

(No Model.)

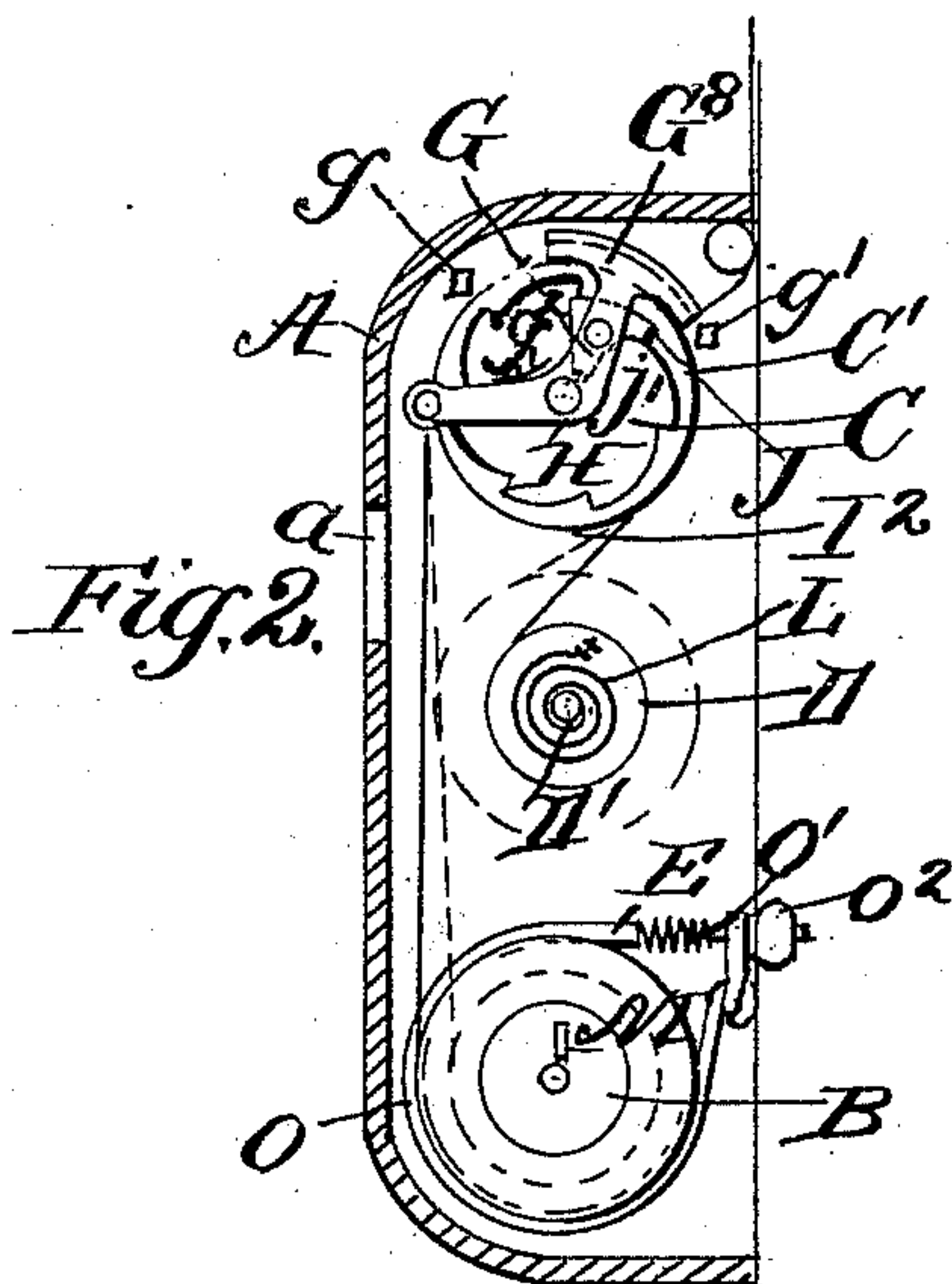
