

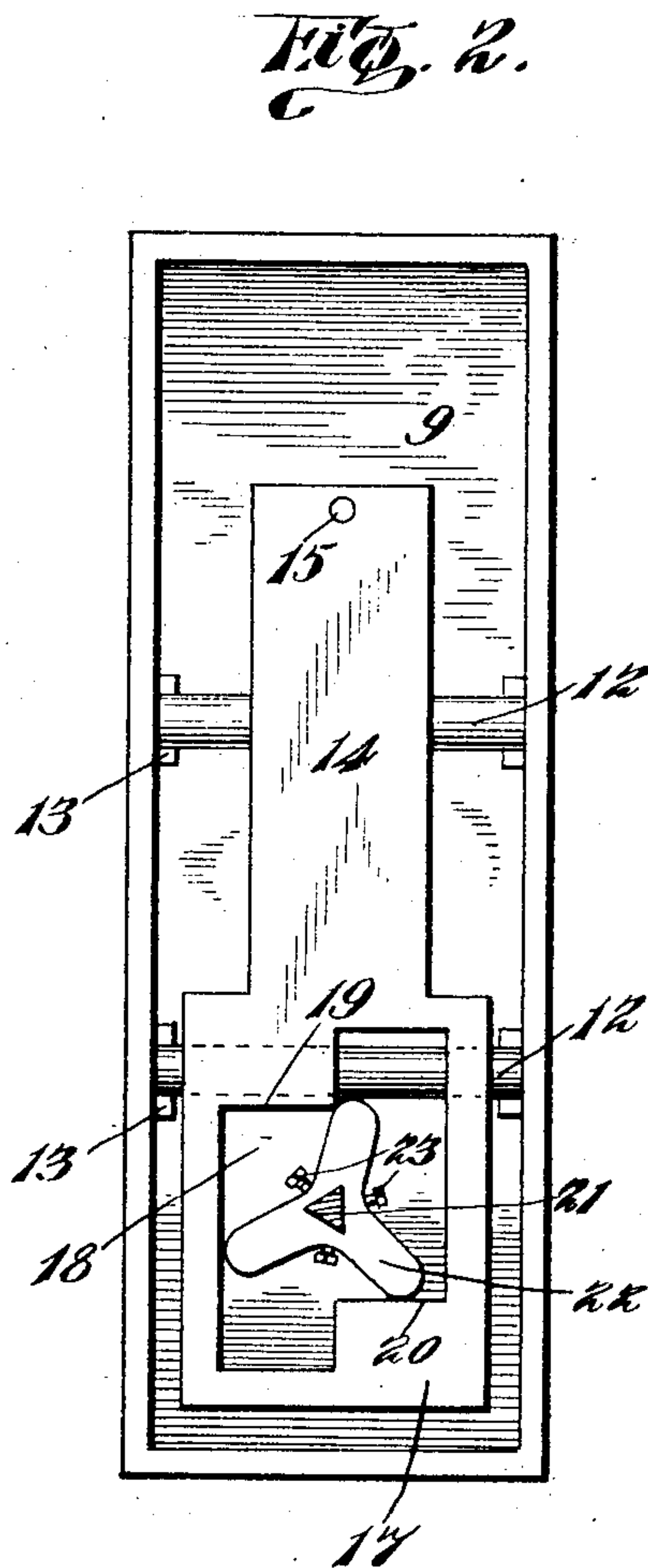
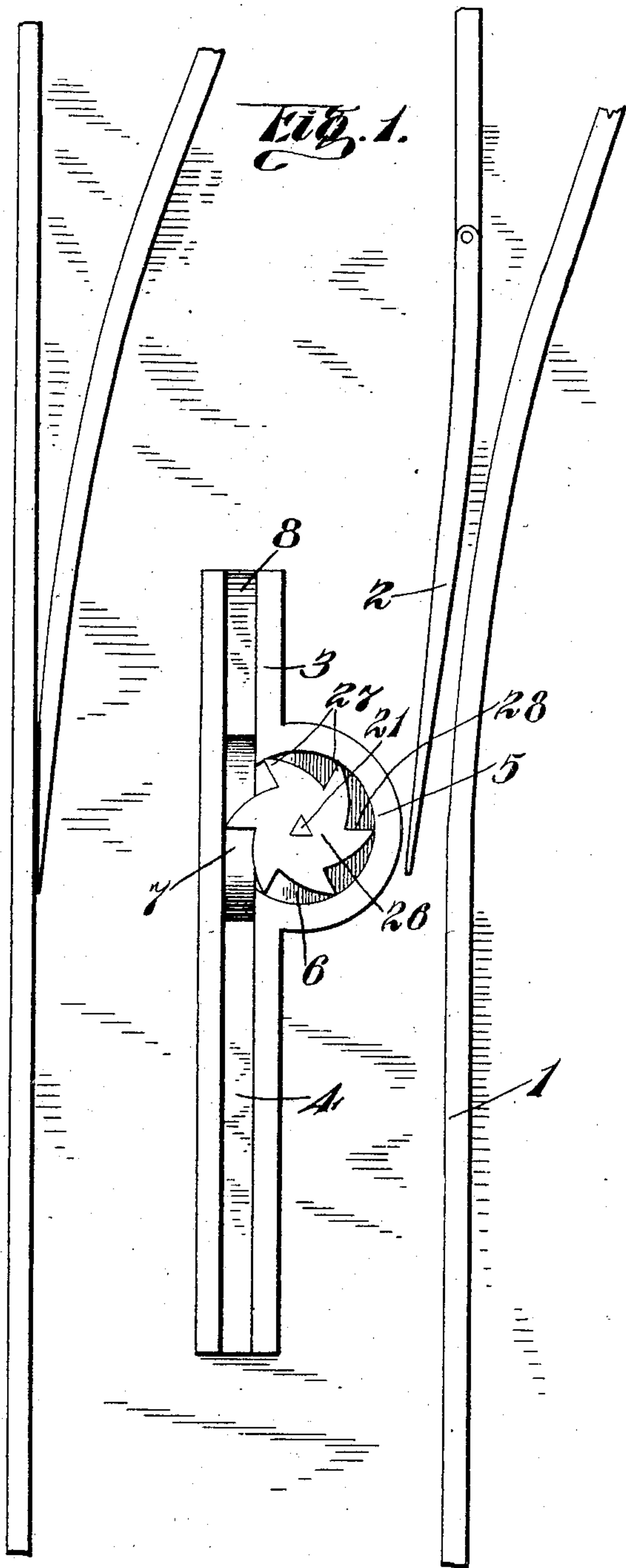
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PATENTED MAR. 28, 1905.

