is a transverse sectional view thereof. Fig. 5 is a detail view illustrating the controlling disks. Figs. 6 and 7 are details of the disk shifting device. Figs. 8, 9 and 10 are details illustrating the disk controlling means.

Referring to the drawings, 10 designates a mail box provided with the deposit opening 11, hinged bottom 12 and front section 13. The construction of the box is immaterial, but I have illustrated the front section 13 hinged at 14 to the bottom section 12, the latter being hinged at its rear end to the back of the box as indicated at 15. The bottom section is provided with end plates 16 having curved slots 17 adapted to receive pins 18 projecting inwardly from the ends of the box. The slots 17 are curved on an arc having its center at the rear hinge 15. The front section 13 is also provided with end plates 19 adapted to slide between the end plate 16 and the ends of the box, said end plates 19 being provided with recesses 20 adapted to fit over the pins 18 when the box is closed.

Supported in any suitable manner on the inner face of one of the end walls of the mail box is a clock mechanism of any preferred construction provided with the usual trains of gearing for operating the minute and hour hands 22, the latter being suitably mounted on an arbor which projects through said end wall. Pivotally mounted upon said arbor is a lever 24 adapted to wind the main spring 26 of the clock mechanism, through a winding rod 25, and pinions 25' and 25^a, the lower end of said lever lying in the path of a trip lug 28 secured to one of the end plates 19. Loosely mounted on the arbor 23 is a hub 29 provided at one end with a disk 30, said disk being provided with a central opening to receive a reduced portion 31 of the arbor, whereby said hub will rotate with said arbor and yet be free to reciprocate thereon. Mounted on said hub 29 is a second hub 32 provided with a large disk 33 the latter being provided with a central opening 34 to receive disk 30. The opposite end of hub 32 is also provided with a central opening to receive a reduced portion 35 of arbor 23, whereby said hub will rotate with said arbor and yet be free to reciprocate thereon. The walls of the hubs 29 and 32 are provided with coinciding slots to receive a pinion 36 mounted on a stem extending laterally from arbor 23, said pinion engaging rack teeth 38 on opposite walls of the slots in the hubs, the arrangement of the parts being such that rotation of the pinion effects a relative reciprocation of the two hubs. Each of the disks 30 and 33 is provided with a series of holes arranged near its edge adapted to receive removable stops 39. Mounted upon an arm 40 is an escapement pinion 41 arranged parallel with the faces of the disks 30 and 33 and in such manner that the teeth of said pinion intercept the path of movement of the stops 39. Said pinion is normally prevented from rotation by means of an escapement pawl 42 of approximate crescent shape and provided with a lug 43 extending into the path of movement of the trip lever 24. The lug 43 is pivoted to the pawl 42 and held normally against a suitable stop shoulder 44 by spring 45 so that the trip lever when moving in one direction will operate the pawl and when moving in the other direction will pass the same without interference. It will be observed that the pinion 41 is of sufficient

length to intercept the stops 39 on both disks.

Mounted on a suitable support 50 is a cam wheel 51 provided with teeth or fingers 52 adapted to be engaged by a lug 53 on the hub 32. Said cam wheel is provided with a short cam 54 adapted to engage a pin 55 on pinion 36, a longer cam arm 56 being provided to engage a pin 57 on said pinion. The hub 32 makes one complete revolution in twenty-four hours, and the fingers are so numbered that at the end of the sixth day the cam arm 54 is in a position to intercept the path of movement of the pin 55 as the pinion 36 swings in its orbit around arbor 23. As said pin engages arm 54 the pinion 36 is partially revolved on its axis and consequently withdrawing the stops of disk 33 from engagement with pinion 41 and forcing disk 30 outward until its stops engage said pinion. The next revolution of hub 32 causes the cam arm 56 to engage pin 57 and reverse the foregoing operation. In order to prevent forward rotation of the cam wheel 51 except when engaged by lug 53 fingers 52 are extended to form spring pressed pawls 58 arranged to engage a stationary lug 59, and in order to prevent reverse rotation of the cam wheel 51 I provide a suitable pawl 58' and ratchet 59'.

On the outer face of the box adjacent the hands 22 I provide an ordinary clock face 60, the same being covered by a suitable lens 61 held in position by a suitable collar 62. Said collar is provided with an upper permanent section and a lower pivoted section engaged by a suitable catch 63. By this arrangement rain is prevented from entering the mail box, the clock mechanism is protected, and the lens may be readily replaced or repaired.

In order to provide for the changing of the disks 30 and 33 for holidays occurring before the end of the week I provide a suitable manually operated device comprising a member 70 pivotally mounted upon the support 50 and operated by means of a suitable lever 71. Said member is provided with fingers 72, 73 corresponding to the cam arms 54 and 56 respectively, said fingers being provided with depending lugs 74 reaching down to the plane of the pins 55 and 57. A coiled spring 75 tends to hold member 70 normally elevated and to return the same to operative position when rotated. Said member is provided with a latch 76 adapted to engage projections on cam wheel 51 and arranged to be disengaged by the pin 53. When it is desired to operate this device the operator, at the last collection before the holiday, depresses member 70 until latch 76 engages the cam wheel, whereupon the fingers 72 and 73 will act identically as cam arms 54 and 56. As the pin 53 comes around it disengages the latch 76 where-

upon the spring will reverse the rotation of member 70 and at the same time elevate the latter to its normal position.

