

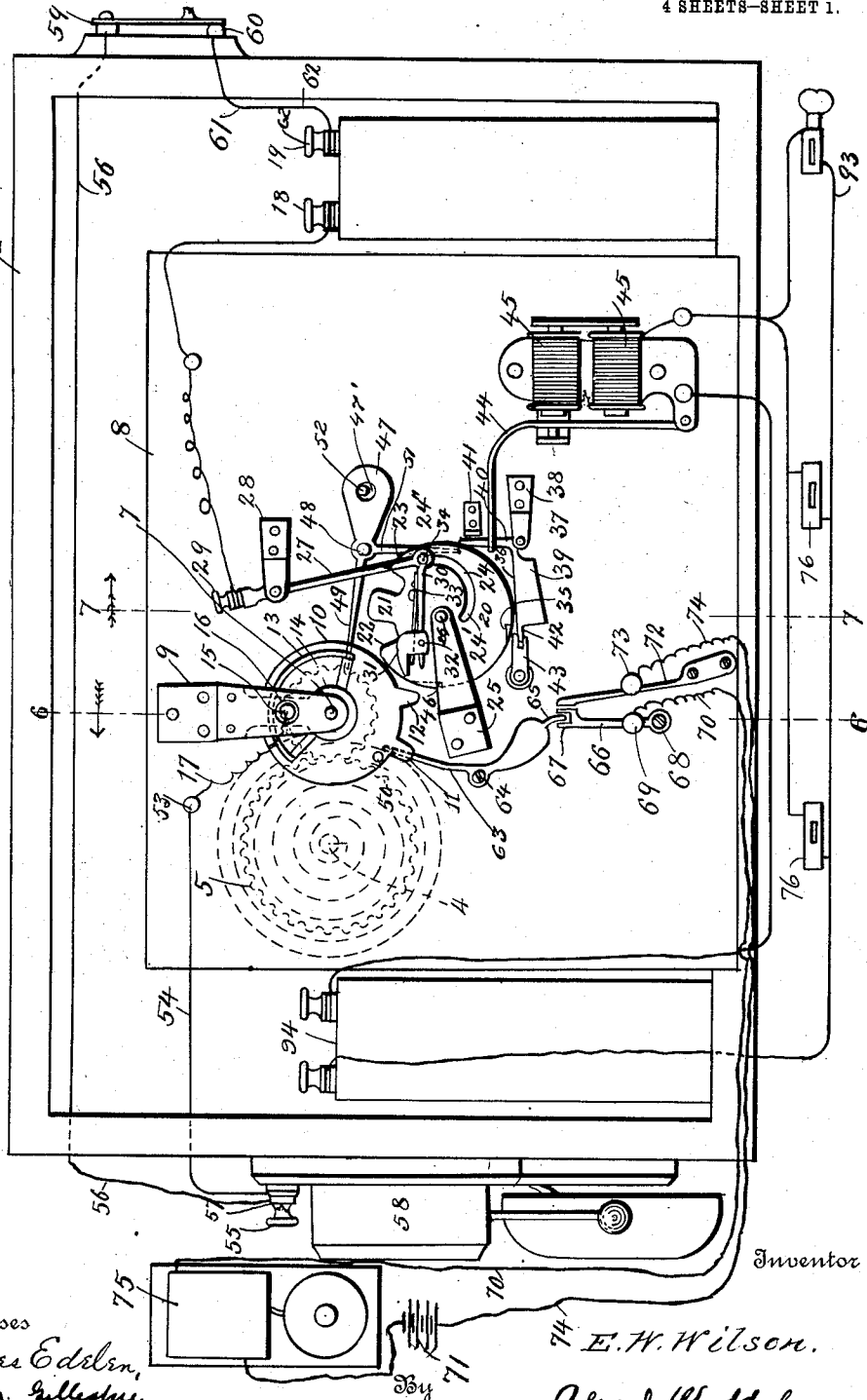
E. W. WILSON.
TIME SIGNAL.
APPLICATION FILED JULY 17, 1909.

1,048,118.

Patented Dec. 24, 1912.

4 SHEETS-SHEET 1.

Fig. 1.



Witnesses
H. R. Edlin,
S. M. Gillespie

E. W. Wilson.

Alex. J. Wedderburn, Jr.
Attorney

E. W. WILSON.

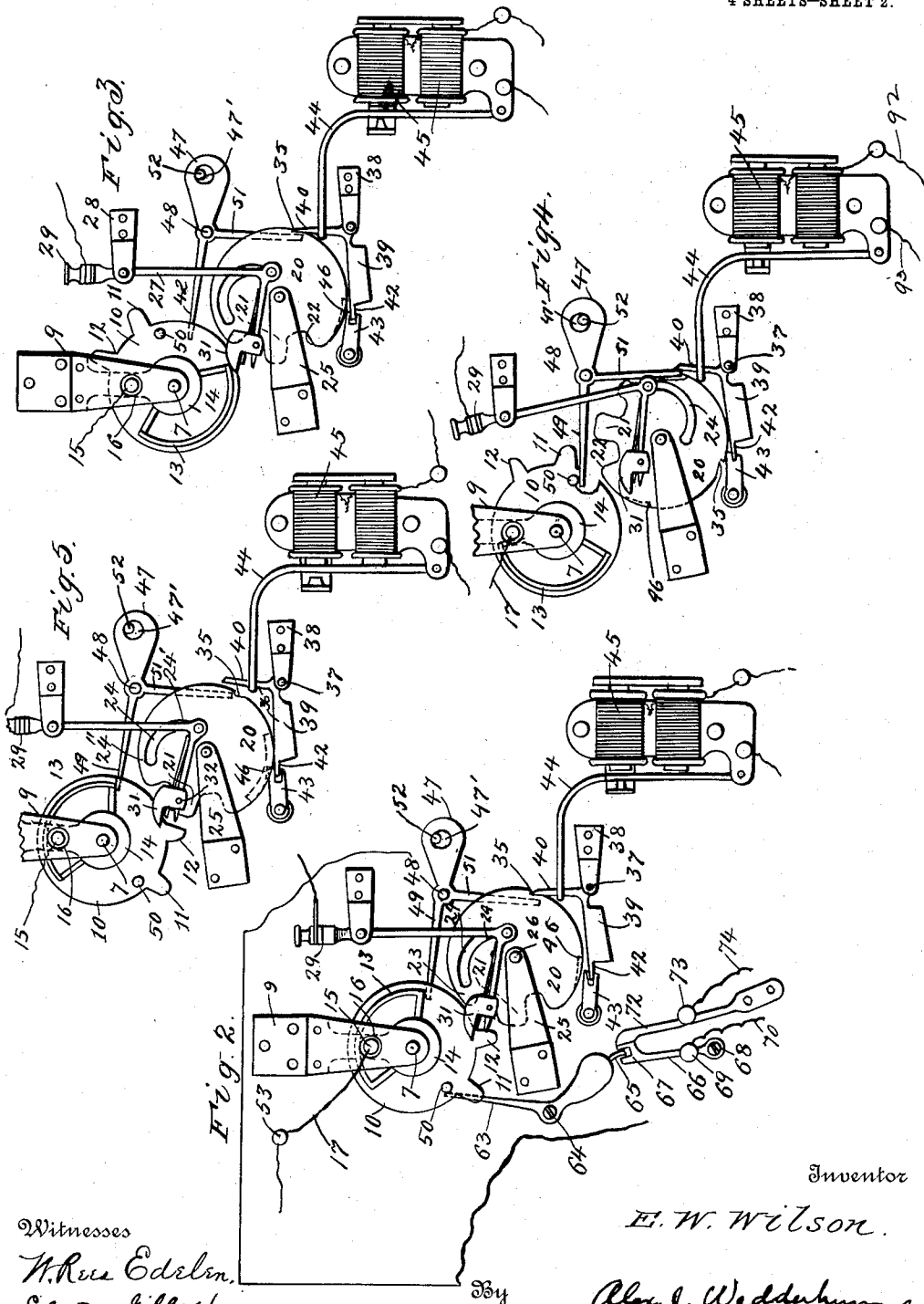
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H. R. Edelson.
L. M. Gillespie

