

(No Model.)

V. H. SPRAGUE.

STATION INDICATOR.

No. 246,832.

Patented Sept. 6, 1881.

Fig: 1.

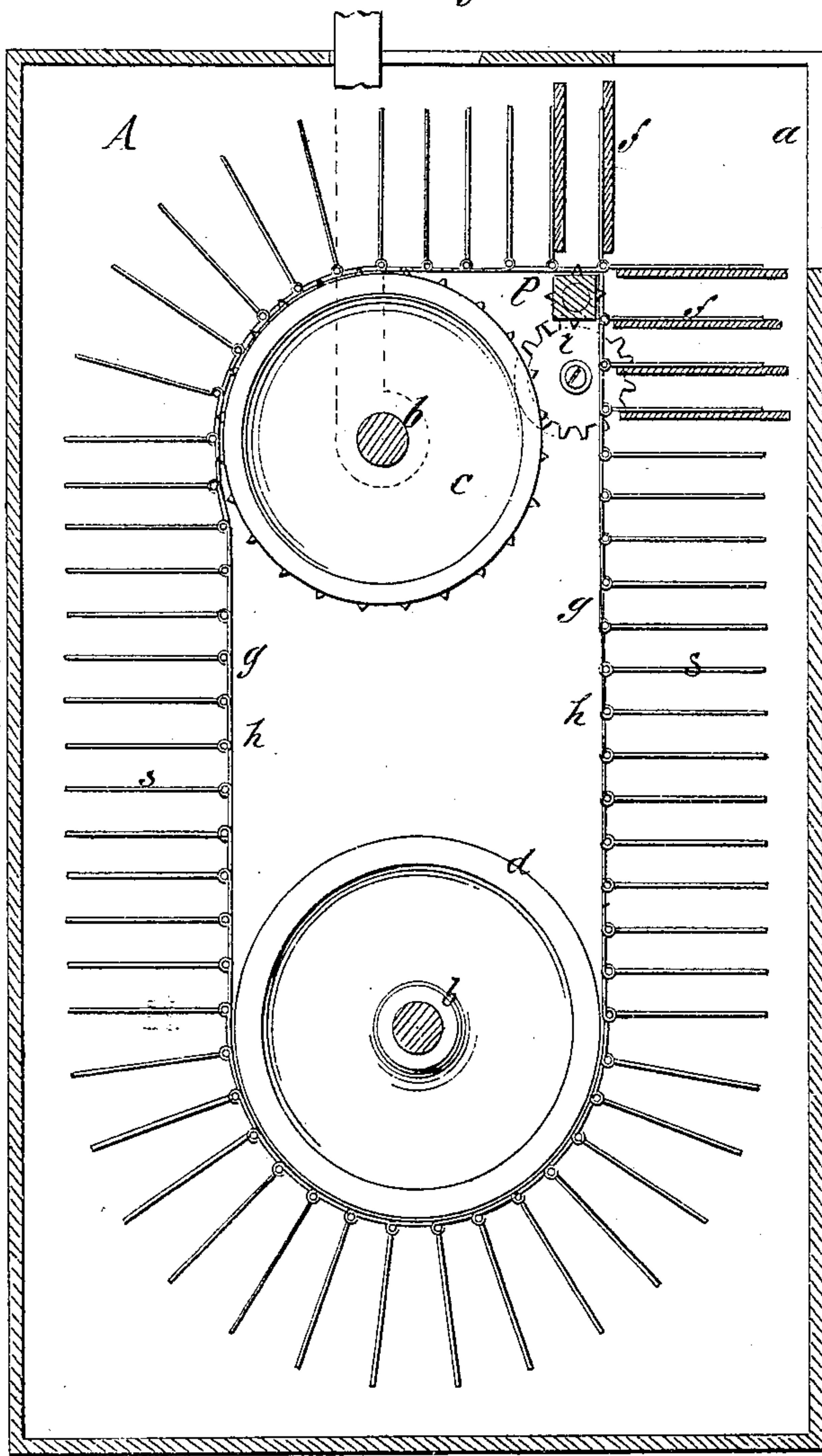


Fig: 2.

