

E. & G. HAGSTROM.
LOCATION INDICATOR FOR CARS.
APPLICATION FILED JUNE 15, 1908.

Patented Mar. 30, 1909.

3 SHEETS—SHEET 1.

916,549.

Fig. 2.

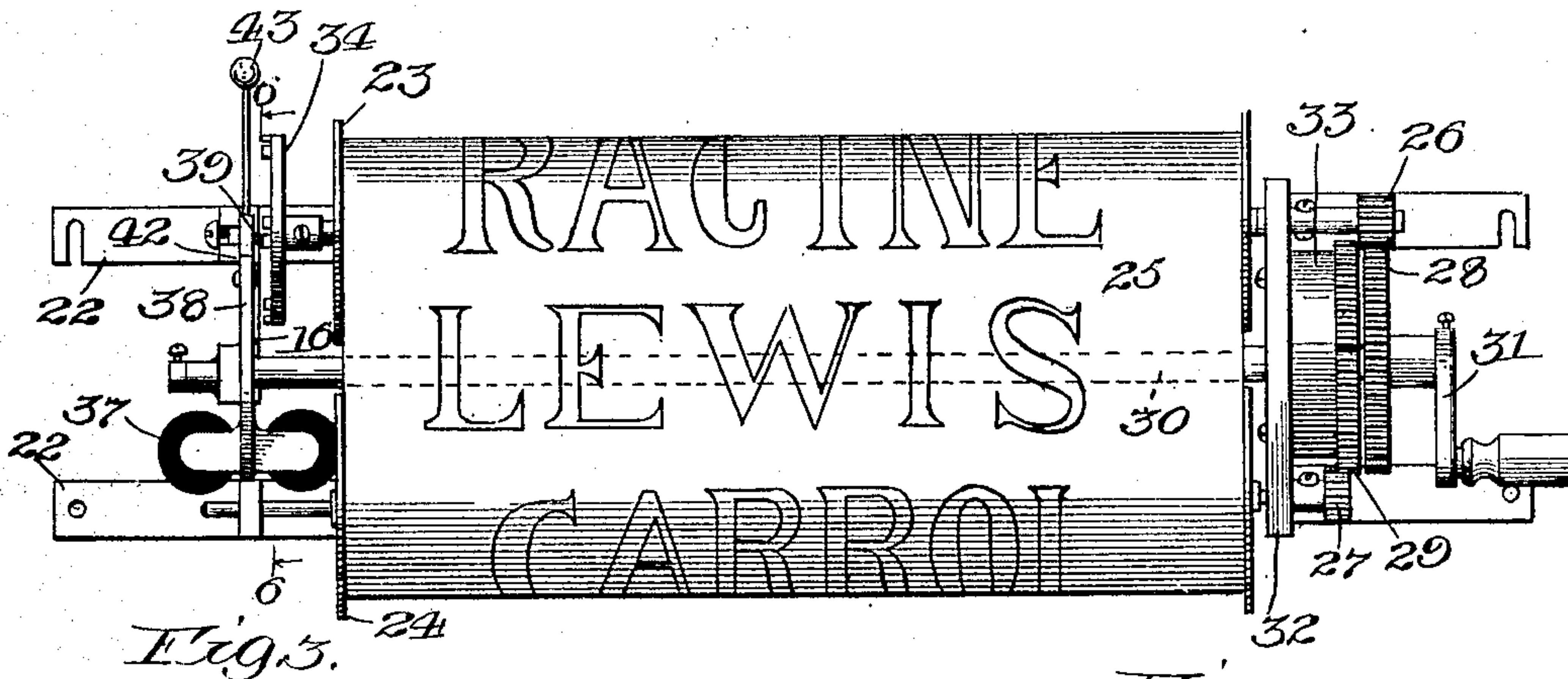


Fig. 4.

