

(No Model.)

3 Sheets—Sheet 1.

J. A. & J. B. WRIGHT.  
AUTOMATIC STATION OR STREET INDICATOR.

No. 436,730.

Patented Sept. 16, 1890.

Fig. 1.

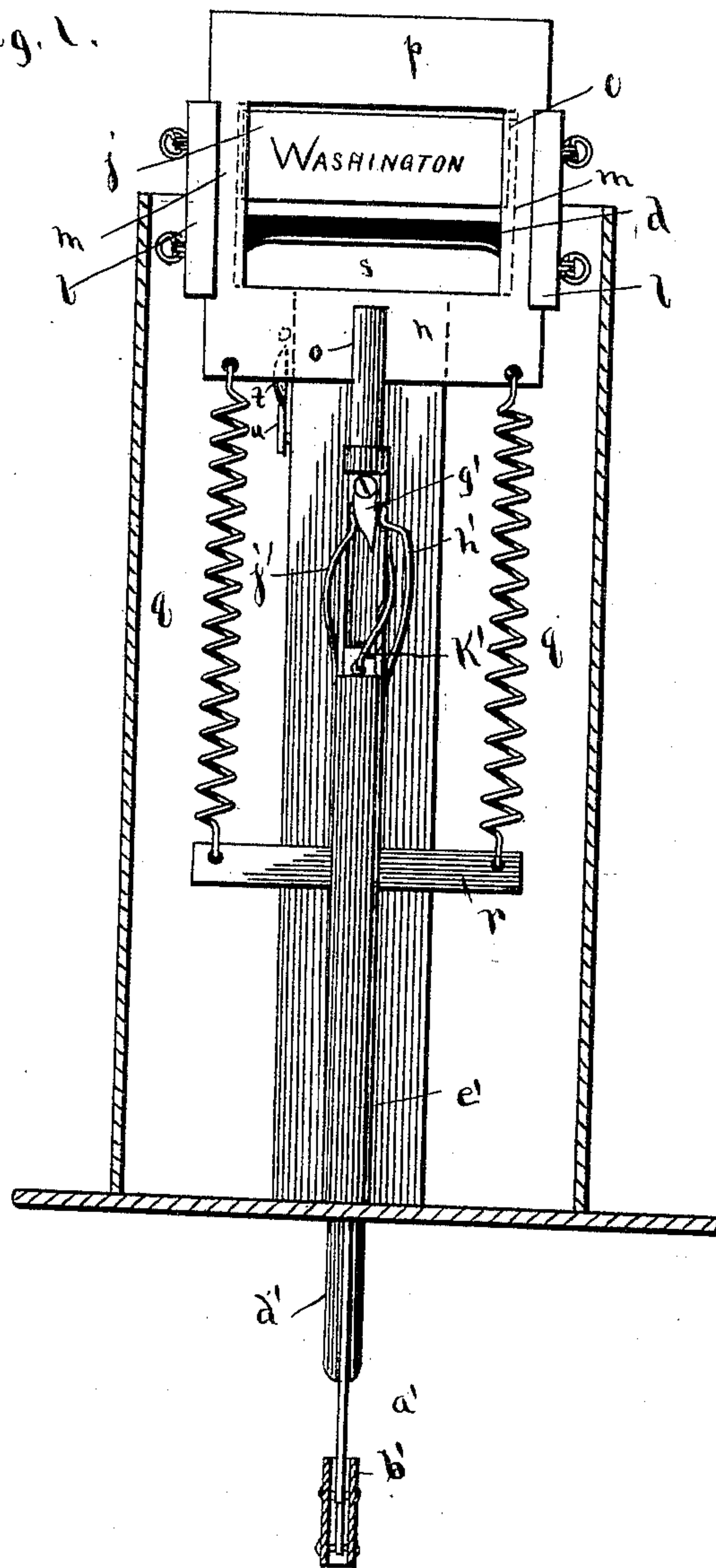


Fig. 6.