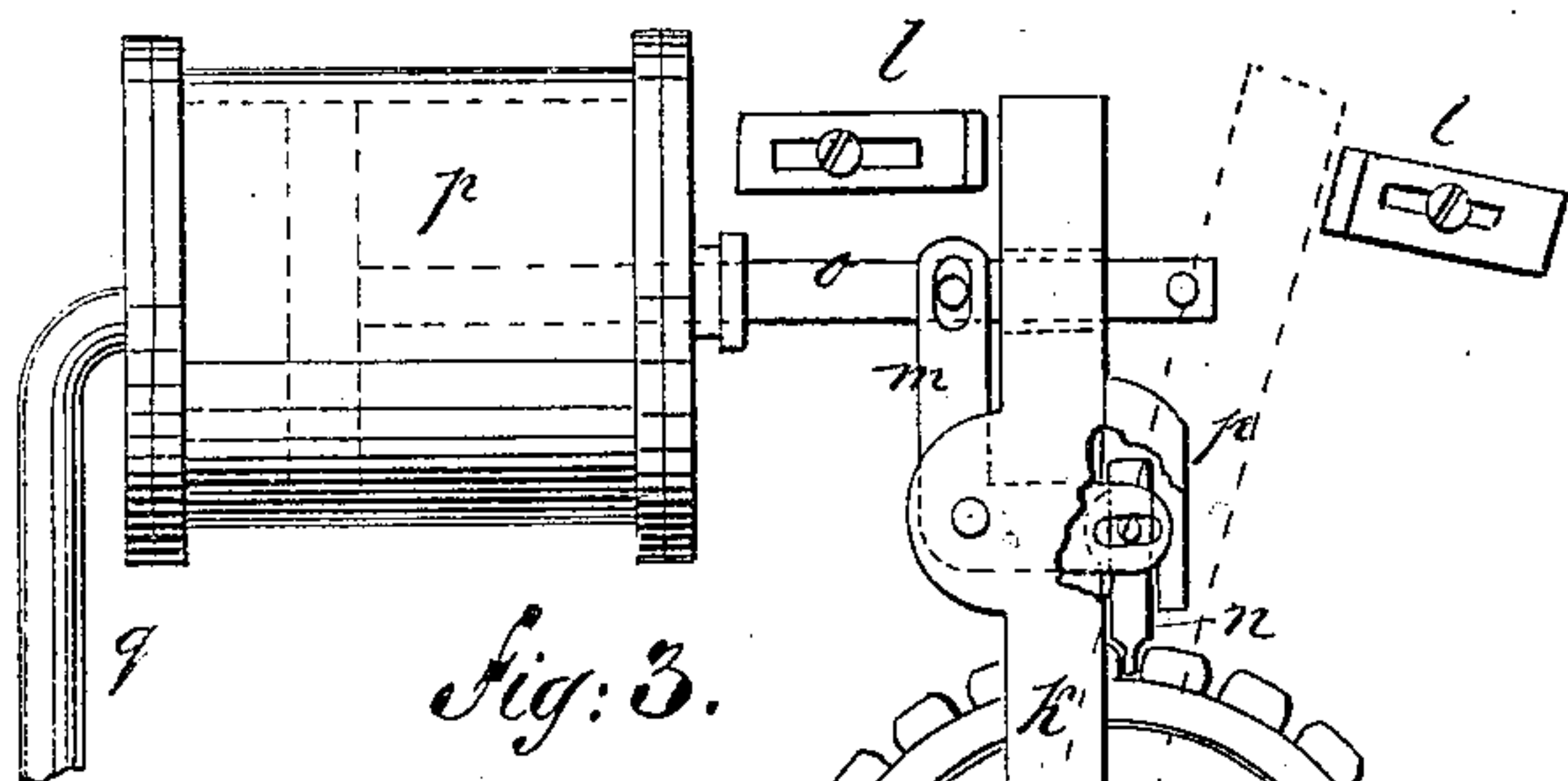