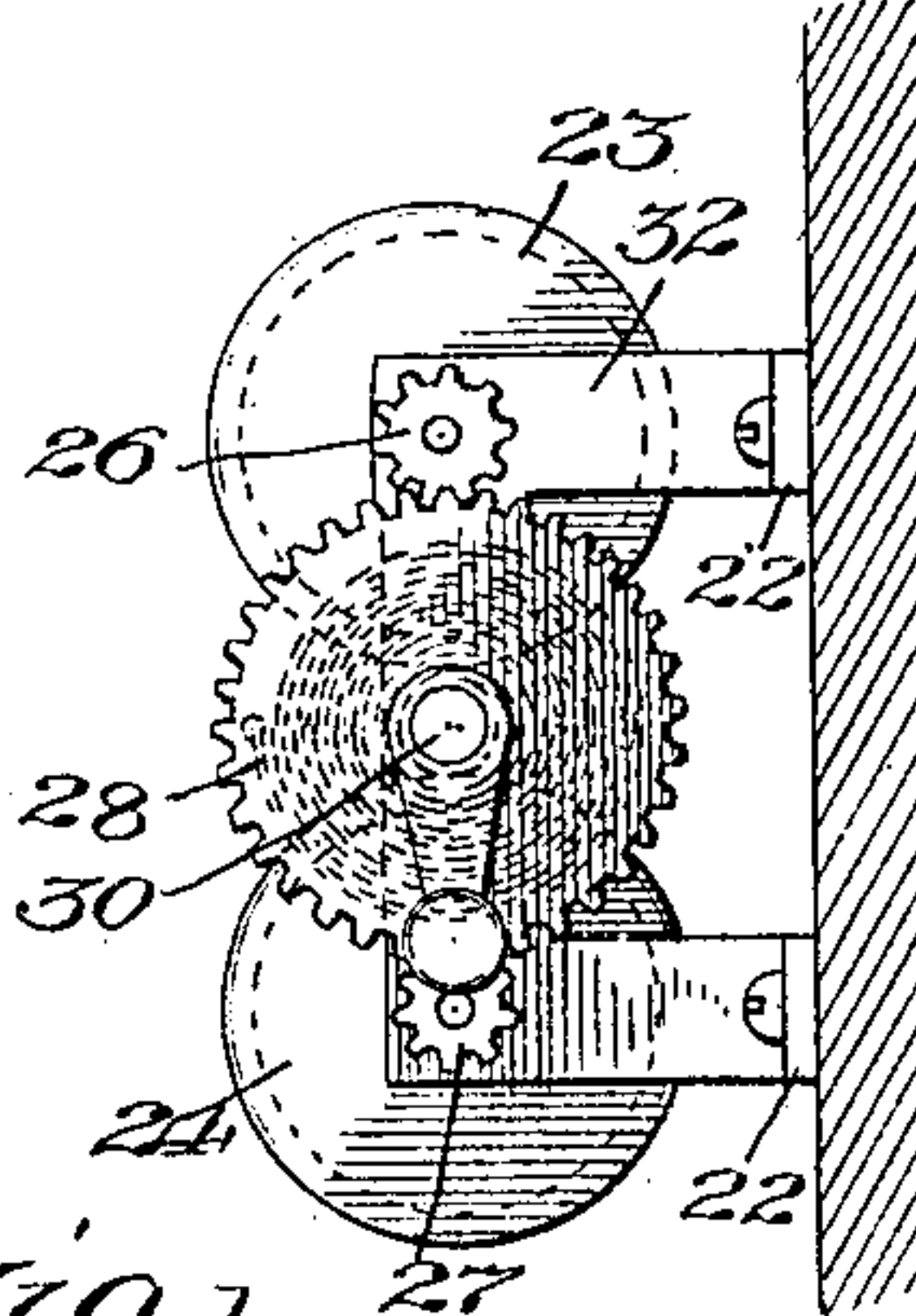
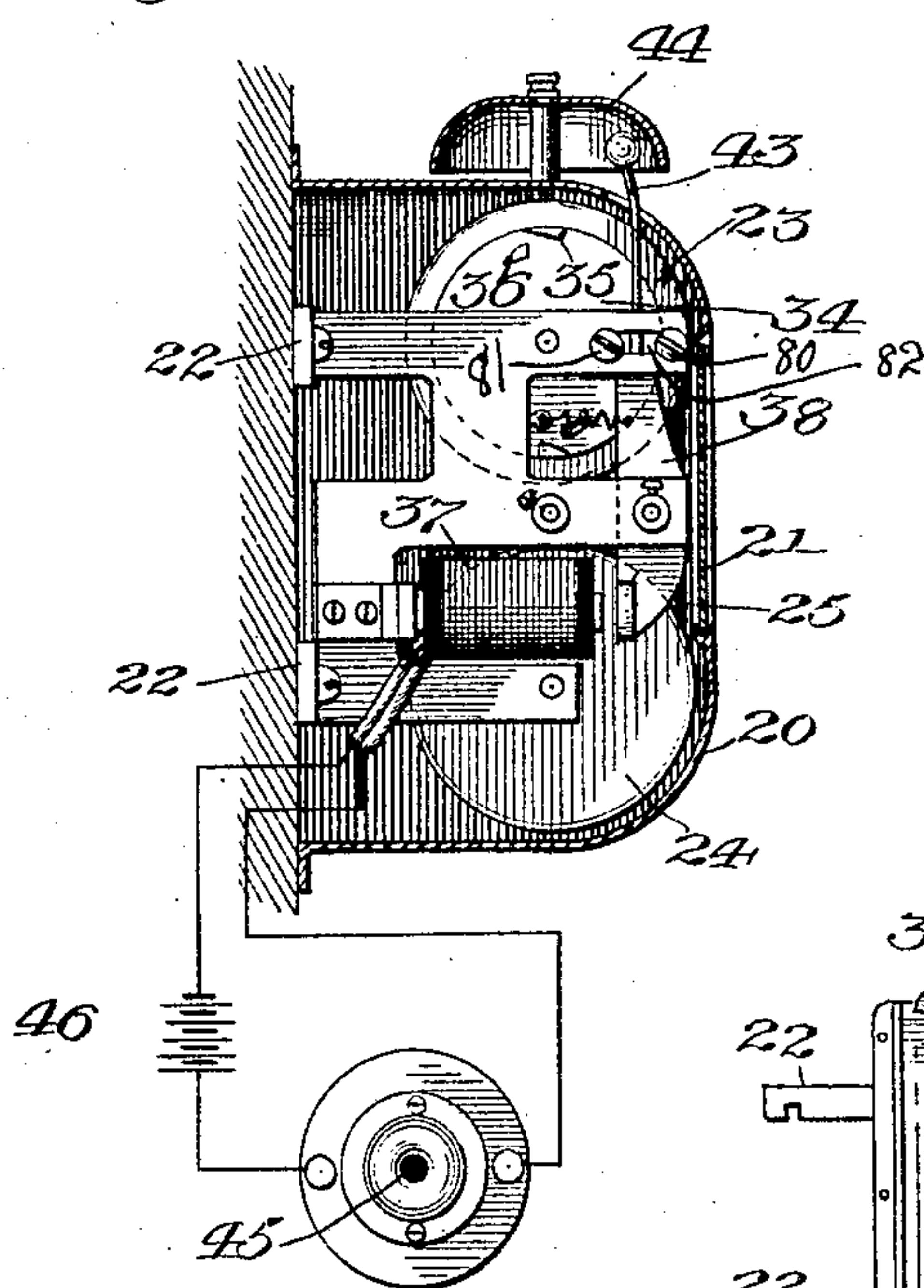
