

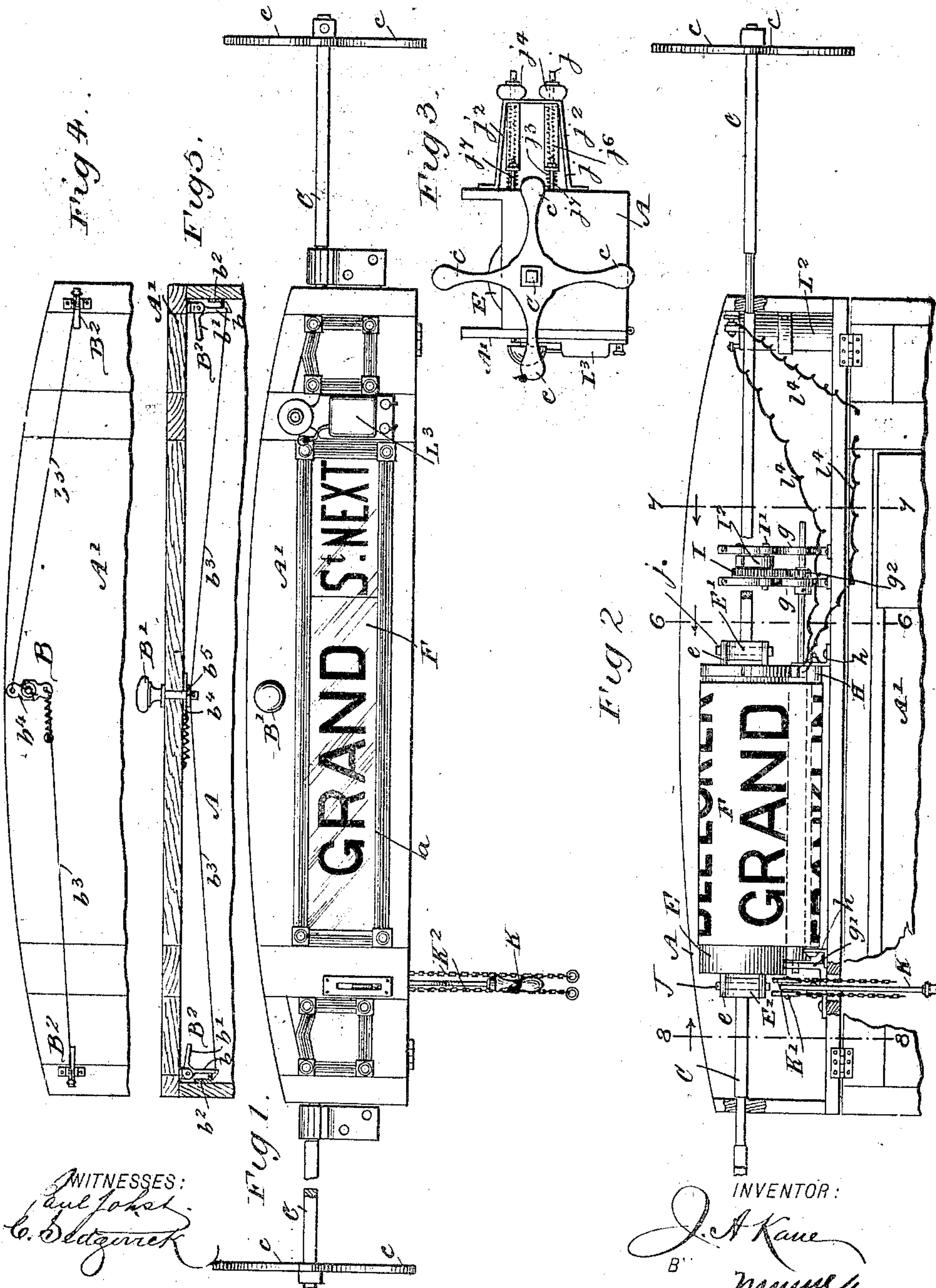
(No Model.)

2 Sheets—Sheet 1.

J. A. KANE.
STATION INDICATOR.

No. 462,138.

Patented Oct. 27, 1891.



WITNESSES:
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(No Model.)

2 Sheets—Sheet 2.

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Fig 9.

