

(No Model.)

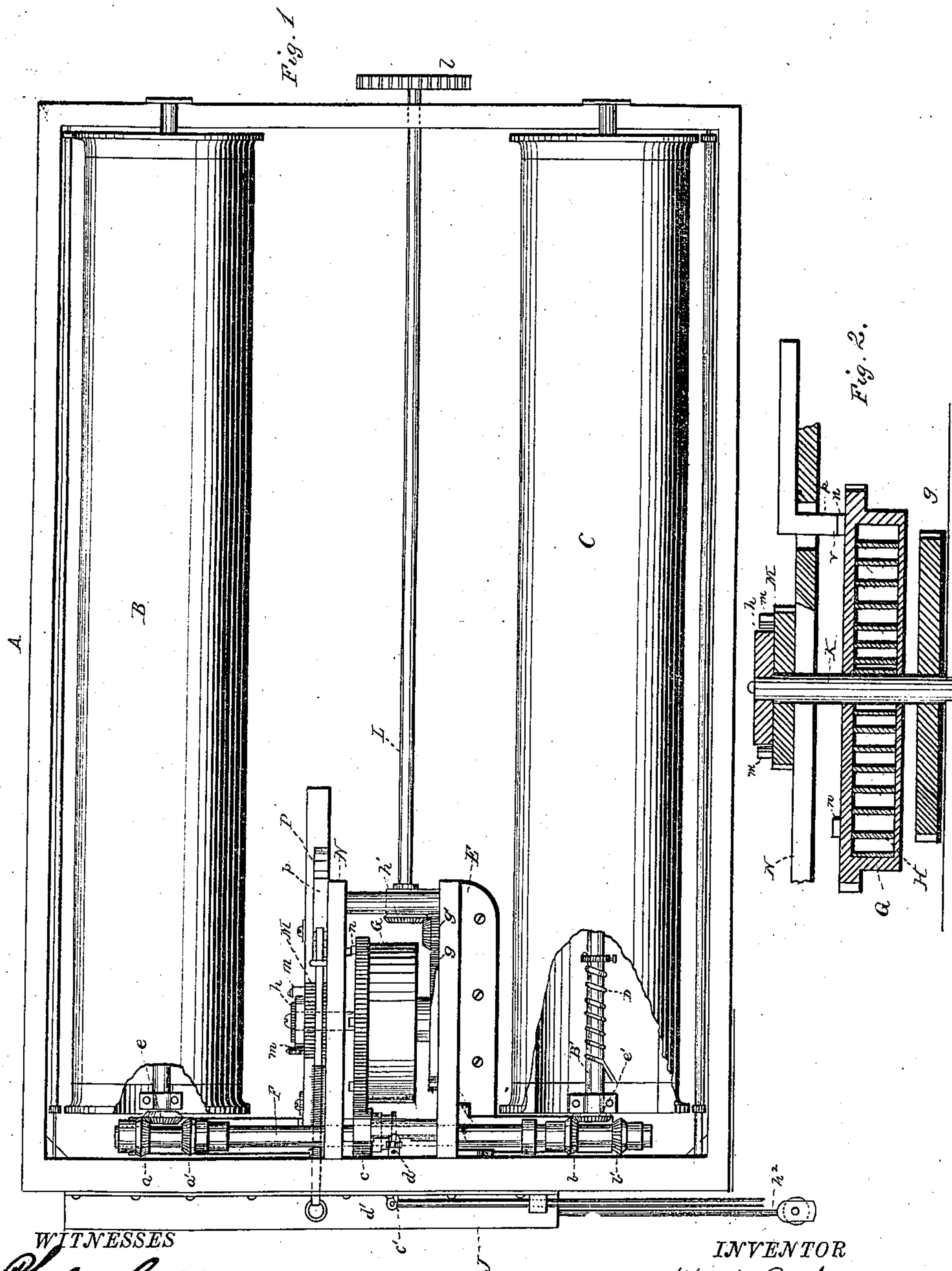
5 Sheets—Sheet 1.

M. ANTHONY.

STREET OR STATION INDICATOR.

No. 385,985.

Patented July 10, 1888.



WITNESSES  
*Philip C. Massi.*  
*Wm. B. Harrison*

INVENTOR  
*Mark Anthony,*  
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Attorney

(No Model.)