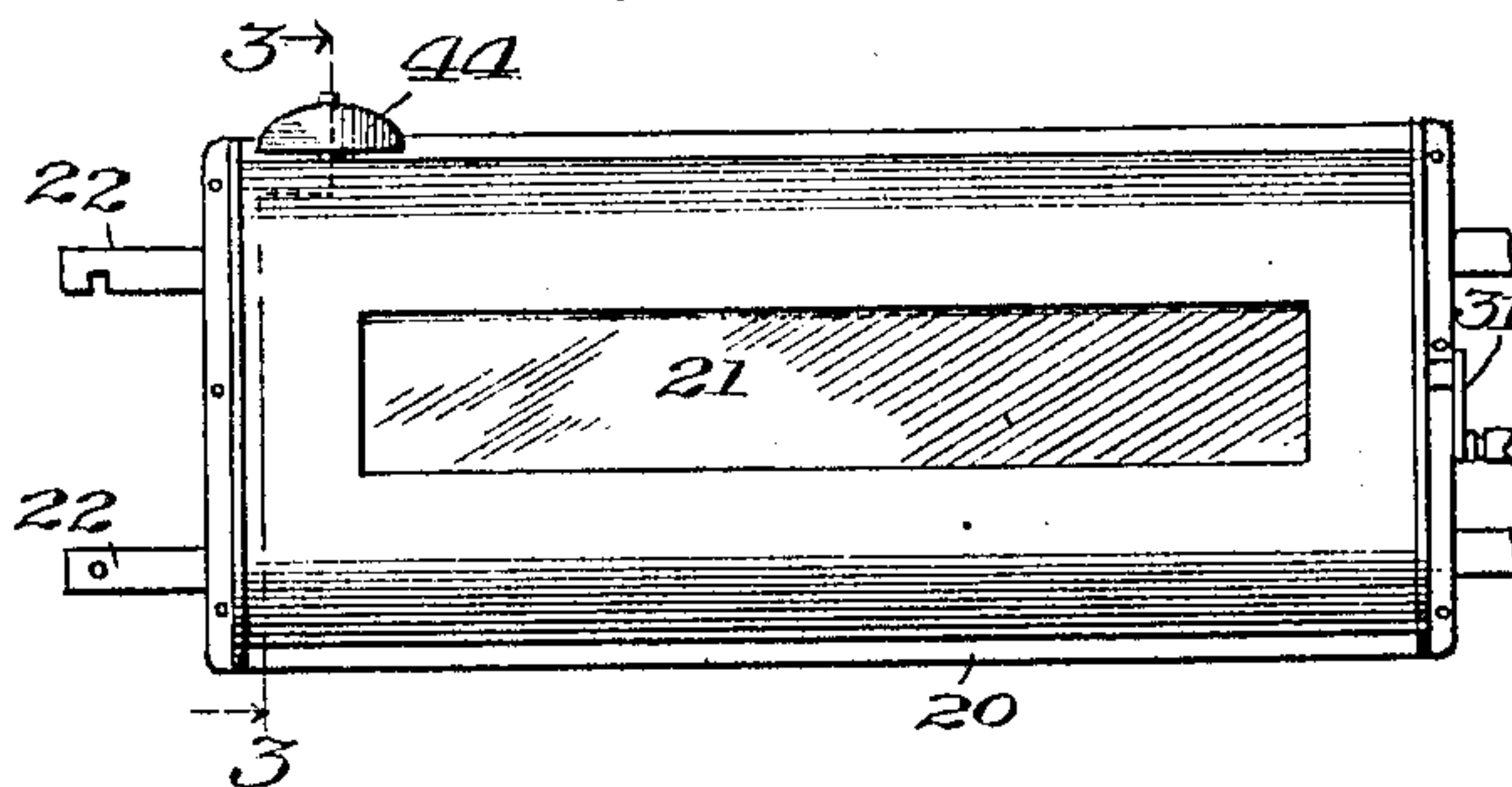