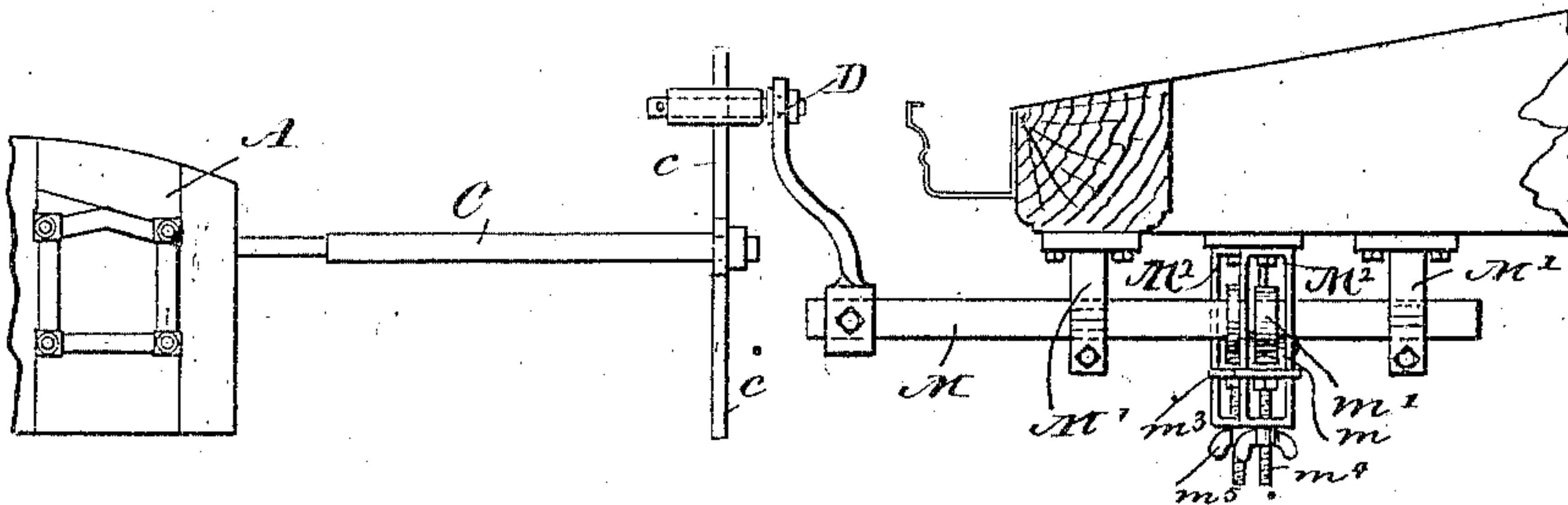
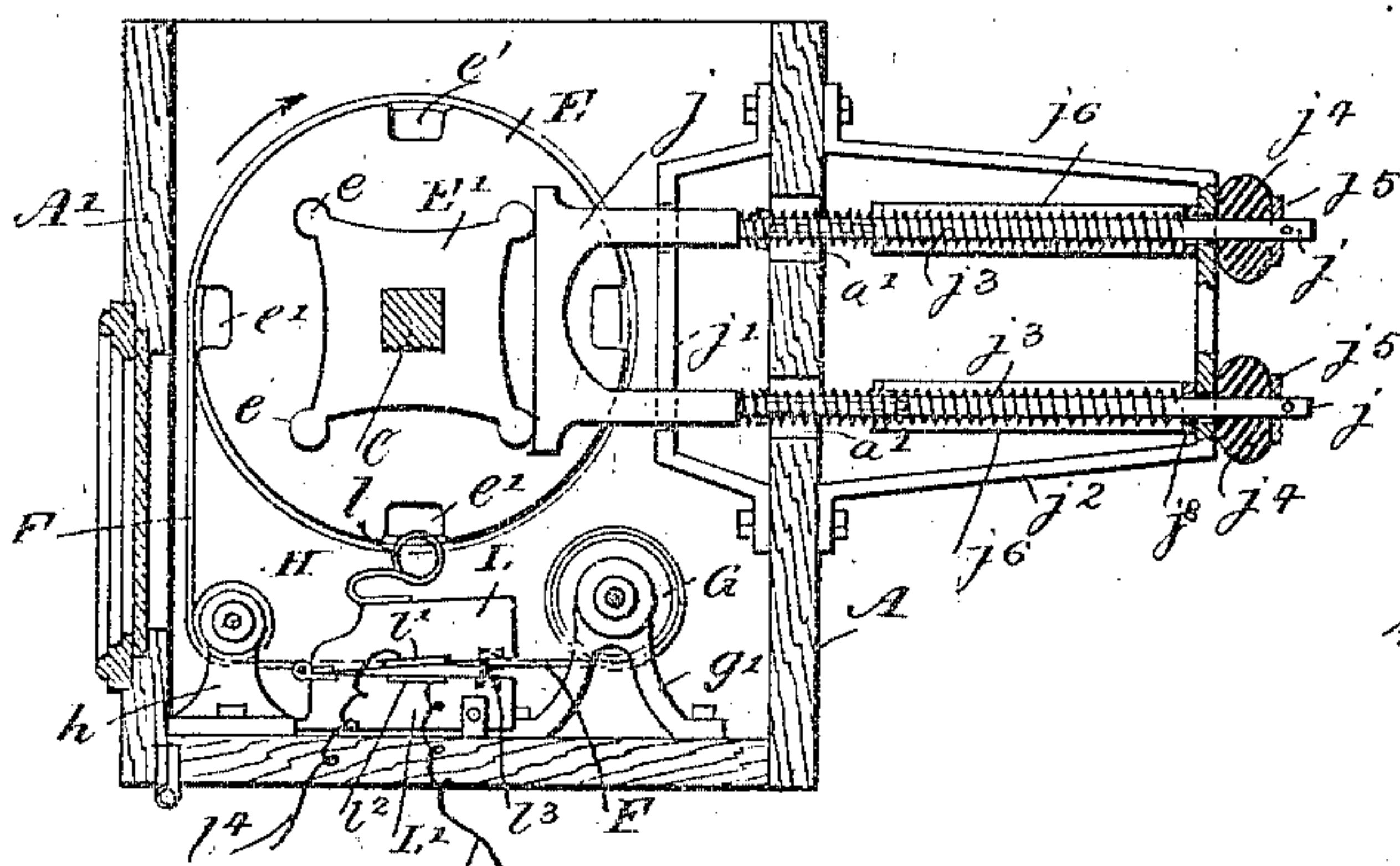