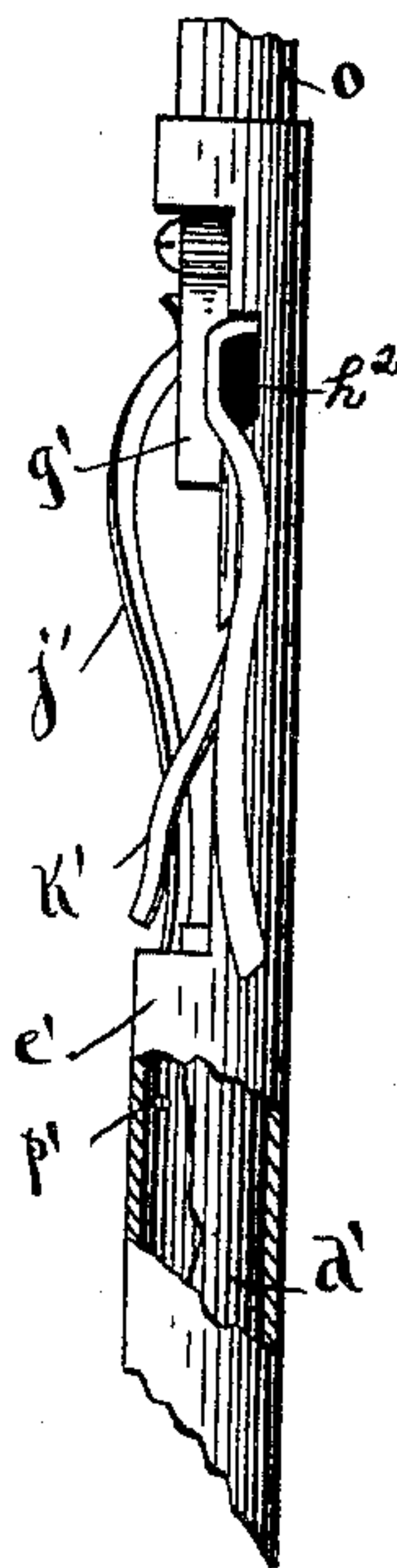
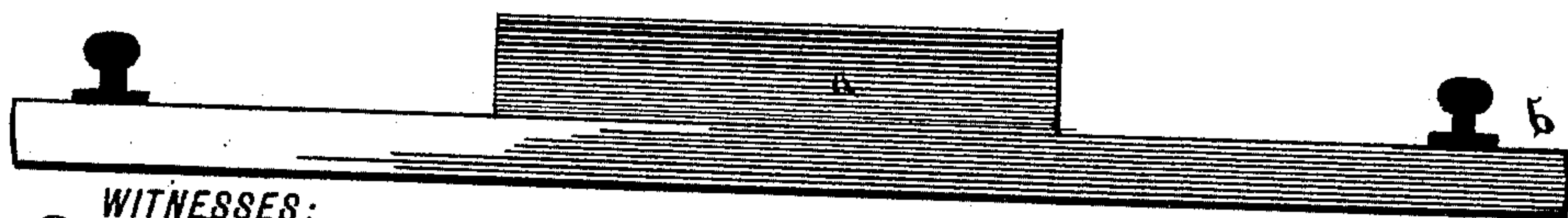
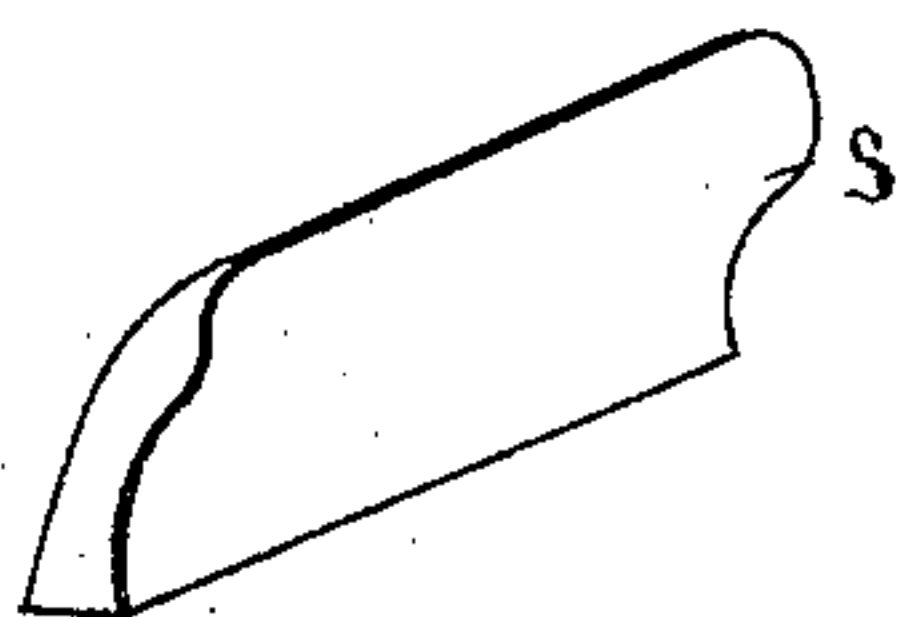


