

No. 692,580.

Patented Feb. 4, 1902.

J. A. WOTTON.

ANNUNCIATOR.

(Application filed June 10, 1901.)

(No Model.)

2 Sheets—Sheet 1.

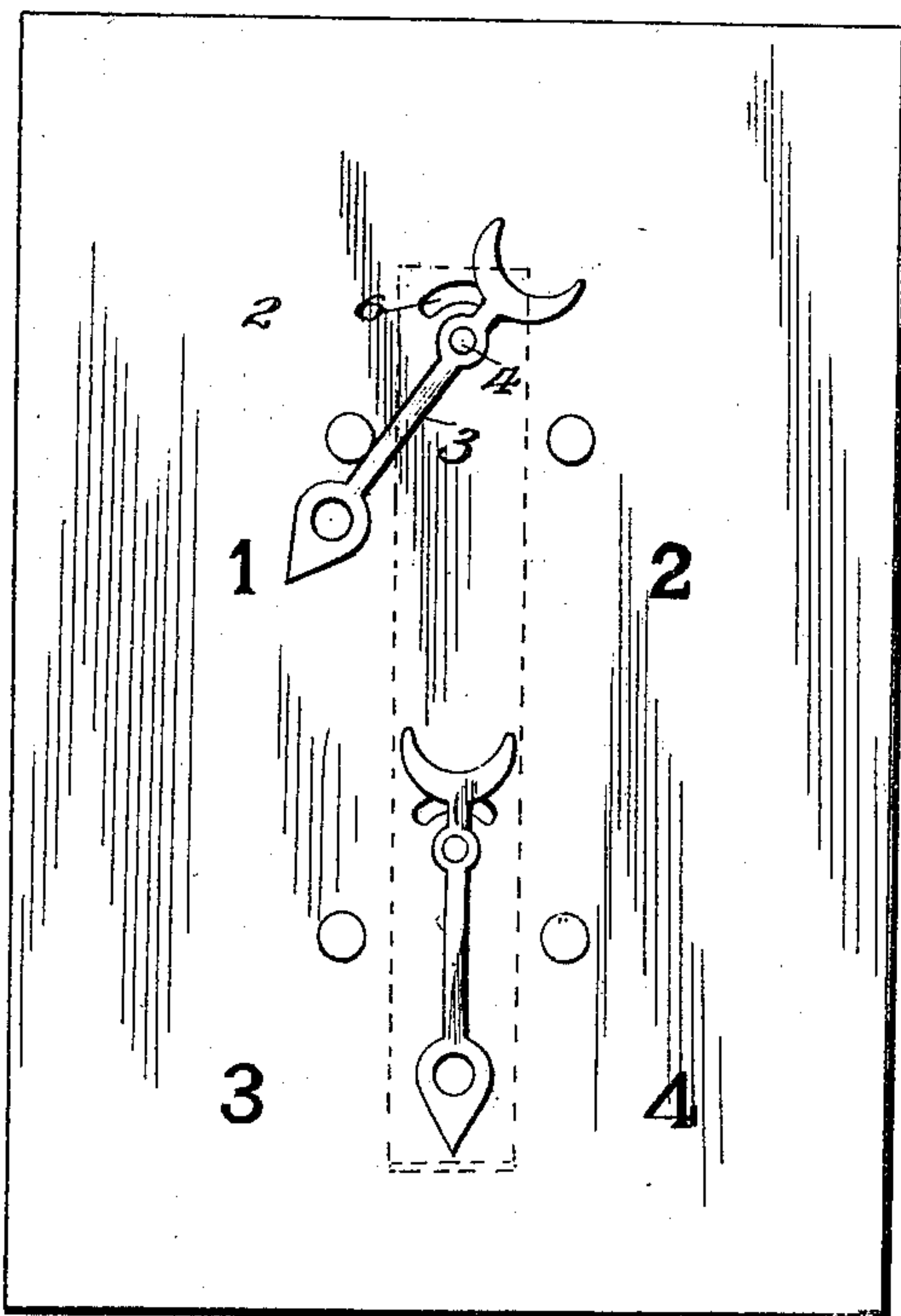


Fig. 1.