Inventor

E. W. Wilson.

Alex. J. Wedderburn, Jr.

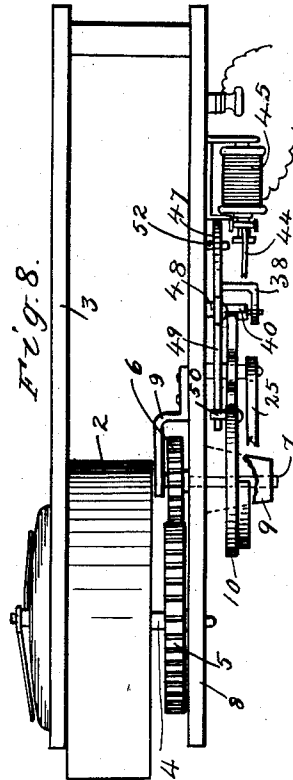
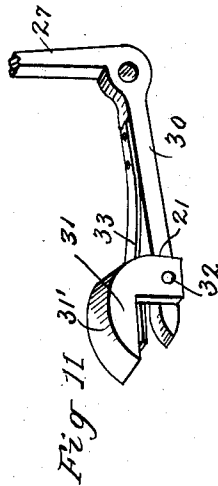
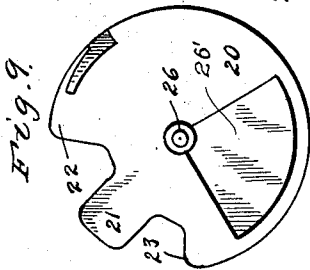
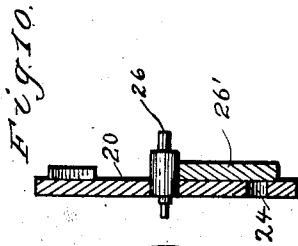
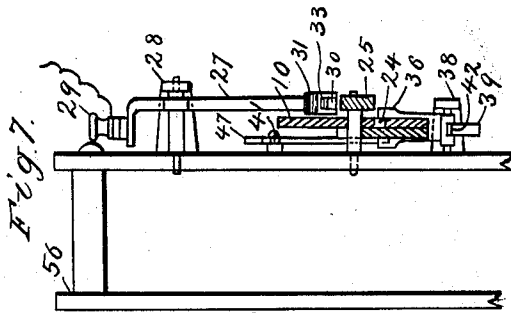
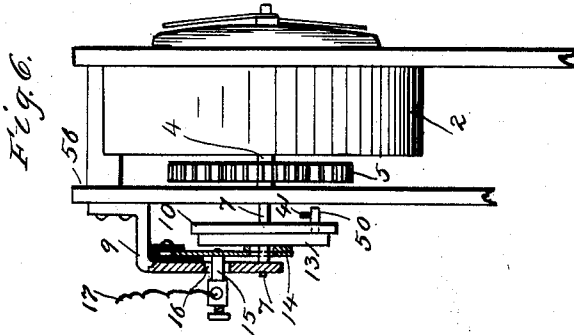
Attorney

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4 SHEETS—SHEET 3.