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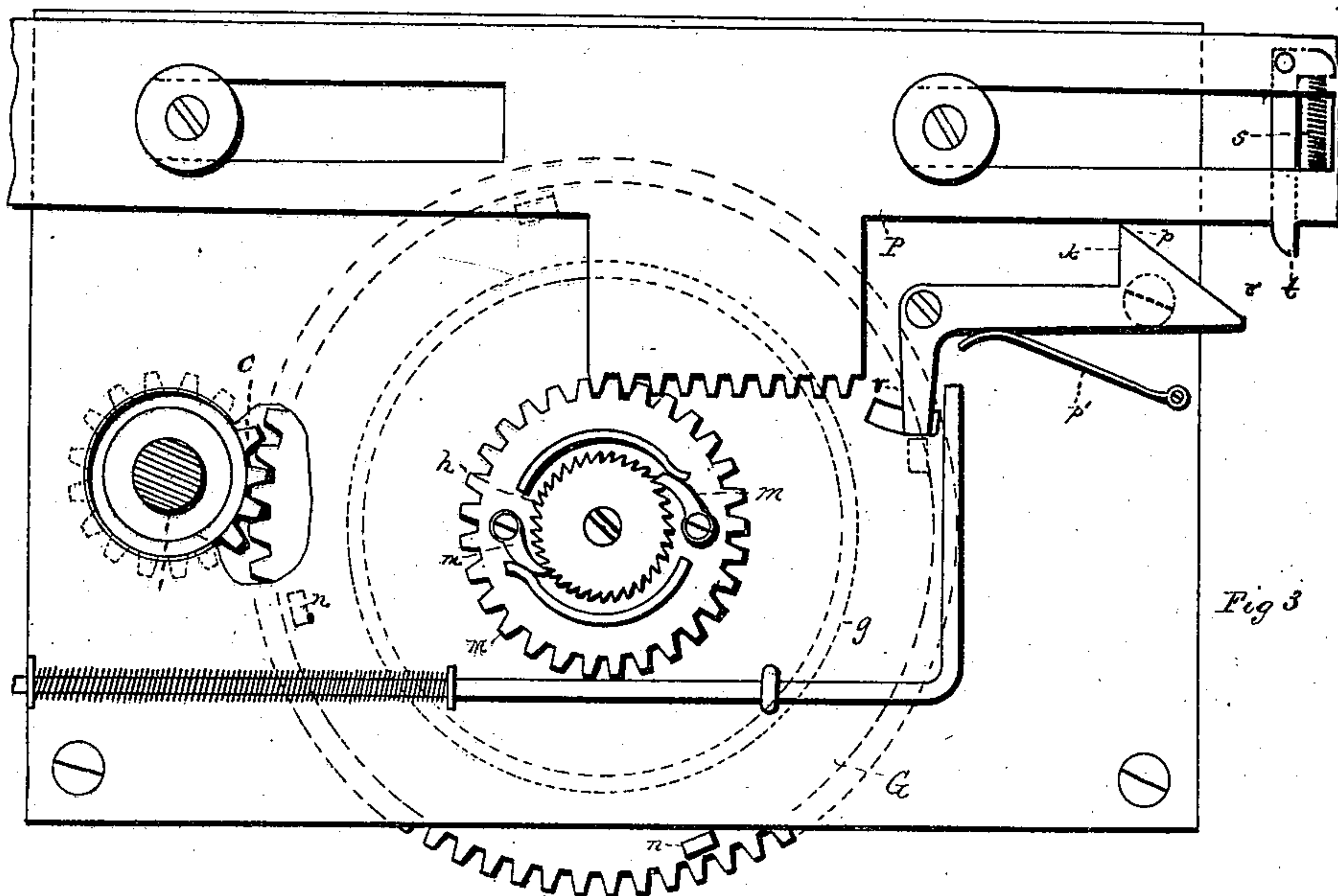
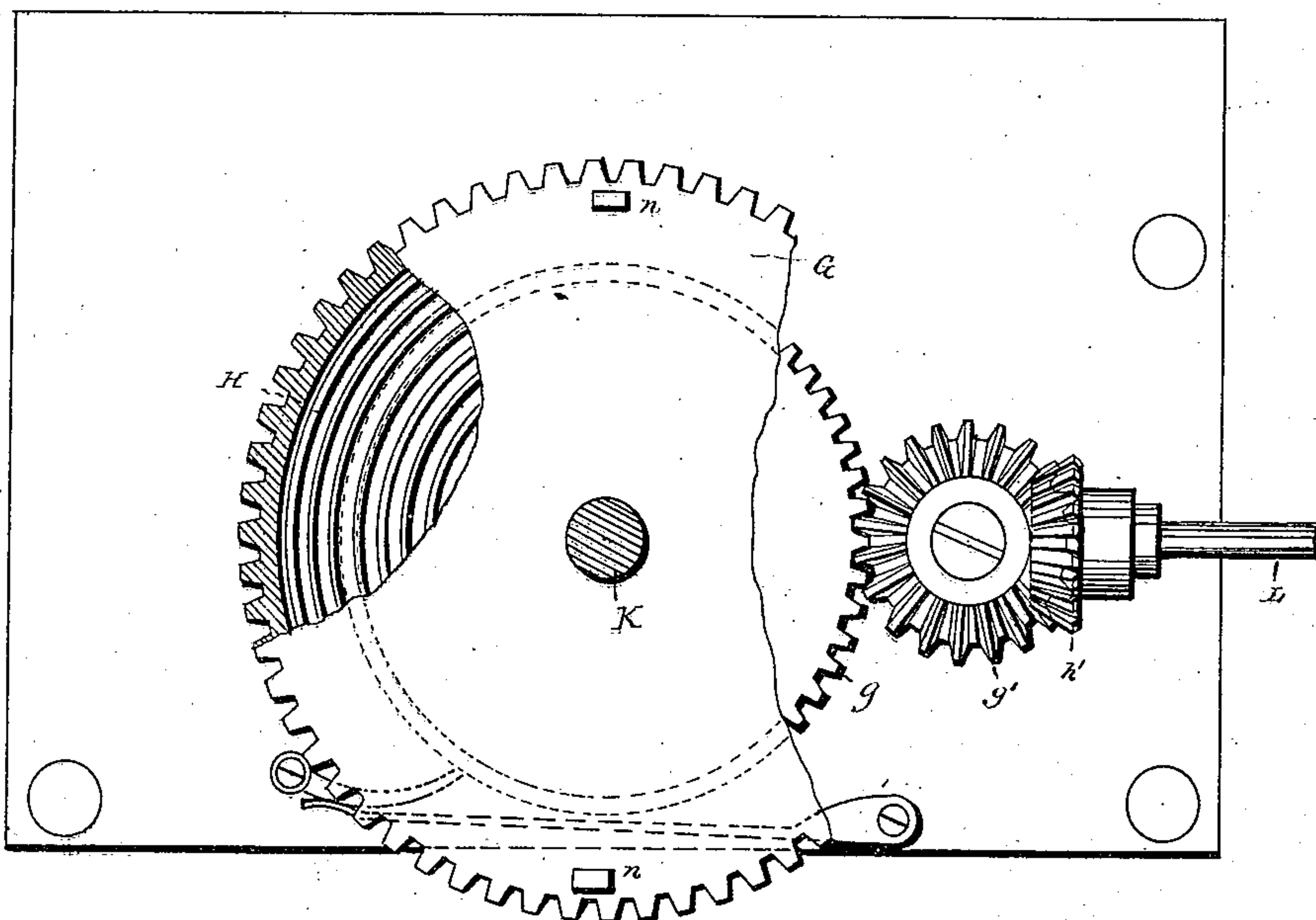


Fig. 3

Fig. 4.