Fig. 9.



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Fig. 2.

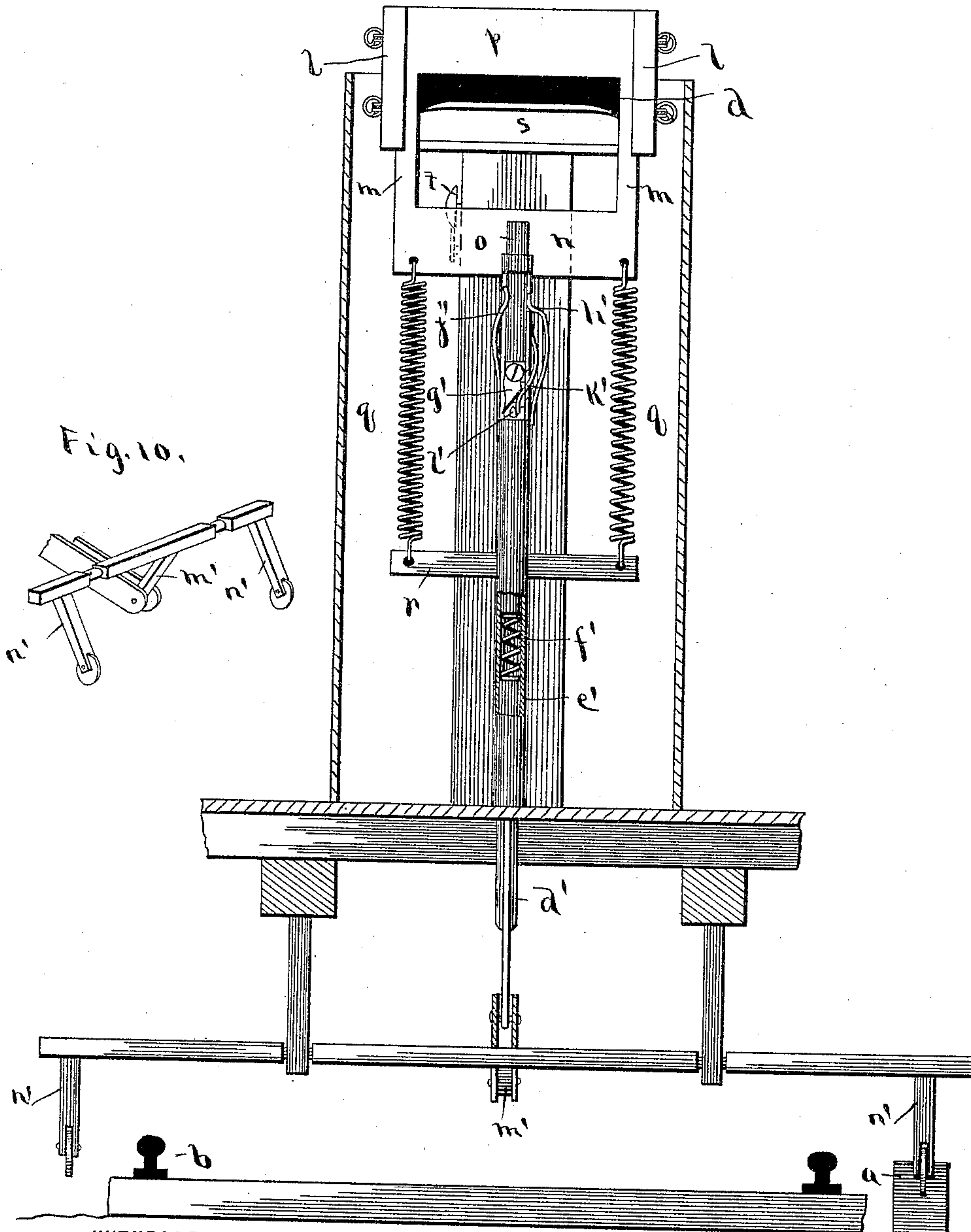
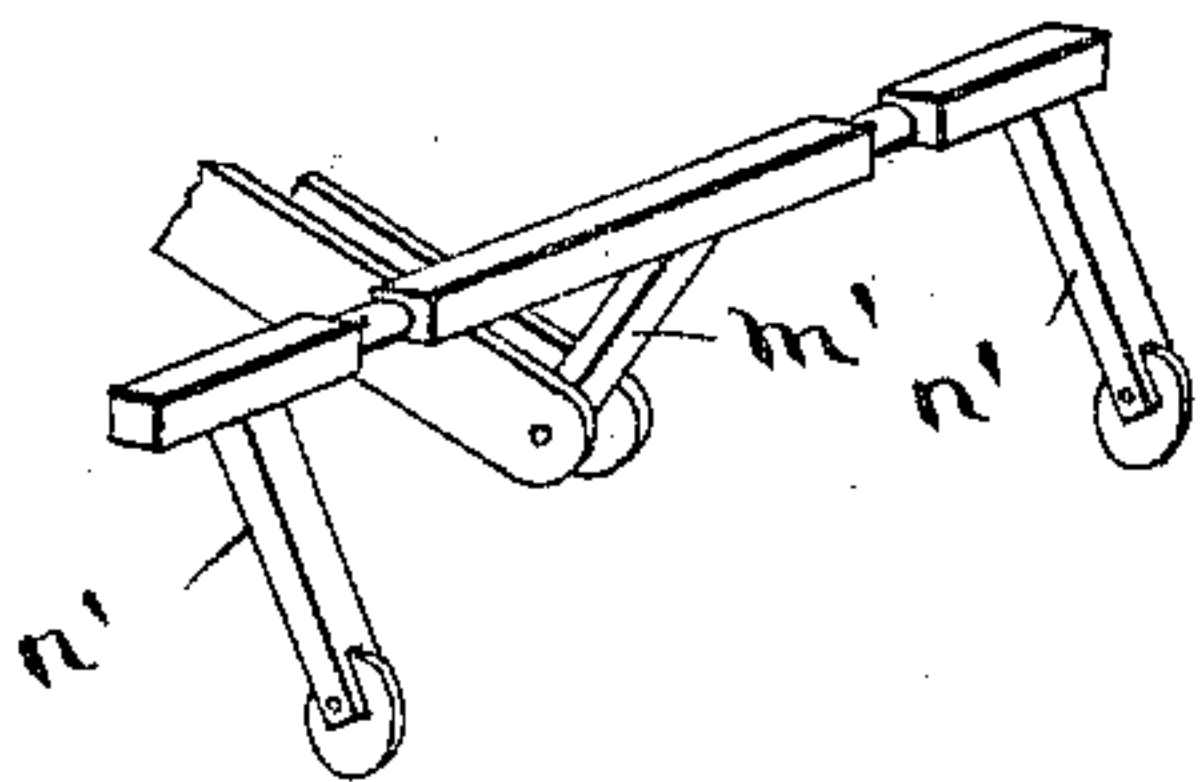


Fig. 10.