Inventor

E. W. Wilson

Witnesses
W. R. E. Edlin.
S. M. Gillespie

By

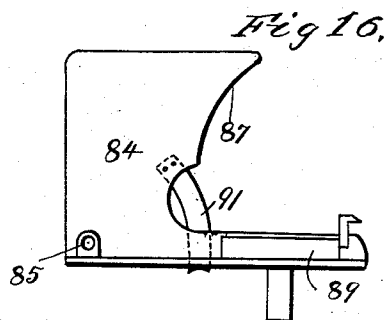
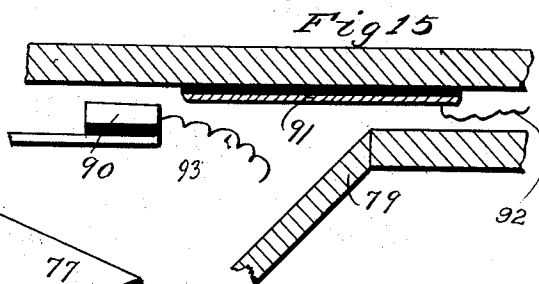
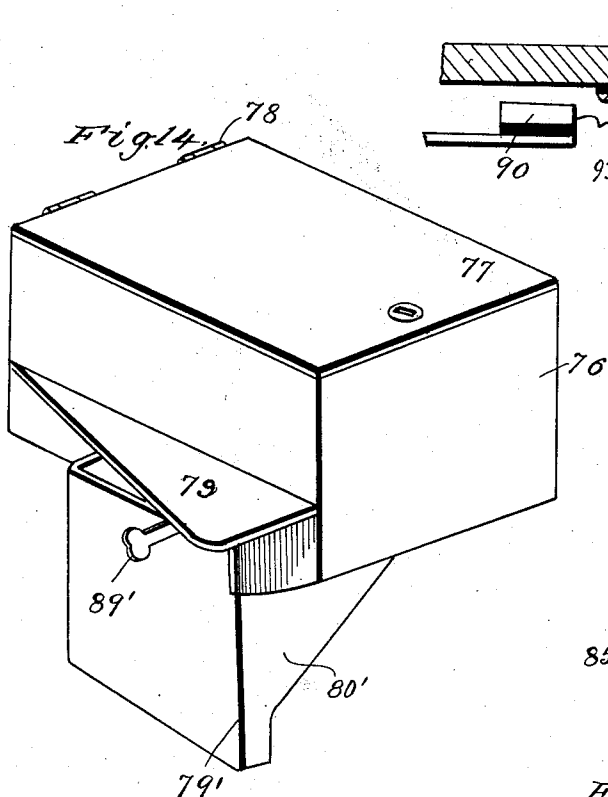
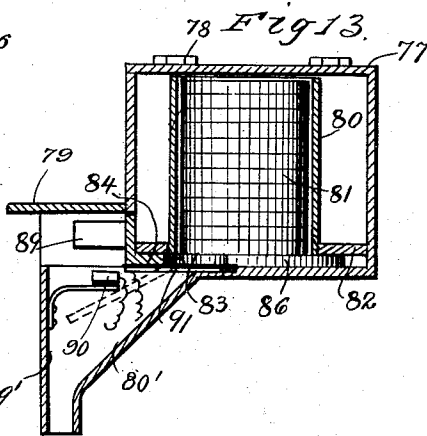
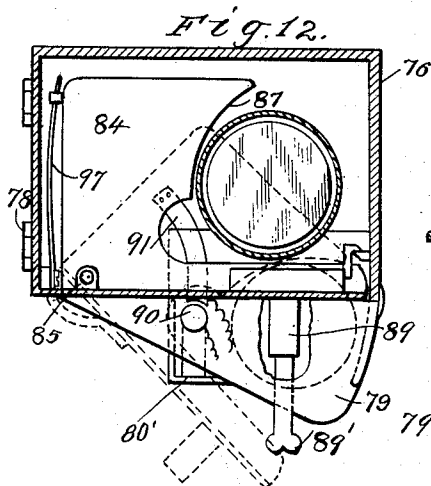
Alex. J. Wedderburn, Jr.
Attorney

E. W. WILSON.
TIME SIGNAL.
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Patented Dec. 24, 1912.

4 SHEETS—SHEET 4.



Witnesses

*H. R. Edelen,
Lila M. Gillerpie*

Inventor

E. W. Wilson

By

Alex. J. Wedderburn, Jr.

Attorney

UNITED STATES PATENT OFFICE.

EDWARD WILLIAM WILSON, OF TRENTON, NEW JERSEY.

TIME-SIGNAL.

1,048,118.

Specification of Letters Patent.

Patented Dec. 24, 1912.

Application filed July 17, 1909. Serial No. 508,182.

To all whom it may concern:

Be it known that I, EDWARD WILLIAM WILSON, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Time-Signals, of which the following is a specification.

This invention relates to improvements in time mechanisms and particularly refers to the construction of means whereby the failure of a watchman to make his regular visits will be audibly announced.

One of the objects of the invention is the construction of a system embracing an alarm mechanism and an operating mechanism whereby a watchman will be induced to maintain regularity in his visits and the failure of the watchman to be regular in his visits will be audibly announced by the alarm mechanism.

Another object of the invention is the construction of an alarm mechanism for keeping an automatic tally on the visits of a watchman which will positively operate in the event of the failure of the watchman to make his regular visits.

Another object of the invention is the construction of a mechanism for giving an alarm when a watchman fails to make regular visits to check-up stations and for giving the watchman an alarm previous to the time when the give-away alarm acts, so that the watchman will not neglect his visits.

Another object of the invention is the construction of a system for keeping an automatic alarm tally on the inspection visits of a watchman comprising a series of alarm relieving stations adapted to give the watchman a check or receipt when he operates one of the stations in order to prevent the operation of the alarm mechanism.

With the above and other objects in view the invention embraces certain constructions, combinations and arrangements of parts clearly described in the following specification and clearly illustrated in the accompanying drawings in which,

Figure 1 is a view in side elevation showing the alarm mechanism, Fig. 2 is a detail view, in elevation, showing the alarm mech-

anism with a five minute advance of the alarm acting position, and the alarm for the watchman being in action, Fig. 3 is a detail view, in elevation, showing the alarm mechanism in action giving the tell tale alarm indicating that the watchman has failed to properly act on the local inspection station at the appointed time, Fig. 4 is a detail view, in elevation, showing the operation of the mechanism for returning the alarm or signal wheel to its normal position, Fig. 5 is a detail view, in elevation, showing the position of the alarm mechanism after the controlling magnets have been energized by the operation of one of the inspection stations, Fig. 6 is a detail sectional view taken on line 6—6 of Fig. 1, looking in the direction of the arrows, Fig. 7 is another detail sectional view taken on line 7—7 of Fig. 1, looking in the direction of the arrows, Fig. 8 is a plan view of the alarm mechanism and the connection with the operating clock train, Fig. 9 is a detail plan view of the signal wheel, and Fig. 10 is a detail sectional view of the signal wheel. Fig. 11 is a detail perspective view of a contact lever, Fig. 12 is a horizontal sectional view of a check delivering mechanism, Fig. 13 is a vertical sectional view thereof, Fig. 14 is a perspective view of the check holding box, Fig. 15 is a detail sectional view of a contact mechanism, and Fig. 16 is a top plan view of a delivery slide.

Referring to the accompanying drawings, which are merely illustrative of the invention, 1 denotes a box or casing adapted to contain the alarm mechanism and a part of the batteries for operating the alarm bell and the controlling magnets.

