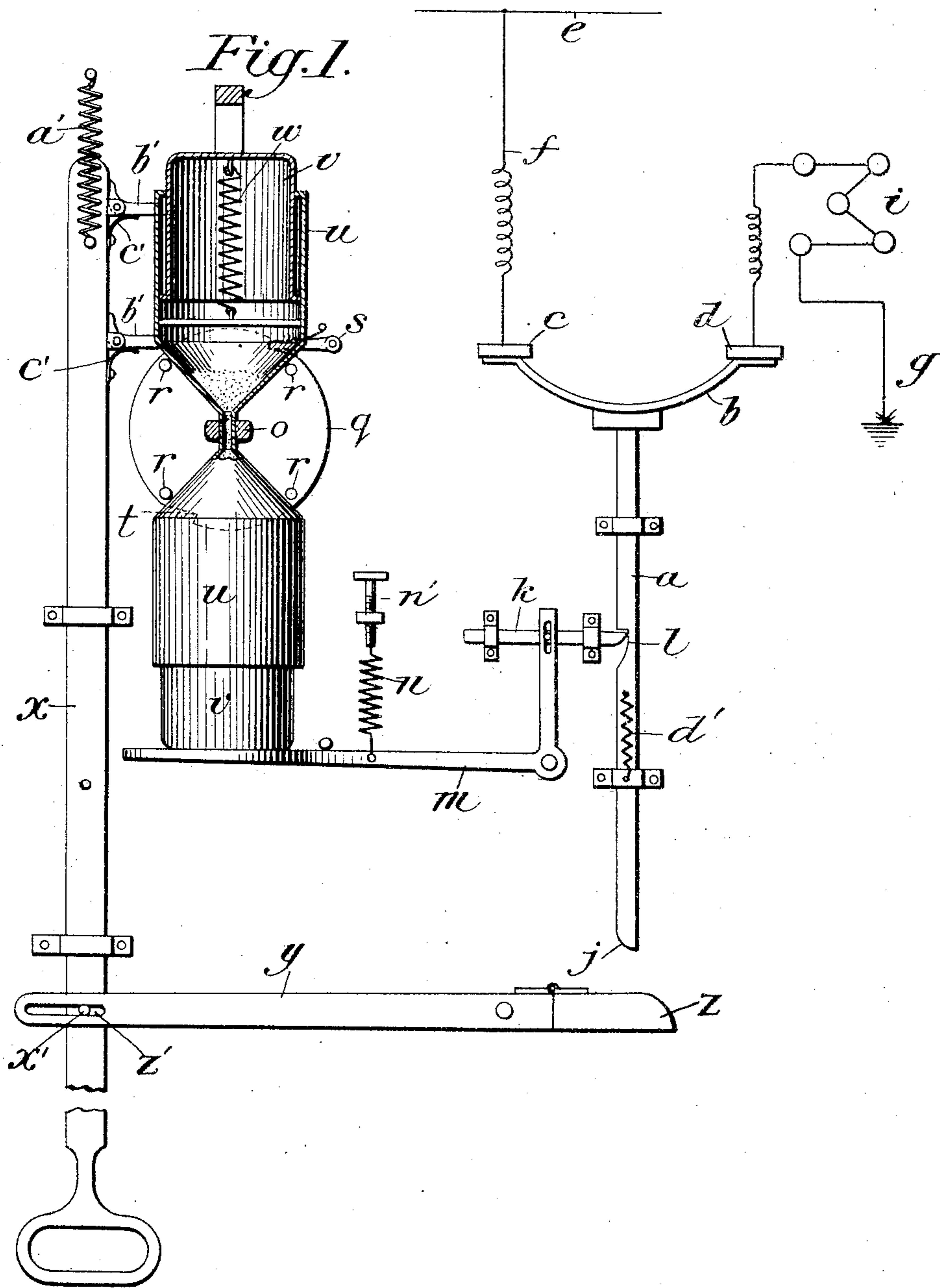


No. 780,852.

PATENTED JAN. 24, 1905.