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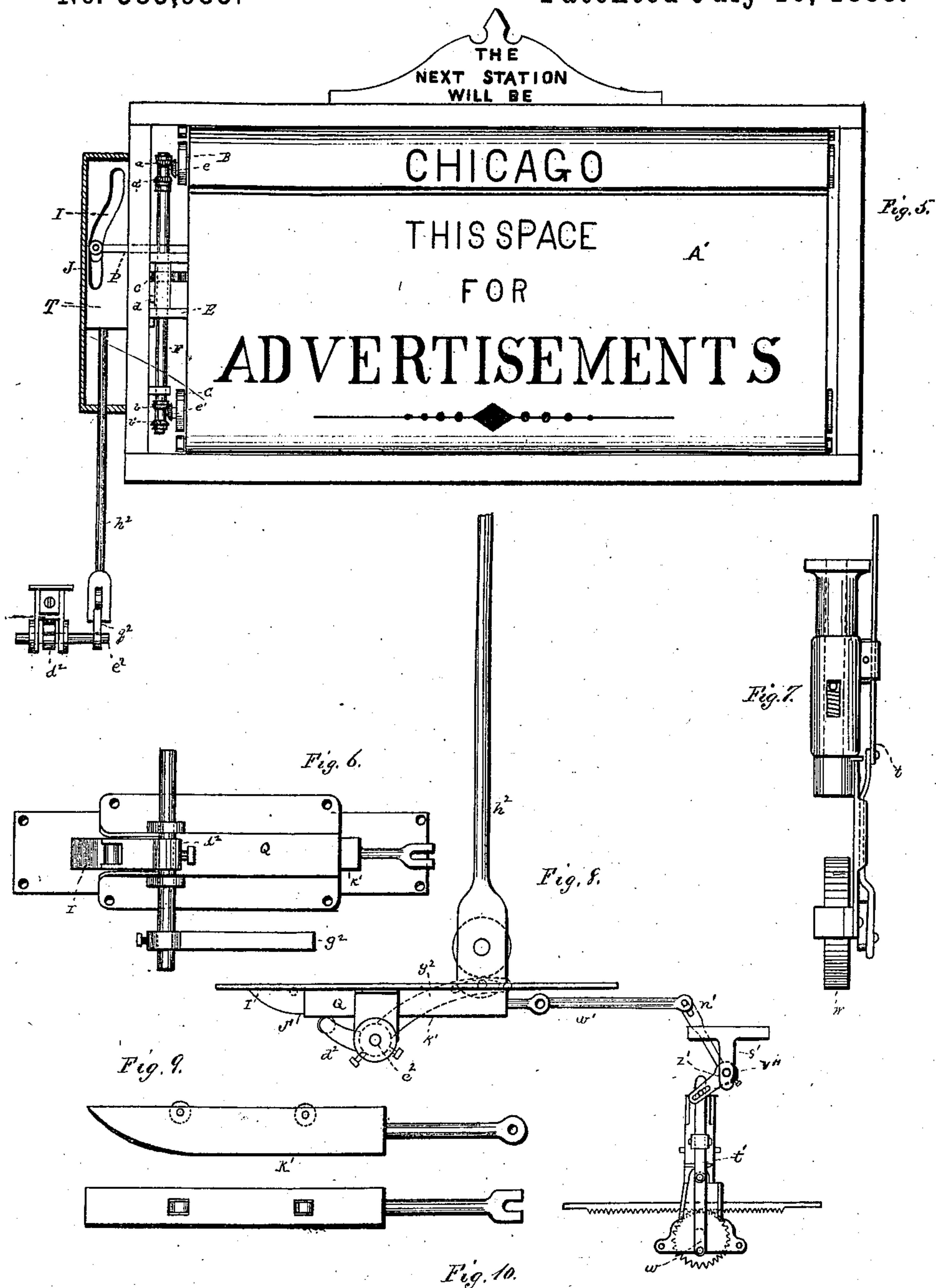
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