Fig. 10.

Fig 6.



24 Fig 4

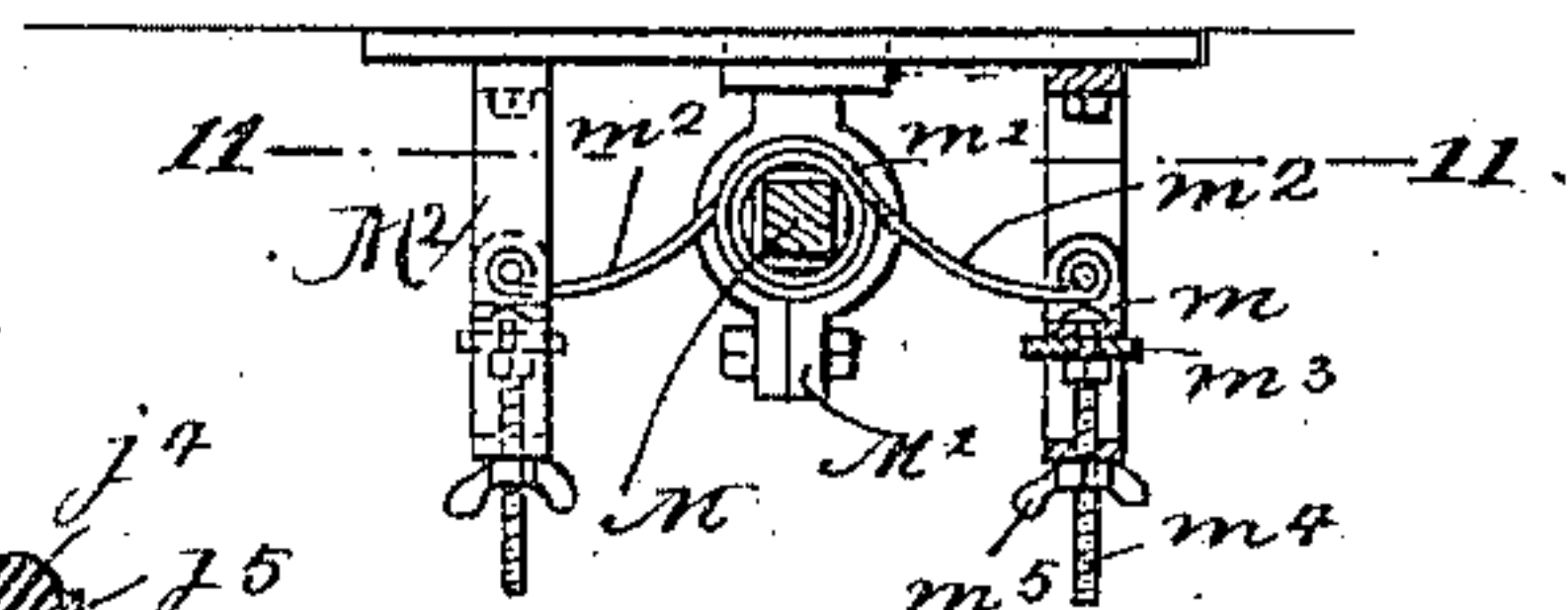


Fig 11.

