

(No Model.)

B. E. BYRD.  
STATION INDICATOR.

No. 582,038.

Patented May 4, 1897.

Fig. 1.

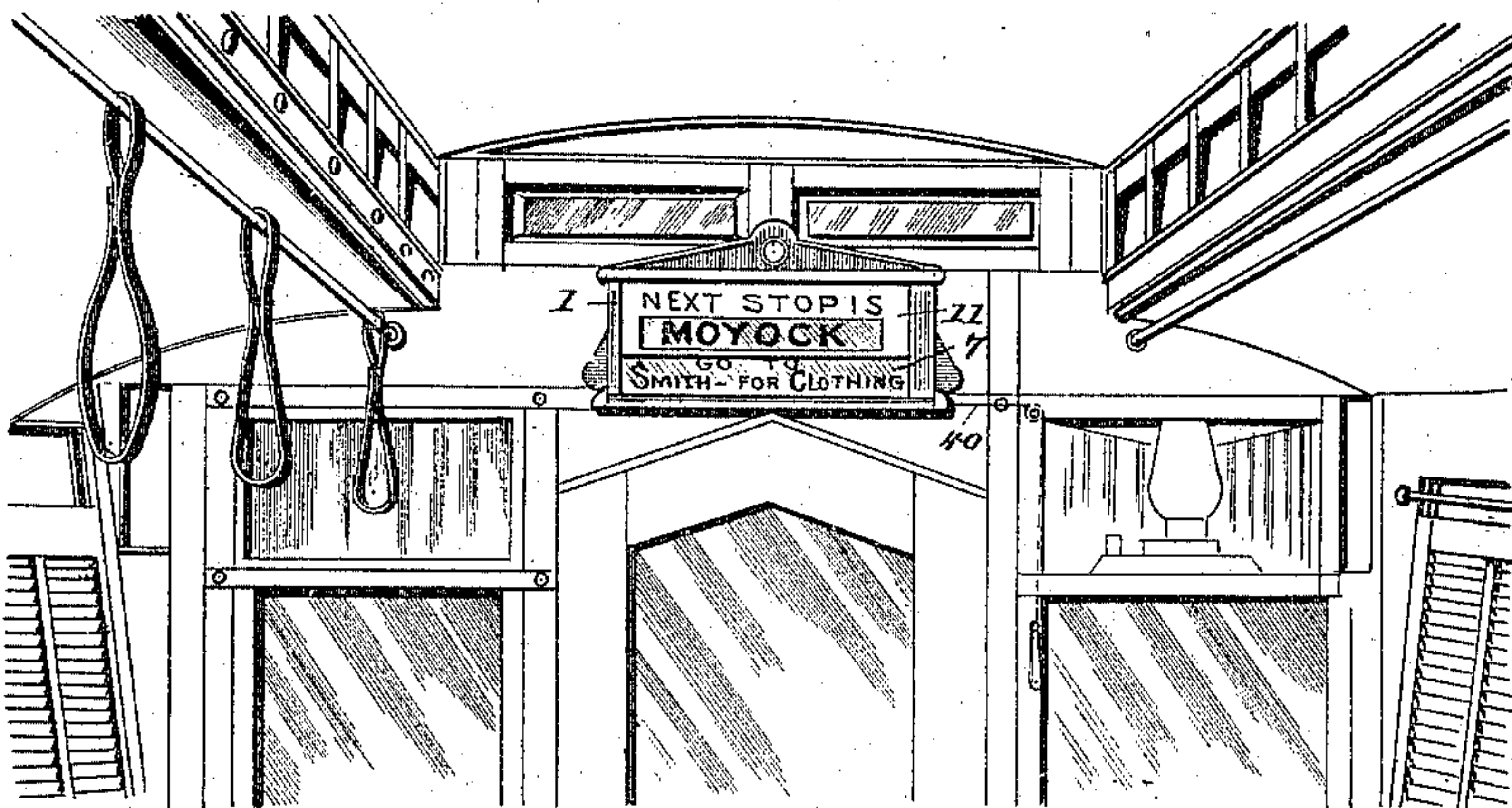


Fig. 2.