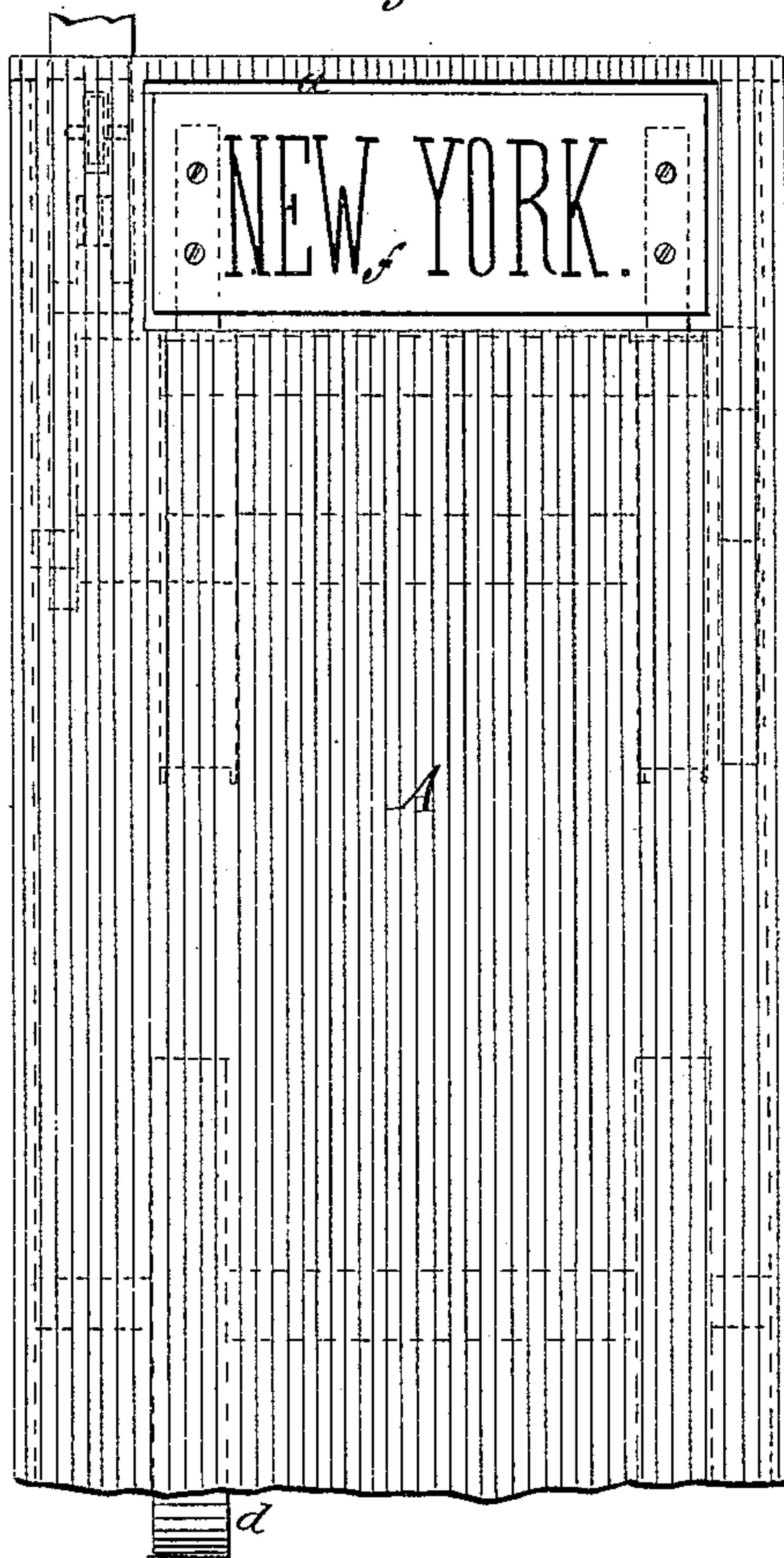