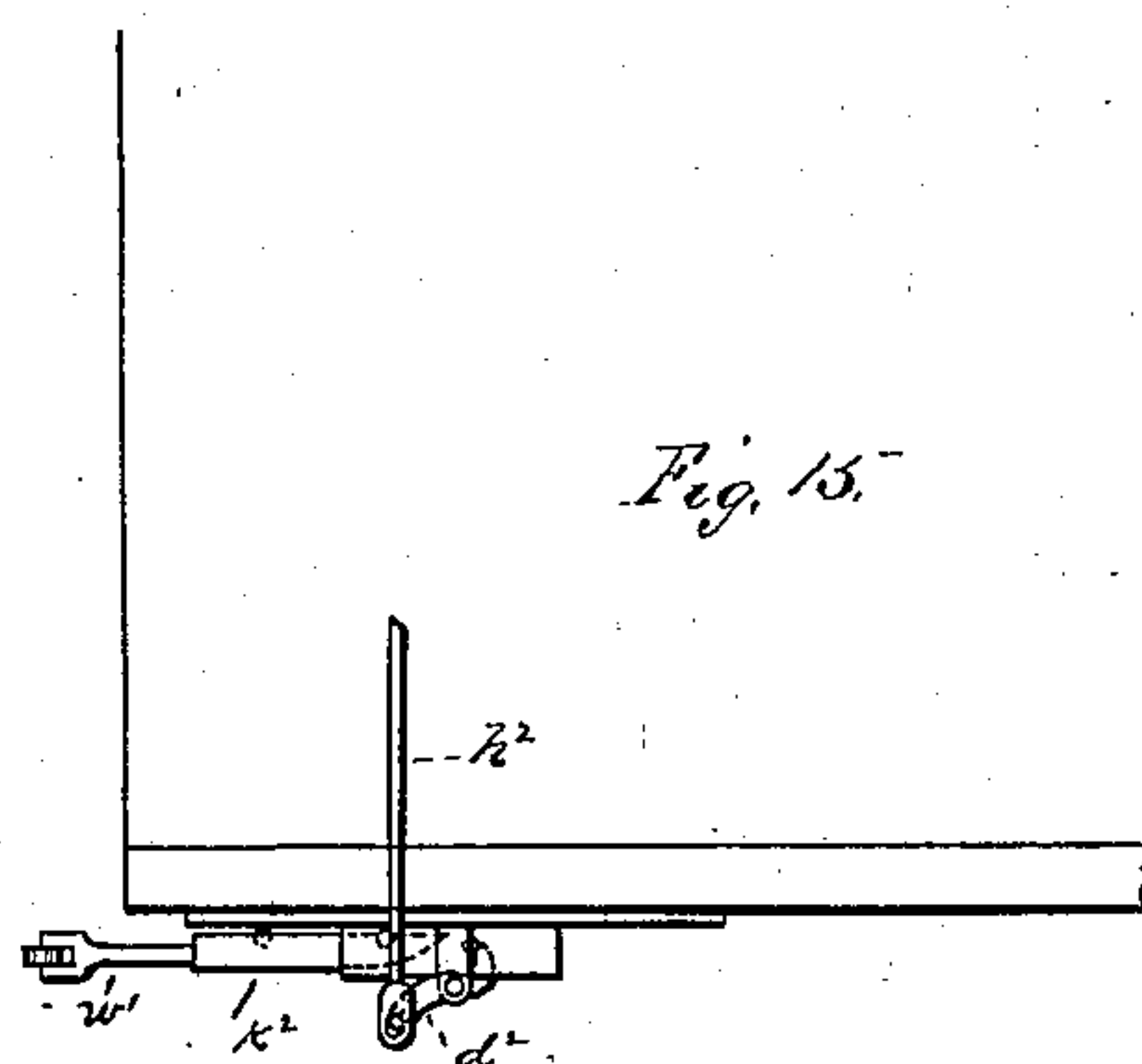
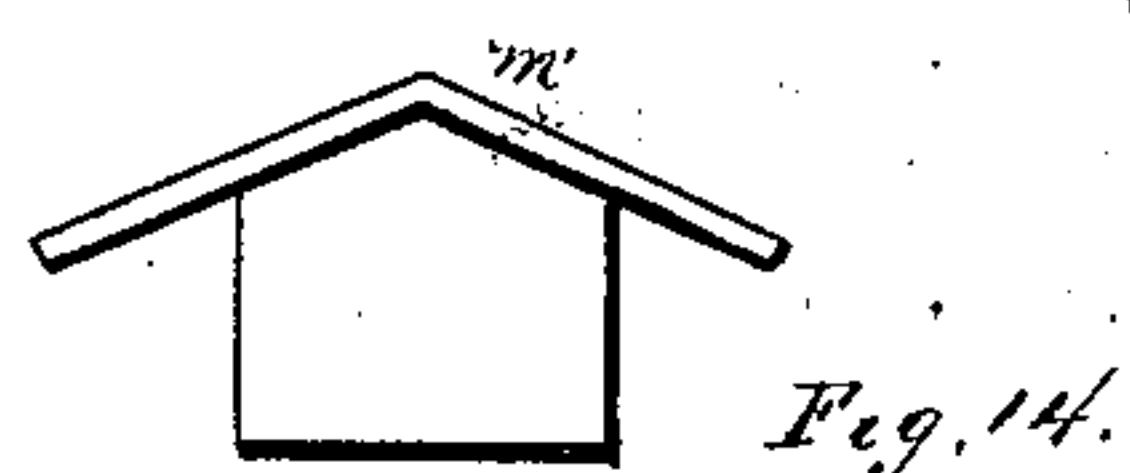
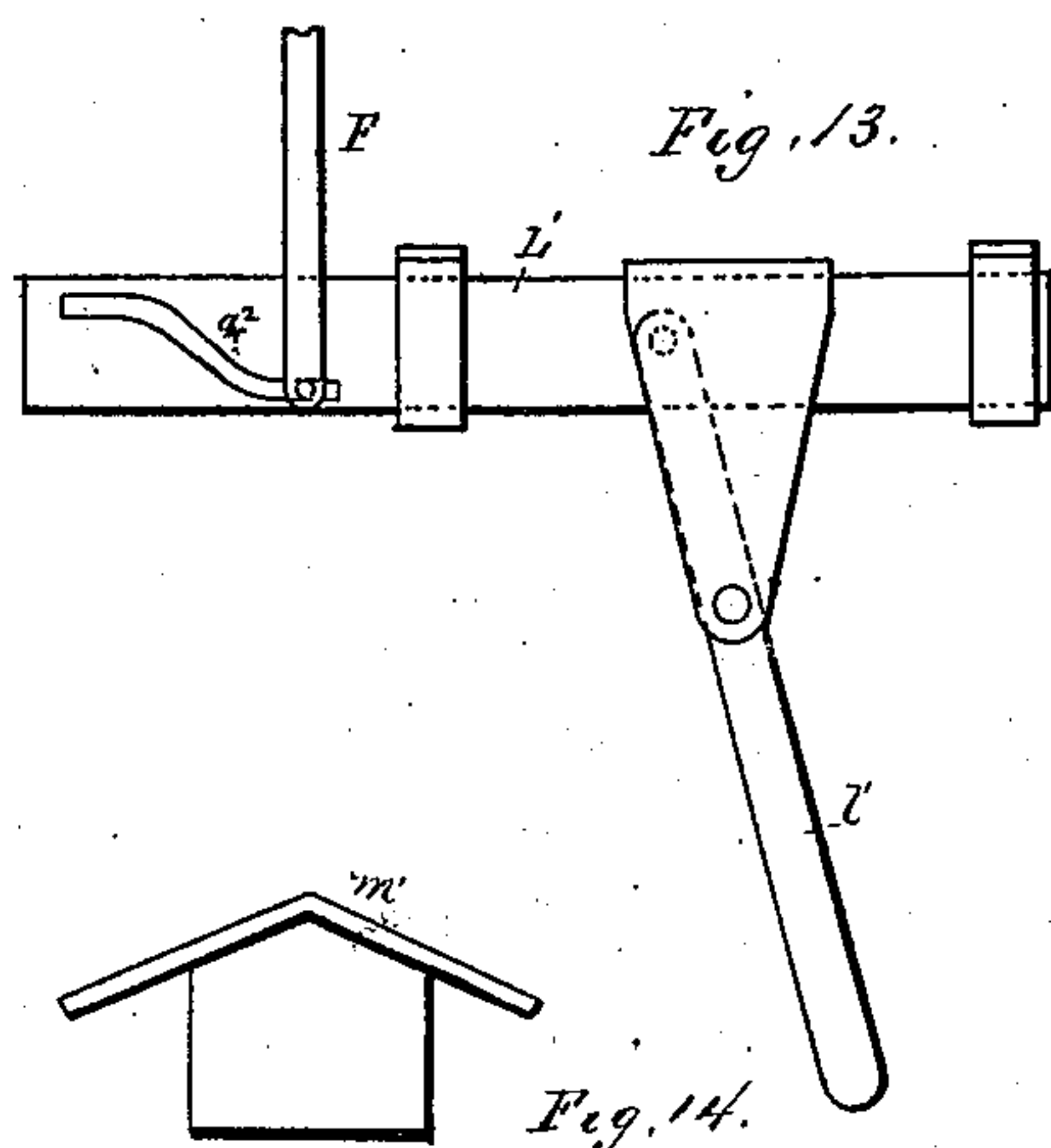