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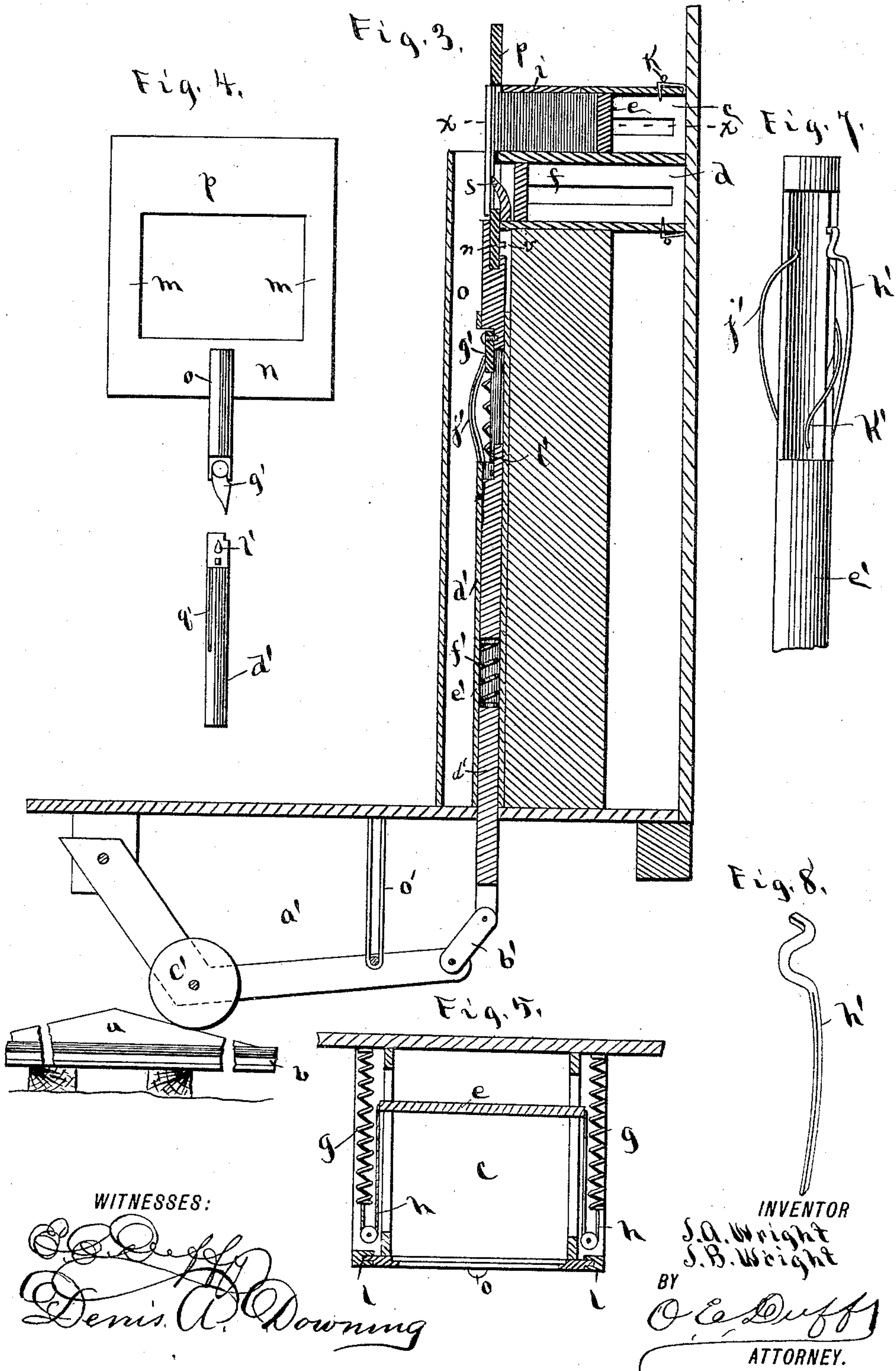
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3 Sheets—Sheet 3.

J. A. & J. B. WRIGHT.  
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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC STATION OR STREET INDICATOR.

SPECIFICATION forming part of Letters Patent No. 436,730, dated September 16, 1890.

Application filed February 11, 1890. Serial No. 340,058. (No model.)