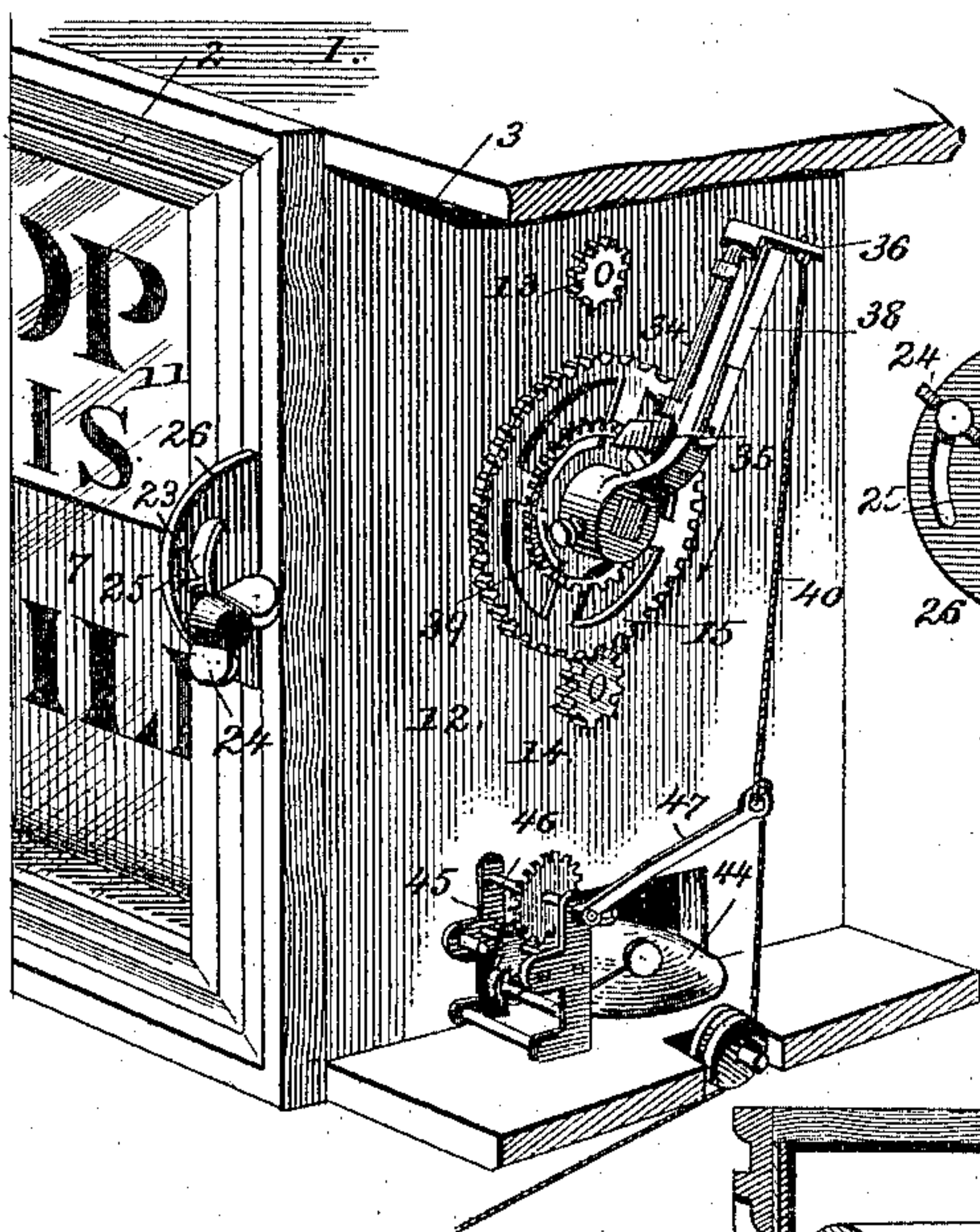


Fig. 3.