In the casing 1 a clock mechanism 2 is secured to a partition 3, the drive shaft 4 of said clock mechanism or train being connected by means of a gear 5 with a gear 6, mounted on a shaft 7, journaled between a partition 8 and a bracket 9, mounted on the partition 8. On the outer end of the shaft 7 a signal or alarm actuating wheel 10 is mounted. The signal or alarm actuating wheel 10 comprises a circular member provided with two spaced peripheral teeth 11

and 12, and an arcuate contact member 13, fixed thereon. The wheel 10 is formed out of insulating material, or effectively insulated, and the arcuate contact member 13 of said wheel is connected by means of a bearing spring plate 14 with a binding post or wire terminal 15, extending through an opening 16, formed in the bracket 9.

The connection between the contact member 13 and the battery 19 is controlled by a mechanism embracing a wheel 20, formed with a peripheral tooth 21, spaced apart from two abutments 22 and 23, formed thereon. The abutments 22 and 23 are located on each side of the peripheral tooth 21, and said abutments and said peripheral tooth 21 are adapted to be engaged by the peripheral teeth 11 and 12, of the signal or alarm actuating wheel 10. The wheel 20 is formed with an arcuate groove 24, one end 24' of which is located nearer the center of the wheel, and one end of which 24'' is located near the periphery of the wheel. The wheel 20 is mounted on the partition 8 by means of a bracket 25, and a pivot 26.

As shown in Figs. 9 and 10 the wheel 20 carries a preferably segmental weighted portion 26' arranged to be held so as to bias the wheel and therefore occupies an alining position with the arcuate groove, on the opposite side of wheel 20.

A contact lever 27 is pivotally supported on a bracket 28, and is provided on its upper end with a binding post or terminal 29. The lower end of the lever 27 is formed with an angular offset arm 30, which carries on its outer end a contact member 31, formed with a rounded contact surface 31', adapted to engage with the contact member 13, of the wheel 10. The contact member 31 is pivotally secured to the arm 30, of the lever 27, by a pivot 32, and is engaged by a spring 33, of flat material, mounted on said arm 30, and engaging with said contact member 31 on its underside so as to normally hold the same above the arm 30, to be engaged by the arcuate contact member 13, of the wheel 10. By this arrangement a positive sliding contact is made between the main contact members of the alarm mechanism. The lever 27 carries an insulated follower pin 34, which is normally held in the groove 24, and by means of which the lever is rocked on the bracket 28 when the wheel 20 revolves, through the actuation of the signal wheel 10 thereon. The groove 24 being disposed irregularly on the face of the wheel 20 gives the follower pin 34 a lateral motion, whereby the contact member 31 will be moved into and out of position to be engaged by the rotating contact member 13, of the wheel 10.

The wheel 20 is formed with a peripheral notch 35, engaged by a holding lever 36, pivotally secured at 37 to a bracket 38,

mounted on the partition 8. The lever is formed angular and its lower arm 39 is weighted so that the upper arm 40 will be held toward the notch 35, of the wheel 20. The arm 40 is adapted to abut against a fixed stop 41, mounted on the partition 8. The lower arm 39 is formed with a projection 42, engaging with a pivotal catch or holding arm 43, formed with a bifurcated end.

The upper arm 40 of the lever 36 is engaged by an operating armature arm 44, controlled by magnets 45. When the magnets 45 are energized the armature arm will move the arm 40 of the lever 36 away from the notch 35 of the wheel 20. When the armature arm 44 is actuated by the magnets 45 and the lever arm 40 is moved out of engagement with the notch 35 of the wheel 20, the holding catch 43 is moved into engagement with the notch 46 on the wheel 20, so that if the magnets are held permanently energized the wheel 20 will be held. The notch 46 is placed in advance of the notch 35 so that the action of the catch arm 43 will occur immediately after the lever arm 40 releases the wheel 20.

On the partition 8 a bell crank lever 47 is pivoted at 48, having one arm 49 engaged by a pin 50 of the wheel 10 and the other arm 51 engaging the arm 40 of the lever 36. This lever acts as a safety device to prevent the two wheels 10 and 20 from binding, since it operates to throw the arm 40 out of engagement with the wheel 20, whereby the wheel 10 will be automatically returned to its normal position by reason of its weighted portion 26', as indicated in Fig. 10. The lever 47 is provided with an opening 47' through which a pin 52, on the partition 8, projects for the purpose of limiting the rocking movement of said lever.

The wire 54 is directly connected to a binding post 53, on the partition 8, and said binding post is connected by means of wire 54 with a binding post 55, on the bell magnets 58 which in turn is connected by wire 56 with the battery 19. The wire 56 is connected to a binding post 57 of the bell 58, suitably mounted on the end of the casing 1. The wire 56 is also connected to a manually operated switch arm 59, pivoted to engage a fixed contact member 60, which is connected by a wire 61 to the binding or terminal post 62 of the battery 19.

The pin 50 of the wheel 10 engages a lever 63, pivoted at 64, which lever is provided on its lower end with a projection 65 having operative connection with a contact member 66, formed with a bifurcated upper end 67, engaging with said projection 65, and pivoted at 68 to the partition 8. The contact member 66 carries a terminal 69 connected by a wire 70 with an electric bell 75. The bifurcated end 67 of the contact mem-

ber 66 engages with a spring contact arm 72 fixed to the partition 8 and provided with a terminal 73 having connection by means of a wire 74 with the battery 71.

5 This mechanism is designed to give the watchman a signal five minutes in advance of the time for the toll alarm bell 58 to be energized. This signal is given through the medium of a bell 75 having connection with the battery 71.

10 The alarm mechanism previously described is operated in connection with a series of alarm relieving or inspection stations, which are distributed over the territory or place to be watched and safeguarded and are electrically connected to the same armature. It is found best to have 24 stations corresponding to the number of half hours in the non-working hours of the day, or in the hours when the watchman is employed.