Fig: 3.

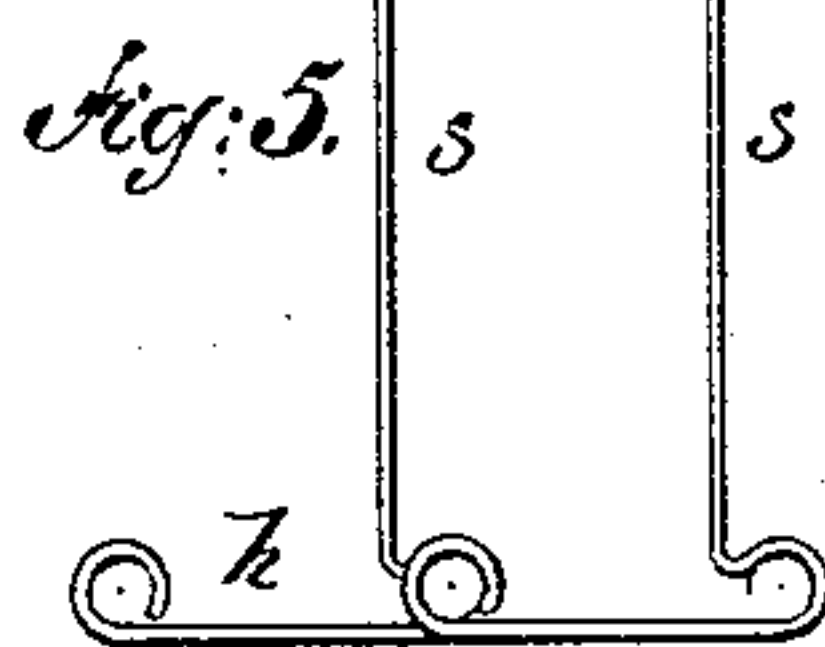


Fig: 5.

Fig: 4.