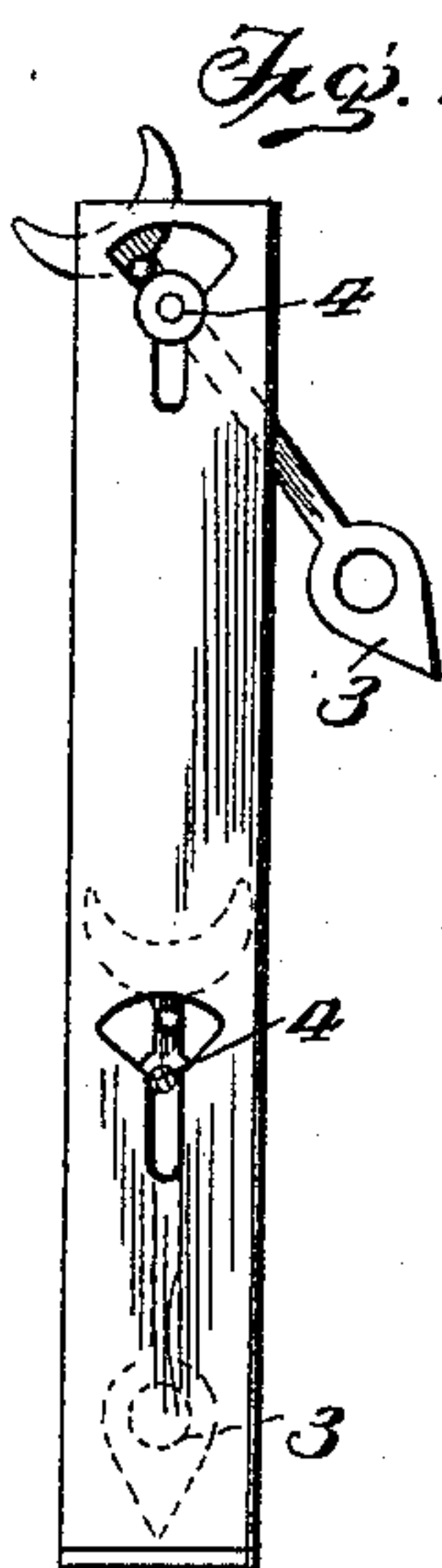


Fig. 2.