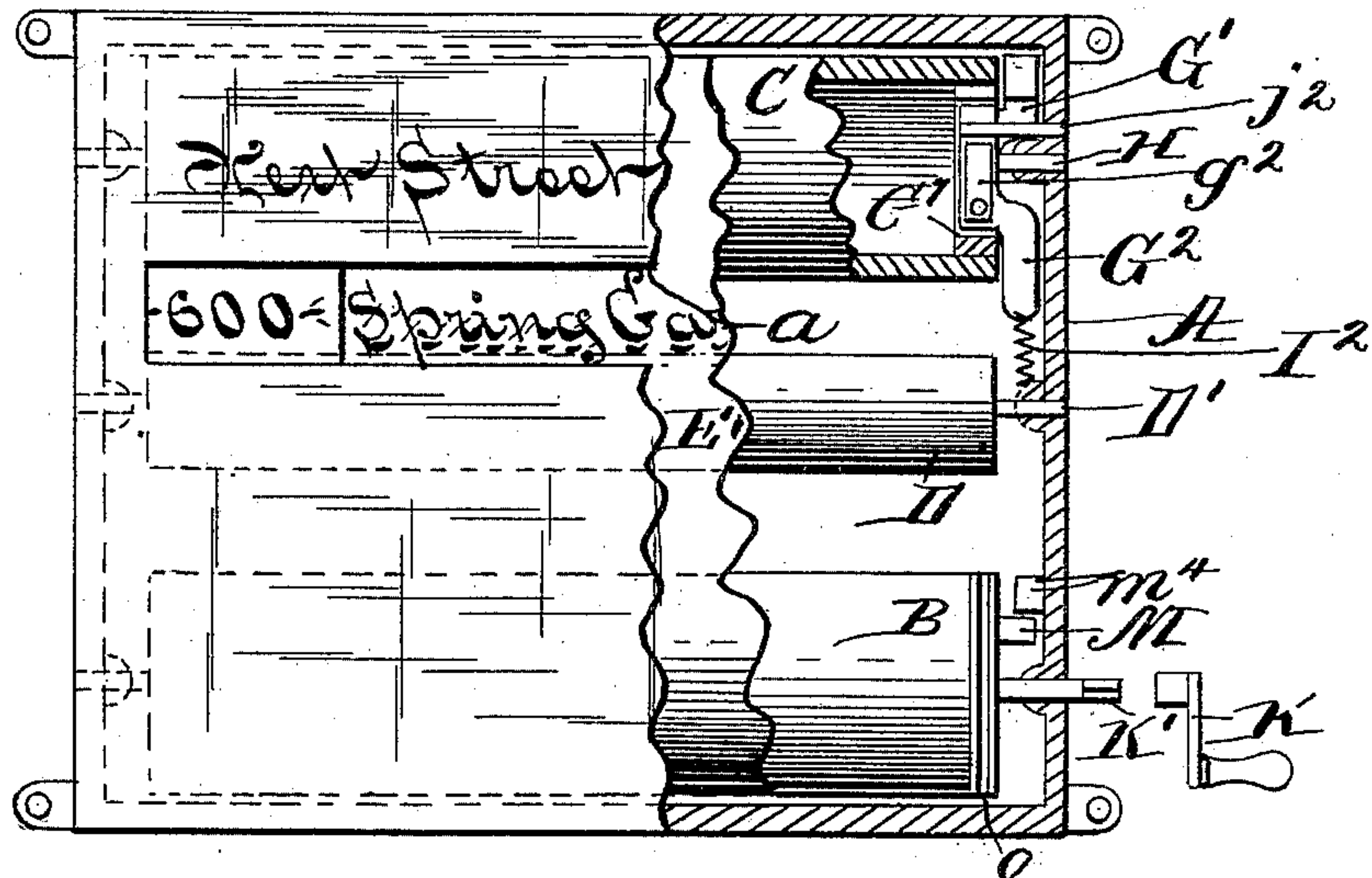
2 Sheets—Sheet 1.