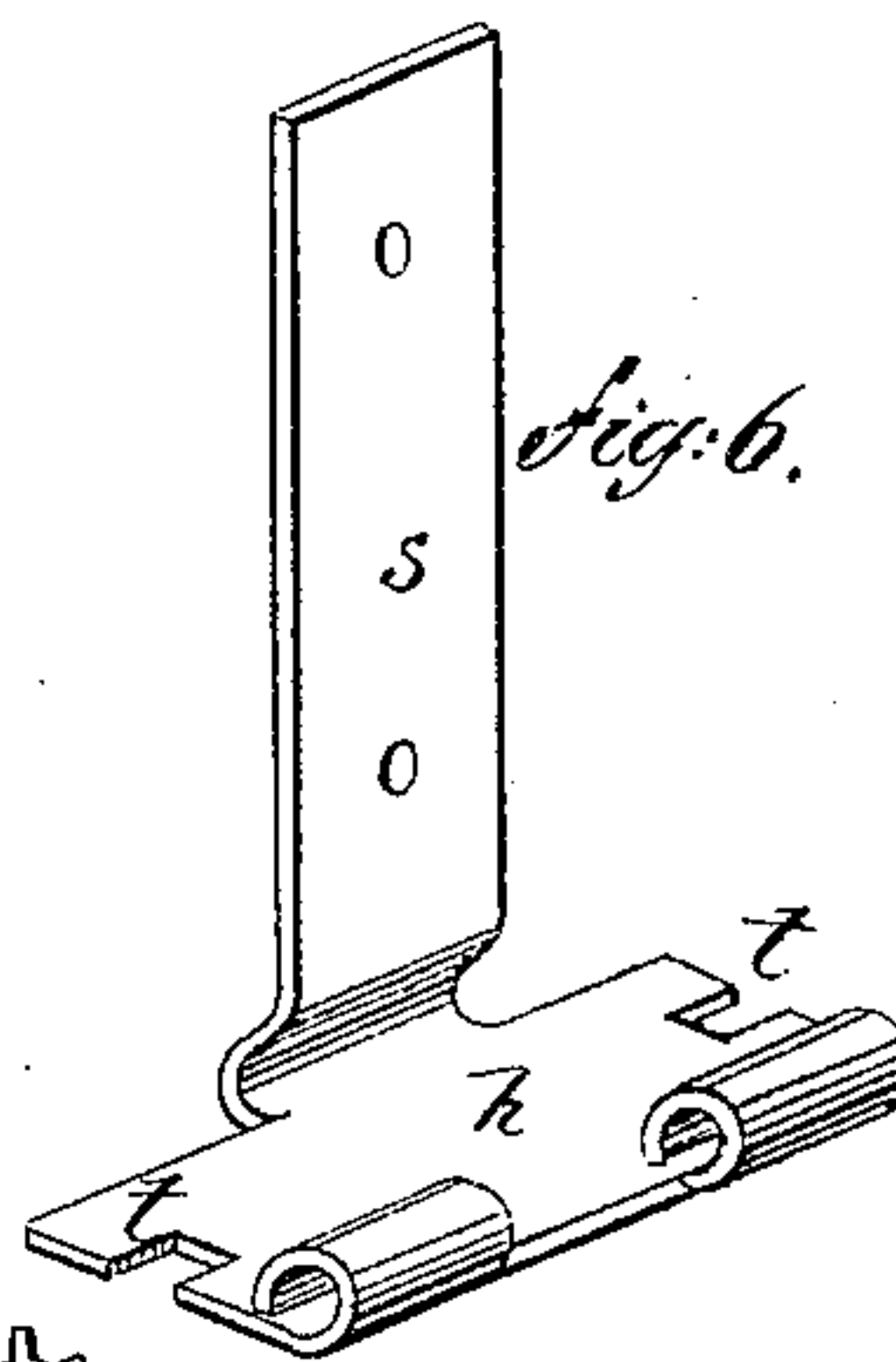