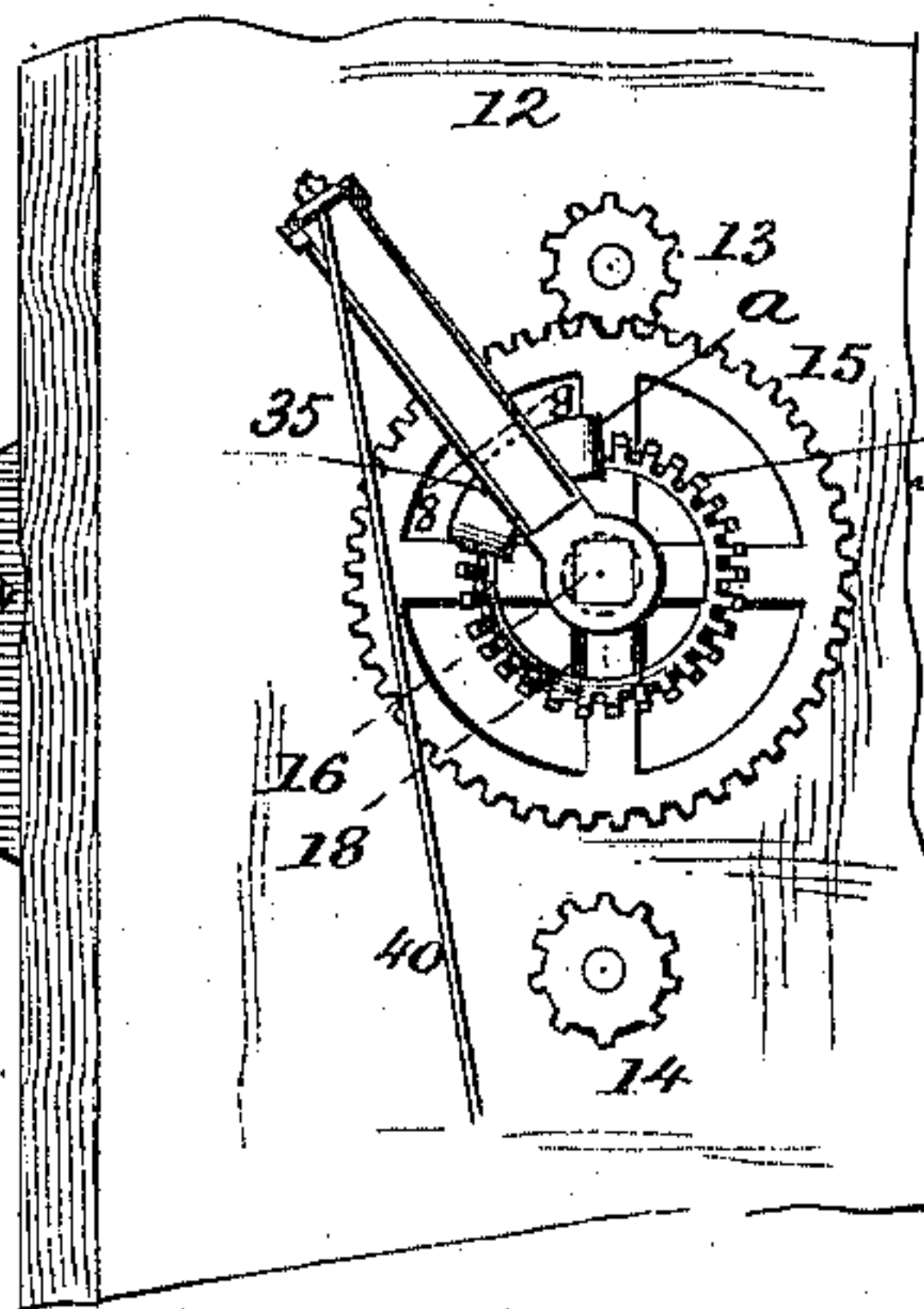


Fig. 5.