J. L. WRENN.  
STATION SIGNAL.  
APPLICATION FILED NOV. 24, 1903.

2 SHEETS—SHEET 1.



Witnesses:  
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J. M. Wrenn

Inventor:  
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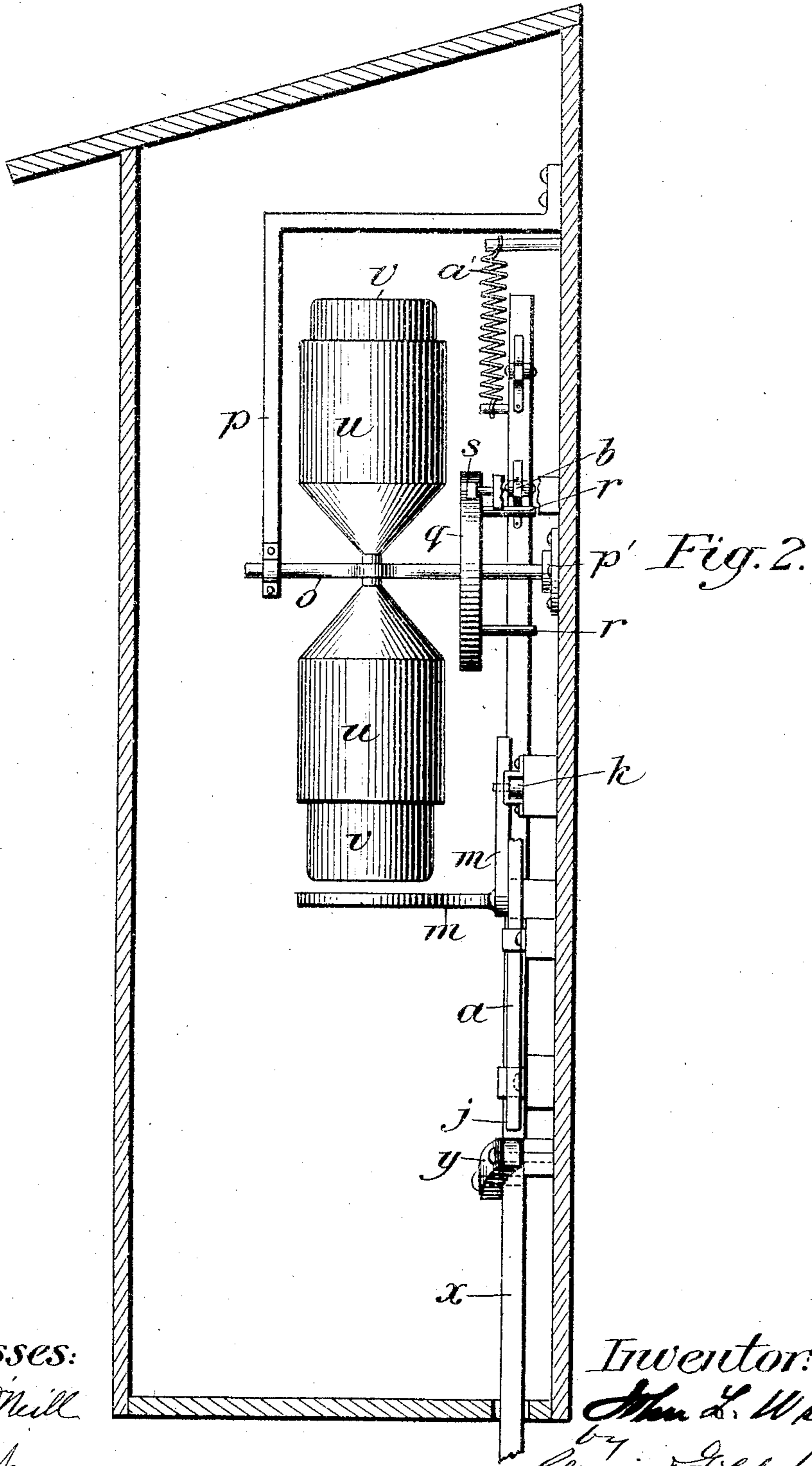
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Chas. O'Neill  
J. M. Wrenn

Inventor:

John L. Wrenn,  
by  
Pruitt & Alden, Attys.

# UNITED STATES PATENT OFFICE.

JOHN L. WRENN, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR  
OF ONE-HALF TO JOHN C. PENNIE AND JOHN A. GOLDSBOROUGH, OF  
WASHINGTON, DISTRICT OF COLUMBIA.