C. J. KINSOLVING, JR.
SWITCH THROWING DEVICE.

APPLICATION FILED AUG. 8, 1904.

2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

CHARLES J. KINSOLVING, JR., OF SYOSSET, NEW YORK.

SWITCH-THROWING DEVICE.

SPECIFICATION forming part of Letters Patent No. 786,128, dated March 28, 1905.

Application filed August 8, 1904. Serial No. 219,963.

To all whom it may concern:

Be it known that I, CHARLES J. KINSOLVING, Jr., a citizen of the United States, residing at Syosset, in the county of Nassau and State of New York, have invented certain new and useful Improvements in Switch-Throwing Devices; and I do 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 improvements in switch throwing or operating devices for street-railway cars.

The object of the invention is to provide a device of this character whereby a switch may be operated by the motorman or operator of the car without his leaving or stopping the car.

A further object is to provide a device of this character which will be simple in construction, strong, durable, efficient, and reliable, and which will always be ready for operation by the next approaching car.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of a road-bed and rails adjacent to the switch-point, showing the surface arrangement of the device. Fig. 2 is a plan view of the box or casing which is arranged below the road-bed, the cover-plate of the same being removed to disclose the arrangement of the parts within the same. Fig. 3 is a vertical longitudinal sectional view of the device, taken through the same on a line with the guide-channel of the surface plate. Fig. 4 is a vertical transverse sectional view through the device, taken on a line with the pivot-pin; and Fig. 5 is a vertical transverse sectional view through a portion of a car-platform, showing the arrangement of the plunger-rod for operating the switch.

Referring more particularly to the drawings, 1 denotes the track-rails of a street-railway, and 2 denotes a switch-point of the same.

Between the rails 1 and adjacent to said switch-point is arranged a guide channel-plate 3, in which is formed a longitudinally-disposed channel 4, which extends throughout the length of the plate 3. Near one end of said plate is formed a circular enlargement 5, having therein a circular recess 6, which intersects the channel 4. The bottom of the recess 6 at that portion of the same which aligns with the channel 4 is depressed or hollowed out, as shown at 7. At the end of the channel beyond the circular enlargement 5 the bottom of the same is inclined upwardly to a slight degree, as shown at 8, the purpose of which will hereinafter appear.

Below the circular enlargement 5 of the channel-plate 3 and countersunk into the ground is arranged a transversely-disposed box or casing 9, a part of which is covered by said circular enlargement of the channel-plate, while over the rest of the same is arranged a cover-plate 10, a part of which is removable to permit access to the box. In the lower portion of the box or casing 9 is disposed two or more bearing-rollers 12, said rollers being journaled at their ends in U-shaped brackets 13, secured to the sides of said box or casing. Slidably mounted on said rollers is a horizontally-disposed point-throwing plate or bar 14, on the outer end of which is formed an upwardly-extending pin or lug 15, which projects through a slot 16, formed in the top of the said box or casing, and is connected to the switch-point 2. On the opposite end of the plate or bar 14 is formed a rectangular enlargement 17, in which is formed an opening 18. The opening 18 is of irregular shape, as shown, and has two working faces or walls 19 and 20.