### *To all whom it may concern:*

Be it known that we, JAMES AARON WRIGHT and JOHN BUNYAN WRIGHT, of Rockingham, in the county of Richmond and State of North Carolina, have invented certain new and useful Improvements in Automatic Station or Street Indicators; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in station or street indicators; and the invention consists in certain novel features of construction, and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a front view of the apparatus, showing the bottom of the car and portion of the track, the indicator displaying the name-card. Fig. 2 is a similar view, the card-displaying box being closed and some of the parts being shown in section and differently constructed from those of Fig. 1. Fig. 3 is a longitudinal section of the machine and through the bottom of the car. Fig. 4 is a detail front elevation of the sliding face-plate and its operating mechanism. Fig. 5 is a cross-section on the line  $x x$ , Fig. 3. Figs. 6 and 7 are, respectively, a detail elevation and a front detail elevation of the automatic means for locking and releasing the sliding face-plate. Fig. 8 is a detail perspective of the spring-catch which holds the face-plate raised over the card-displaying box. Fig. 9 is a detail perspective of the curved plate or lip which receives the cards brought down from the upper displaying-box by the face-plate and guides them into the lower box. Fig. 10 is a detail perspective of the form of trip shown in Fig. 2.

By this invention the name of the next street or station is prominently displayed in a moving vehicle a short time before reach-

ing the street or station, and at the same time the attention of the passengers is directed to the indicator by the sounding of a bell.

The device of this invention is entirely automatic, as suitable inclines or raised projections  $a$  are located along the track on each side of the street or station, so that as the vehicle approaches the operating mechanism or trip will engage and be operated by said incline to actuate the mechanism in the car to display a card or device provided with the name of the street or station and at the same time sound a bell. After the vehicle has passed the street or station the operating-trip engages the other incline and the mechanism in the car is operated and the card or name just displayed is removed and the apparatus is placed in readiness to display the name of the next street or station.

In the accompanying drawings the reference-letter  $b$  indicates a railroad-track, and  $a$  the double inclines before mentioned along the tracks on opposite sides of the station or street.

The indicating device is conspicuously located in the interior of the car, preferably the upper portion of one end of the same.

The indicating device proper comprises a suitable box or casing secured in the upper portion of the car and consisting of two horizontal upper and lower chambers  $c d$ , open at their outer sides and containing the outwardly-pressing spring blocks or followers  $e f$ . The sides of the chambers are provided with longitudinal slots or grooves in which the ends of said followers slide, which slots are inclosed on the outer sides. Retractive coil-springs  $g g$  are located in said inclosures, the outer ends of which springs are connected with the followers or blocks and tend to draw the same out by means of cords  $h h$ , secured at their opposite ends to the follower and springs, respectively, and passing around pulleys in the forward parts of the chambers, as clearly shown in Fig. 5. The top of the upper compartment is provided with an upwardly-opening door  $i$ , provided with a suitable latch or catch, so that the cards  $j$ , pro-



vided with the names of the streets or stations, can be placed in the upper compartment in front of the follower therein. In order to hold the follower back while the name-cards are being inserted, a catch *k* is provided, which consists of a spring secured on the top of the upper compartment, provided with a bent end extending down into the compartment, so that when the follower is pushed back said end will spring down in front of the same and hold the follower. The spring-catch is provided with a knob, so that it can be lifted to release the follower. A pair of vertical guideways or strips *l* are secured to the opposite sides of the front open ends of said chambers and retain the cards in said compartments. A slide-frame works in these ways, and consists of two vertical side strips *m m*, confined in said ways, the lower cross-bar *n*, to which said strips are secured and to which the top end of the vertical operating-rod *o* is secured, and the face-plate *p*, secured to the upper ends of said strips. This face-plate *p* is of such size as to completely close the front open ends of the upper chamber when drawn down in front of the same, and is secured to the inner sides of the strips, so that the lower edge of the plate can engage the upper edge of a card in the upper compartment, and bearing against the inner faces of said strips *m m* when the face-plate is drawn down. The normal position of the face-plate is shown in Fig. 2 covering the open end of the upper compartment. When the vehicle approaches a street or station, the frame just described, carrying the face-plate, is forced up by means of the operating mechanism hereinafter to be described, until the open end of the upper compartment is uncovered and the card therein bearing the name of the street or station is displayed, the card being forced out against the strips *m m*. When the vehicle passes the station, the operating-trip is again actuated, and the said frame is released and drawn down to its normal position by the retractive coil-springs *q q*, secured to a suitable cross-bar *r* and to said lower cross-bar *n*. As the face-plate passes down, its lower edge engages the upper edge of the first card bearing the name of the station or street just passed and carries said card down until its lower edge is caught by the outwardly-curved upper edges of a lip or plate *s*, partially closing the open end of the lower compartment, which plate guides the card into the lower compartment. The card bearing the name of the next station is now bearing against the rear face of the face-plate. The lower compartment is provided with a suitable opening from which the cards can be withdrawn when the end of the route is reached. The cards should be sufficiently heavy and stiff to be readily moved by the face-plate without injury. The cards are placed in the upper compartment in the consecutive order of the streets or stations and with their name or printed sides facing outwardly.