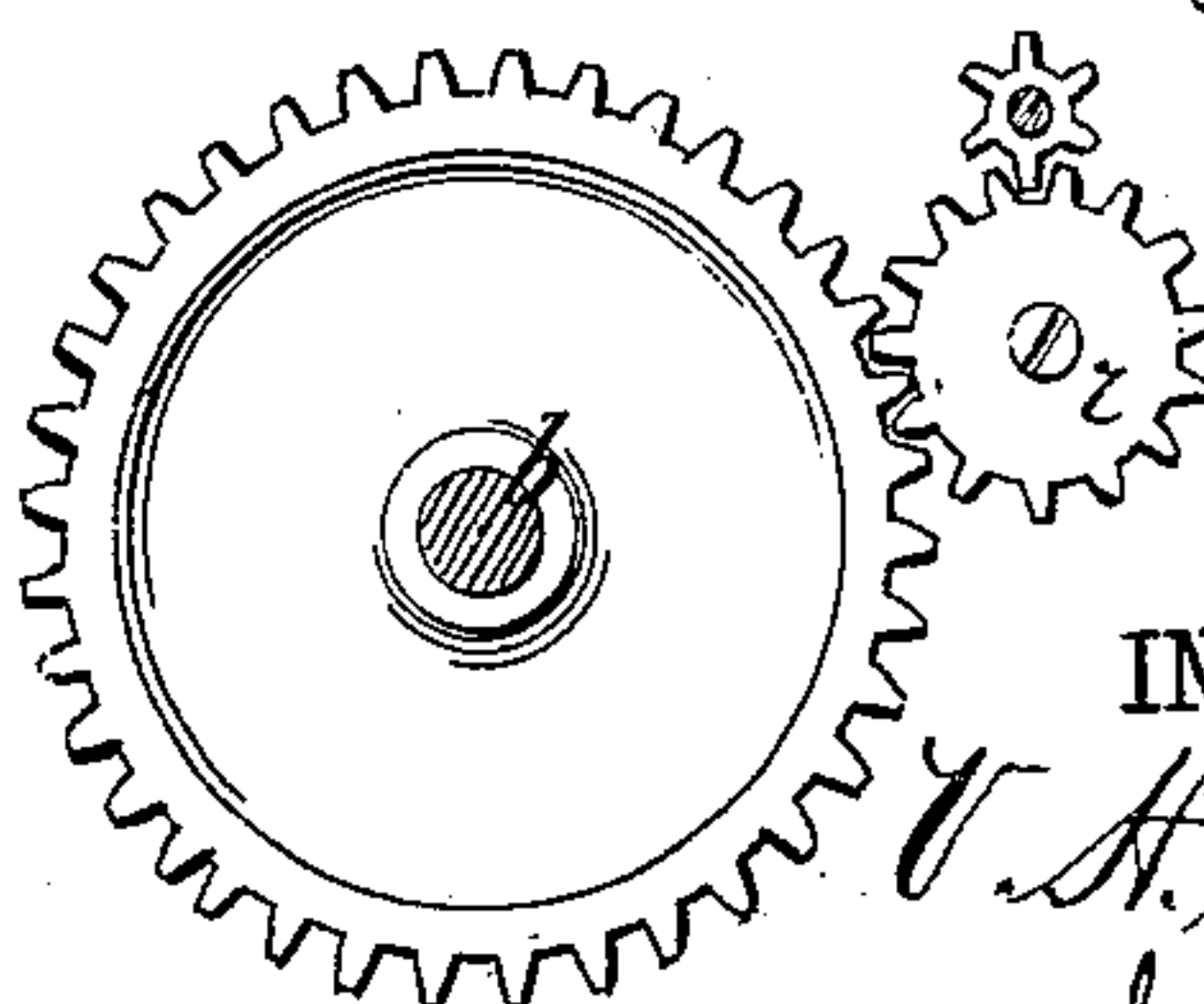