Each inspection station consists of an outer casing 76, which is provided with a removable top 77, hinged at 78 thereto. On one side of the casing 76 a shield 79 is formed, said shield projecting over the mouth of a chute 79 formed on the bottom of the casing 76. The interior of the casing 76 is provided with a vertical tube or guide 80, in which a number of deliverable checks or receipts 81 are arranged in a tier. The tube 80 is screwed to a bottom member 82, which is formed with a discharge opening 83, through which the checks 81 can be delivered to the hopper. Below the member 82 a slide 84 works. The slide 84 is pivoted at 85 to the bottom 86, of the casing 76. The slide is cut-away at 87 to allow for the bottom check to normally engage the bottom 86, so that said bottom check can be withdrawn from the tube and casing by horizontally moving the slide 84. The slide 84 is provided with a lock 89 operated by a key 89' by means of which the slide may be withdrawn to drop a check in the chute 79.

On the front wall 79' of the hopper 80' a contact arm 90 is fixed, the contact surface of the same being insulated from the wall. On the bottom of the slide 84 an arcuate contact member 91 is fixed for engagement with the contact member 90, said contact member 91 being insulated from said slide. When the slide 84 is withdrawn from the casing 76 a check will be forced into the hopper.

55 The operation of my system and mechanism is as follows:—Each station is provided with a number of checks or receipts, which should be equal to the number of stations, but may be more or less, in the station shown but 12 checks are used. The slide contact 91 is electrically connected by means of a wire 92 with the magnets 45 and the contact member 90 is likewise connected by means of a wire 93 with said magnets.

65 When the circuit of the magnets is closed by

the contacting of the contact member 90 with the contact member 91 the magnets 45 will be energized by the batteries 94, connected therewith, and the armature arm 44 will withdraw the lever arm 40 from engagement with the wheel 20.

The wheel 10 is geared to the clock train so that the same will make two revolutions for each revolution of the minute hand of the clock train, in the same direction. When the wheel 10 is ready to give the alarm to the watchman that he has five minutes to operate one of the inspection stations the tooth 12 occupies a position slightly in advance of the abutment 23, being the position in which it is placed immediately after wheel 20 has been moved by cogs 11 and 12 as will hereinafter appear, the lever arm 30 is held toward the wheel 10 by the cam groove 24, due to the weighted portion 26' being held against descent by gravity by the lever arm 40 which is in engagement with the notch 35 of the wheel 20; the pin 50 will be in engagement with the lever 63, thus holding the contact member 66 in engagement with the contact member 72 and completing the circuit through the batteries 71, and consequently ringing the watchman's bell 75, thereby notifying the watchman that he should operate one of the inspection stations.

When the watchman opens the door slide 84 of the casing 76 the circuit through the batteries 94 and the magnets 45 is closed and the various parts will be in the position shown in Fig. 5, so that the wheel 20 will be disengaged from the holding lever 36 and the catch arm 43 will be moved into engagement with notch 46, thus holding the wheel 20 against turning until the door slide 84 has been returned to its normal position in the casing 76 and the circuit broken. When the door has been returned to its normal position and a check has been delivered to the watchman by the slide, which check is numbered to correspond with the number of the inspection station from which it is drawn, the armature arm 44 will be returned to its normal position. The holding lever mechanism acts as an automatic check on the watchman.

The wheel 10 revolves once in each half hour and arcuate contact member 13, thereon, is adapted to maintain contact with the contact member 31, and to hold the circuit through the two contact members closed, for a period of fifteen minutes. Should the watchman fail to operate one of the inspection stations at the appointed time the wheel 20 will be moved and held in such position that the circuit through the alarm bell 58 and the contact member 13 and 31 will be closed and the alarm given that the watchman has failed in his duty.

The armature 44 when attracted, it will be noticed from Fig. 5, holds the arm 40

not only disengaged from its recess 35 but at a slight distance from the periphery of wheel 20. As stated, when the arm 40 is retracted, lever 43 will enter its recess 46 immediately holding the wheel against rotation. To disengage the lever 43 it is not necessary to thrust arm 40 into its recess 35. When the armature is restored to normal position as in Fig. 2 the arm 40 is tilted by weight 39 to abut the periphery of wheel 20, and as arm 40 moves inwardly lever 43 is moved downwardly and released from the relatively small notch 46. Thereupon the segmental weighted position 26' drops by gravity rotating wheel 20 until the cam groove 24 is at its diametrically opposite side when the weight 26' will be inert and the wheel come to a standstill. As the wheel 20 is thus rotated the follower-pin 34 of lever 27 will be moved in the arcuate groove 24 to the position shown in Fig. 4 where it will be seen that the contact 31 has been retracted out of the path of movement of the segmental contact 13 on wheel 10. It will be noticed also that the abutments 21, 22, and 23 of wheel 20 are substantially at right-angles to their former positions as shown in Figs. 2, 3, and 5. In the meantime the wheel 10 has been rotating clockwise steadily. From Fig. 2 it is clear that the segmental contact member 13 will move downwardly as the teeth 11 and 12 of wheel 10 move upwardly but, since the projection 31 has been laterally retracted the contact 13 will not be instrumental in closing the circuit to alarm bell 58 which would notify the headquarters that the watchman was neglectful. It is now necessary that the wheel 20 be restored to normal position and the weighted portion 26' be lifted to resume its function, since the watchman will soon again be notified that he is to operate the slide to withdraw his ticket. This is accomplished by the intermeshing of the teeth 11 and 12 of wheel 10; as said wheel rotates the teeth 11 and 12 will in due time turn wheel 20 in a direction opposite to that of a clock hand, and as the tooth 12 has urged down the abutment 21 of wheel 20 the lever arm 40 will be urged by weight 39 into its recess 35, thereby stopping the rotation of wheel 20. It will be seen that, shortly before teeth 11 and 12 of wheel 10 engage the abutments on wheel 20 the pin 50 will engage trip lever 41 rapidly, but this will not produce the effect to be hereinafter explained. It is obvious that when lever arm 40 reenters notch 35 to stop the rotation of wheel 20 the parts of the mechanism will be restored to normal position. A failure on the part of the watchman to withdraw his ticket after the five minutes notice has been given will cause the cycle of operations above described to be slightly different. Reference being had to Fig. 2 the wheel 20 is shown in normal position as