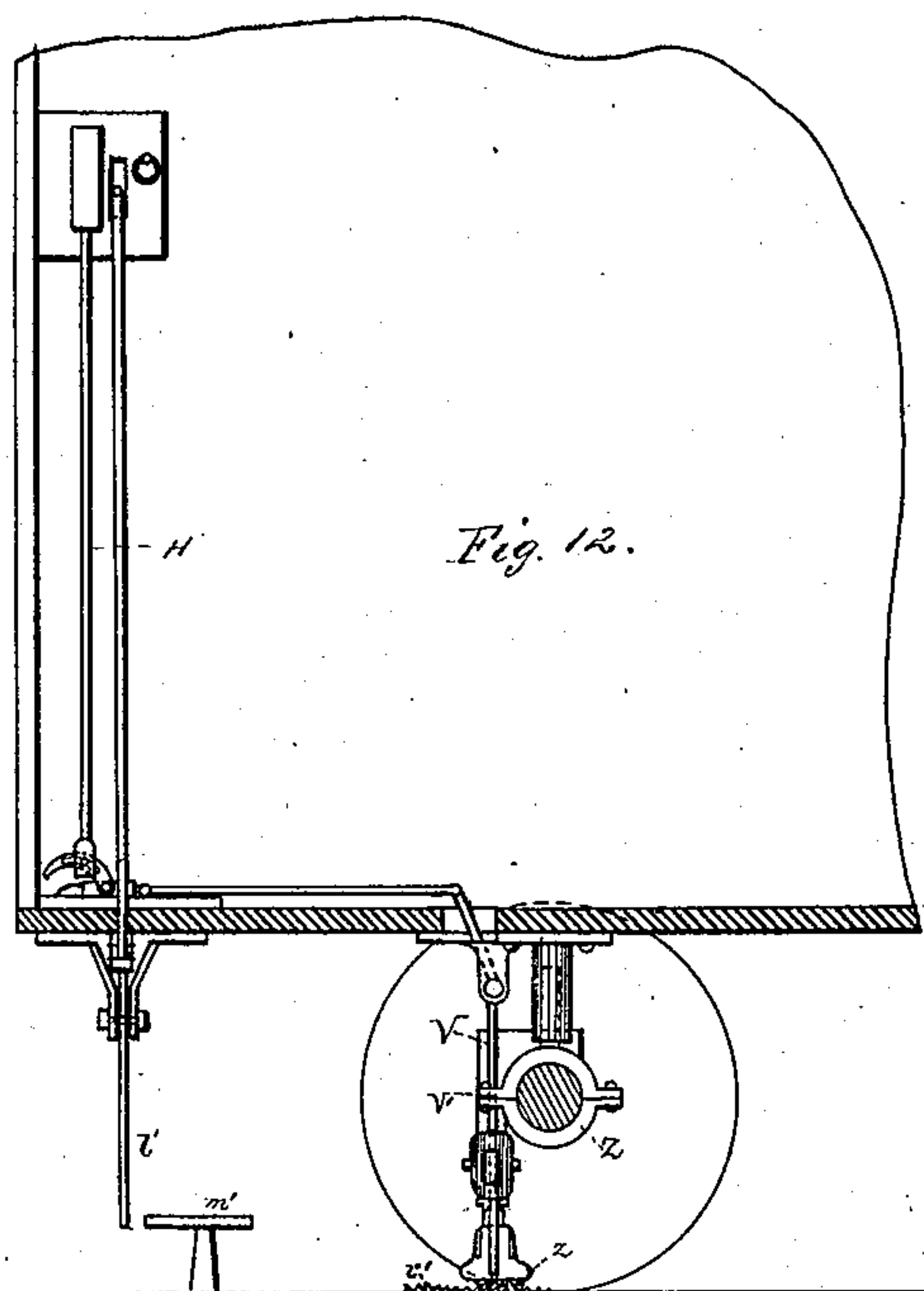
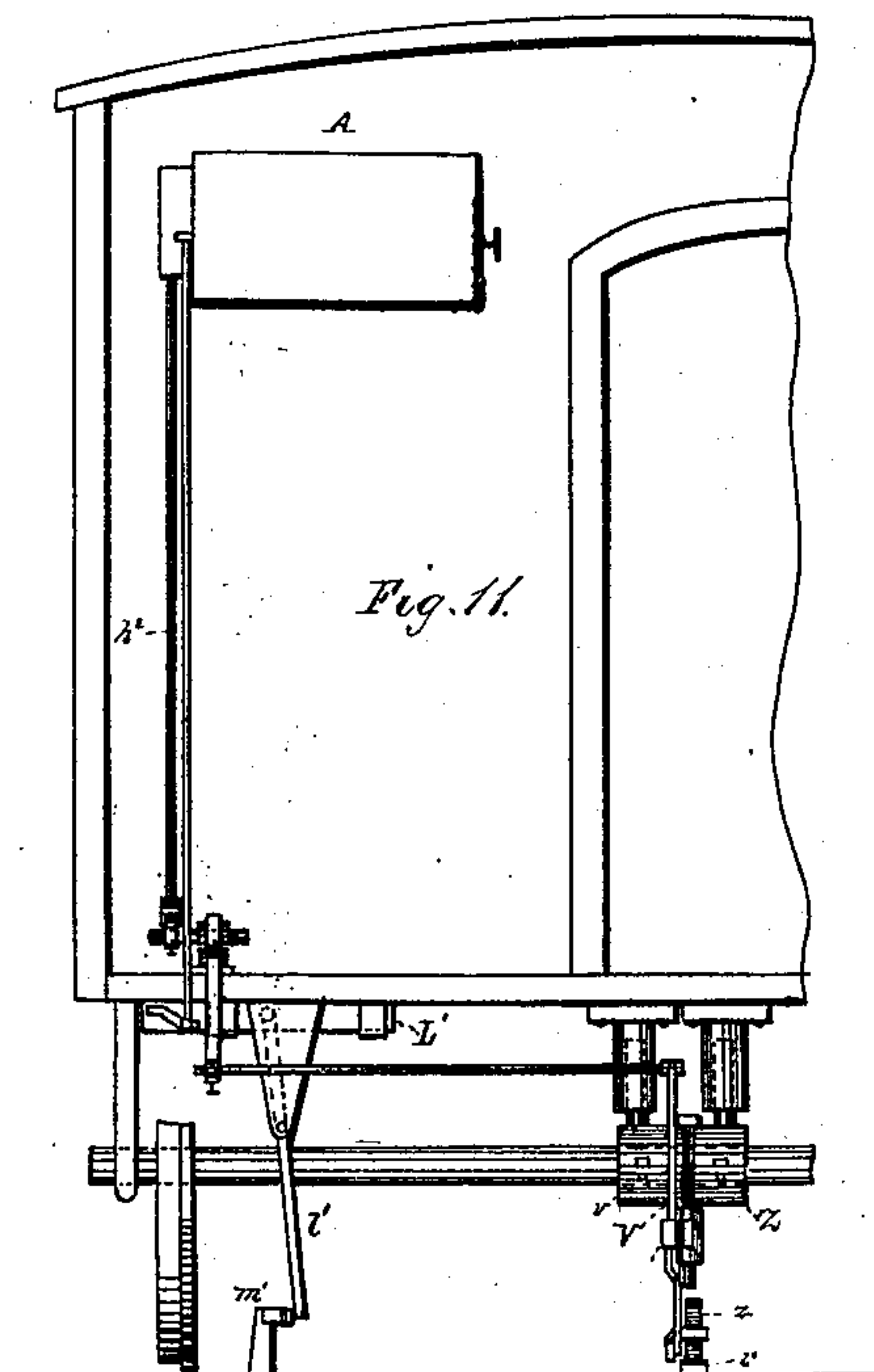
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