The device is provided with a bell *t*, provided with a clapper *u* and mechanism *v*—such as a lug on the cross-bar *n*—so that when the face-plate is raised to display a card the bell will be loudly sounded. The face-plate is raised by a trip located beneath the car to engage the double inclines on the track. In Figs. 1 and 3 this trip consists of the vertically-swinging angle or arm *a'*, centrally located beneath the car and at one end pivoted to allow its opposite end to swing vertically, which vertically-swinging end is pivotally connected to the lower end of a vertically-reciprocating operating-rod by means of a link *b'*. The angle or elbow of the trip is provided with a roller *c'* to strike and run up the double inclines on the track, and thereby force up the free end of the trip in whichever direction the car is traveling and raise the operating-rod. The operating-rod *d'* extends from below the car up into the car beneath the indicating device and through a vertical supporting-tube *e'*, in the upper open end of which the lower end of the rod *o* is loosely confined. This rod *d'* is formed in two sections, as clearly shown in Fig. 2, and a coil-spring *f'* is interposed between the two sections, for the purpose hereinafter set forth. The tube *e'* is cut away at the upper portion. The lower end of the rod *o* in the tube *e'* is on its front side provided with a vertically-swinging releasing-finger *g'*, projecting below the end of the rod *o*. A spring-catch *h'* is secured to the tube *e'* with its end bent straight to constantly bear against the rod *o*, and the tube *e'* is provided with a recess *h<sup>2</sup>*, in which said bent end of the catch is adapted to spring so as to project beneath the lower end of rod *o* and hold the face-plate in the raised position, displaying the name-card. The releasing-finger *g'* and the bent end of the spring-catch *h'* are so relatively arranged that when the rod *o* and face-plate operated thereby are held in raised adjustment by the catch *h'* the finger *g'* will be located opposite and bearing against the locking end of the catch and in a direction to release it from the rod *o*. The finger *g'* is tapered downward, as shown, and when the rod *o* is in raised adjustment the lower end of the finger is constantly pressed toward the said catch by a spring *j'*, secured to said tube *e'*. As the rod *o* descends the finger passes down from contact with the spring *j'*, and when the finger reaches the lower end of the opening in tube *e'* it is engaged by a spring *k'*, which forces its free end toward the opposite side of the tube from the catch *h'*, as clearly shown.

The outer face of the upper end of the upper section of rod *d'* is provided with a projecting lug *l'* to engage either side of the swinging finger and force the same in the opposite direction.

It should be observed that the rod *d'* is entirely separate from the rod *o*.

When the trip is engaged by an incline on the track, it forces the two sections of the rod



*d'* up. The upper end of the rod *d'* engages the lower end of rod *o*, the finger being held projecting in a direction opposite to the catch *h'* by the spring *k'*, and forces up the rod *o* and the face-plate, and the catch locks the same raised, and the trip and rod *p'* drop to their normal position by gravity. As soon as released from the lug *l'* the finger is immediately thrown over against the catch by spring *j'*. Hence when the trip is again actuated after the sheet or station is passed the rod *d'* is lifted and its beveled lug *l'* engages one edge of the finger and forces the same outwardly against said catch, thereby releasing rod *o*, and the same and the face-plate are immediately returned to their normal position by the spring *q*. The trip is provided with a guide *o'*.

In Figs. 2 and 10 a different form of the trip is shown, consisting of a rock-shaft located beneath the car provided with an intermediate arm *m'*, loosely secured to the rod *d'*, and also provided with the end lateral arms *n' n'*, provided with rollers to engage the inclined arm on the outer side of the track and when the car is proceeding in either direction.

The object of the spring-separated rod *d'* is to prevent sudden jar and shocks and injury to the parts. The rod *d'* and the tube *e'* are provided with means to prevent the rod *d'* from turning, such as a groove *q'* and lug *p'*.