Fig. 1.



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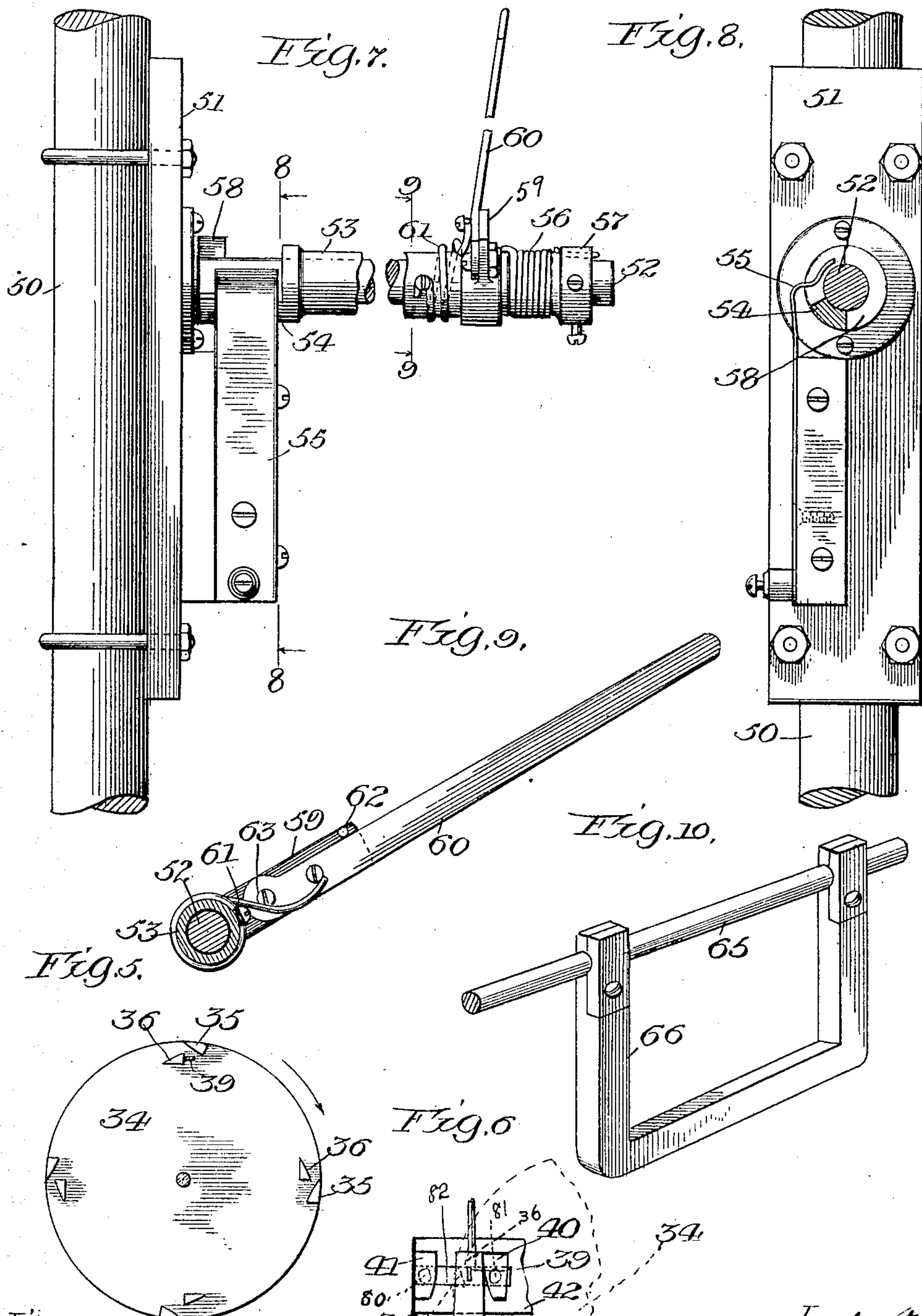
Emanuel Hagstrom
Gust Hagstrom
By Casper L. Reafield atty.