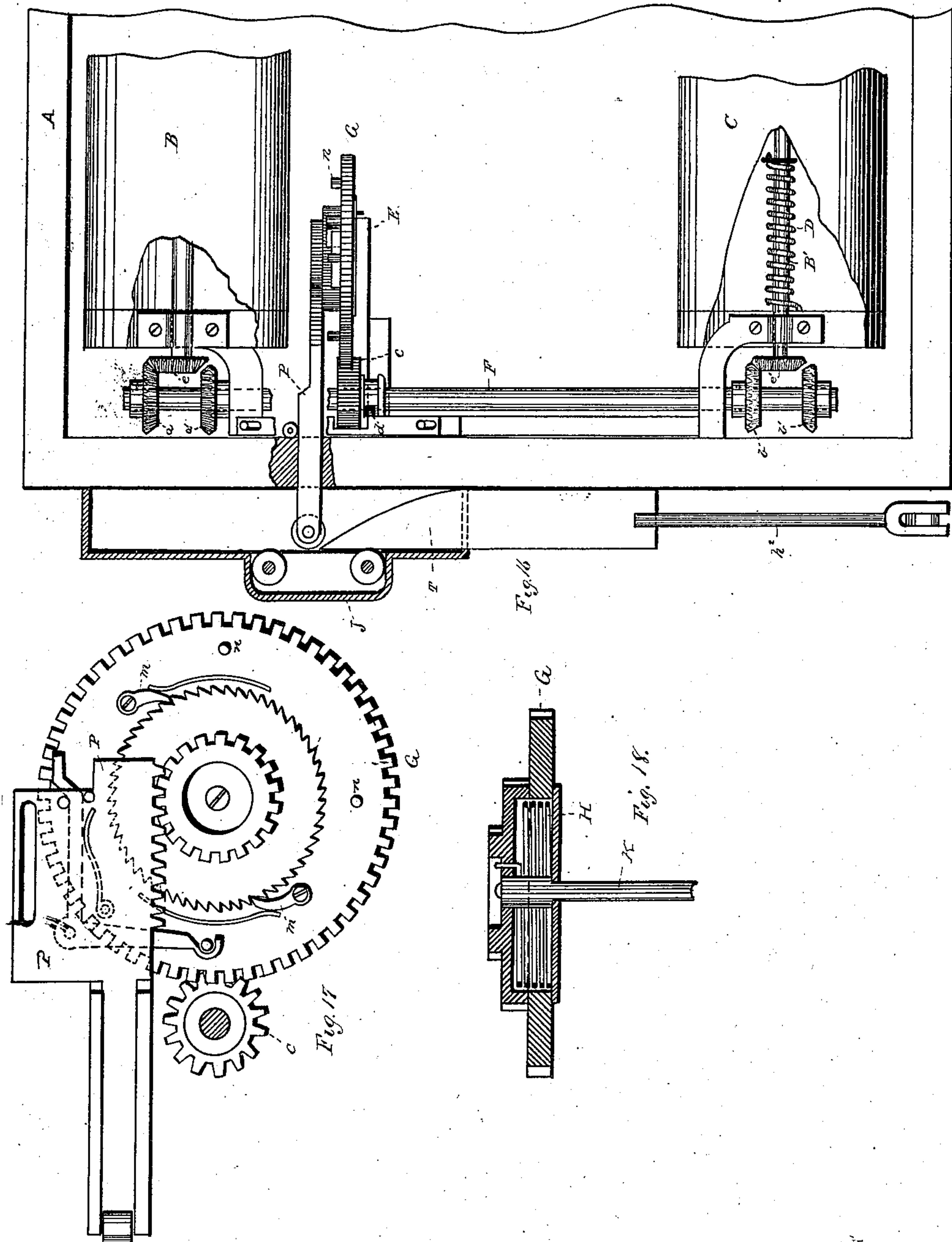
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INVENTOR,  
Mark Anthony.  
By E. W. Anderson,  
his Attorney.