In operation it is necessary to depress the front section 13 before the mail matter can be withdrawn from the box. As the said section is depressed the trip lug 28 engages the lower end of the lever 24 and moves the same in a direction to wind the main spring 26. It will be noted that the lever in its movement engages the lug 43 but by reason of the joint in the latter, passes the same without operating it. At the time that this operation takes place one of the stops 39 of either disk is in engagement with one of the teeth of the pinion 41, the latter by reason of the pawl 42 preventing movement of the disk. On the return movement of the lever 24 pressed upon and operated by trip-lug 28 the lug 43 is again engaged rocking the pawl, disengaging one end of the latter from the pinion 41 and permitting said pinion to rotate sufficiently to allow the stop 39 to pass, further movement of said pinion being interrupted by the other end of the pawl 42. The disk will at once be rotated by reason of the rotation of shaft or arbor 23. As soon as the trip lever 24 passes the lug 28 the escapement pawl returns to its original position in engagement with the escapement pinion 41, the latter intercepting the next stop in the disk 30 or 33 and thereby interrupting the movement of the latter.

It is obvious that any arrangement of stops 39 and holes 38 may be employed, but I have illustrated the holes in disk 33 as arranged in four rows of seventy-two holes each, each hole representing five minutes, and twelve holes one hour, and it is readily apparent that the time indicated by the hands 22 may be varied by shifting the stops in the various holes. The holes 38 of disk 30 are arranged for half hour periods but it is obvious that this arrangement may be varied. By this arrangement the indicator may be set to indicate the next hour of collection and the time altered to suit all conditions. At the last collection of the seventh day, *i. e.*, Saturday, the cam wheel 51 is operated to bring disk 30 into operative position, the stops on said disk having been set to indicate the hours of Sunday collections. At the last collection Sunday the disk 30 is rendered inoperative and the disk 33 placed automatically into operative relation. It is also obvious that while I have illustrated and described my improved indicating mechanism as particularly adapted to a mail box, I do not desire to limit myself in this particular as the same may be readily adapted without material alteration for various purposes.

Having thus explained the nature of my invention, and described a manner of con-

structing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim is:—

5 1. An indicator of the character described comprising indicating mechanism, a rotatable shaft for operating the same, a spring for rotating said shaft, controlling means secured to said shaft and rotatable there-
10 with, stop mechanism arranged to normally engage said controlling means to prevent rotation of said shaft, trip mechanism for temporarily disengaging said stop mechanism and said controlling means, and means
15 for intermittently increasing the tension on said spring immediately before each operation of the trip mechanism.

2. An indicator of the character described comprising indicating mechanism, a rotatable shaft for operating the same, a spring for rotating said shaft, controlling means secured to said shaft and rotatable there-
20 with, stop mechanism arranged to normally engage said controlling means to prevent rotation of said shaft, trip mechanism for temporarily disengaging said stop mechanism and said controlling means, means for
25 intermittently increasing the tension on said spring immediately before each operation of the trip mechanism, and a single member
30 for operating said trip mechanism and said tension increasing means.

3. An indicator of the character described comprising indicating mechanism, a rotatable shaft for operating the same, a spring for rotating said shaft, controlling means secured to said shaft and rotatable there-
35 with, stop mechanism arranged to normally engage said controlling means to prevent rotation of said shaft, trip mechanism for temporarily disengaging said stop mechanism and said controlling means, means for
40 intermittently increasing the tension on said spring immediately before each operation of the trip mechanism, and a trip lever
45 having arms for respectively operating said tension increasing means and said trip mechanism.

4. An indicator of the character described comprising indicating mechanism, a rotatable shaft for operating the same, a spring for rotating said shaft, a disk secured to
50 said shaft and rotatable therewith, said disk being provided with stops, stop mechanism arranged to normally engage said
55 stops to prevent rotation of said shaft, trip mechanism for temporarily disengaging said stops and stop mechanism, and means for intermittently increasing the tension on
60 said spring immediately before each operation of the trip mechanism.

5. An indicator of the character described comprising indicating mechanism, a rotatable shaft for operating the same, a spring
65 for rotating said shaft, a disk secured to

said shaft and rotatable therewith, said disk being provided with a plurality of holes, removable stops secured in said holes, stop mechanism arranged to normally engage
70 said stops to prevent rotation of said shaft, trip mechanism for temporarily disengaging said stops and stop mechanism, and means for intermittently increasing the tension on said spring immediately before each operation of the trip mechanism.

6. An indicator of the character described comprising indicating mechanism, means for actuating the same, controlling means operatively connected with said actuating
75 means, stop mechanism adapted to normally engage said controlling means, and trip mechanism for temporarily disengaging said controlling means from said stop mechanism, said controlling means includ-
80 ing adjustable means for varying the periods of disengagement of said controlling means and said stop mechanism.