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Witnesses:
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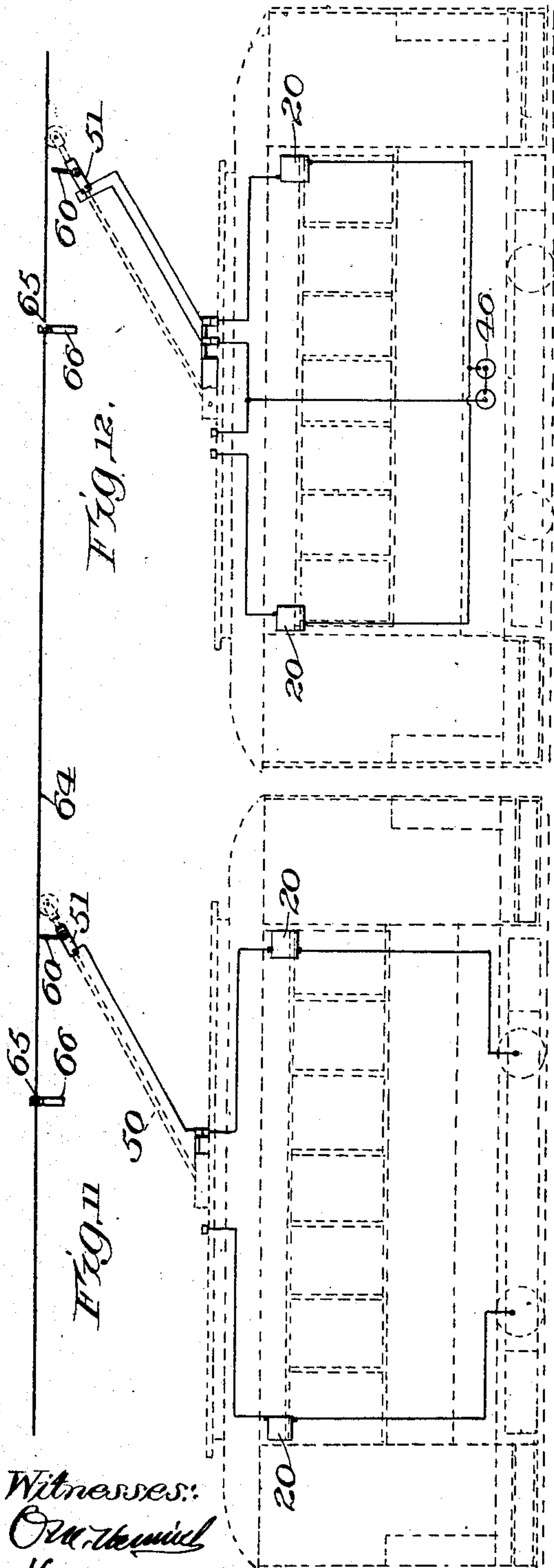
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3 SHEETS—SHEET 3.



Witnesses:
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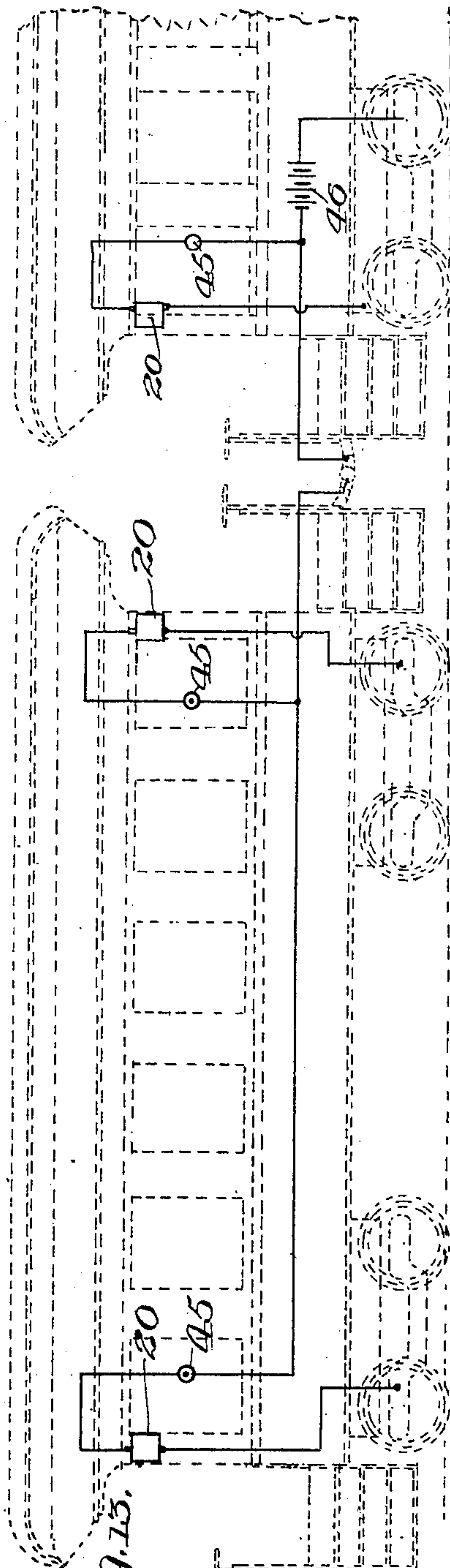


Fig. 13.
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UNITED STATES PATENT OFFICE.