# UNITED STATES PATENT OFFICE.

MARK ANTHONY, OF SAN FRANCISCO, CALIFORNIA.

## STREET OR STATION INDICATOR.

SPECIFICATION forming part of Letters Patent No. 385,985, dated July 10, 1888.

Application filed July 16, 1887. Serial No. 244,541. (No model.)

*To all whom it may concern:*

Be it known that I, MARK ANTHONY, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Advertising Street or Station Indicators; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a front elevation of my improved automatic station-indicator. Fig. 2 is a vertical longitudinal section of gear-barrel G and spring H. Fig. 3 is a detail top view of barrel G and bar P. Fig. 4 is a top view of barrel G broken away, showing spring H and gear *g*. Fig. 5 is a front elevation of my indicator with casing J broken away, showing thrust T. Figs. 6, 7, 8, 9, and 10 are detail parts. Fig. 11 is a broken end view of a car with my improved indicator attached. Fig. 12 is a side view. Fig. 13 is a detail front view of the reversing-lever and thrust. Fig. 14 is a detail top view of incline *m'*. Fig. 15 is a detail view of automatic attachment for steam-cars. Figs. 16, 17, and 18 are modified views.

This invention has relation to automatic station-indicators for railway-cars; and it consists in the construction and novel combinations of parts, as hereinafter set forth.

In the accompanying drawings, the letter A designates a box or case, in which the horizontal rolls or drums and the indicating ribbon carrying the names of the streets or stations are located, this box being preferably provided with a glazed front, A', to protect the ribbon and mechanism.

B designates the trip-drum, and C the free drum, which is connected to its shaft B' by a spring, D, whereby any slack of the ribbon is taken up. A bearing-frame, E, of metal, is secured in the end of the box.

F is a vertical-rod connection carrying at its end double pinions *a a'* and *b b'* and at its middle portion a pinion, *c*. This rod is pivoted in a collar connected to a shifting-lever,

*d*, whose stud *c'* projects through a slot, *d'*, in the case-wall. A shifting-lever is moved to raise or lower the rod F to bring its lower pinions, *a' b'*, or its upper pinions, *a b*, in engagement with the journal-pinions *e e'* of the drum shafts or journals. This shifting mechanism is designed to facilitate the reversal of the movement of the drums, so that the indicator-ribbon may be carried in either direction according to requirement.

G is a barrel-gear carrying an inside coiled spring, H, one end of which is connected thereto. The inner end of said spring is attached to the winding-stem K, which carries the large lower gear-wheel, *g*, and the upper ratchet, *h*, which are rigidly secured to said stem. The barrel-gear engages the middle pinion, *c*, of the shifting-rod F. The lower gear-wheel, *g*, engages an intermediate pinion, *g'*, which is engaged by the pinion *h'* of the winding-rod L, which extends through a bearing in the case-wall and is provided with a handle, *l*.

The upper ratchet, *h*, of the stem K engages spring-pawls *m m* of the gear M, which is loose on the stem under the pinion *h*, so that when the gear M is turned in one direction it will carry the pinion *h* and stem K, but when turned in the opposite direction it will rotate freely on said stem. The gear M is located above the bearing or frame plate N, as shown, and is in engagement with a toothed bar, P, which is designed to move back and forth in horizontal position when actuated by the devices hereinafter referred to. When moved in one direction, the slide or bar P will turn the gear M to rotate the stem K and wind the spring H in the barrel-gear; but when said slide or bar is moved in the opposite direction, although the gear M is turned, no effect will be produced on the winding-stem. In this manner it is designed to provide means for automatically winding the mainspring H.

On the upper surface of the spring-barrel G, at its marginal portion, are provided the stop-lugs *n*, which are designed to successively engage the angular stop-pawl *p*, which is pivoted to the frame-plate N. This stop-pawl is provided with a beveled end, *r*, having a catch shoulder or projection, *k*, and the toothed slide or bar P is provided with a lat-



erally-projecting pivoted arm  $t$ , having a retracting-spring,  $s$ , and held by said spring against a shoulder or bearing of the bar  $P$ . This arm  $t$  projects sufficiently to engage the beveled end of the pawl  $p$  when the latter is held in normal position by its spring  $p'$ . The other end of the pawl  $p$  is provided with a downwardly-extending lug or projection,  $v$ , which is adapted, when the pawl is in normal position, to engage a stop-lug,  $u$ , of the spring-barrel  $G$ . When the slide-bar is moved in one direction, its lateral arm  $t$  engages the end pawl,  $p$ , and turns the latter sufficiently to move its lug  $v$  out of engagement with the stop-lug of the spring-barrel  $G$ , allowing said spring-barrel to rotate under the action of the mainspring and turn the vertical rod  $F$ , which turns the drums and shifts the indicator-ribbon to show the name of the next station. After the arm has passed the catch  $k$  of the pawl the latter returns to its normal position, and its stop-lug is replaced in the path of the stop-lugs of the spring-barrel, so that the movement of said spring-barrel, and consequently the drums and the indicator-ribbon, is stopped when the next stop-lug comes into engagement with the pawl  $p$ .

If the car to which this attachment is applied has a perfectly steady motion, it would be sufficient to operate the toothed slide by means of an incline at the side of the track to move the slide in one direction and a spring in connection with said slide to retract it; but in practice cars are found to sway when in motion, and as this irregular or unsteady movement is less marked near the track, it is designed to provide the attachment with a vertically-moving reciprocating slide or thrust bar,  $T$ , which is located in the casing or way  $J$ . This thrust-bar is formed with a long bevel or inclined slot,  $I$ , which is curved so that its inclination becomes more and more parallel with the edge of the bar at its end, so that when its movement commences its action will generally overcome the inertia of the mechanism and injury thereto will be avoided. When the thrust-bar is moved upward by the track device or trip, it actuates the toothed rack-bar to force it in the operative direction, and when the trip ceases to act the thrust-bar descends under the action of gravity and reverses the movement of the toothed bar  $P$ . A spring may be employed in connection with the thrust-bar to hasten its descent; but this is rarely necessary.