the signal of notice is sounded for the watchman's regard. The watchman having failed to withdraw the slide for his ticket, armature 44 will be inert and the lever arm 40 will enter the recess 35. The wheel 20 can not be rotated as the weighted portion thereof 26' will be held inert. The contact 31 will now project in the path of movement of the movable contact 13 on wheel 10 and in due time, as wheel 10 rotates clockwise, the contacts 13 and 31 will interengage, thereby sounding signal alarm 58 to give the headquarters notice of the neglect of duty of the watchman. This signal will continue for a quarter of an hour so that if the watchman does not, in the meantime, withdraw his ticket, intimation of a possible accident will be communicated. The contact of member 13 and 31 is shown in Fig. 3. From the figure it will be noticed that the teeth 11 and 12 upon wheel 10 will soon have engagement with the wheel 20, as wheel 10 continues to rotate. Unless the projections 21, 22, and 23 of wheel 20 are presented to teeth 11 and 12 of wheel 10 to allow the rotation of wheel 10 to continue untrammelled the device would cease to be operative. Wheel 20 is caused to rotate to effect this but will not remain long out of normal position. As wheel 10 rotates the pin 50 thereon moves clockwise, the trip lever 49 projecting into its path. When now contact is had between pin 50 and said lever 49 the arm 51 on said lever will be tilted, retracting arm 40 to its extreme position as shown in Fig. 4. The wheel 20 moves slightly and is held by lever 43 in the manner stated. Instantaneously as pin 50 is released from lever 49 the arm 40 will be disengaged from arm 51 of said lever, and the weighted portion 39 will cause arm 40 to engage the periphery of wheel 20, thereby releasing lever 43 from its notch 46 in the manner before stated. The weighted portion 26' will then drop by gravity until inert, as before described, and wheel 20 rotated a given amount so that projections 21, 22, and 23, are instantly in position to intermesh with teeth 11 and 12 of wheel 10. Said teeth on meshing will restore wheel 20 to normal position in which it will be held, as before described, by arm 40 remaining in the recess 35.

Should the watchman altogether fail in his duty the repeated alarms, which are made by the alarm mechanism, will give evidence of this fact, or show that the wires have been cut, or some, similar, unusual disturbance has occurred in the territory protected by the system. Should the watchman be compelled to remain at one place for more than the allotted time he can and should operate the nearest station for the time corresponding to the period of delay. This makes it possible for the watchman to still prevent the alarm being given at the residence of the

official in charge. The number of checks which he has received from the inspection stations and the numbers carried by the checks will show what stations he has operated and truthfully account for his night's work. The key in the slide door operates to move the door, when turned therein, and should the watchman fail to return the door to its normal position a spring 97 will automatically close the door slide.

It will be seen that the system is based on the principle of compelling the watchman to operate one or more of the inspection stations in order to prevent the alarm from operating, and thus indicating that he has failed in his duty, either through personal neglect or through violent or other interference. When the watchman operates one of the inspection stations he automatically receives a check certifying that he has operated said station. The failure of the alarm to act shows that he has operated a station and the number of the check shows the number of the station he has operated. In this way the watchman is compelled to make his rounds. The alarm mechanism is so constructed that it is impossible to short circuit any of the parts, the partition 8, for this purpose, being made out of fiber or other suitable insulating material.

Having described my invention I claim and desire to secure by Letters Patent:—

1. In combination a series of electrically connected inspection stations, each station being provided with a circuit maker and with means delivering a check simultaneously with the operation of the circuit maker, a distant time controlled alarm, and means for causing said circuit maker to render said alarm inactive after said means has delivered a check.

2. In combination, a series of inspection stations in circuit with each other, each station being provided with a circuit maker, means coacting with the circuit makers delivering a check to the operator, a magnet controlled by the circuit maker, and an alarm mechanism active with the time controlled mechanism and means actuated by the magnet adapted to prevent the operation of the alarm mechanism.

3. In combination, an alarm circuit, an alarm connected therewith, a time controlled signal wheel connected therewith, a contact member carried by the signal wheel, a lever, a contact member carried by the lever and communicating with the signal wheel contact at stated intervals, a wheel engageable with the signal wheel for actuating the lever, a holding arm controlling the wheel, a magnet controlling the holding arm, a holding catch actuated with the holding arm and engaging with the wheel, and a distant station circuit controlling the magnet.

4. In combination, an alarm circuit, means

controlling the alarm circuit controlling means, a circuit controlling said last named means, a casing, a tube in the casing, checks in the tube, a slide adapted to remove one of the checks, pivotally secured below the tube to said casing, a chute on the casing, a shield over the chute, a contact arm on the chute wall connected with the second circuit, a contact on the slide engaging with the first contact, said contacts being adapted to engage with each other, simultaneously with the delivery of the check by said slide, and means connecting the slide contact with the second circuit.

5. In combination, a central alarm station, a distant alarm station, means for giving periodical alarms at said distant station, means for giving periodical alarms at said central station, means for preventing the alarm at said central station, said means consisting of an electric circuit maker, said circuit maker adapted to deliver a check.

6. A device of the character described comprising a ticket delivery, a slide for removing a ticket, a magnet controlled armature electrically actuated by said slide, a disk rotating continuously with the hour arbor of a timepiece, a local alarm circuit closable by said disk during every revolution, a distant alarm circuit, means for closing said distant alarm circuit before said disk completes a revolution, and means actuated when the armature is retracted to render said local alarm inactive as said disk completes its hour revolution.

7. A device of the character described comprising a ticket delivery, a slide for removing a ticket, a magnet, an armature controlled by said magnet, means for causing said armature to be attracted and retracted as said slide is moved out and in, a disk rotating continuously with the hour arbor of a time piece, a local alarm circuit closable by said disk during every revolution, a distant alarm circuit and means actuated by said disk to close the circuit of the distant alarm and actuatable upon the retraction of the armature to prevent the closing of said local circuit within the interval of a revolution of said disk.

8. A device of the character described comprising a ticket delivery, a slide for removing a ticket, a magnet controlled armature electrically actuated by said slide, a disk rotating with the hour hand of a time piece, a weighted disk interposed between said first named disk and the armature, a contact plate mounted on the hour disk, a contact upon the weighted disk projecting into the path of movement of the contact plate to complete a distant alarm circuit closed by said disk during every revolution, a local alarm circuit closed by said disk during every revolution, means for holding said weight at the upper dead center of the hour

disk controlled by said armature, said projecting contact being retracted as the weight is released, and means for restoring said weight to normal position before the local circuit is closed.