EMANUEL HAGSTROM AND GUSTAF HAGSTROM, OF LINDSBORG, KANSAS.

LOCATION-INDICATOR FOR CARS.

No. 916,549.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed June 15, 1906. Serial No. 321,831.

To all whom it may concern:

Be it known that we, EMANUEL HAGSTROM and GUSTAF HAGSTROM, citizens of the United States of America, and residents of Lindsborg, county of McPherson, and State of Kansas, have invented certain new and useful Improvements in Location-Indicators for Cars, of which the following is a specification.

Our invention relates to location indicators for cars, and has for its object an improved device for use in street cars for indicating street crossings, or to be used in railway coaches for indicating stations.

In the accompanying drawings, Figure 1 is an elevation of the case which contains the operating parts; Fig. 2 is an enlarged elevation with the casing removed; Fig. 3 is a sectional elevation on line 3—3 of Fig. 1; Fig. 4 is an elevation of Fig. 2 from the right hand end; Fig. 5 is an enlarged end view, corresponding to Fig. 3, of one of the rolls; Fig. 6 is an enlarged detail on line 6—6 of Fig. 2; Fig. 7 is an elevation of the attachment which goes upon the trolley pole of a street car; Fig. 8 is a section on line 8—8 of Fig. 7; Fig. 9 is a section on line 9—9 of Fig. 7; Fig. 10 is a perspective of the trip which goes on the stay wire of a trolley system; Fig. 11 shows the system applied to a street car and using the trolley current; Fig. 12 shows the same thing using a battery; and Fig. 13 shows the system applied to railway coaches. In Figs. 11, 12 and 13, the cars and present appliances are shown in dotted lines, the full lines representing what we add to make an operative system.

In the said drawings 20 is a casing which contains the mechanism and which is provided with a window 21 through which the names of the streets or stations may be seen. Secured to the back of the casing are two bars 22 which support the mechanism and by which the device may be secured to the wall of the car. Supported by a suitable frame work on the bars 22 are the rolls 23 and 24 which carry a belt 25 on which are the names of the streets or stations. The belt 25 has one end secured to one roll and the other end to the other roll. At the beginning of an operation the belt is wound upon roll 23, but during an operation is gradually transferred to roll 24. It is then returned to roll 23 by means of the crank 31 operated by hand.

On the shafts of the rolls 23 and 24 are gears 26 and 27 which mesh into gears 28 and

29 on an intermediate shaft 30, on which shaft there is a crank 31. The crank 31 and the gear 28 are fast to the shaft 30, while the gear 29 is loose thereon. Between the portion of the frame 32 and the gear 29 is a stationary spring case 33, in which is an ordinary clock spring having one end fast to the case 33 and the other end fast to the loose gear 29. On the other end of the shaft of the roll 23 is a disk 34 having lugs 35 and 36 arranged in the manner best shown in Fig. 5.

Supported at a convenient place is an electro magnet 37 whose armature lever 38 carries a pin 39 adapted to engage the lugs 35 and 36 to stop the rotation of the disk 34 in the direction of the arrow of Fig. 5. The length of movement of the armature lever 38 is limited by lugs 40 and 41 (Fig. 6) on a portion 42 (Fig. 2) of the frame. The lugs 40 and 41 are held in place by screws 80 and 81 which pass through the slot 82 in the end of the portion 42 of the frame. On the end of the lever 38 is a clapper 43 arranged to strike a bell 44 each time that the magnet is actuated.

In the normal position of the lever 38 the pin 39 rests in the position shown in Fig. 5. The magnet 37 may be actuated by a push button 45 and battery 46, and when this occurs the lever 38 moves the pin 39 into the space between the lugs 35 and 36, and thus permits the spring in the case 33 to rotate the roll 23 and disk 34 in the direction of the arrow of Fig. 5. If the magnet 37 is deenergized before the roll makes a quarter rotation it will be stopped by contact between pin 39 and the next lug 36. If the magnet is not deenergized so quickly, then the stoppage will occur by reason of contact between the pin 39 and the lug 35. As soon as the circuit is broken through the magnet 37 the pin 39 will slip from lug 35 to 36. These movements of the roll 23 advance the belt 25 far enough to remove one name from the window 21 and substitute another, the spacing of the names on the belt being such as to bring about this result for each operation of the magnet. It will be observed that in this operation the spring in the case 33 does not act directly upon the roll 23 which carries the disk 34, but directly upon the roll 24 and thence through the belt 25 to the roll 23. This results from the fact that the gears 28 and 29 are connected together only through the belt 25 and gears 26 and 27. The effect of this is to always keep the belt tight, one

end of the belt being fast to one roll and the other end fast to the other roll.