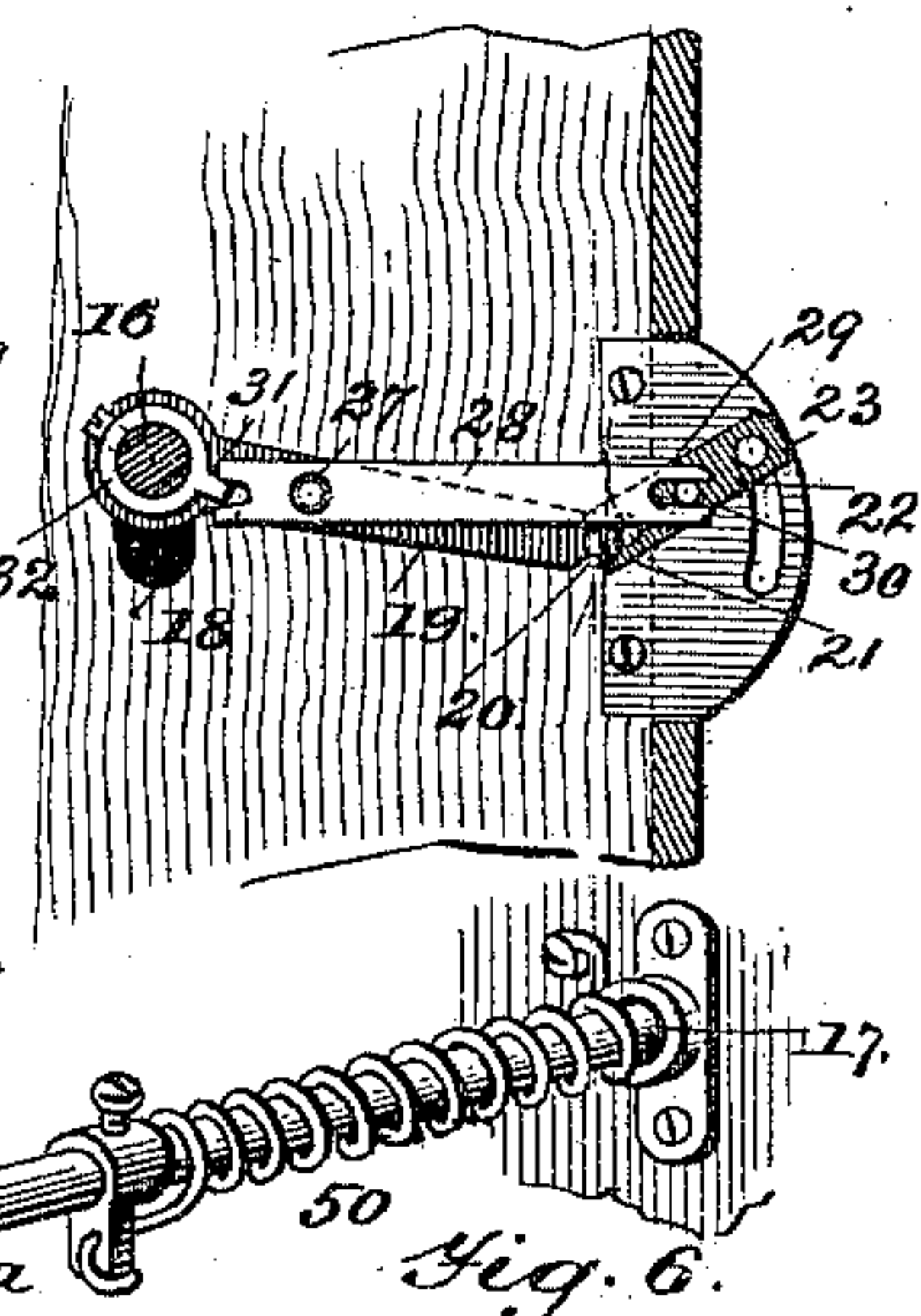


Fig. 4.