G. A. GULOWSEN & A. A. UGLAND.
STATION INDICATOR.

No. 427,684.

Patented May 13, 1890.

Fig. 1.



Witnesses
W. H. Keller.
Vernon M. Dancy

Inventor
and Gulow A. Gulowson
Andrew A. Uglund.
By J. B. L. Lawyer,
Attorney

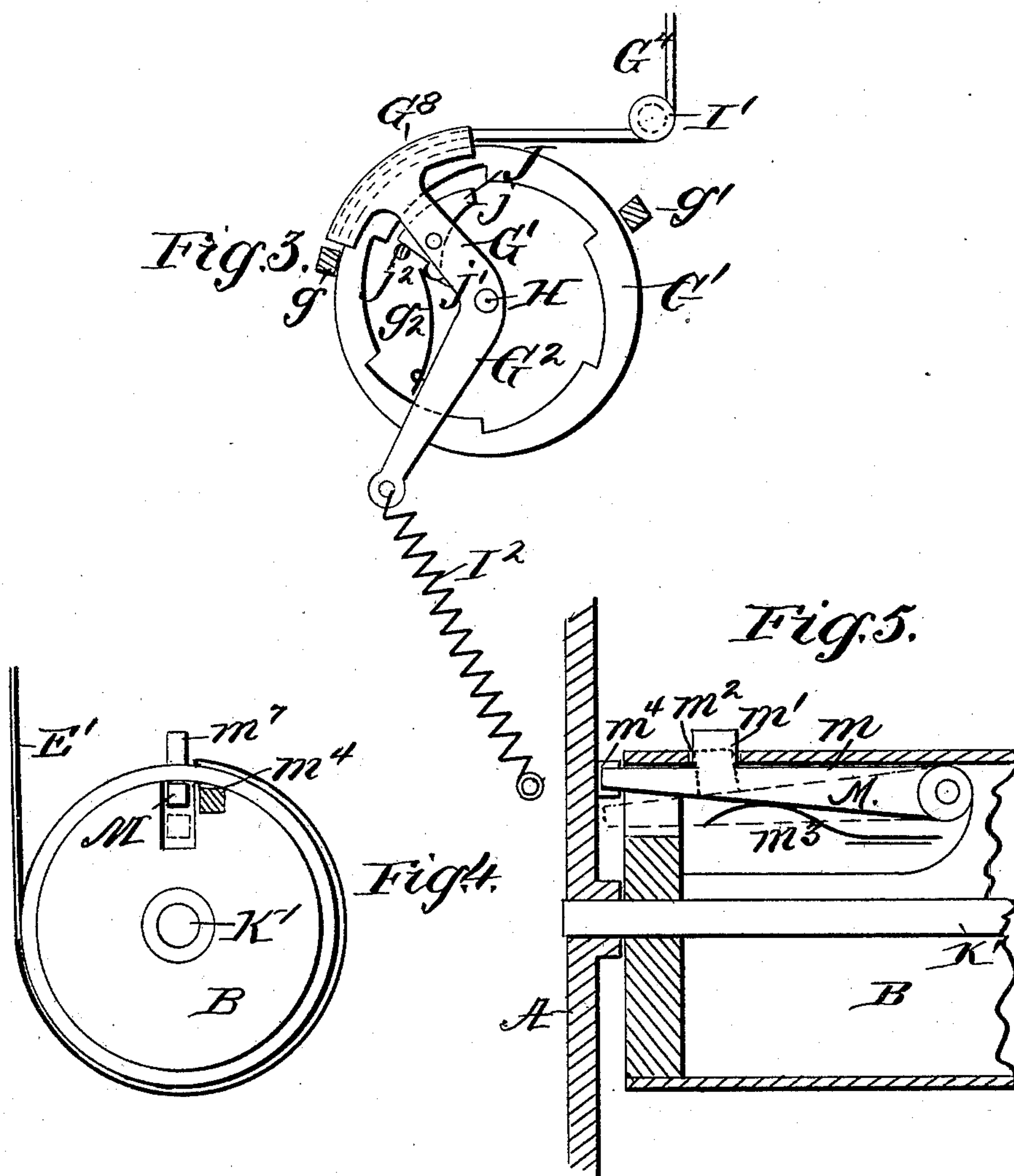
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C. H. Keller.
Vernon M. Dacey.

Inventor
Gulow O. Gulowson.
and Andrew O. Island
By J. B. Lawler
Attorney

UNITED STATES PATENT OFFICE.

GULOW A. GULOWSEN AND ANDREW A. UGLAND, OF PHILADELPHIA,
PENNSYLVANIA.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 427,684, dated May 13, 1890.

Application filed October 1, 1889. Serial No. 325,664. (No model.)

To all whom it may concern:

Be it known that we, GULOW A. GULOWSEN and ANDREW A. UGLAND, citizens of the United States, residing at Philadelphia, in the
5 county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Station-Indicators; and we do declare the following to be a full, clear, and exact description of the invention, such as will
10 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 a part of this specification.