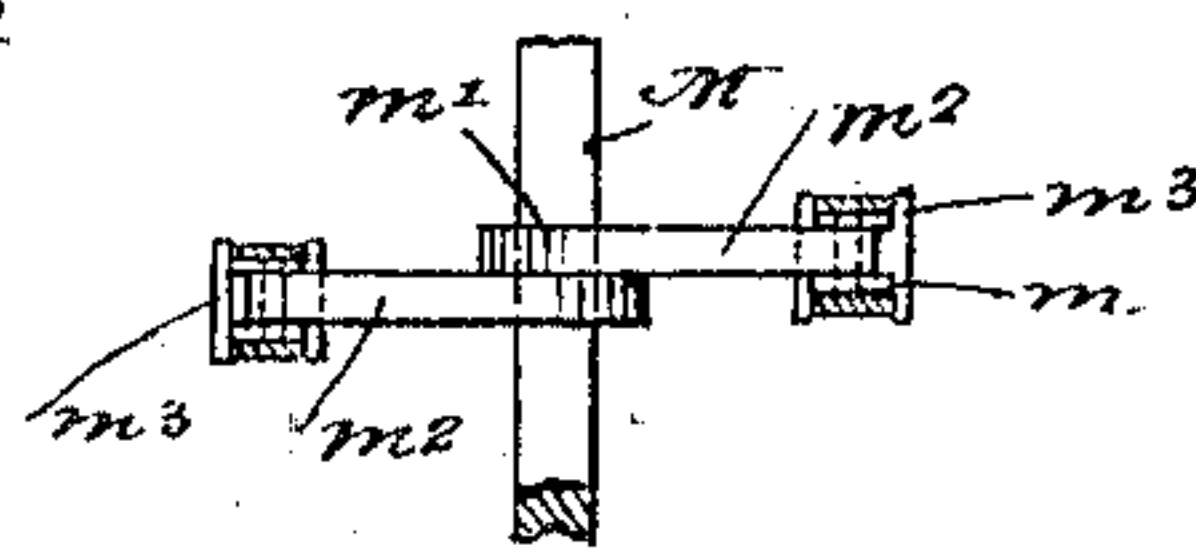
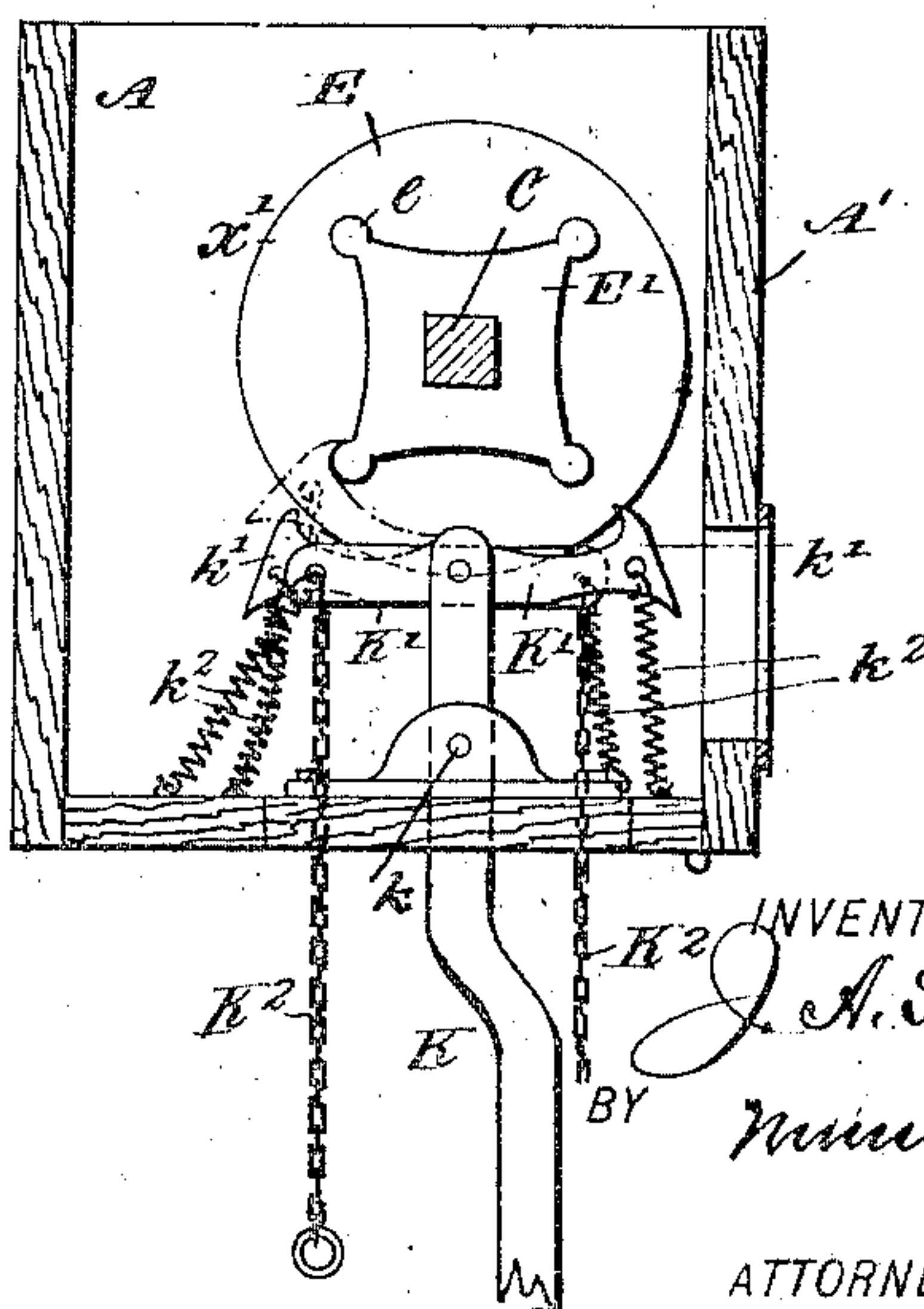