7. An indicator of the character described comprising indicating mechanism, a rotatable shaft for operating the same, a spring for rotating said shaft, controlling means
85 secured to said shaft and rotatable therewith, stop mechanism arranged to normally engage said controlling means to prevent rotation of said shaft, trip mechanism for temporarily disengaging said stop mechanism and said controlling means, and means
90 for intermittently increasing the tension on said spring immediately before each operation of the trip mechanism, said controlling means including adjustable means for
95 varying the periods of disengagement of said controlling means, and said stop mechanism.

8. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for increasing
105 the tension on said spring, a disk or plate controlling said indicating mechanism, stops carried by said disk, or plate, a locking pinion adapted to successively engage
110 said stops, trip mechanism controlling said locking pinion, and a trip lever for operating said trip mechanism.

9. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for increasing
115 the tension on said spring, a disk controlling said indicating mechanism, stops removably supported by said disk, a locking pinion adapted to successively engage the
120 stops, trip mechanism controlling said locking pinion, and a trip lever for operating said trip mechanism.

10. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for increasing
125 the tension on said spring, a disk controlling said indicating mechanism, stops supported by said disk, a locking pinion

adapted to successively engage said stops, an escapement pawl controlling said pinion, and a trip lever for operating said pawl.

11. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for increasing the tension on said spring, a disk controlling said indicating mechanism, stops supported by said disk, a locking pinion arranged to intercept the path of movement of said stops, an escapement pawl controlling said pinion, said pawl being provided with a pivoted lug, and a trip lever for operating said pawl.

12. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for increasing the tension on said spring, a disk for controlling said indicating mechanism and provided with a plurality or series of holes, stops removably mounted in said holes, a locking pinion extending across all of said series of holes and adapted to engage the stops, trip mechanism for controlling said locking pinion, and a trip lever for operating said trip mechanism.

13. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, a plurality of disks each adapted to control the operation of said indicating mechanism, means for alternately placing said disks in operative relation with said indicating mechanism, locking mechanism for said disks, and means for releasing the disks from said locking mechanism.

14. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, means engaging said hubs to move said disks alternately into and out of operative position, locking mechanism for said disks, and means for releasing said disks from said locking mechanism.

15. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, said hubs being provided with rack teeth, a pinion meshing with the teeth on each hub, means for oscillating said pinion, locking mechanism for said disks, and means for releasing said disks from said locking mechanism.

16. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodic-

ally increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, means engaging said hubs to move the disks alternately into and out of operative position, said means including a cam wheel, means carried by one of said hubs for actuating said cam wheel, locking mechanism for said disks, and means for releasing the disks from said locking mechanism.

17. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, a pinion engaging said hubs to move said disks alternately into and out of operative position, a cam wheel for oscillating said pinion, means carried by one of said hubs for actuating said cam wheel, locking mechanism for said disks, and means for releasing the disks from the locking mechanism.

18. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, means engaging said hubs to move the disks into and out of operative position, said means including a cam wheel provided with circumferential fingers, a lug carried by one of said hubs and adapted to successively engage said fingers, locking mechanism for said disks, and means for releasing the disks from said locking mechanism.

19. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, a pinion engaging the hubs to move said disks alternately into and out of operative position, said pinion being provided with pins or projections, a cam wheel provided with cam arms adapted to alternately engage said pins or projections, said cam wheel being provided with peripheral fingers, a lug carried by one of said hubs and adapted to successively engage said fingers, locking mechanism for said disks, and means for releasing the disks from said locking mechanism.

20. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, said

disks being provided with means for normally preventing operation of said indicating mechanism, a cam wheel for throwing said disks into and out of operative position, and means for preventing reverse rotation of said cam wheel.

21. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, automatic means engaging said hubs to move said disks alternately into and out of operative position, independent manually operated means for moving said disks into and out of operative position, locking mechanism for said disks, and means for releasing the disks from said locking mechanism.

22. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, a pinion engaging said hubs to move said disks alternately into and out of operative position, an oscillating cam member for actuating said pinion, means for depressing said cam member, a spring for holding said cam member normally elevated and also to return said cam member to normal position when oscillated, locking means for said disks, and means for releasing said disks from the locking means.

23. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said indicating mechanism, a plurality of disks each provided with a hub secured to said arbor, a pinion engaging said hubs to move said disks alternately into and out of operative position, a cam member for actuating said pinion, a spring for holding said cam member normally elevated, means for depressing said cam member, means for rotating said cam member against the tension of said spring, means for releasing said cam member from said rotating means, locking means for said disks, and means for releasing said disks from said locking means.

24. An indicator of the character described comprising indicating mechanism, a spring for operating the same, means for periodically increasing the tension on said spring, an arbor connected with said spring and adapted to operate said mechanism, means supported by said arbor and including removable stops for limiting the movement of said arbor, locking means adapted to engage said stops, and means for releasing said stops from said locking means.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SAMUEL C. COX.

Witnesses:

WM. S. HODGES,
ELMER KINTZ.