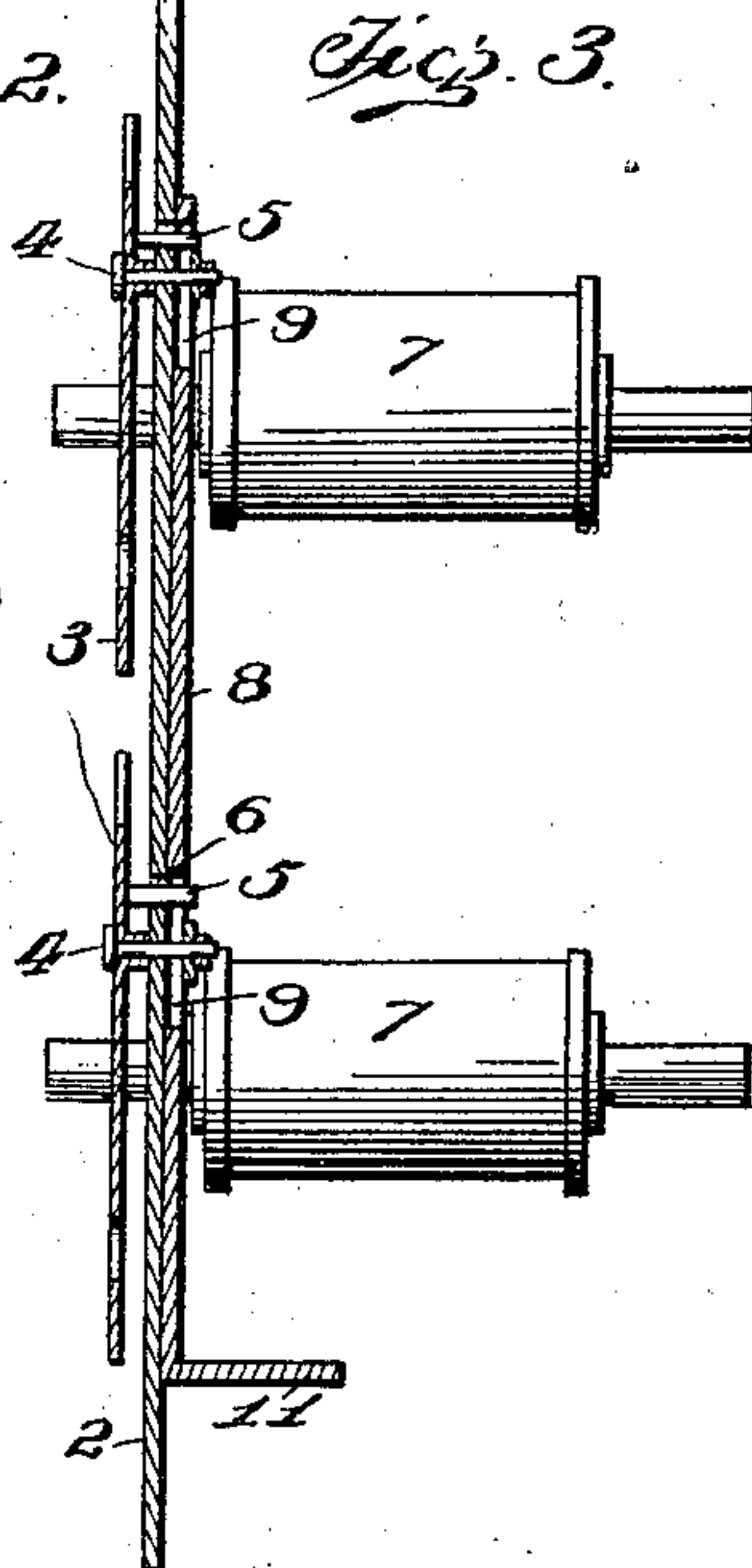


Fig. 3.