15 Our invention relates to certain new and useful improvements in station-indicators; and it consists in general of a casing containing carrying and feed rollers, over which passes a web having the names of the station, streets,
20 &c., to be indicated printed thereon, and of a cord, chain, &c., connected to the feeding-roller by suitable intermediate gearing for causing the web to move forward when the cord, &c., is drawn by the conductor or other
25 attendant, whereby the web will be wound from one carrying-roller upon the other by a spring contained in the latter, causing the names of the successive stations to appear opposite to a slot in the casing.

30 It also consists in certain details of construction of the foregoing invention, whereby the web is prevented from entirely winding off the carrying-rollers, protecting the fastenings thereof from strain, whereby the feed-
35 roller is left free for backward rotation in winding the web back upon the first or main carrying-roller, and of a brake adapted to permit a free backward rotation of the first carrying-roller, but which exerts a greater re-
40 sistance to its forward rotation, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by similar letters, Figure 1 is a front view of
45 our invention, having a portion of the front of the casing thereof broken away. Fig. 2 is an end view thereof, having the end of the casing removed. Fig. 3 is a detail side view of the feeding mechanism. Fig. 4 is an en-
50 larged end view of the lower carrying-roller,

showing the latch thereon. Fig. 5 is a detail longitudinal central section through a part of the casing and one end of the lower carrying-roller.

In a suitable casing A, having an elongated
55 slot *a* in its face, are pivoted rollers B, C, and D. The lower and main carrying-roller B has a brake E, which retards to a certain extent its forward movement, as will be hereinafter described. The web E', having the
60 names of the streets, &c., thereon, is at the beginning of a run upon this roller, one end thereof passing in front of the slot *a*, over the feed-roller C in the top of the casing, down to the roller D, where it is fastened. An inter-
65 nal ratchet-wheel C' is mounted upon one end of the feed-roller, while a lever G, consisting of two arms G' and G², is mounted at the junction of the arms upon the shaft H of the roller. The upper end of the upper arm G'
70 has an arc-shaped head G³, to which is attached a rope, chain, &c., G⁴, passing over a roller I' to a place accessible to an attendant in charge. To the lower arm G² of the lever G is attached a retractile coil-spring I², which
75 draws the arc-shaped head against a stop *g* upon the casing A, which thus limits its movement in one direction, while a corresponding stop *g'* limits it in the other. A pawl J is pivoted on the upper arm G' of the lever G,
80 and has a nose *j*, which is caused to engage the ratchets of the wheel C' by a flat spring *g*², fastened to the lever G and bearing upon the shank *j'* of the pawl at a point below and behind the pivotal point thereof. When
85 the lever G is in its normal position, as shown in Fig. 3, a lug *j*², projecting from the side of the casing A, strikes the rear portion of the pawl above its pivotal point, and thus forces the nose *j* downward and out of engagement
90 with the ratchets, thus freeing the feed-roller for backward rotation, which is caused by the carrying-roller B being turned backward by a crank K, detachably mounted on the shaft K' thereof. The roller D has one end of a coil-
95 spring L attached thereto, the opposite end being attached to the shaft D' of the roller, as is well known, thus causing the roller D to take up any slack of the web that may be caused by a forward rotation of the roller C. 100

In order to prevent a too great strain upon the fastening of the web to the rollers B and D when the web has been worked off one of them, either by means of the feed-roller or by means of the crank K, respectively, we employ the friction of the web against the roller, the latter being prevented from turning by the following mechanism. As the means employed for this purpose are the same for both the rollers B and D, we will describe them only in relation to the former, it being understood that they may be applied to the roller D.