Fig: 6.

WITNESSES:

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UNITED STATES PATENT OFFICE.

VIRGIL H. SPRAGUE, OF GREENE, MAINE.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 246,832, dated September 6, 1881.

Application filed February 5, 1881. (No model.)

To all whom it may concern:

Be it known that I, VIRGIL H. SPRAGUE, of Greene, in the county of Androscoggin and State of Maine, have invented a new and useful Improvement in Station-Indicators, of which the following is a specification.

My improvements relate to apparatus for the visual indication of the names of stations or streets in railroad-cars. I make use of endless belts or chains, carrying the name cards or plates, and fitted with mechanism for giving step-by-step movement to the belt, whereby the cards are successively exposed.

The invention consists in a station-indicator provided with an endless chain to carry the name-plates, constructed substantially as hereinafter described.

In the accompanying drawings, Figure 1 is a vertical section of the apparatus, showing the indicator proper and its case. Fig. 2 is a front elevation of the same. Fig. 3 is an elevation of the actuating mechanism. Fig. 4 is a detail view of the gearing. Figs. 5 and 6 are detail views of the chain-links.

Similar letters of reference indicate corresponding parts.

A is the inclosing-case, having an aperture, *a*, at one angle, (shown at the top,) which case is to be fitted at a place in the car suitable for convenient observation.

b b are shafts fitted across the case A, one near the top and the other near the bottom, and carrying pulleys *c d*. There are two pulleys, *c*, on the upper shaft, and two pulleys, *d*, of somewhat larger diameter, on the lower shaft. In front of pulleys *c* is fitted a square shaft, *e*, geared through an intermediate pinion, *r*, with a gear-wheel of upper shaft, *b*. The gearing is shown separately in Fig. 4, and will be arranged to give a quarter-revolution to shaft *e* at each step forward of shaft *b*, which in turn will be regulated to the number of name-cards in use. Around the pulleys *c d* and shaft *e* pass endless chains or belts *g*, carrying the name cards or plates *f*, which connect the two belts. The shaft *e* causes a change of direction of the belt at right angles, and, being directly back of the aperture *a*, carries the name-cards in succession from the vertical position of exposure to the horizontal position, where they are out of sight.

The belts or chains are made up of links con-

sisting of metal plates *h*, having eyes formed at one side by bending the metal, and formed at the opposite side with a right-angled tongue, *s*, curved at the angle to form an eye that enters between the eyes of the next link, hinge-pins being used to retain the links together. This construction permits the ready removal and insertion of the links when it is desired to decrease or increase the number. The links *h* are slotted at the ends, as shown at *t*, for engagement with spurs on pulleys *c*, and the tongues *s* have holes for screws or rivets, by which the name-plates *f* are secured. These links *h* may be curved, if desired, in the direction of the length of the belt, in which case the shaft *e* will be rounded to correspond.

The mechanism for giving a step-by-step movement to the belt is shown in Fig. 3, and is as follows:

i is a wheel fixed on the upper shaft, *b*, having a notched periphery or formed with cogs.

k is an arm hung loosely on the same shaft *b*, so that it can swing between the adjustable stops *l l*.

m is an elbow-lever hung on arm *k*, carrying at one end a pawl, *n*, above wheel *i*, and having its other end connected to an operating-rod, *o*. The pawl *n* is contained between the arm *k* and a bent lug, *p*, on the arm, and is connected to lever *m* by a pin or screw passing through a slot in the lever. The parts being in the position shown, the forward movement of rod *o* carries arm *k*, and the pawl, being engaged with wheel *i*, moves the latter, and thus turns shaft *b*. On return of rod *o* the first effect is to move lever *m* and raise the pawl free from wheel *i*, and then the arm *k* is brought back. The next forward movement restores the first position and moves the wheel again. The wheel *i* should be moved at each step just the distance required to move the chains forward one link.

The rod *o* may be operated by hand by connections suitably arranged, or it may be connected directly to a piston-head in a cylinder, as shown at *p*, for movement by compression or exhaustion of air in the cylinder.

q is an air-tube through which the air is to be exhausted or compressed to move the piston-head in one direction, a spring being used to move it in the other direction.

The cylinder *p* will be fitted for being ad-

justed or removed to obtain reversal of the motion at the terminus of a route. To obtain such reverse motion lever *k* and its attached parts will be removed from shaft *b* and replaced
5 in reverse position, with the cylinder also reversed. The movement of rod *o* will then turn wheel *i* and the chain in a direction opposite to that before described.

On street-cars the cylinder may be dispensed
10 with, and lever *k* moved by a cord and spring, or the lever and its attachments may be dispensed with and wheel *i* be turned by a worm-gear carried by a rod fitted for operation by a crank.

15 I do not limit myself to the details exactly as described, as they may be varied within the scope of my invention. The belts may be arranged to move in a horizontal plane, if desired.

The ratchet mechanism, which has been described for the better understanding of the
20 present invention, will form the subject-matter of another application.

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

25 In a station-indicator, the endless chain consisting of the plates *h*, provided with tongues *s* for receiving the name-plates, side eyes for receiving detachable hinge-pins, an eye at the junction of each tongue and plate, and the end
30 notches, *t*, as and for the purpose set forth.

VIRGIL HORACE SPRAGUE.

Witnesses :

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EVA M. RICHMOND.