In use it is intended to place a time-table near the indicator, which will give the names of the stations arranged in consecutive order, the time the trains should arrive at each station, and the length of the stop at each station.

The indicator can be provided with the striking mechanism of a clock, so arranged as to be operated by the sliding face-plate, so that the clock mechanism will sound its alarm when the train approaches the station or street.

It is evident that various changes might be made in the form and construction of the parts described without departing from the spirit and scope of our invention. Hence we do not confine ourselves to the precise construction herein set forth.

What we claim is—

1. In a station-indicator, the combination of the horizontal card-compartment open at its outer end and containing a spring-follower, the card-receiving compartment having an opening thereinto from and beneath the open end of said card-compartment, the reciprocating face-plate normally closing the open end of said card-compartment, means to throw up said plate to display a card, and a spring to draw it down to its normal position and throw a card into the receiving-compartment.

2. In combination, the card-compartment open at the outer end and having means to press the cards outwardly, the card-receiving compartment having a receiving-opening beneath the open end of said card-compartment,

a vertically-reciprocating face-plate normally closing the open end of said card-compartment, an open frame at its upper portion carrying said plate and arranged so that when pushed up the card displayed will be pressed against the frame beneath said plate and when drawn down it will carry said card down into the lower compartment, a rod provided with means to push up said frame, and a spring to draw it down.

3. A station-indicator consisting in the combination of a card-containing compartment, an outwardly-pressing follower therein, means to retain said cards therein and allow the first one to be displayed, a lower card-receiving compartment, and the sliding face-plate at the open end of said card-compartment adapted when drawn down to engage and force the displayed card down into the receiving-compartment.

4. In combination, the two adjacent card-compartments having spring-followers and open at their outer ends, the curved guide-plate at the open end of the lower compartment to guide the cards thereinto pushed from the open end of the other compartment, vertical ways at said outer ends of the compartments, an open frame carrying a face-plate and slidable in said ways to display the outer card in the upper compartment or to draw the face-plate and close said compartment and push down the card just displayed, and means to operate said frame, substantially as described.

5. In a station-indicator, the combination, with the card-containing compartment open at its outer end, a receiving-compartment, a sliding face-plate normally closing the outer end of said card-compartment and against which the cards are pressed, means to throw up said plate to display a card in said compartment, a catch to hold the plate up, and means to automatically release said catch when the station is passed and allow the plate to be drawn down, as set forth.

6. In a station-indicator, the combination, with the card-compartments, of the sliding face-plate, a frame carrying the same, a spring tending to draw the same down to its normal position, the rod secured to said frame, a trip beneath the car to force up said rod and face-plate, a catch to hold the same raised, and means operated by said trip to release the catch.

7. The card-compartments, and sliding face-plate provided with a downwardly-extending rod, the vertical tube in which the lower end of said rod is loosely confined, a catch to hold said rod and face-plate raised, a finger carried by said rod to release the catch, and a trip beneath the car provided with a rod in said tube to engage said rod of the face-plate and force the same up and to operate said finger to release the catch.

8. The guide-tube, the upper vertical reciprocating rod in the same, a spring-catch carried by said tube to hold said rod raised, a



pivoted finger projecting below the end of said tube and adapted to engage and release the catch, a spring to force said finger toward said catch when the rod is raised, a  
5 spring to force the finger in the opposite direction when the rod is lowered, and another sliding rod in said tube to raise the first-mentioned rod and operate said finger.

9. In a station-indicator, the guide-tube  
10 and indicator in the car, in combination with the trip beneath the car, and the vertical reciprocable rod from said trip to operate the indicator, said rod being located in said tube and formed in two sections separated by a  
15 spring, substantially as described.

10. The combination, with an indicating

device and an operating-rod therefor, of the trip consisting of the bent arm pivoted at one end, at the other swinging end connected to the indicator-operating rod by a link, and  
20 carrying a wheel at its elbow to engage the incline on the track and force up the free end of the arm.

In testimony that we claim the foregoing as our own we affix our signatures in presence of  
25 two witnesses.

JAMES AARON WRIGHT.  
JOHN BUNYAN WRIGHT.

Witnesses:

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F. McDONALD.