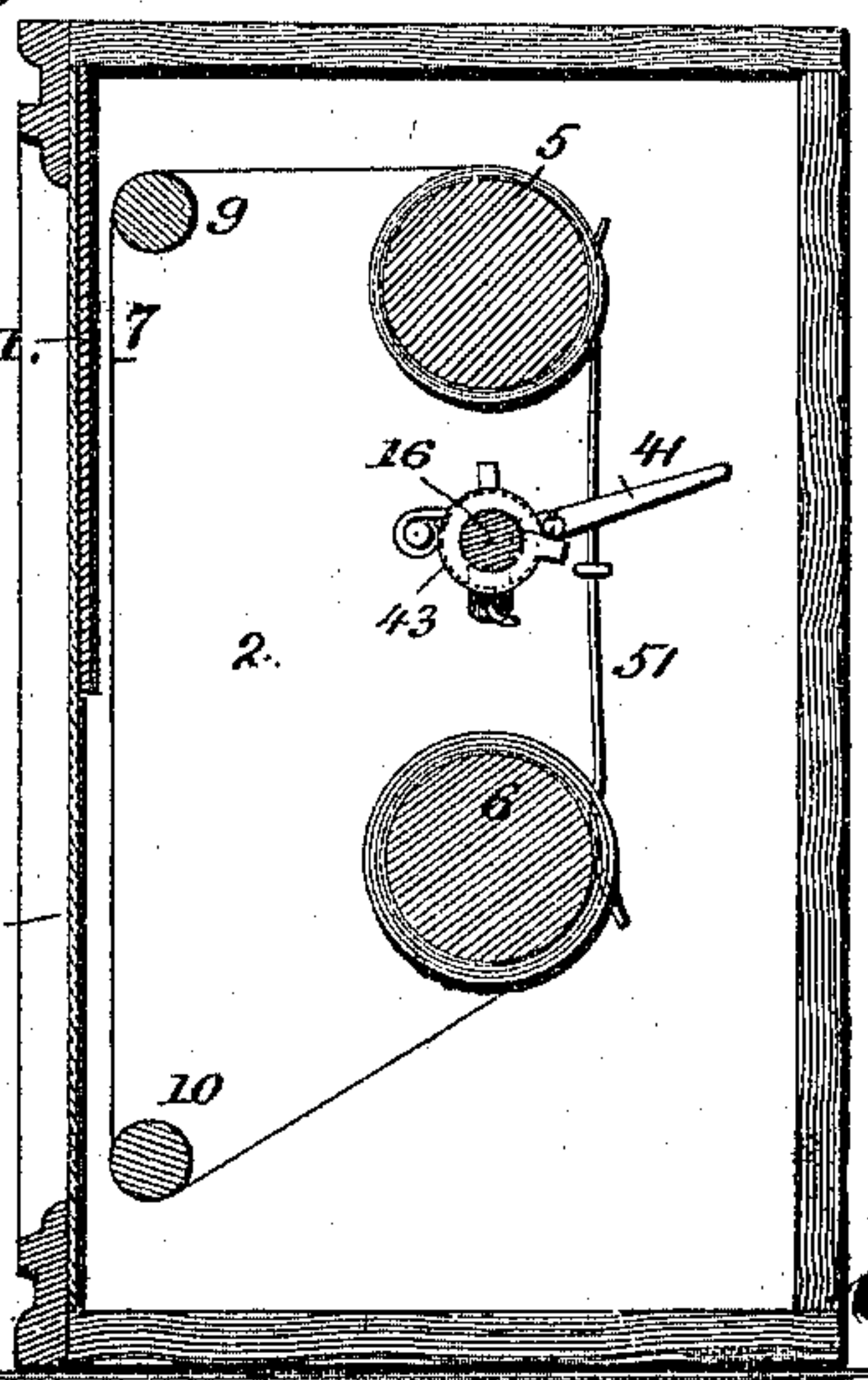


Fig. 7.

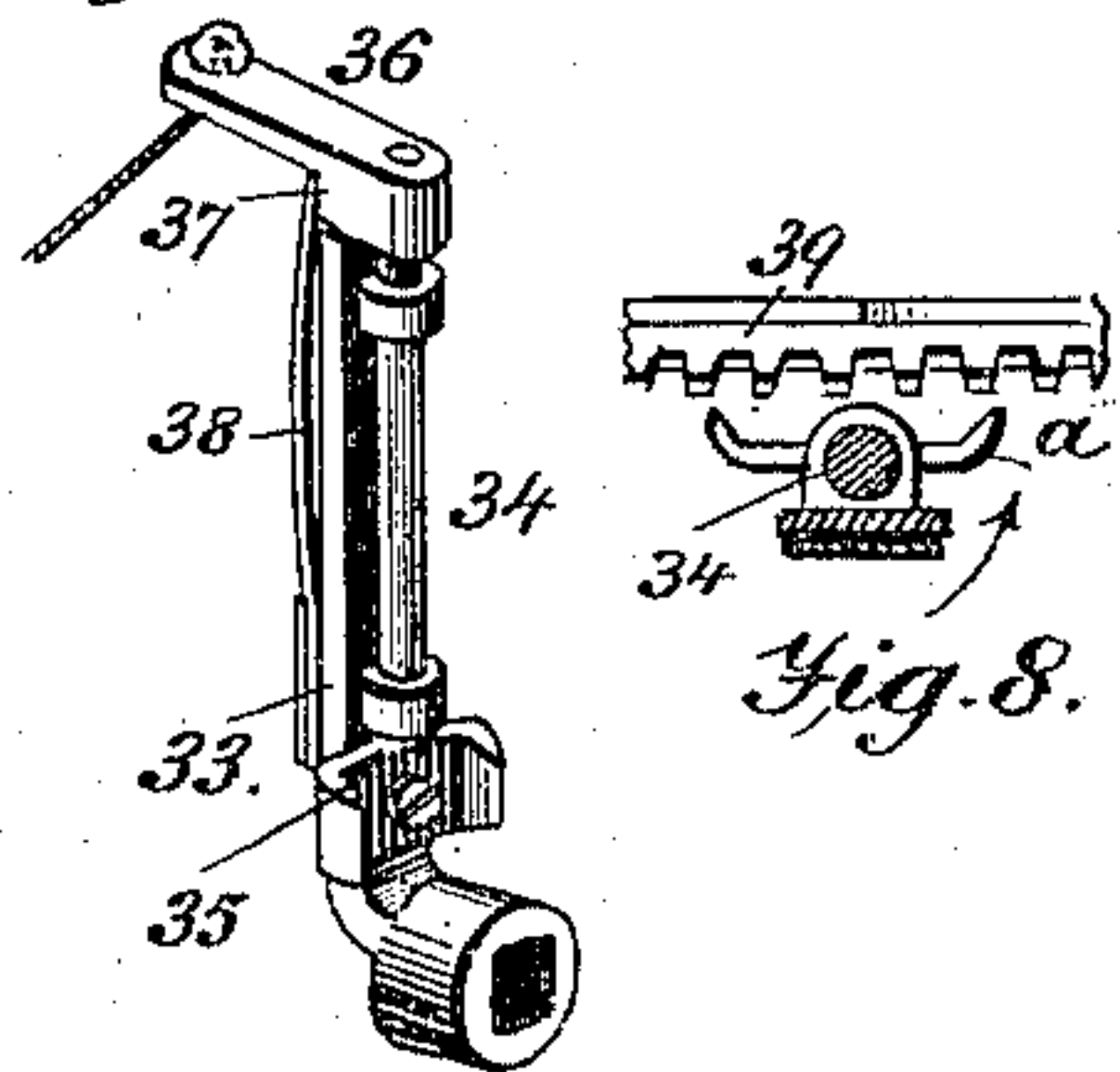
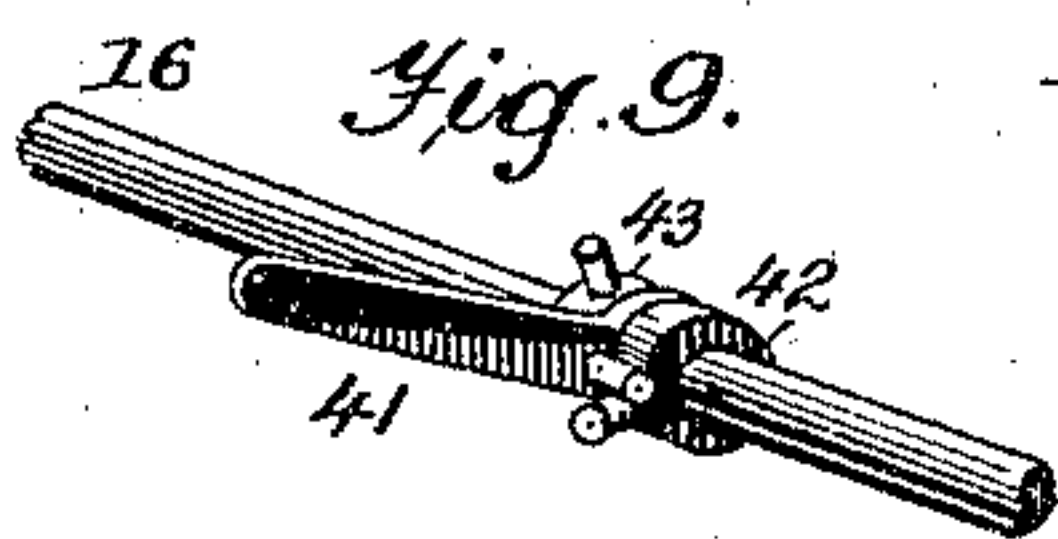


