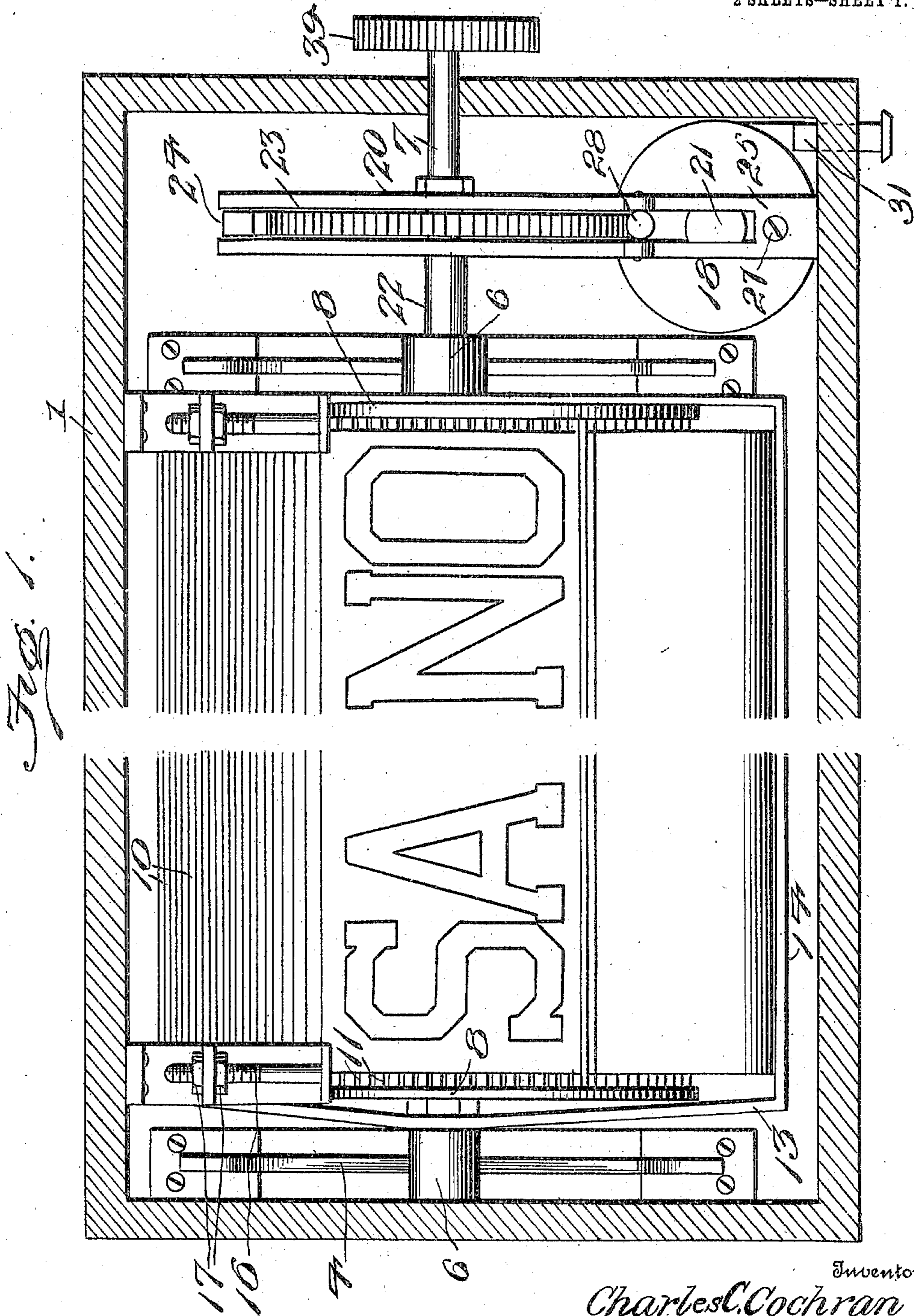


C. C. COCHRAN.
STATION INDICATOR.
APPLICATION FILED OCT. 25, 1907.

947,694.

Patented Jan. 25, 1910.