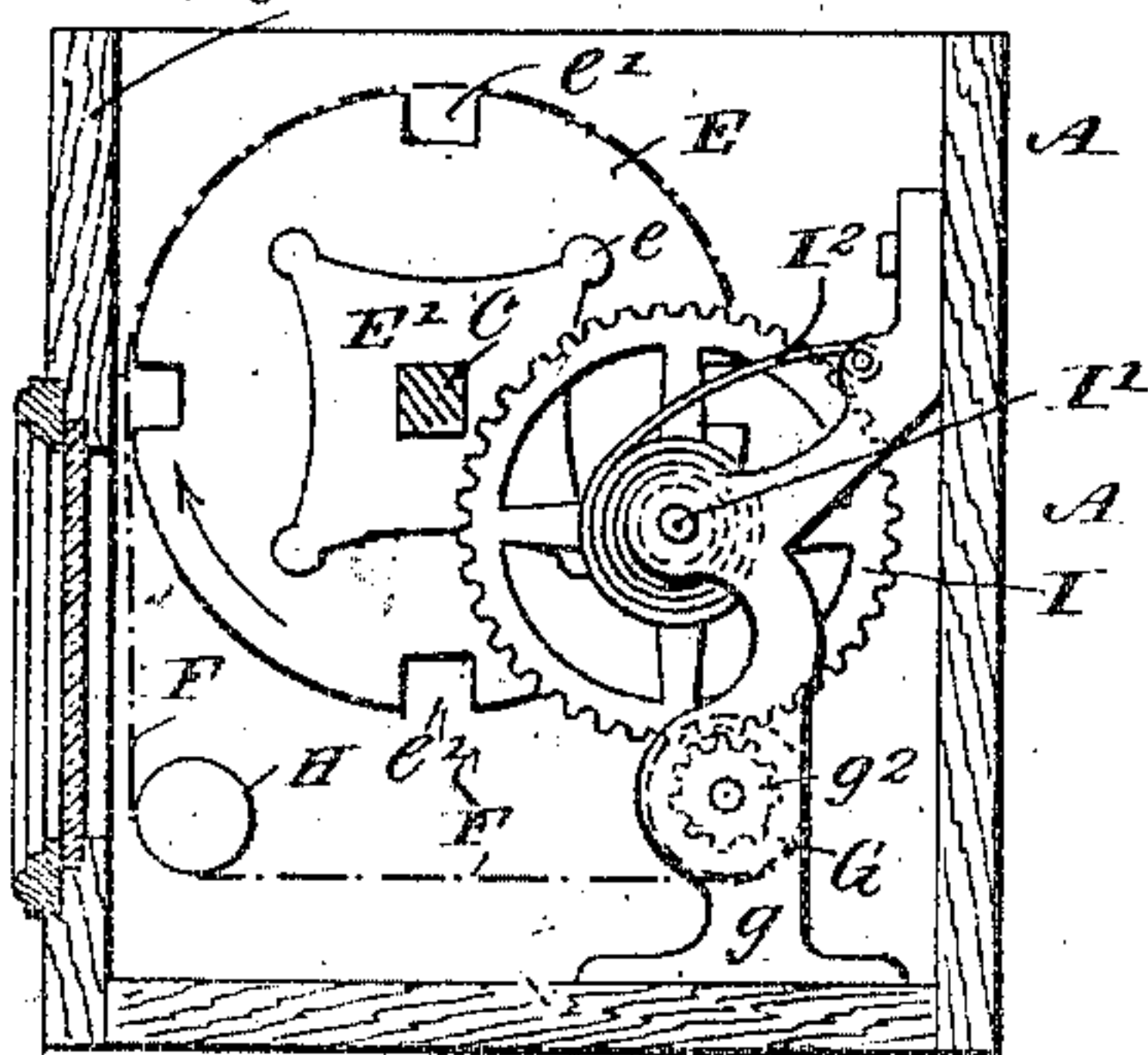