When a trolley system is used as shown in Figs. 11 and 12, there is secured to the trolley pole 50 a bracket 51 to which is secured a stud or pin 52. On this pin is a sleeve 53, the inner end of which is partially cut away so as to leave a contact segment 54 adapted to engage a contact spring 55 when the sleeve is moved from its normal position. A spring 56 and collar 57 on pin 52, together with a stop 58 on the bracket 51 serve to normally hold the segment 54 and spring 55 out of electrical connection with each other. On the sleeve 53 is an arm 59 on which is pivoted a lever 60. A spring 61 normally holds the lever 60 against a stop pin 62. Pressure on the lever 60 toward the pin 62 while in contact therewith results in turning the sleeve 53 on the stud 52, the effect of which is to close electrical connection between segment 54 and contact spring 55. A release of the lever 60 permits spring 56 to break this electrical connection by returning the sleeve to its normal position. A movement of the lever in the opposite direction simply results in turning the lever idly on its pivot 63. The trolley wire is shown at 64 in Fig. 11 and the stay wire at 65. This stay wire is the one ordinarily used in steadying and holding the trolley wire from swaying. On the stay wire is clamped a bracket 66 (Figs. 10 and 11) which is adapted to be engaged by the lever 60, the effect of which is to turn the sleeve 53 and close the circuit through the spring 55 and the magnet 37. These brackets 66 are located at the places where it is desired to shift the indicator, and each shift is accompanied by an alarm sounded by the bell 44. When the current for operating the magnet 37 is taken from the wire 64 it passes through the device to ground as shown in Fig. 11. When a battery is used the arm 60 is insulated from the sleeve 53 and the circuit is completed as shown in full lines in Fig. 12. On railway coaches the circuit is completed by a push button 45 as shown in Fig. 13. In this case the connections may be conveniently extended from car to car by attaching the wire in any suitable way to the hose for the air brake system. Or each car may be independent of each other car, in which case each car would carry its own battery and push button. As shown in Fig. 13, one battery serves for the entire train, but each car is provided with one or more push buttons so that the indicator may be operated by the proper employee at whatever place he might be.

When the indicator has run to the end it is returned to normal position by the employee turning the crank 31. In doing this the escape wheel 34 acts as a ratchet wheel, and the pin 39 acts as a pawl. By observing Fig. 5 it will be seen that the lugs 36 and 35 are tapered to points at their rear ends so that if

the disk 34 should be turned by hand in the direction opposite to the arrow, the pin 39 would pass between these lugs and act as a holding pawl on a ratchet wheel.

What we claim is:—

1. An indicator comprising a belt provided with a series of indications, a pair of rotatable members carrying said belt, a power transmitting spring for revolving one of said members, a disk connected with the other member and provided with a plurality of pairs of laterally extending spaced lugs upon one face thereof, said belt serving to transmit the force of the spring from one member to the other, an intermittently operable arrester normally extending in the path of one of a pair of lugs whereby the movement of said members is arrested and an electrically operated device for shifting said arrester to a position between the lugs of a pair whereby said members are released and rotated through the medium of the said spring and belt thereby successively exposing the indications upon the belt.

2. An indicator comprising a belt provided with a series of indications, a pair of rotatable members carrying said belt, a power transmitting spring for revolving one of said members, a disk connected with the other member and provided with a plurality of pairs of laterally extending spaced lugs upon one face thereof, said belt serving to transmit the force of the spring from one member to the other, an intermittently operable arrester normally extending in the path of one of a pair of lugs whereby the movement of said members is arrested and an electrically operated device for shifting said arrester to a position between the lugs of a pair whereby said members are released and rotated through the medium of the said spring and belt thereby successively exposing the indications upon the belt, and means for limiting the movement of said arrester when shifted by said device.

3. An indicator comprising a casing having an exposure opening, an upper, a lower and an intermediate spindle journaled in said casing, a pinion fixed to one end of each of the upper and lower spindles, a gear fixed to the intermediate spindle and meshing with the pinion carried by the upper spindle, a gear loosely mounted upon the intermediate spindle and meshing with the pinion upon the lower spindle, a power transmitting spring fixed at one end to the intermediate spindle and at its other end connected to the loose gear for rotating it, a roller carried by the upper and the lower spindle, a belt attached to the rollers and provided with a plurality of indications adapted to be successively exposed through said opening, a disk fixed to the upper spindle and provided with a plurality of lateral lugs on one face thereof, an intermittently operable arrester normally extending in the path

of one of the lugs whereby the movement of the said rolls is arrested, and an electrically operated device for shifting said arrester out of the path of the lug whereby said rolls are released and rotated through the medium of said spring and belt thereby successively exposing the indications upon the belt.