2 SHEETS—SHEET 1.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 2.

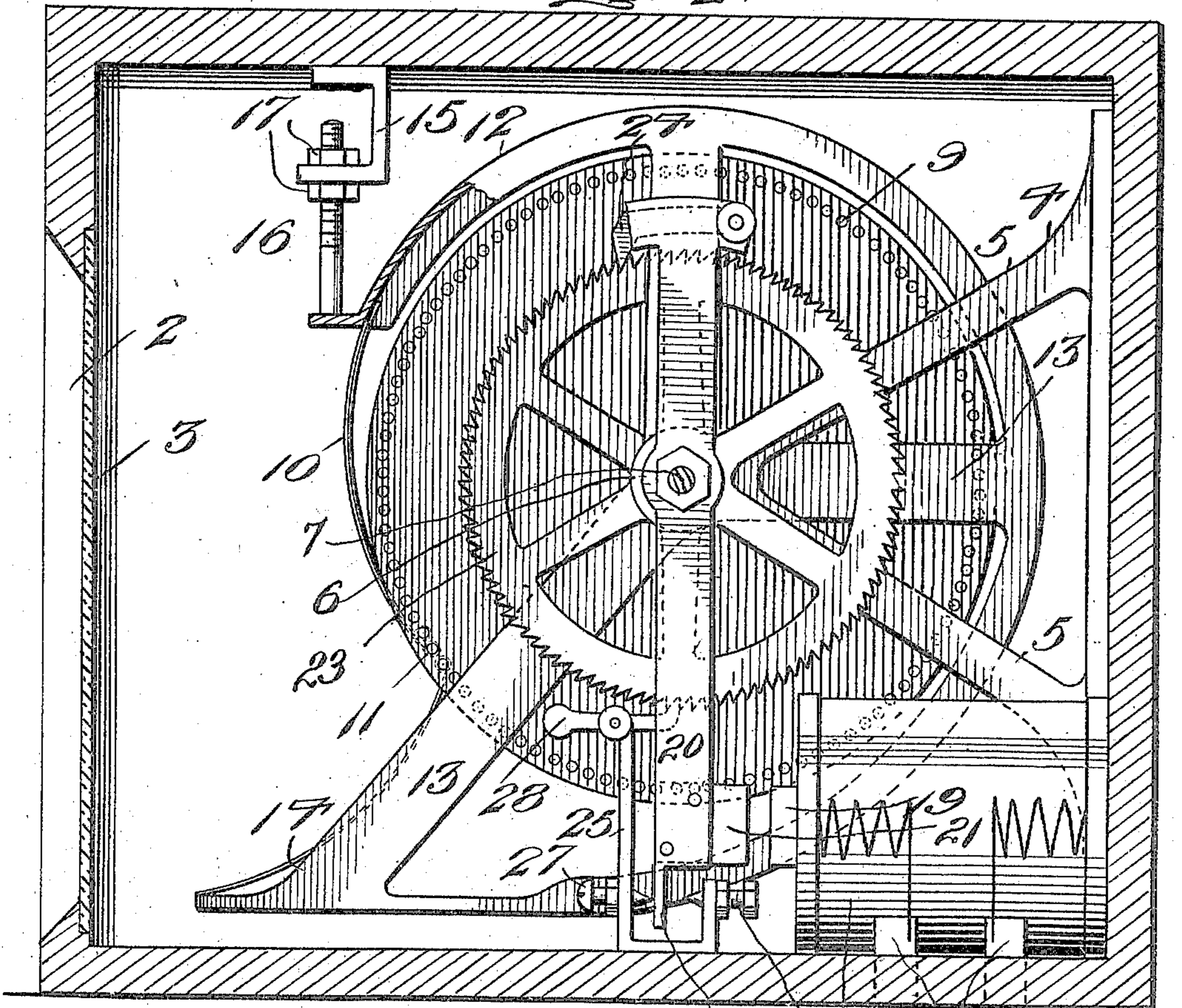
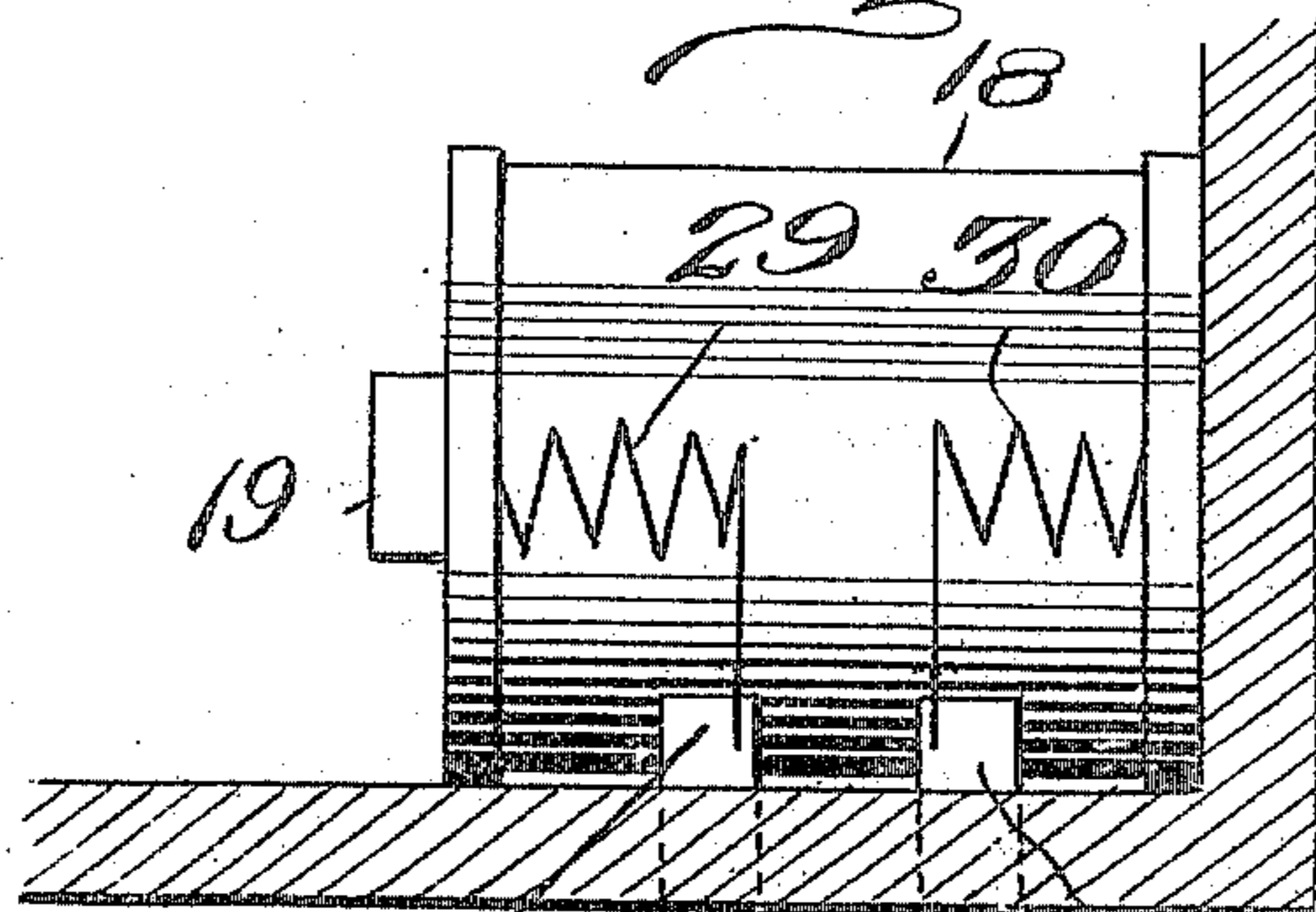