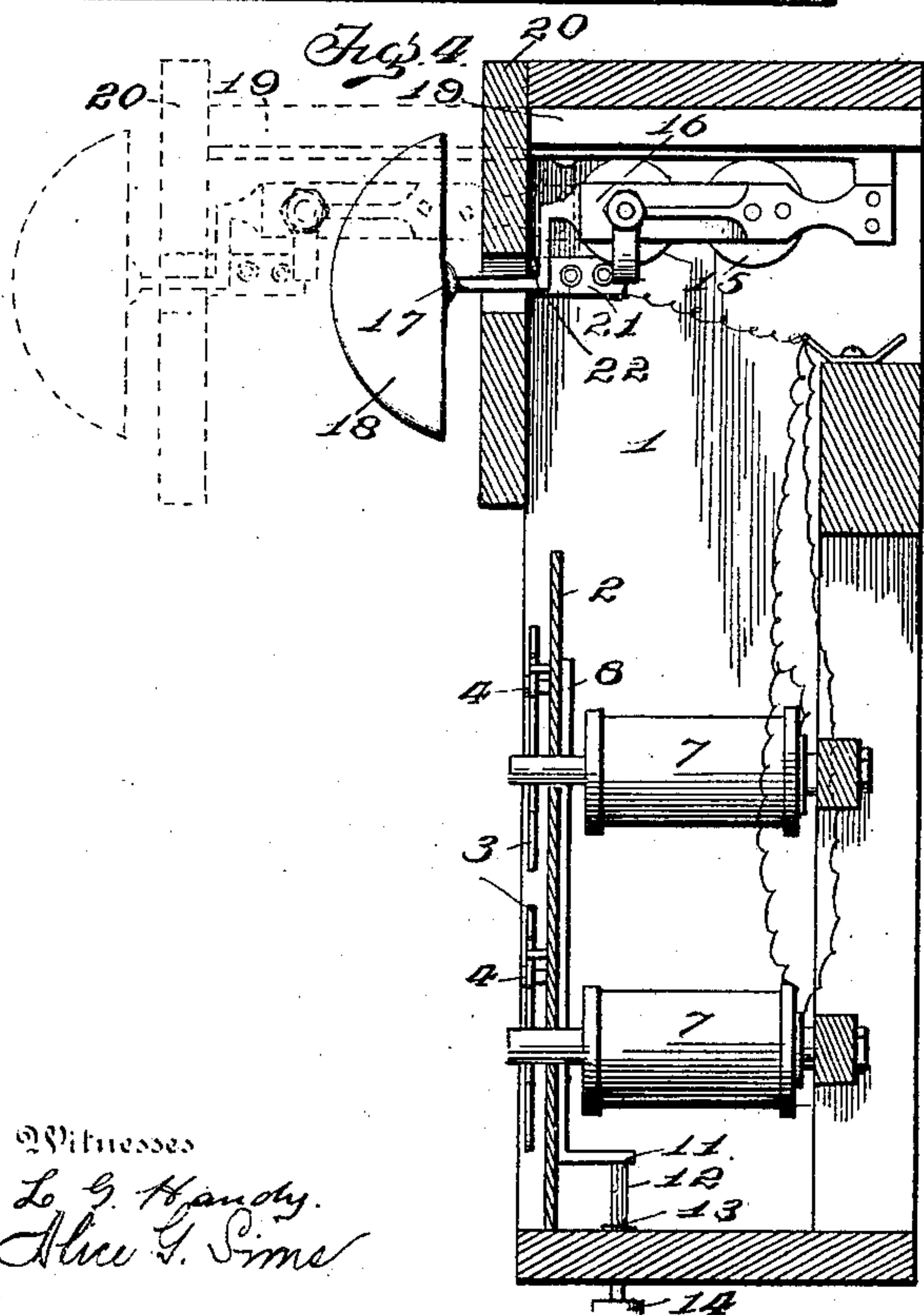


Fig. 4.

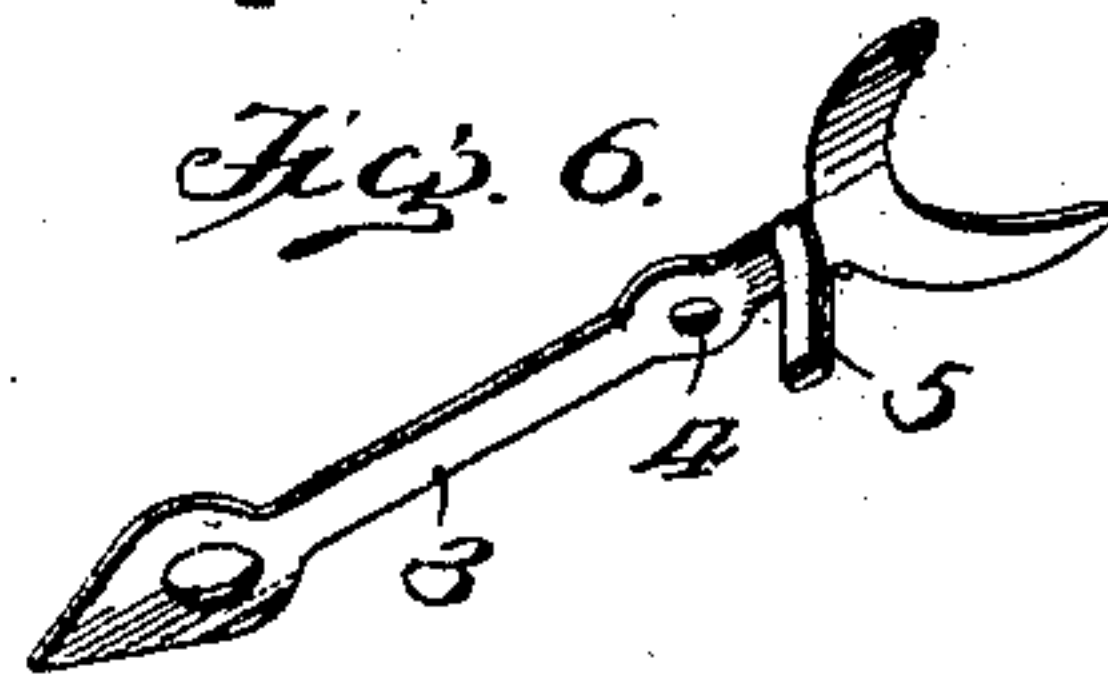


Fig. 6.