Fig 8.



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UNITED STATES PATENT OFFICE.

JOHN A. KANE, OF PATERSON, NEW JERSEY.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 462,138, dated October 27, 1891.

Application filed February 14, 1891. Serial No. 381,407. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. KANE, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and Improved Station-Indicator, of which the following is a full, clear, and exact description.

The invention relates to indicators for use on railway-cars for indicating the successive stations along the road, the object being to provide an efficient and durable indicator of this character.

The invention consists in the construction and arrangement of parts, all as hereinafter specifically described, and defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of a station-indicator constructed in accordance with my invention. Fig. 2 is a similar view with the front or door of the casing opened and partly broken away. Fig. 3 is an end view. Fig. 4 is a broken view of the inside of the hinged door or front of the casing, showing the latch devices therefor. Fig. 5 is a broken plan view thereof. Fig. 6 is a transverse sectional elevation on line 6 6, Fig. 2. Fig. 7 is a like view on the line 7 7, Fig. 2, parts being omitted. Fig. 8 is a like view on line 8 8, Fig. 2, parts being omitted. Fig. 9 is an end elevation of the main operating mechanism or station-tripping devices for automatically operating the indicator. Fig. 10 is a partly sectional side view of the trip-arm support, and Fig. 11 is a sectional plan view on line 11 11 of Fig. 9.

The casing A of the indicator is suitably fitted or formed in a railway-car transversely of the latter, and is formed with a hinged front or door A', having on its inner side latch devices B, which are operated from the knob or handle B', as hereinafter explained.