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES C. COCHRAN, OF LAWRENCE, KANSAS, ASSIGNOR OF ONE-HALF TO
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STATION-INDICATOR.

947,694.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed October 25, 1907. Serial No. 399,164.

To all whom it may concern:

Be it known that I, CHARLES C. COCHRAN, a citizen of the United States, residing at Lawrence, in the county of Douglas and State of Kansas, have invented new and useful Improvements in Station-Indicators, of which the following is a specification.

The invention relates to an improvement in station indicators, being primarily directed to a structure whereby a street or station will be automatically indicated in advance to enable the passenger to determine the street or station the car is approaching.

The main object of the present invention is the production of a station indicator particularly adapted for automatic operation on electrically controlled railways, the construction including a series of indicating signs which are automatically projected into view at proper intervals to indicate the street or station which the car is approaching.

The invention will be described in detail in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a view in front elevation of the improved indicator, the casing being shown in section. Fig. 2 is an end elevation of the same, with the casing in section. Fig. 3 is a detail elevation, partly in section, illustrating the electro-magnet and connections.

Referring particularly to the drawings, wherein is illustrated the preferred form of the invention, 1 indicates a casing which may be constructed of any material and in any desired size. The forward wall of the casing is formed with a sight opening 2, preferably closed by a glass section or strip 3. The rear wall of the casing is provided with brackets 4 arranged in spaced relation, the forwardly projecting arms 5 of which brackets terminate in bearings 6. Mounted in the bearings 6 is a shaft 7 on which adjacent each bearing is secured a disk 8. The disks are each formed near their peripheral edges with openings 9, each pair of aligned openings of the respective disks serving as a support for a particular indicating sign. These signs are preferably thin metallic sheets as 10, on one face of which is printed or otherwise indicated the particular data. Each sign is provided at its upper end with a supporting rod 11, the terminals of which project beyond the side edges of the sign and are adapted to be mounted in the openings

9 of each pair, so that the sign is supported normally pendent between the disks, and freely movable about the rods 11 as a bearing.

Disposed beyond the respective disks 8 are guide members 12, which are disposed for the greater portion of their length concentric with the disks. The guides comprise arms 13 mounted on the shaft 7 and carry at their free ends a guide strip proper, which strip is of right-angled formation in transverse section with the lower end projected eccentric to the disk and terminating in a plane portion 14 arranged in advance of the disks and in parallel relation to the bottom of the casing, as clearly seen in Fig. 2. The opposing ends of the guide strips terminate in advance of the disks and approximately on a line with the upper edge of the sight opening, said ends being adjustably connected with fixed brackets 15 carried by the upper wall of the casing through the medium of bolts 16 and nuts 17.

Secured on the bottom of the casing and against the rear wall thereof is an electro-magnet 18 of ordinary type having the usual projecting core 19. In advance of the magnet and supported upon the shaft 7 is the operating lever 20, preferably made up of spaced members arranged in parallel relation, between which at their lower ends is mounted an armature member 21 arranged to be attracted by the core 19 of the electro-magnet upon energization of the latter. Between the lever members, which are loosely mounted on the shaft 7, and preferably on a sleeve 22 encircling said shaft, there is secured upon the shaft a ratchet wheel 23. An operating pawl 24 is secured between the upper ends of the lever members, said pawl being arranged to engage the teeth of the ratchet in the movement of the lever, whereby a step-by-step movement is imparted to the ratchet. Secured beneath the lever 20 is a bracket 25 including spaced arms disposed on opposite sides of the lower projected terminal 26 of the lever. Each of the arms of the bracket are provided with set screws 27 having pointed inner ends to be engaged by the projected end of the lever in the movement of the latter, said screws serving as a means for conveniently adjusting the throw of the lever. The upper end of one of the arms of the bracket 25 is provided with a stop pawl 28 arranged to engage the teeth of the ratchet in diametrically opposed re-

lation to the engagement of the pawl 24 and prevent return movement of the ratchet after operation by said pawl 24.

The terminals 29 and 30 of the winding 5 of the electro-magnet terminate in split sockets 31 projecting through the bottom of the casing for the convenient connection of the feed wire, it being understood that one feed wire is connected with one of the sockets 10 31 through a simple push plug, while the opposing socket is grounded through a similar wire or plug to the rail.