The latch M is pivoted within the roller B at one end thereof, and has upon its outer face a shoulder m' , for the reception of which shoulder a slot m^2 is cut in the roller. A spring m^3 bears upon the latch and forces the shoulder through the slot, the outer surfaces of the shoulder and roller being kept even by the web wound upon the latter. The forward end of the latch projects beyond the end of the roller, and therefore travels in a circle around the shaft K' of the roller as it revolves. When the web has been unwound from the roller to such an extent that the slot m^2 is uncovered, the shoulder m' is forced there-through by the spring m^3 and the free projecting end of the latch moves a corresponding distance from the axle, thus traveling in a circle of greater diameter than before. A lug m^4 is attached to the casing at such a distance from the axle K' as to be in the thus enlarged path of the end of the latch, thus stopping the rotation of the roller. It is evident from an inspection of Fig. 4 that the lug m^4 may be placed in such a position as to leave nearly a complete round of web upon the roller to assist in withstanding the strain. A brake is also provided for the lower carrying-roller B, which consists of a strap E, fastened directly to the casing at one end, passing around the roller in a groove O therein, and having its other end connected with a spring O' , the latter being attached to the casing by an adjusting bolt and nut O^2 . It is evident that on a forward movement of the roller B the strap will hug it and by its friction retard its rotation, while on a backward rotation the spring O' will yield to the pull of the strap and in a measure leave the roller free to move. When the cord G^4 is pulled by the attendant, the feed-roller is caused to revolve a distance dependent upon the distance of the stops $g g'$ from each other, moving the web forward a corresponding distance and causing the name of the next street, &c., to appear behind the slot a , the take-up roller D taking up the slack furnished by such movement. The spring L also serves to keep the web at a tension sufficient to cause its friction with the feed-roller to be so great as to prevent the roller slipping under it. When the web has been unwound from the roller B, except a small end, the latch comes into operation and prevents its further movement. The web is then rewound on the carrying-roller B by means of the crank K' .

Suitable legends may be placed on the face of the casing, as shown in Fig. 1.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a station-indicator, the combination of a carrying-roller, a web mounted thereon, a latch pivoted in the said roller and adapted to lock the roller in position before the web has been entirely unwound therefrom, a take-up roller to which one end of the said web is attached, a feed-roller bearing upon the said web at a point between the said take-up and carrying rollers, and a feeding mechanism attached to the said feed-roller, as and for the purposes described.

2. In a station-indicator, the combination of a carrying-roller, a web mounted thereon, a brake for the said roller serving to retard forward rotation, but leaving it free for backward rotation, a take-up roller to which one end of the web is attached, a feed-roller bearing upon the said web at a point between the said take-up and carrying rollers, a feeding mechanism attached to the said feed-roller, and a latch pivoted in the said take-up roller, adapted to lock the roller in position before the web has been entirely unwound therefrom, as and for the purposes described.

3. In a station-indicator, the combination, with a slotted carrying-roller, of a web mounted thereon, means for unwinding the said web therefrom, a fixed lug, a latch pivoted to the said roller, having a shoulder thereon adapted to project through the said slotted roller, but normally depressed by the said web, as and for the purpose described.

4. In a station-indicator, the combination, with a web, of a feeding-roller thereof, a ratchet-wheel on the end of the feeding-roller, a lever pivoted concentrically thereto, a pawl having a forwardly-projecting nose pivoted on the said lever, a spring bearing on the pawl below and behind its pivotal point, a lug adapted to strike the upper posterior portion of the pawl when the lever is in its normal position, a feeding-rope attached to one end of the lever, and a retractile spring attached to the other, as and for the purposes described.

5. In a station-indicator, the combination of a casing, a slotted carrying-roller mounted in the said casing, a web wound upon the said roller, a take-up roller to which one end of the said web is attached, a feed-roller bearing upon the said web at a point between the take-up and carrying rollers, a brake consisting of a strap encircling the said carrying-roller and having one end rigidly secured to the casing, the other end having a spring-connection thereto, a fixed lug on the casing, a latch pivoted to the said roller and projecting therefrom, the said lug being in the path of the said latch, a shoulder on the said latch, adapted to project through the said slotted carrying-roller, a ratchet-wheel on the end of the feeding-roller, a lever pivoted concentric-

ally with the feeding-roller, a pawl having a
forwardly-projecting nose pivoted on the said
lever, a spring bearing upon the said pawl
below and behind its pivotal point, a lug on
5 the casing, adapted to strike the upper pos-
terior portion of the said pawl when the said
lever is in its normal position, a feeding-rope
attached to one end of the said lever and a
retractile spring to the other, and a slot in the
10 said casing, the said carrying, feed, and take-

up rollers being mounted within the casing,
as and for the purposes described.

In testimony whereof we affix our signatures
in presence of two witnesses.

GULOW A. GULOWSEN.
ANDREW A. UGLAND.

Witnesses:

GRANT ROWE,
JOHN E. DILLON.