In the case A the main shaft C of the indicator is suitably journaled, the shaft being extended at each end beyond the case A and provided with arms c, which extend radially therefrom and are adapted to be tripped by the arm D, Fig. 9, of the station-tripping devices, with which each station along the road is provided, and by means of which a partial

rotation is given to the shaft C. On the shaft C the main roller or drum E is fitted to rotate with said shaft, to which drum E is secured one end of the web F, of fabric or any suitable material, bearing the names of the several stations, the rotation of the drum in response to the movements of its shaft C serving to successively display the names of the several stations at the opening a in the front A' of the case A. Parallel with the drum E and beneath the same a winding-roller G and a guide-roller H are journaled, respectively, in brackets or standards g g' and h h, the web F being secured to the winding-roller G, and passing forward over the guide-roller H to the drum E. The winding-roller G carries a pinion g², which meshes with a gear-wheel I, the shaft I' of which is journaled in the brackets g g', and to the shaft I' one end of a coiled spring I² is secured, its other end being secured to one of said brackets g or to other suitable fixed supports. Thus as the drum E is rotated in the direction of the arrow shown in Figs. 6 and 7 the spring I² will be wound, and when the drum is rotated in the inverse direction of the arrow the spring tends to take up the slack, winding the web F on the roller G. At the ends of the drum E the same is provided with squared hubs E', formed, preferably, with rounded projections or beads e at the angles, and against one face of each of said hubs a spring-acted controlling-head J bears. The heads J are each formed with two arms j, which are mounted in the brackets j' j², secured to and projecting from the opposite faces of the back of the case A, said arms passing through apertures in said brackets and through apertures a' in the case. Around the arms j spiral springs j³ are wound and normally act to press the heads J against the hubs E' of the drum, and on the outer ends of the arms j buffer-blocks j⁴ are adjustably secured, as by washers j⁵, held by pins, which enter suitable apertures in the said arms. Within the brackets j² yokes j⁶, formed similarly to said brackets, are arranged, the cross-bars j⁸ of said yokes being operated for the passage therethrough of the arm j. The springs j³ thus abut at their outer ends against the cross-bars j⁸. The yokes j⁶ are supported adjustably at their inner ends from the case A by bolts j⁷, and by adjusting said bolts the

said yokes may be moved to give more or less tension to the springs j^3 . The controlling-heads J so arranged serve to arrest the rotary movement of the drum E, limiting its movement to a quarter-revolution.

The arm D of the automatic tripping mechanism at each station is secured to a square shaft M, which is rounded where it rests in its supporting-brackets M', and is yieldingly maintained in position to permit it to rock slightly by means of a spring, which is coiled into a loop m' , and its ends m^2 are extended in opposite directions and are secured to slices m , which are held on plates m^3 , secured to the vertical screw-rods m^4 , which pass through apertures in the bottoms of the hangers M², wing-nuts m^5 or other suitable nuts serving to hold the rods in the adjusted position. By moving the ends of the spring up or down the desired tension is obtained.

In addition to the main or station tripping devices, an auxiliary hand-operated actuating device is provided for moving the drum E and the web F in either direction. The auxiliary device is best shown in Fig. 8, and comprises a vertically-disposed lever K, which is fulcrumed at k on the case A, and hooks K', pivoted at about their centers in the forked upper end of said lever, the hooks being oppositely arranged. The hooked ends k' of the hooks K' are connected with springs k^2 , having a tendency to normally maintain said hooks out of engagement with the rounded projections e of the square hub E', and to the opposite ends of said hooks chains or cords K² are secured and hang freely below the case A in proximity to the lever K. Thus by pulling on either of the chains K² the hooked end of the corresponding hook K' is thrown upward into engagement with the adjacent projection e , as shown in dotted lines in Fig. 8, whereby as the lever K is thrown on its fulcrum the hook K will give a partial rotation to the drum E. If the opposite hook be thrown up and the lever K thrown in the opposite direction, a corresponding movement will be given the drum E. The auxiliary devices thus serve to adjust or actuate the drum and web as desired when it is not required to display the stations in the regular succession.

The names of the stations, such as "Grand," are produced on the web F, and the characters and letters "St. Next" are permanently produced on the case, so that when a name on the web is presented at the opening the announcement will be read in connection with the permanent characters, thus: "Grand St. Next."