In the bottom of the box or casing 9 is journaled the lower cylindrical end of an upwardly-projecting triangularly-shaped shaft 21, which projects upwardly through the opening 18 in the plate 14 and has fixed thereon near its lower end a plate-shifting element consisting of triple radially-disposed wiper-arms 22. The wiper-arms 22 may be secured to the shaft 21 by means of set-screws 23.

In the bottom of the recess 6 of the circular enlargement 5 is formed a concentrically-ar-

ranged opening 24, in which is disposed a flanged collar 25. Through said collar 25 is adapted to pass the upper end of the shaft 21. On said upper end of the shaft is fixed an operating block or wheel 26, said block being in the form of a star-wheel having six radially-disposed points 27, each of which is provided with a straight or flat working face 28. The block or wheel 26 is adapted to rest and turn in the circular recess 6 of the enlargement 5 and is so disposed within said recess that one of the arms of the same always lies across the channel 4 of the plate 3 and is in position to be engaged by the operating device 28, carried by each car.

The operating device 28 is here shown as a vertically-disposed rod 29, the upper end of which is reduced, thereby forming a shoulder 30, said reduced end being adapted to project through an apertured plate 31, which rests on the platform of the car. The rod 29 passes through an aperture in said platform and projects below the same. On the upper end of the reduced portion of the rod 29 is arranged a cross-bar 32, and on said reduced end of the rod between the cross-bar 32 and the plate 31 is arranged a coil-spring 33, which normally retracts or holds the rod 29 up. On the lower side of the car-platform is secured a guide-bracket 34, in which is formed an aperture 35, through which the rod 29 is adapted to pass. As the car approaches a switch which is not set in position to direct said car in the direction it is desired the same to go the motorman places his foot on the cross-bar 32 and presses the rod 29, so that the lower end of the same will enter the channel 4 of the guide-plate 3 and in passing through the same will engage one of the points 27 of the operating block or wheel 26 and turn said block, thereby rotating the shaft 21 and wiper-arms 22, causing the same to engage one or the other of the working faces 19 or 20 of the irregular opening 18 of the point-throwing plate 14, thereby reciprocating the same in one direction or the other, which will move the switch-point to the proper position to permit the car to follow the tracks over which the same is intended to pass. As soon as the rod 29 turns and passes the operating block or wheel 26 the end of the same will engage the upwardly-inclined bottom 8 of the channel 4, thus raising the rod 29, which movement will indicate to the motorman that the car has reached the end of the guide-plate and that he should remove his foot from said rod to permit the spring 33 to retract the same.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be

resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a switch-throwing device, the combination with a point-throwing plate or bar, of wiper-arms adapted to engage and reciprocate said plate or bar, an operating-block connected with and adapted to rotate said wiper-arms and means carried by a car to engage and turn said operating-block, substantially as described.

2. In a switch-throwing device, the combination with a point-throwing plate or bar, of triple wiper-arms adapted to engage and reciprocate said plate or bar, a six-pointed operating block or wheel connected to and adapted to rotate said wiper-arms, an operating-rod carried by a car and adapted to be engaged with the points of said operating-block and to thereby turn the same, and means whereby said operating-rod is guided into engagement with the arms of said block, substantially as described.

3. In a switch-throwing device, the combination with a box or casing, of an apertured switch-throwing plate, slidably mounted to reciprocate in said box, a vertically-disposed shaft rotatably mounted in said box or casing, triple wiper-arms mounted on said shaft to engage the walls of the aperture in said plate, and thereby reciprocate the same, and means whereby said shaft is rotated by a passing car, substantially as described.

4. In a switch-throwing device, the combination with a box or casing, of an apertured switch-throwing plate, slidably mounted to reciprocate in said box, a vertically-disposed shaft rotatably mounted in said box or casing, triple wiper-arms mounted on said shaft to engage the walls of the aperture in said plate, and thereby reciprocate the same, a six-pointed operating-block fixed on the upper end of said shaft a spring-retracted operating-rod carried by a car and adapted to be projected by the motorman to engage and turn said operating-block and thereby rotate said shaft and wiper-arms to throw said switch and means whereby the motorman may be warned to release said operating-rod, substantially as described.

5. In a switch-throwing device, the combination with a box or casing, of an apertured switch-throwing plate, slidably mounted to reciprocate in said box, a vertically-disposed shaft rotatably mounted in said box or casing, triple wiper-arms mounted on said shaft to engage the walls of the aperture in said plate, and thereby reciprocate the same, a plate arranged above said box or casing, a longitudinally-disposed guide-channel arranged in said plate, the bottom of said channel being in-

clined upwardly at one end, a circular bearing-recess formed on said plate, through the center of which projects the upper end of said operating-shaft, a six-pointed operating-block arranged in said recess and fixed on the
5 upper end of said shaft, the point of said block being adapted to project across the channel in said plate, and a spring-retracted operating-rod carried by a car and adapted to
10 be projected into said channel and brought

into engagement with said arms, substantially as described.

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

CHARLES J. KINSOLVING, JR.

Witnesses:

ALICE L. LEWIS,

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