## STATION-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 780,852, dated January 24, 1905.

Application filed November 24, 1903. Serial No. 182,452.

*To all whom it may concern:*

Be it known that I, JOHN L. WRENN, a citizen of the United States, residing in Washington, District of Columbia, have invented certain new and useful Improvements in Station-Signals; 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 railway station-signals, and has for its object to provide a signaling apparatus that may be actuated by a prospective passenger to set a signal for an approaching car, which signal will be maintained for a predetermined period and then will be automatically withdrawn or discontinued through the agency of a time mechanism set in operation as the switch is closed.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a diagrammatic view of my improved station-signaling apparatus, the timing device being shown in partial section. Fig. 2 is a vertical section through a signal-box containing the signal-controlling mechanism.

Referring to the drawings, *a* represents a sliding bar which is provided with a bridging-contact *b*, said contact being adapted to connect two stationary contacts *c* *d*, and thereby close an electric circuit *f* from a trolley-wire, feed-wire, or other source of electricity through a group of lamps *i* or other suitable signal device. Said bar *a* is normally retracted to open the circuit at the contacts *b* *c* *d* by means of a spring *d'*, and when the bar has been advanced to close the circuit a sliding latch *k* engages a notch *l* in said bar to lock the latter and hold the switch in closed position.

The bar *a* is preferably advanced to close the switch by means of a rock-lever *y*, pivoted adjacent to its lower end and having a hinged end *z* cooperating with a rounded corner *j* or the bar to permit the end of the lever to slide

past the bar when the latter has been advanced sufficiently to close said switch and permit the lever end to pass as rod *x* returns to normal position. The lever *y* is connected by a pin *x'* and slot *z'* to a pull-rod *x*, sliding in suitable guide-brackets, and is normally drawn upward by a spring *a'*.

Connected to the latch *k* by means of a pin and slot is a pivoted bell-crank *m*, which is normally lifted by a spring *n* attached to an adjustable screw *n'* by means of which the tension of said spring and accordingly the force tending to hold said latch *k* in locking position is regulated.

Mounted in an angle-bracket *p* and a bearing-block *p'* in the box or casing is a horizontal shaft *o*, to which is secured a sand-glass apparatus consisting of two cylindrical cone-ended vessels *u* *u*, connected by a constricted tubular neck, each of said vessels having a telescoping bottom *v* sliding within the cylindrical portion thereof and normally drawn within the same by a spring *w*. Secured to the shaft *o* is a disk or wheel *q*, from one face of which project four studs or pins *r*, spaced at quadrant distance apart about the periphery of said disk. Pivoted upon pull-rod *x* in position to cooperate with adjacent studs *r* *r* on the wheel *q* as said rod is pulled down are two pawls *b'* *b'*, held normally in horizontal position by light springs *c'* *c'*, said pawls being capable of movement on their pivots in a downward direction against the tension of the springs *c'* *c'*, but being held from upward movement from the horizontal by angularly-projecting tails or lugs, which engage the supporting-face of pull-rod *x*.

The operating mechanism is preferably mounted in a box or casing attached to a pole or other support adjacent to the station or stopping place. Pull-rod *x* projects through the bottom of the box within easy reach of the operator, and the lamp-cluster *i* or other signal device may be mounted within the box or at any point on the outside, as desired.

The circuit of course is normally broken at

the switch-contacts when no signal is displayed. When an intending passenger wishes to signal an approaching car, he grasps the pendent handle of bar *x* and pulls it downward, whereupon the lower lever *y* is rocked upon its pivot and its end *z* engages the adjacent end of slide-bar *a* and lifts said bar until bridging-contact *b* engages the fixed contacts *c* *d*, closes the circuit, and lights the lamps *i*.