Fig. 8.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

BRITTON E. BYRD, OF EDENTON, NORTH CAROLINA, ASSIGNOR OF ONE-HALF TO W. S. SUMMERELL, OF SAME PLACE.

## STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 582,038, dated May 4, 1897.

Application filed September 19, 1896. Serial No. 606,320. (No model.)

*To all whom it may concern:*

Be it known that I, BRITTON E. BYRD, residing at Edenton, in the county of Chowan and State of North Carolina, have invented a new and Improved Station-Indicator, of which the following is a specification.

My invention is in the nature of an improved indicator for railway or street cars; and it primarily has for its object to provide a mechanism of this character of a very simple and economical construction, one which can be readily manipulated and which will effectively serve for its intended purposes.

My invention also has for its object to provide an indicator having means adapted to be readily set by the operator to simultaneously reverse the movement of the indicator band or ribbon and set the operating mechanism for such reverse movement.

With other objects in view, which will hereinafter be made clear, the invention consists of an indicator embodying the peculiar features of construction and novel combination of parts, such as will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a view showing my invention as set up for use in a street-car. Fig. 2 is a perspective view of a portion of the casing, illustrating the operating-gear and alarm mechanism, the main gear being shown adjusted to wind the ribbon downward. Fig. 3 is a detail end view of such gear mechanism, the same being shown set to turn the ribbon in an upward or reverse direction. Fig. 4 is a cross-section of the casing, illustrating the ribbon-rolls and the stop device hereinafter referred to. Fig. 5 is a detail view illustrating the shifting-lever devices for simultaneously setting the main gear and the operating-lever to a reverse position. Fig. 6 is a detail view of a portion of main operating-shaft. Fig. 7 is a detail view of the operating-lever and the shifting or rock pawl. Fig. 8 is a detail section on the line 8 8 of Fig. 3, and Fig. 9 is a detail view of the stop device for limiting the throw of the operating or pawl lever.

Referring now to the accompanying drawings, in which like numerals and letters indi-

cate like parts in all the figures, 1 indicates a casing, which is of a suitable ornamental shape and of a size to suit the car or other body to which it is to be applied. This casing has two compartments 2 and 3, the one 3 being of such width only to accommodate the operating-gear devices presently referred to.

Within the compartment 2 are held in vertical alinement a pair of ribbon-rollers 5 6, which in practice are of a diameter to suit the extent to which it is desired to move the ribbon at each operation. When used for steam-railway purposes and the ribbon 7 provided only with names of stations, the rollers are made proportionately small, while for street-car use, when the ribbon is provided with advertisements alternating with the names of stations, the rolls are made correspondingly larger.