Energization of the electro-magnet will through the armature 21 swing the lower 15 end of the lever toward the magnet, thereby causing the operating pawl 24 to advance the ratchet wheel a distance commensurate with its length of movement. As the ratchet wheel is secured upon the shaft 7, the movement of said wheel will similarly advance 20 the disks 8 with the effect to cause a gradual advance of the signs carried thereby. The particular signs are so arranged that in the proper operation of the device the free edge 25 of the sign indicating the next station will be held just within the forward upper edges of the guides 12, thus effectively displaying the particular sign through the sight opening. As the next shoe is engaged and a second impulse imparted to the ratchet wheel, 30 movement of the latter is sufficient to carry the free edge of the sign beyond and free of the guides, permitting the particular sign to gravitate into contact with the lower portions 14 of the guides and thereby reverse 35 its position, displaying the opposite or non-lettered side. The sign next in order will, in this operation, have reached the forward edge of the guides and thereby maintained 40 in display position.

As the operating lever is released through the deenergization of the electro-magnet it will gravitate to upright and normal position, thereby setting the pawl 24 for the next 45 operation, the pawl 28 meanwhile engaging the teeth of the ratchet 23 and preventing retrograde movement thereof.

The disks 8 are to be provided with as many sign-bearing openings as desired, it 50 being preferable in the case of a street car traveling over a certain route to have the openings double the number of stations less one, having one sign for the last station at one end of the route and duplicate signs for 55 each of the remaining stations.

From the above construction, it will be evident that I have provided a simple form of station indicator which will be automatically actuated to indicate in advance 60 the street or station the vehicle is approaching, the small number of parts and the simplicity of their arrangement preventing derangement of the apparatus.

With the movement of the lever adjusted through the set screws 27 it is obvious that 65 the feed of the disks will be regulated as desired, though to avoid mistakes and correct errors which may arise through faulty contacts, I prefer to extend the shaft 7 beyond the side wall of the casing and provide 70 the same with a milled head 39 to permit manual adjustment of the signs when necessary.

Having thus described the invention, what is claimed as new, is:— 75

1. A station indicator comprising a casing formed with a sight opening, a shaft mounted in the casing, disks fixed in spaced relation on the shaft, means for imparting a step-by-step movement to the shaft, a plurality of signs pivotally mounted in the 80 disks, arms mounted on the shaft beyond the respective disks, guide members carried by the arms, said members comprising right angled plates to receive and guide the signs, 85 and a strip connecting the arms on the opposing sides of the disks, said strip extending transversely of the casing and being arranged beneath and in advance of the disks, the lower portions of the guide mem- 90 bers being connected to the rear edge of the strip.

2. A station indicator comprising a casing formed with a sight opening, a shaft mounted in the casing, disks fixed in spaced relation on the shaft, means for imparting a step-by-step movement to the shaft, a plurality of signs pivotally mounted in the disks, arms mounted on the shaft beyond the respective disks, guide members carried by 100 the arms, said members comprising right angled plates to receive and guide the signs, and a strip connecting the arms on the opposing sides of the disks, said strip extending transversely of the casing and being arranged beneath and in advance of the disks, the lower portions of the guide members being connected to the rear edge of the strip, a bracket carried by the casing, bolts projecting from the upper and forward ends of 110 the guide members, and means adjustably connecting the bolts and brackets to permit adjustment of the forward ends of the guide members.

3. A station indicator comprising a casing 115 formed with a sight opening, a shaft mounted in the casing a series of spaced disks secured on the shaft, a series of signs mounted in the disks, guide members for engaging the free edges of the signs, a ratchet wheel 120 secured upon the shaft beyond one of the disks, an operating lever loosely mounted on the shaft adjacent the wheel, a pawl carried by one end of said lever to engage the teeth on the wheel, an electro-magnet for oper- 125 ating the lower end of the lever in one direc-

tion to impart movement to the ratchet wheel, a U-shaped bracket secured beneath the lever having its arms arranged on opposite sides of the lever, a set screw carried by
5 each arm and adjustable therein to limit the throw of the lever, one of said arms being extended and terminating adjacent the ratchet wheel, and a stop pawl carried by

said extended arm to engage the teeth of the ratchet.

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

CHARLES C. COCHRAN.

Witnesses:

F. WHIPPLE,
GEO. WRAY.