To operate the vertical thrust-bar, I provide a pendent arm,  $V$ , extending downward through a bearing,  $v'$ , attached at any convenient part beneath the car, but preferably to a loose collar-connection,  $Z$ , on the axle, said collar-connection being free to allow the axle to turn therein, but provided with guards to prevent endwise movement. The arm  $V$  is provided with a roller,  $z$ , preferably toothed at its lower end to engage an incline or rack,  $z'$ , which is connected to the trackway, or in the cable-way when the attachment is applied

to a cable-road. The arm  $V$  is also provided with a jointed-link connection,  $l'$ , which is pivoted at its lower end to a crank,  $w$ , on the journal of the roller, and at its upper end to a crank-arm,  $z'$ , of a rock-shaft,  $v''$ , which is seated in a bearing,  $s'$ , fastened to the bottom of the car. This rock-shaft also carries a crank-arm,  $n'$ , which is set at an angle with the crank-arm  $z'$ , and when the roller is turned the crank-arms are moved to operate the rod-connection  $w'$ , which extends along the bottom of the car to connect with the horizontal thrust  $J'$ , which is seated in the bearing  $Q$ , and is formed with a beveled end or guide portion,  $I'$ , which, when said thrust is moved forward, engages an arm,  $d'$ , of a rock-shaft,  $e'$ , which also carries an arm,  $g'$ , to which is connected the lower end of the rod extension  $h'$  of the vertically-reciprocating thrust-bar  $T$ . It will be observed that the thrust-bars  $T$  and  $J'$  may be so made that if their movements are extended beyond a point sufficient to exactly operate the mechanism connected it will not affect the proper operation of said mechanism. This is effected by extending the thrust to provide a straight bearing,  $k'$ , at the end of the bevel in the direction of motion. In this manner perfect action of the thrust-bar is secured, notwithstanding any irregular movements below.

When the devices are to be used in connection with steam railway-cars, it will often suffice to extend the thrust-connection  $w'$  beyond the side of the car, as indicated in Fig. 15 of the drawings, this thrust-connection being provided with an end roller to engage a rack or incline at the side of the trackway. So, also, I provide an automatic shifting device to shift the vertical gear-carrying rod  $F$  at the end of the route. This may consist of a lever-arm,  $l'$ , depending from the car, its lower end being in position to engage an incline,  $m'$ , on the trackway, its upper end being pivoted to a horizontal thrust-bar,  $I'$ , which is formed with an inclined slot,  $a'$ , engaging a stud-connection of the vertical rod  $F$  at the lower end of the latter. When the car reaches the end of the route, the arm  $l'$  strikes the incline and is shifted to move the thrust-bar and raise or lower the vertical gear-rod, as the case may be; and it is to be observed that the bevel-pinions of the gear-rod  $F$  are located sufficiently close to the journal-pinions of the rolls to prevent entire disengagement at any time, for in order to prevent the rolls from turning loosely in shifting, the journal-pinions must be engaged by the lower pinions of said rod before the upper pinions are disengaged, and so, also, of the reverse adjustment. In this manner the movement of the rolls, and consequently of the indicator-ribbon, is always under control.

A modification is illustrated in Figs. 16, 17, and 18 of the drawings, in which the gearing is somewhat simplified, the principle, however, remaining the same.

In addition to the names of the streets-or



stations, advertising matter may appear upon the indicator-ribbon.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a station-indicator, the combination, with the geared horizontal rolls and the indicator-ribbon, of the connecting and shifting rod F, having the intermediate gear, *c*, the intermittently-moving barrel-gear engaging the gear *c*, and automatic devices governing its movements, substantially as specified.

2. In a station-indicator, the combination, with the upper geared roll and the lower spring-connected roll, its geared shaft, and the indicator-ribbon, of the vertical geared connecting-rod F, engaging the gears *e e'* and the barrel-gear, the intermittently-moving barrel-gear engaging the gear *c*, and automatic devices governing the movements thereof, substantially as specified.

3. In a station-indicator, the combination, with the geared horizontal rolls, the take-up spring, and the indicator-ribbon carried thereby, of the geared connecting-rod F, the barrel-gear in engagement therewith, and the winding-stem, an operating-spring in connection with said gear and winding-stem, the gearing and ratchet of the winding-stem, the stops of the barrel-gear, the reciprocating toothed bar P, engaging the pinion M of the barrel-gear, and the adjusted stop-pawl, substantially as specified.

4. In a station-indicator, the combination, with the horizontal geared rolls and the indicator-ribbon connected thereto, the geared connecting-rod, and stop-governed intermittent winding and let-off mechanism, of a vertically-reciprocating thrust-bar, T, in the casing J, provided with the inclined slot I for actuating the toothed rack-bar, the horizontally-reciprocating thrust-bar J', seated in the bearing Q, and having the beveled end to engage in arm *d*<sup>2</sup> of the rock-shaft *e'*, and connecting devices, substantially as specified.

5. In a station-indicator, the combination, with the ribbon-carrying rolls, the indicator-ribbon, and the gear-connections, of the winding mechanism, consisting of the bar P, operating upon the gear M, the stem K, and the spring H in the barrel-gear, and the automatic stopping mechanism, consisting of the stop-pawl *p*, pivoted to the frame-plate, and having the projection *v*, to bear upon the stop-lugs *n* in the barrel G, substantially as specified.

6. In a station-indicator, the combination, with the ribbon-carrying rolls, the indicator-ribbon, and the gear-connections, of the main-spring and winding-gear, the reciprocating toothed bar engaging the gear M, thrust-bars T and J', the trip-arm V, extending through the bearing *v'*, and having the roller *z* at its lower end to engage a rack on the trackway, and the link-connection *t*, pivoted at its lower end to a crank on the roller-journal and its upper end to the crank-arm *z'*, and the crank and other connections, substantially as specified.

7. In a station-indicator, the combination, with the ribbon-carrying rolls, the indicator-ribbon, and gear-connections, the mainspring, and winding-gear, of a reciprocating thrust-bar having a beveled operating-surface and extended to provide a straight bearing surface, K', in the direction of motion, substantially as specified.

8. In a station-indicator, the combination, with the drum B, the free drum C, and the vertical geared rod F, of the shaft B, within the drum C and connected thereto by the spring D, designed to take up the ribbon slack, substantially as specified.

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

MARK ANTHONY.

Witnesses:

THEO. MUNGEN,  
PHIL C. MASI.