At this time latch *k*, under the influence of bell-crank *m* and spring *n*, enters notch *l* in bar *a* and holds the latter in locked position, and the end *z* of lever *y* slides past the end *j* of said bar *a*. The downward movement of bar *x* causes the lower pawl *b'* to engage the adjacent pin *r* on wheel *q* and turns shaft *o* and the connected sand-glass about one-quarter of a revolution. The upper pawl *b'* then comes into engagement with the succeeding pin *r* and turns the sand-glass device another quarter revolution, so that the empty half of said sand-glass is brought over the end of bell-crank *m* and the section containing the sand or other mobile granules is carried to the top and the sand begins to run out of the top section into the lower section. When the pull-rod *x* is released, it is immediately retracted by spring *a'*, the pawls *p'* are turned down as they pass the pins *r'* next above them on the wheel *q* and immediately assume a horizontal position for a subsequent operation, as indicated, while wheel *q* is held from a backward or reverse turning movement by a pawl *s* engaging one of the notches *t* in the edge of said wheel. As the sand flows into the lower half of the sand-glass and forces the telescoping bottom section thereof downward into engagement with a laterally-projecting tubular end of bell-crank *m*, when sufficient sand has accumulated in the lower portion of the sand-glass to overcome the tension of spring *n* the bell-crank is rocked on its pivot and withdraws bolt *k* from engagement with bar *a*, which is instantly drawn downward by spring *d'*, thereby breaking the circuit at contacts *c* and *d* and discontinuing the signal without any arcing at the separated terminals. The apparatus is then in condition for a subsequent operation to establish a signal for the next car.

It is to be observed that the apparatus is exceedingly simple in construction and mode of operation and when the signal is set by the passenger it requires no further attention, but is automatically discontinued after a predetermined interval by the time mechanism. By regulating the tension of the spring *n* the length of time which the signal is displayed may be varied to suit the running schedule of the cars.

While I have described a particular form of time mechanism for discontinuing the signal, it is to be understood that my invention is not

limited thereto, but other forms of timing devices may be employed with good results. Also the form and arrangement of my switch-operating mechanism may be varied without departing from my invention.

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

1. A station signaling apparatus, comprising an electric circuit, a signal operated thereby, a switch for closing said circuit to operate the signal, a lock for holding said switch in closed position, a time mechanism coöperating with the lock to release the switch after a predetermined interval, means for actuating said switch to close the circuit, and mechanism coöperating with said switch-actuating means for setting said time mechanism.

2. A station signaling apparatus, comprising an electric circuit, a signal operated thereby, a switch for closing said circuit to operate the signal, a lock for holding the switch in closed position, a time mechanism coöperating with the lock to release the switch after a predetermined interval, and manually-actuated means for simultaneously closing the switch and setting the time mechanism.

3. A station signaling apparatus, comprising an electric circuit, a signal operated thereby, a switch for closing said circuit to operate the signal, a sand-glass mechanism for discontinuing the signal after a predetermined interval, means for actuating said switch to close the circuit, and mechanism coöperating with said switch-actuating means for reversing the sand-glass.

4. A station signaling apparatus, comprising an electric circuit, a signal operated thereby, a switch for closing said circuit to operate the signal, a sand-glass mechanism for discontinuing the signal after a predetermined interval, and means carried by the switch-operating mechanism for reversing said sand-glass.

5. A station signaling apparatus, comprising an electric circuit, a signal operated thereby, a switch for closing said circuit to operate the signal, means for normally opening said switch, manually-operated means for closing said switch, a lock to hold said switch in closed position, and a time mechanism to release the lock and discontinue the signal after a predetermined interval.

6. A station signaling apparatus, comprising an electric circuit, a signal operated thereby, a switch for closing said circuit to operate the signal, means for normally opening said switch, manually-operated means for closing said switch, a lock to hold said switch in closed position, a rotatory sand-glass coöperating with said lock to release the same after a predetermined interval, and mechanism connected with the switch-closing means to rotate the sand-glass when said closing means is operated.

7. A station signaling apparatus, compris-

ing an electric circuit, a signal operated there-  
by, a switch for closing said circuit, means for  
normally opening said switch, a lock to hold  
said switch in closed position, a pull-rod for  
5 closing said switch, a rotatory sand-glass for  
tripping the lock to release the switch, and  
pawl-and-ratchet mechanism connecting the  
pull-rod and the sand-glass to rotate the latter

through one hundred and eighty degrees when  
the pull-rod is operated to close the switch. 10

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

JOHN L. WRENN.

Witnesses:

WILLIAM W. CONNER,  
CHAS. J. O'NEILL.