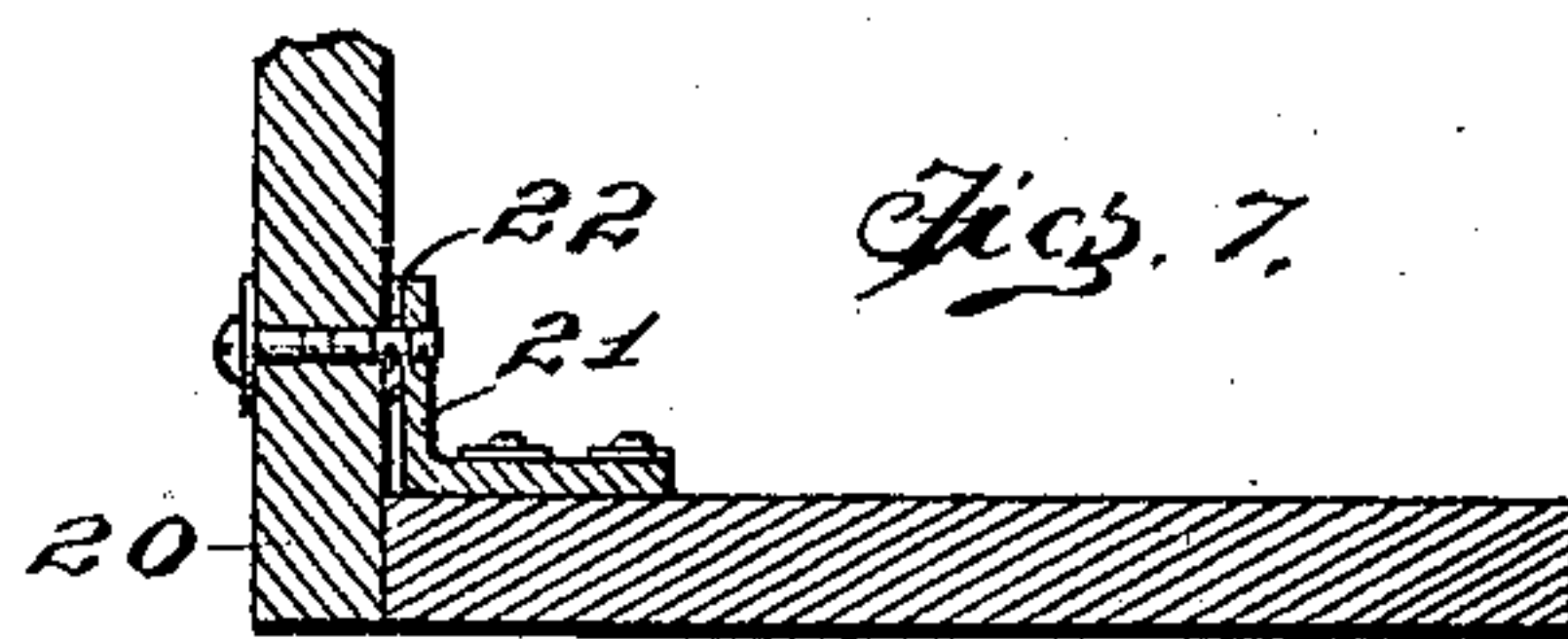


Fig. 7.