9. A device of the character described comprising a ticket delivery, a slide for removing a ticket, a magnet, an armature controlled by said magnet, means for causing said armature to be attracted and retracted as the slide is moved out and in, a rotating disk making a revolution each hour, a local alarm circuit closed by said disk during each revolution, a contact plate mounted on said disk, a contact normally projecting into the path of movement of said contact plate and engaging it to close the local alarm circuit and means actuated as said armature is retracted for retracting said projecting contact until said contact plate is moved out of its range.

10. In combination a ticket delivery, a slide therein for removing a ticket, a magnet, an armature controlled by said magnet, means for causing said armature to be attracted and retracted as the slide is moved out and in, a disk making an hourly revolution, a local alarm circuit closable by said disk anterior to a complete revolution, teeth upon said disk, a second disk having corresponding recesses for the teeth of the latter, normally disposed in a vertical plane, a contact plate on the hour disk, a contact member on the second disk projecting into the path of movement of said plate to complete said local alarm circuit, and means actuated as the armature is retracted to move the second disk until said recesses are disposed in a horizontal plane whereby the contact will lie alongside the second disk, the teeth of the hour disk arranged to enter said recesses to restore said contact member and said recesses to normal position.

11. In combination, a magnet, an armature, a check controlled device for energizing said magnet, a contact carrier mounted on a shaft of a time piece, a distant alarm circuit, a disk, a contact on said disk projecting alongside of said carrier, a weight mounted on said disk arranged to move said disk a predetermined distance to hold the last named contact out of projecting position, a local alarm circuit closed by the said contact carrier, means normally holding said weight inactive but rendered inoperative when the armature is retracted by the magnet, and means for re-projecting said disk contact.

12. In combination, a magnet controlled armature, a ticket delivery, a slide for removing a ticket, a magnet controlled armature electrically actuated by said slide, a wheel rotating with the hour arbor of a time piece, and having teeth and a pin, a

distant alarm circuit closed by the pin during each revolution, a contact plate diametrically opposite said teeth on said wheel, a disk having corresponding recesses for the teeth, and a contact to engage said plate, a local alarm circuit closed when said contacts interengage, means for moving said disk clockwise actuated when said armature is active to retract its contact whereupon said recesses will be in the path of movement of said teeth, said disk restored to normal position by said teeth, a detent holding said disk in normal position, and a trip lever having an arm actuated by said pin to urge another arm to release said detent, after said contacts have interengaged and when the armature is inactive, to cause said means to be engaged whereupon the recesses may be engaged by said teeth.

13. In combination a wheel rotating on a shaft of a time piece carrying a contact plate, a contact member normally projecting in the path of the plate, a reciprocable member holding said contact in or out of projecting position, a local alarm circuit closed when said last named contacts have interengagement, check controlled means for actuating said member before the wheel completes a revolution, a pin upon said wheel, a fixed contact, a distant alarm circuit, a tilting contact engaging said fixed contact to close said distant alarm circuit, and a member actuated by said pin before the plate is in range with the cooperating contact to urge the tiltable contact to abut the fixed contact.

14. In combination, a wheel rotating on a shaft of a time piece, a contact plate thereon, a contact member normally projecting into the path of the plate, a reciprocable member holding said contact in or out of projecting position, a local alarm circuit closed when said contacts interengage, means for actuating said member, and a check controlled device actuated to hold said last named means inactive during each revolution of the wheel.

15. In combination, a wheel rotating on a shaft of a time piece, a contact plate thereon, a contact member normally projecting into the path of the plate, a reciprocable member holding said contact in or out of projecting position, a local alarm circuit closed when said last named contacts interengage, said member formed with a peripheral notch, a magnet, an armature controlled by said magnet, a check controlled device energizing said magnet, means for actuating said member and a detent adapted to enter said notch to hold said means inactive, said armature, when active, releasing said detent.

16. In combination, a wheel rotating on a shaft of a time piece, a contact plate there-

on, a contact member normally projecting into the path of said plate, a reciprocable member holding said contact in or out of projecting position, a local alarm circuit closed when said contacts interengage, a pin upon said wheel, a fixed contact, a distant alarm circuit, a tilting contact engaging said fixed contact to close said distant alarm circuit but normally spaced therefrom, said last named member formed with a notch, a magnet, an armature controlled by said magnet, a check controlled device energizing said magnet, means for actuating said member, a lever actuated by said pin before the plate is in range with the cooperating contact to urge the tilting contact to abut the fixed contact, and a detent adapted to enter said notch to hold said means inactive, said armature when active, releasing said detent.

17. In combination, a wheel rotating on a shaft of a time piece, a contact plate thereon, a contact normally projecting into the path of said plate, a reciprocable member holding said contact, in or out of projecting position, a local alarm circuit closed when said last named contacts interengage, said member formed with spaced apart notches, a magnet, an armature controlled by said magnet, a check controlled device energizing said magnet, means for actuating said member, a weighted lever having a detent normally engaging one of said notches to hold said means inactive, and a detent arranged to lie in said other recess to hold said means inactive engaged by said weighted lever and disengaged from its notch when said other detent is engaged, said armature when attracted releasing the first named detent whereupon said last named detent will enter its notch and when retracted said first named detent will release said last named detent to render said means active.

18. In combination a wheel rotating on a shaft of a time piece, a contact plate on said wheel, a contact member normally projecting into the path of said plate, a reciprocable member holding said contact in or out of projecting position, a local alarm circuit closed when said contacts interengage, a pin upon said wheel, a fixed contact, a distant alarm circuit, a tiltable contact engaging said fixed contact, to close said distant alarm circuit and normally spaced from said contact, a magnet, an armature controlled by said magnet, a check controlled device energizing said magnet, means for actuating said member, a lever actuated by said pin before the plate is in range with the cooperating contact to urge the tiltable contact to abut said fixed contact, said reciprocable member formed with spaced apart notches, a weighted lever having a detent normally engaging one of said notches to hold said means inactive, and a detent en-

gaged by said weighted lever and disengaged when said lever detent is engaged, said armature when attracted releasing the lever detent, whereupon the other detent will enter its notch, and when retracted said lever detent will release said other detent to render said means active.