By referring now more particularly to Fig. 4 it will be seen the front wall of the casing has a glass-covered opening 8 and vertically-alining guide-rolls 9 10, disposed adjacent the opening over which the ribbon passes. 11 denotes a fixed plate, which covers the upper portion of the opening 8 and on which the fixed sign "Next stop is" appears.

The shafts of the rollers 5 and 6 at one end extend through the wall 12 of the casing and carry small cog-pinions 13 14, with which a main gear-wheel 15 is adapted to be alternately moved into engagement, whereby to impart reverse movements to the ribbon.

The gear 15 is loosely connected to one end of a rock-shaft 16, the other end of which has a loose bearing in a socket 17, whereby the gear end is capable of a slight movement vertically in the slot 18 in the casing-wall 12. (See Figs. 4 and 6.) At the inner end the shaft 16 has a coiled spring 50, arranged in the manner most clearly shown in Fig. 6, which serves to return such shaft to its normal position after each operation of the gear 15.

19 indicates a lever-arm held on the shaft 16 just inside the wall 12, which extends toward the front of the casing and terminates in a ball-like end 20, with which the forked end 21 of a throw-lever 22 engages, the front end 23 of which extends through the front wall of casing and has a thumb-screw 24,



having its shank working in a segmental slot 25 in a plate 26, as clearly shown in Figs. 2 and 5.

The lever 19 is fulcrumed on a stud-pin or screw 27, secured to the wall 12 in the casing, on which a second lever-arm 28 is also fulcrumed, which arm has its front end forked, as at 29, to receive a stud-pin 30 on the throw-lever 22, while the inner end is forked to receive a tooth 31, projected radially from a collar 32, fixedly secured to the shaft 16, as shown.

Upon the outer end of the shaft 16 is fixedly held a lever 33, which extends up normally at an angle other than a right angle to the vertical axis of the shaft 16, which lever 33 has a rock-shaft 34, mounted on its inner face, which carries at its lower end a double-acting pawl 35 and at its upper end a crank or angle extension 36, having a flat face 37, with which a spring 38, held on the lever 33, engages to normally keep the rock-shaft and pawl out of an operative position, as clearly shown in Fig. 8.

39 indicates an annular toothed rim secured to and projected out from the main gear, having its teeth arranged to be engaged by either end of the double-acting pawl.

So far as described it will be readily seen that when the parts are in the position shown in Fig. 2 by pulling on the cord 40 the rock-shaft 34 will be turned in the direction indicated by the arrow in Fig. 8 and bring its pawl end *a* into engagement with the annular toothed rim 39, and thereby give the main gear and the shaft 16 a partial rotation and turn the lever-operating pin in the direction indicated to wind up the ribbon on the lower roller 6 when changing the sign.

As the rollers 5 and 6 vary in diameter and as the ribbons are fed on or off, it follows that as the signs or indicator-names on the ribbon are spaced regularly apart the main gear must be moved at all times a distance sufficient to feed the ribbon a uniform distance. For this purpose I have provided a stop-arm 41, which has a limited free movement on the shaft 16 and is adapted when the shaft is rocked to engage the lower roll when such roll is filling and the upper one when it is filling, it being obvious that as the lower roll increases in diameter the stop will have a proportionately-decreased sweep or throw sufficient to compensate for increased rotation of the discharging-roll necessary to let out the required length of ribbon, it being also understood that the same results are attained when the rotation of the rolls is reversed, as collars 42 43, having suitable lugs, are provided to engage the stop 41, as shown clearly in Fig. 9.

44 indicates a gong or alarm-bell disposed, preferably, in the bottom of the compartment 3.

45 denotes ratchet-gear devices, to the operating-shaft 46 of which is connected a lever 47, with which the pull-cord connects, as

clearly shown in Fig. 2, such cord in practice extending down over a suitable guide pulley or pulleys to a point in easy reach of the brakeman or conductor.

By arranging the several parts in the manner described it will be readily seen that when necessary to set the mechanism to move the ribbon backward it is only necessary for the operator to shift the thumb-nut from one extreme point in the slot to the other, as such movement causes the levers connected to this shaft to operate to lift or depress the main gear, as the case may be, and rock the shaft to swing the pawl-carrying lever over to reverse position, as will be clearly understood by reference to Figs. 2 and 3. It will thus be seen that to set the indicator to work in either direction it is not necessary to remove or apply slide devices, remove any part of the casing, or readjust or set any of the internal mechanism by disconnecting any portion thereof, as such operation is effected by simply moving the thumb-screw in the slotted segment-plate in the manner stated and securing it in such position, the movement thereof properly setting all the parts.