Witnesses
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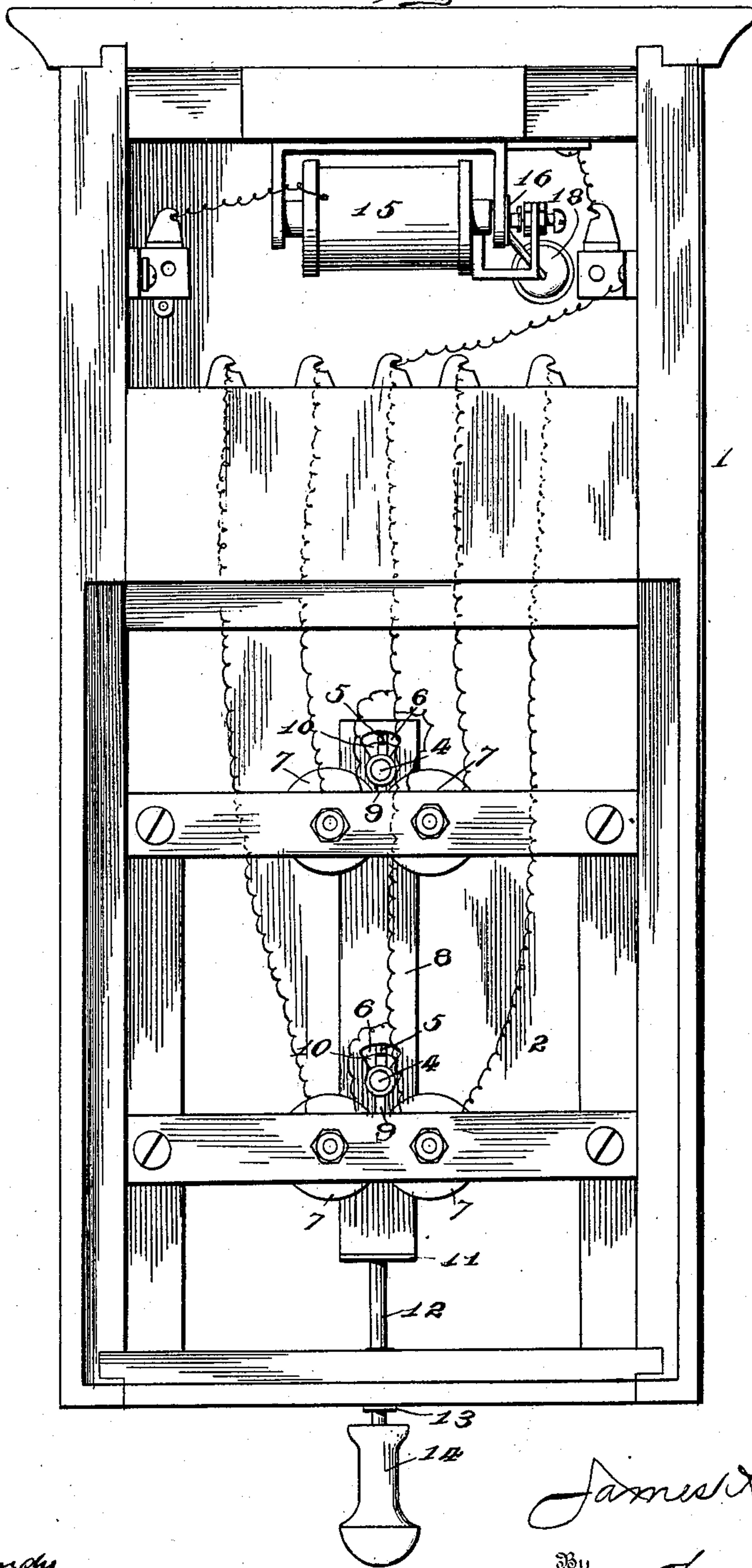
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2 Sheets—Sheet 2.

Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES A. WOTTON, OF ATLANTA, GEORGIA, ASSIGNOR TO WOTTON ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF GEORGIA.

ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 692,580, dated February 4, 1902.

Application filed June 10, 1901. Serial No. 63,920. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. WOTTON, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Annunciators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in annunciators, and particularly to that class of annunciators which employ needles or pointers adapted to be deflected by the action of electromagnets.

It consists in an annunciator having a series of needles or pointers pivoted upon a suitable plate, the said plate being formed with apertures through which tangs or projections on the said pointers may extend, the said annunciator also having the poles of electromagnets arranged upon either side of the pointer or pointers for deflecting the same, and a reciprocating plate or bar arranged inside the annunciator and formed with slots having enlarged portions at one end for receiving and engaging the tangs of the pointers, the construction being such that when the bar or plate is raised the tangs of any deflected needles will be brought in line with a vertical plane passing through the axes of the said tangs.

It also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and specifically claimed.

In the accompanying drawings, Figure 1 is a front elevation of the face-plate of an annunciator, showing the arrangement of the needles or pointers thereon. Fig. 2 is a rear elevation of the reciprocating bar employed for resetting the annunciator-pointers. Fig. 3 is a vertical central section through the face-plate of the annunciator, showing the relation of the reciprocating bar to the said pointers or needles and also showing some of the electromagnets in side elevation. Fig. 4 is a central vertical section through a portion of an annunciator-box, showing the arrangement of all the parts therein. Fig. 5 is a rear elevation of the complete annunciator.

Fig. 6 is a detail perspective view of one of the pointers. Fig. 7 is a detail sectional view showing the contact-plates, which serve to hold the bell-ringing mechanism in the annunciator-casing.