19. In combination, a wheel making an hourly revolution and having a pin, teeth, and a contact plate, a disk carrying a contact projecting alongside of said wheel, and having sockets for said teeth, and having a cam way in said disk, a weight arranged to move said disk, a lever working in said cam way, upon which said contact is mounted, being reciprocated as the cam way moves, a magnet, an armature controlled by said magnet, a ticket delivery having provision for energizing said magnet, said disk having spaced apart peripheral notches, a weighted lever having a detent normally held in one of said notches, a detent for the other notch held inactive by said lever, until said first named detent is released, a local alarm circuit closed when the contacts interengage, said plate moving into range of said contact before the teeth can mesh, and a trip lever having one arm resting against the first-named detent, and the other projecting alongside of the wheel, said armature when attracted releasing said first named detent, whereupon said last named detent will enter its notch, and when retracted will release said last named detent to free said weight, the teeth of the wheel meshing with said disk until the lever detent enters its notch, said pin rotating in advance of said teeth and engaging said trip lever to release said lever detent when the armature is inactive.

20. In combination a wheel making an hourly revolution and having a pin, teeth, and a contact plate, a disk carrying a contact projecting alongside said wheel and having sockets for said teeth, and having a cam way, a weight arranged to move said disk, a lever working in said cam way upon which the contact is mounted being retracted as the cam way moves, a magnet, an armature controlled by said magnet, a ticket delivery having provision for energizing said magnet, said disk having spaced apart peripheral notches, a weighted lever having a detent normally held in one of said notches and normally holding said weight inactive, a detent for the other notch held inactive until said first named detent is released, a local alarm circuit closed when the contacts interengage, said plate moving in range of said contact before the teeth can mesh, a trip lever having one arm resting against the first named detent and the other projecting alongside of the wheel, a fixed contact, a distant alarm circuit, a movable contact

abutting said fixed contact to close said distant alarm circuit, said trip lever engaged by said pin to actuate said movable contact, said armature when attracted releasing said first named detent whereupon said last named detent will enter its notch, and when retracted will release said last named detent to urge said weight, the teeth of the wheel meshing with said disk until the lever detent enters its notch, said pin rotating in advance of said teeth and engaging said trip lever to release said lever detent when the armature is inactive.

21. In combination a magnet, an armature controlled by said magnet, a check-controlled device for energizing said magnet, a contact carrier mounted on a shaft of a timepiece, a distant alarm circuit closed by said carrier during each revolution, a rotatable disk having a contact normally projecting alongside said carrier, a local alarm circuit closed when said contacts interengage, a weight held biased at the upper dead center of the disk, means actuated, when said armature is moved, to release said weight, whereupon the projecting contact will be retracted, and means controlled by said carrier for restoring said weight to biased position.

22. In combination a magnet, an armature controlled by said magnet, a check-controlled device having provision for energizing said magnet, a contact carrier mounted on a shaft of a timepiece, a distant alarm circuit closed by said carrier during each revolution, teeth upon said carrier diametrically opposite its contact, a disk, an inwardly movable contact projecting from said disk, a local alarm circuit closed when said contacts interengage, said disk having corresponding sockets for said teeth disposed vertically as the contact projects, and means for actuating said inwardly movable contact mounted on said disk and controlled by said armature whereupon the sockets will be horizontally disposed, said teeth entering said sockets to restore said disk to normal position.

23. In combination a magnet, an armature controlled by said magnet, a ticket delivery, a movable ticket discharge therein arranged to energize said magnet, a disk making an hourly revolution, a contact plate on said disk, a contact normally projecting into the path of movement of said plate, a local alarm circuit closed when said contacts interengage, a distant alarm circuit closed by said disk during each revolution, a member moved in one direction when said armature is active to retract said projecting contact and in the opposite direction by said disk to restore said contact to normal position, and means for holding said contact in normal position.

24. In combination a magnet, an armature

controlled by said magnet, a casing, a movable ticket delivery therein arranged to energize said magnet, a wheel making a periodical revolution and having teeth, a disk having corresponding recesses for said teeth, a weight arranged to rotate said disk, a distant alarm closed by said wheel during each revolution, a contact projecting from the disk, a detent holding said weight inactive and the recesses of said disk out of the range of the teeth of said moving wheel, a contact plate on said moving wheel engageable with said projecting contact before said teeth can mesh to close a local alarm circuit, said armature when active releasing said detent whereupon said projecting contact will be retracted as the disk moves, said teeth engaging said recesses to restore said weight to normal position, and means for releasing said detent when said armature is inactive to cause said weight to allow said recesses to be engaged by said teeth.

25. In combination a magnet-controlled armature, a ticket delivery having provision for energizing said magnet, a wheel rotating with the hour arbor of a timepiece and having teeth, a disk close to the wheel having recesses for said teeth to permit the continuous rotation of said wheel, a distant alarm circuit closed by said wheel during each revolution, said disk formed with a cam groove, a weight on said disk, a detent engaging said disk to hold said weight and cam groove disposed at the upper end of said disk, a lever disposed at one end of said groove and carrying a contact projecting alongside of said wheel, a local alarm circuit, a contact plate on said wheel engaging said contact to close said local alarm circuit, said armature when active releasing said detent whereupon said weight will actuate said disk to cause said cam to retract said contact, said teeth being free to mesh after said contact is retracted whereby the disk will be restored to normal position, and means for releasing said detent when said armature is inert after said plate shall have engaged with said contact.

26. In combination a ticket casing, a disk making an hourly revolution and having teeth, a second disk having corresponding recesses for said teeth, a weight arranged to rotate said last-named disk, a distant alarm circuit closed by said hour disk during each revolution, a contact projecting from the second disk, a detent holding said weight inactive, the recesses of said second disk allowing said teeth to mesh when disposed horizontally, a contact plate on the hour disk and engageable with said projecting contact before said teeth can mesh, to close local alarm circuit, a movable ticket delivery in said ticket casing, means actuated by said ticket delivery for releasing said

detent whereupon said projecting contact
may be retracted as the last-named disk
moves, said teeth engaging said recesses to
restore said weight to normal position, and
5 means for releasing said detent when said
ticket delivery is inactive to cause said teeth
to be horizontally-disposed.

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

EDWARD WILLIAM WILSON.

Witnesses:

LILA M. GILLESPIE,
NELLIE G. SMITH.