4. An indicator comprising a casing having an exposure opening, an upper, a lower and an intermediate spindle journaled in said casing, a pinion fixed to one end of each of the upper and lower spindles, a gear fixed to the intermediate spindle and meshing with the pinion carried by the upper spindle, a gear loosely mounted upon the intermediate spindle and meshing with the pinion upon the lower spindle, a power transmitting spring fixed at one end to the intermediate spindle and at its other end connected to the loose gear for rotating it, a roller carried by the upper and the lower spindle, a belt attached to the rollers and provided with a plurality of indications adapted to be successively exposed through said opening, a disk fixed to the upper spindle and provided with a plurality of lateral lugs on one face thereof, an intermittently operable arrester normally extending in the path of the lugs whereby the movement of the said rolls is arrested, and an electrically operated device for shifting said arrester out of the path of the lugs whereby said rolls are released and rotated through the medium of said spring and belt thereby successively exposing the indications upon the belt, and means for limiting the movement of said arrester when shifted by said device.

5. An indicator comprising a casing having an exposure opening, an upper, a lower and an intermediate spindle journaled in said casing, a pinion fixed to one end of each of the upper and lower spindles, a gear fixed to the intermediate spindle and meshing with the pinion carried by the upper spindle, a gear loosely mounted upon the intermediate spindle and meshing with the pinion upon the lower spindle, a power transmitting spring fixed at one end to the intermediate spindle and at its other end connected to the loose gear for rotating it, a roller carried by the upper and the lower spindle, a belt attached to the rollers and provided with a plurality of indications adapted to be successively exposed through said opening, a disk fixed to the upper spindle and provided with a plurality of pairs of laterally extending spaced lugs upon one face thereof, an intermittently operable arrester normally extending in the path of one of a pair of lugs, whereby the movement of said rolls is arrested and an electrically operated device for shifting said arrester to position the same between the lugs of a pair whereby said rolls are released and rotated through the medium of said spring and belt thereby suc-

cessively exposing the indications upon the belt.

6. An indicator comprising a casing having an exposure opening, an upper, a lower and an intermediate spindle journaled in said casing, a pinion fixed to one end of each of the upper and lower spindles, a gear fixed to the intermediate spindle and meshing with the pinion carried by the upper spindle, a gear loosely mounted upon the intermediate spindle and meshing with the pinion upon the lower spindle, a power transmitting spring fixed at one end to the intermediate spindle and at its other end connected to the loose gear for rotating it, a roller carried by the upper and the lower spindle, a belt attached to the rollers and provided with a plurality of indications adapted to be successively exposed through said opening, a disk fixed to the upper spindle and provided with a plurality of pairs of laterally extending spaced lugs upon one face thereof, an intermittently operable arrester normally extending in the path of one of a pair of lugs, whereby the movement of said rolls is arrested and an electrically operated device for shifting said arrester to position the same between the lugs of a pair whereby said rolls are released and rotated through the medium of said spring and belt thereby successively exposing the indications upon the belt, and means for limiting the movement of said arrester when shifted by said device.

7. An indicator comprising a casing having an exposure opening, an upper, a lower and an intermediate spindle journaled in said casing, a pinion fixed to one end of each of the upper and lower spindles, a gear fixed to the intermediate spindle and meshing with the pinion carried by the upper spindle, a gear loosely mounted upon the intermediate spindle and meshing with the pinion upon the lower spindle, a power transmitting spring fixed at one end to the intermediate spindle and at its other end connected to the loose gear for rotating it, a roller carried by the upper and the lower spindle, a belt attached to the rollers and provided with a plurality of indications adapted to be successively exposed through said opening, a disk fixed to the upper spindle and provided with a plurality of pairs of spaced lugs upon one face thereof, an armature lever carrying a pin arranged in the path of said lugs whereby the movement of the rolls is arrested, an electro-magnet, and means for energizing said magnet thereby operating said lever and shifting said pin to a position between a pair of lugs whereby the rolls are released and rotated through the medium of said spring and belt thereby successively exposing the indications upon the belt.

8. An indicator comprising a casing hav-

ing an exposure opening, an upper, a lower
and an intermediate spindle journaled in
said casing, a pinion fixed to one end of each
of the upper and lower spindles, a gear fixed
to the intermediate spindle and meshing with
the pinion carried by the upper spindle, a gear
loosely mounted upon the intermediate spin-
dle and meshing with the pinion upon the
lower spindle, a power transmitting spring
fixed at one end to the intermediate spindle
and at its other end connected to the loose
gear for rotating it, a roller carried by the up-
per and the lower spindle, a belt attached to
the rollers and provided with a plurality of in-
dications adapted to be successively exposed
through said opening, a disk fixed to the up-
per spindle and provided with a plurality of
pairs of spaced lugs upon one face thereof,

an armature lever carrying a pin arranged in
the path of said lugs whereby the movement
of the rolls is arrested, an electro-magnet,
means for energizing said magnet thereby
operating said lever and shifting said pin to a
position between a pair of lugs whereby the
rolls are released and rotated through the
medium of said spring and belt thereby suc-
cessively exposing the indications upon the
belt, and means for limiting the movement
of said armature lever.

Signed at Lindsborg Kansas.

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Witnesses:

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