My invention is designed for the improvement of annunciators which employ needles or pointers which are adapted to be deflected by electromagnets for indicating the calls made with the mechanism. The annunciator is provided with a suitable casing, as 1, in which a face-plate 2 is arranged, having suitable indications thereon, such as numerals or the names of certain rooms or locations, as may be desired. Two indications are usually arranged opposite the points of each pointer or needle—such, for instance, as are illustrated in Fig. 1 of the drawings. The face-plate carries one or more pointers or needles, as 3 3, which are pivoted, as at 4 4, to the said plate by suitable pivot pins or bolts. The pointers are formed above their pivot-points with rearwardly-projecting tangs, as 5, which project through the segmental apertures 6, formed in the face-plate 2. The apertures 6 are made of sufficient length to permit the pointers or needles to move from side to side upon their pivot-points a sufficient distance to point to the indications arranged on each side thereof on the face-plate. The pointers are so pivoted that their pointed ends will be a little heavier than the ends of the said pointers above the pivots. The said pointers would therefore hang under the action of gravity, with their points half-way between the indications on the face-plate. In order to draw the pointers to one indication or the other, electromagnets, as 7 7, are mounted in the casing to the rear of the face-plate 2 and so arranged that their pole-pieces project through apertures in the face-plate and to a suitable distance in front of the same to be opposite the sides of the pointers. When an electric current is passed around the coil of one of these magnets and its core is thereby magnetized, it will attract the needle nearest to it and draw it to one side of its normal position. The pointers or needles are preferably slightly magnetized, so that when the current ceases in the coil of the magnet the residuum magnetism remaining in the pointer will be just sufficient

to hold said pointer in contact with the pole-piece of the magnet. It is then necessary to employ some means for releasing the pointer from its contact with the pole of the magnet, and for this purpose I employ a reciprocating plate or bar 8, arranged upon the rear face of the plate 2 opposite the pivot-points of the pointers. This plate or bar 8 is formed with elongated slots 9, adapted to permit of a movement of the said bar with respect to the pivot-pins of the pointers, the upper ends of the said slots being flared, as at 10, to the extent of the length of the apertures 6 in the face-plate. The flared portions 10 of the said slots 9 are adapted to engage the tangs 5 of the pointers, and when the said bar is raised the converging sides of the said flared portions will move the said tangs to a vertical line extending through the pivots of the pointers, the pointers thus being released from their engagement with the poles of the magnets. When the bar 8 is in its lowered position, the flared portions 10 will have their broadest parts opposite the apertures 6, and the pointers, with their tangs, will be free to move to either side in response to the attraction of the magnets. The lower end of the bar 8 may project through the bottom of the casing, so that it may be lifted by hand at any time the pointers may be reset. I prefer, however, to bend the lower end of the plate or bar 8 rearwardly in the casing to form a flat bearing-surface at its lower end, as at 11, and provide the bottom of the casing with a short rod 12, finding a bearing at 13, the said rod passing through said bearing and out of the casing and having a knob or handle 14 secured thereto. The knob 14, with the rod 12, will, under the action of gravity, drop down out of the way of the bar 8. When, however, the bar is to be raised, it is merely necessary to push the knob 14 upwardly, when the rod 12 will be brought into engagement with the flat bearing-surface 11 and the said bar be lifted for resetting the pointers. As shown in the drawings, one bar may be made to engage and operate one or more pointers arranged one above the other, or, if desired, the bar 8 might be made of any width necessary for engaging a number of pointers arranged side by side, it only being necessary to provide the said bar or plate with slots having flaring portions for engaging the tangs of the pointers.

The tangs of the pointers may be formed of pins or separate pieces secured to the rear face of the pointers, or the said tangs may be formed integral with the pointers, being stamped out of a single piece of metal therewith and bent rearwardly, so as to project through the slots 6. I have illustrated in the drawings a superior way of making the tangs, they being formed of two lateral projections stamped out with the pointers of flat metal and bent rearwardly on each side thereof, the ends of the two parts being brought together at the rear of the pointer and soldered or otherwise joined to make a firm actuating pro-

jection on the rear of the pointer. This structure is not only simple, but inexpensive, as well as effective, for the purpose desired.

Above the pointers and resetting portion of the annunciator is arranged a bell coil or magnet, as at 15, which is constructed in the usual manner, being formed with magnetic poles adapted to operate a vibrating armature 16, the said armature carrying a tapper 17, adapted to ring a bell or gong 18 outside the annunciator-casing. The mounting of the bell-magnet and bell also forms a feature of the invention, the same being secured upon a block 19, which is removably mounted in the casing, a face-board 20 being attached thereto for carrying the bell or gong and closing the upper portion of the annunciator-casing 1. The means for attaching this block and face-board in position is also used for making the electrical connections necessary for passing an operating-current through the bell-magnet. A contact-piece 21 is secured inside the casing 1, near the front thereof, and is adapted to be brought into contact with contact-pieces 22 22, secured on the inner face of the front board 20. The contact-pieces 21 and 22 are provided with coinciding threaded apertures, so that by passing screws through the front board 20 and into the said coinciding threaded apertures the bell-magnet may be firmly secured in place, while at the same time the contact-pieces are firmly pressed together. The contact-pieces 21 21 are wired in circuit with the magnets in the usual manner employed in wiring such annunciators, so that the bell will always be rung when a call is made. The bell mechanism may thus be removed from the annunciator at any time for adjustment or repair without altering the wiring of the annunciator in the least and simplifies the construction of the annunciator, reducing the expense of its production in addition to its other advantages.