In connection with the indicator an alarm mechanism is employed to attract the attention of the passengers to the station announced, the alarm being as follows: In the periphery of the drum E, at one end, recesses e' are formed and so located that when the drum is at a standstill one of such recesses will be opposite an arm l , Fig. 6, carried by

hinged block L, which carries on its lower face a contact-plate l' , which is arranged in connection with a second contact-plate l^2 , such second contact-plate being held to the opposed block L', both blocks L L' being normally held apart by a spring l^3 . From the contact-plates $l' l^2$ the line-wires l^4 lead to a battery L² and electric bell L³, the bell in the present instance being carried by the hinged front A' of the casing. The arrangement of the signal is such that as the drum E is rotated the spring-arm l is forced from the recess e and acts to throw the hinged block L downward and complete the electric circuit by causing the plates $l' l^2$ to contact, the circuit being maintained closed until the next succeeding opening is brought opposite the spring-arm l , permitting the blocks L L' to separate and break the circuit.

The latch devices B for the door A', which are best shown in Figs. 4 and 5, are as follows: At each end of the said door, on the inside, latches B² in the form of bell-cranks are pivoted and engage by one arm b with catches b^2 on the case A, the other arm b' of each catch serving as a stop to limit the movement of said latches. To the arms b are connected wires b^3 , which extend to opposite ends of the lever b^4 , which is secured to the spring-acted spindle b^5 of the knob B', whereby as the said knob is turned both latches B² will be simultaneously disengaged from their respective catches b^2 and permit the hinged door to be opened.

By yieldingly mounting the trip-arms D the necessary resistance is given to the arms c of shaft C, while at the same time all injurious shocks are prevented, the spring-acted controlling-heads J coacting with the yielding trips D to reduce the shock.

By providing an auxiliary operating mechanism in addition to the main automatic trips the drum may be rotated at will in either direction, as may be necessary when the train is not traveling the whole length of the road, and the stations, therefore, not required to be announced in the regular succession.

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

1. In a station-indicator, the operating-arm provided with a horizontal rock-shaft M, having bearings M' M', in combination with the springs m' , coiled oppositely at their inner ends around the said shaft, hangers at opposite sides of the shaft provided with vertically-adjustable plates or seats, to which are secured the oppositely-projecting outer ends of the said springs, substantially as set forth.

2. The combination, with the bearings M' M', and the rock-shaft M, mounted therein and having an indicator-operating arm, of the hangers M² M² at opposite sides of the shaft, screws m^4 , extending up through the lower ends of the hangers and provided with adjusting-nuts, seats in the hangers connected

to the upper ends of said screws, and the springs m' , coiled around the said shaft in opposite directions, with their ends m^2 connected to said seats or plates, substantially as set forth.

3. In a station-indicator, the combination, with the horizontal rocking shaft having an indicator-operating arm projecting therefrom, of a spring coiled at its inner end about the shaft and projecting outward at its opposite end from the shaft, and an adjusting mechanism to one side of the shaft, and with which the outwardly-projecting end of the spring is connected, whereby the tension of the spring may be varied, substantially as set forth.

4. In an indicator, the combination, with the main drum having a polygonal head provided with projections, of the operating-lever K, having two oppositely-projecting hooks K', pivoted between their ends to its upper end and provided with springs k^2 , normally holding them out of engagement with said head, and a chain or cord K², secured to the inner ends of said hooks and extending down within reach of the operator, whereby by pulling on either cord to throw its hook up into engagement with said head and then rocking

the lever the drum may be rotated in either direction, substantially as set forth.

5. The combination, with the casing having an opening in its front to expose the name of the station, the drum within the casing provided with operating mechanism and with a polygonal hub or plate, of the head J, bearing against the rear face of the hub or plate and provided with arms extending through the rear side of the casing at $a' a'$, bearings $j' j^2$ for said arms, and springs on the said arms pressing said head inward, substantially as set forth.

6. The combination, with the drum having a polygonal hub or plate E', of the head J, having rearwardly-projecting arms, inner and outer brackets $j' j^2$, through which said rods pass, yokes $j^6 j^6$ within the said brackets and apertured at their ends for the passage of the arms, the spiral springs pressing the rods inward, and the buffers $j^4 j^4$ on the outer ends of the rods between their collars j^5 and the end of the bracket j^2 , substantially as set forth.

JOHN A. KANE.

Witnesses:

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