51 indicates a friction-spring adapted to engage the rolls 5 and 6.

Furthermore, by providing a stop device constructed as described the shaft 16 will always have a throw or rock movement necessary to properly feed the ribbon.

The detailed arrangement of the operating mechanism may be varied without departing from the scope of the appended claims.

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

1. In an indicator mechanism of the kind described, the combination with ribbon-rolls and the ribbon secured thereto, said rolls having each a drive pinion or gears, of a rock-shaft a main operating-gear loosely mounted thereon, adapted to be set alternately in engagement with said drive-pinions, a lever device for operating the gear fixedly held on the rock-shaft and means operated from the outside of casing connected with the main gear and lever devices adapted to simultaneously shift the said main gear and lever to operate the ribbon in a reverse direction as specified.

2. A station-indicator, comprising a casing, a pair of ribbon-rolls, a ribbon having its opposite ends wound on the rolls, a rock-shaft, a gear mechanism secured thereto having shifting means whereby it can be set to operate the rolls in reverse directions and a movable stop device on the rock-shaft having its movement governed by the varying diameter of the roll being filled, to regulate the operation of the shaft-and-gear mechanism as set forth.

3. In a station-indicator as described, the combination with the ribbon and the winding rolls, one of such rolls having an operating-gear, of a rock-shaft, a main gear mounted thereon, held to mesh with the roll-gear,



means for rocking such shaft, and a stop-arm carried by such shaft and adapted to engage the ribbon-roll as it is being filled to limit the rock movement of the shaft as specified.

5 4. In a station-indicator as described, the combination with the ribbon-rolls and the ribbon, said rolls having each a drive gear or pinion, of the rock-shaft, spring-held to its normal position, said shaft carrying a main  
10 drive-gear, means for shifting the shaft to bring the said main gear into engagement with either of the roll-gears and a ratchet-and-pawl lever mechanism for operating the rock-shaft to rotate the main gear substantially as  
15 shown and described.

5. The combination with the ribbon and the winding rolls, said rolls having each a drive-gear, the rock-shaft, the main gear held thereon, having a ratchet-rim, an operating-lever  
20 carried by the shaft having a double pawl for engaging the said rim, a single-throw lever operated from the outside of the casing and jointed lever members connecting the shaft and the throw-lever, arranged substantially  
25 as shown, whereby the movement of the throw-lever will lift or depress the main gear, and rock the shaft to change the position of the operating-lever as specified.

6. A station-indicator comprising a casing,  
30 a pair of vertically-aligning ribbon-rolls having each a drive-gear, a ribbon having the ends secured to such rolls, a rock-shaft spring-held to its normal position, and having one end held for a limited vertical movement, a  
35 main drive-gear having a ratchet-rim held on such end adapted to be moved alternately in engagement with the gear on either ribbon-roll, a lever secured to the shaft having a double-acting pawl, normally held out of en-  
40 gagement with the ratchet-rim, but adapted to move into engagement therewith when the lever is operated, an operating-cord connected to such lever and an alarm mechanism connecting with such operating-cord all being ar-  
45 ranged substantially in the manner shown and for the purposes described.

7. In a station-indicator substantially as described the combination with the ribbon-rolls and the ribbon, and the drive-gearing, including the rock-shaft, of a stop-arm, hav- 50 ing a limited free movement on the said shaft, the collars having studs fixedly held on the shaft, said stop-arm being of a length to engage the roll being filled when the shaft is rocked and means for operating the drive- 55 gearing as set forth.

8. In an indicator as described, the combination with winding-rolls having drive-gears, the rock-shaft and the main drive-gear having an annular ratchet-rim, of the lever se- 60 cured to the shaft, the pawl rock-shaft journaled on such lever having a double pawl adapted to engage the ratchet-arm spring devices for holding such pawl rock-shaft nor- 65 mally with the pawl out of operative engagement, said shaft having a crank member, and a pull-cord secured thereto, all being arranged substantially as shown and for the purposes described.

9. In an indicator as described the combi- 70 nation with the ribbon, the ribbon-rolls having drive-gears, the rock-shaft vertically movable at one end, the main gear secured to such end having a ratchet-rim, the operating-lever having a shifting double pawl and the slotted 75 plate secured to the front of the casing, of a throw-lever secured to the shaft, the throw-lever having a fixed thumb-screw or stud operating on the slotted plate, said arm having its inner end forked and connected with the 80 lever 19 and provided with a stud 30, a collar having a radial tooth secured to the rock-shaft, the lever 28 having its inner end forked to engage the said tooth, and its outer end forked to engage the stud 30, said levers 19 85 and 28 having a common pivot or fulcrum point substantially as described.

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Witnesses:

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J. EDW. LUCKETT.