I am aware that devices have been employed heretofore for jarring and otherwise affecting annunciator pointers or needles to reset them, but my improved means for returning the partially-magnetized needles positively to a vertical plane I believe to be novel. The whole structure of the device is such as to increase the commercial value of such annunciators, since its cost of manufacture is reduced materially over those heretofore manufactured, principally because of the simplicity of the parts and the ease with which they can be put together to form a completed device.

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

1. An annunciator having a face-plate, one or more pointers pivoted thereon, tangs carried by the said pointers extending through slots in the face-plate, means for drawing the pointers to one or more indications on the face-plate, and a movable slide having tang-

engaging apertures formed with enlarged portions for permitting the setting of said pointers with their tangs, and with narrow portions for positively engaging the tangs and forcing the pointers to their normal non-indicating positions when said slide is moved, substantially as described.

2. In an annunciator the combination with a suitable casing of a face-plate mounted therein, one or more pointers or needles pivoted thereon, electromagnets arranged upon either side of the said pointers for drawing them to certain indications on the face-plate, tangs formed upon the said pointers and projecting through segmental slots formed in the face-plate, and a reciprocating bar on the said face-plate formed with elongated slots having flaring portions adapted to coincide with the segmental slots in the face-plate, the said flaring portions being arranged to engage and force the tangs of the pointers to their normal positions when the said bar is reciprocated, substantially as described.

3. In an annunciator the combination with a suitable face-plate having indications thereon of a series of pointers pivotally suspended on the face-plate, electromagnets arranged behind the face-plate and having their poles extending through the same at the sides of the pointers for deflecting the pointers and drawing them toward the said indications, tangs upon the said pointers extending through elongated segmental slots made in the face-plate, a reciprocating bar or plate movably mounted on the pivots of the pointers to the rear of the face-plate and provided with elongated slots engaging the said pivots, the said slots having flared portions at their upper ends for accommodating the tangs in their movement with the pointers, the said flaring portions being adapted to lead the tangs back into the elongated portions of the slots when the reciprocating bar is raised whereby the pointers will be restored to their normal positions, and means extending outside the casing for operating the reciprocating bar, substantially as described.

4. In an annunciator the combination with

a casing of a face-plate mounted therein, a series of pivoted indicating-pointers mounted thereon having tangs extending through the said plate, means for engaging the said tangs for positively resetting the pointers, magnets for drawing the pointers to indicating positions, a bell-operating magnet secured to a removable frame and mounted in the upper portion of the casing, contact-pieces on the said frame adapted to be secured to contact-pieces in the casing for removably holding the bell mechanism in the casing and at the same time completing a contact with the wiring of the said annunciator, the structure being such that the bell mechanism can be removed from the annunciator without disturbing the wiring thereof, substantially as described.

5. In an annunciator the combination with a face-plate of pivoted pointers mounted thereon, integral tangs formed on the pointers and extending rearwardly through segmental apertures in the face-plate, a vertically-moving slide arranged inside the face-plate and provided with elongated slots having flaring portions at their upper ends, said flaring portions coinciding with the segmental slots in the face-plate, and adapted to bring the tangs in a vertical line with the pivots of the pointers when the slide is raised, electromagnets having their poles extending through the face-plate at the sides of the pointers for drawing the said pointers to indications on the face-plate, a rod projecting through the bottom of the casing and adapted to engage the lower end of the slide, and an operating-knob on the lower end of said rod the structure being such that when the knob is lifted the rod will be forced inwardly and the slide will be correspondingly lifted to positively reset the annunciator pointers, substantially as described.

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

JAMES A. WOTTON.

Witnesses:

J. O. HARDWICK,
D. M. EASTON.