

No. 610,844.

Patented Sept. 13, 1898.

E. C. CROSSMAN.
STATION INDICATOR.

(Application filed May 20, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

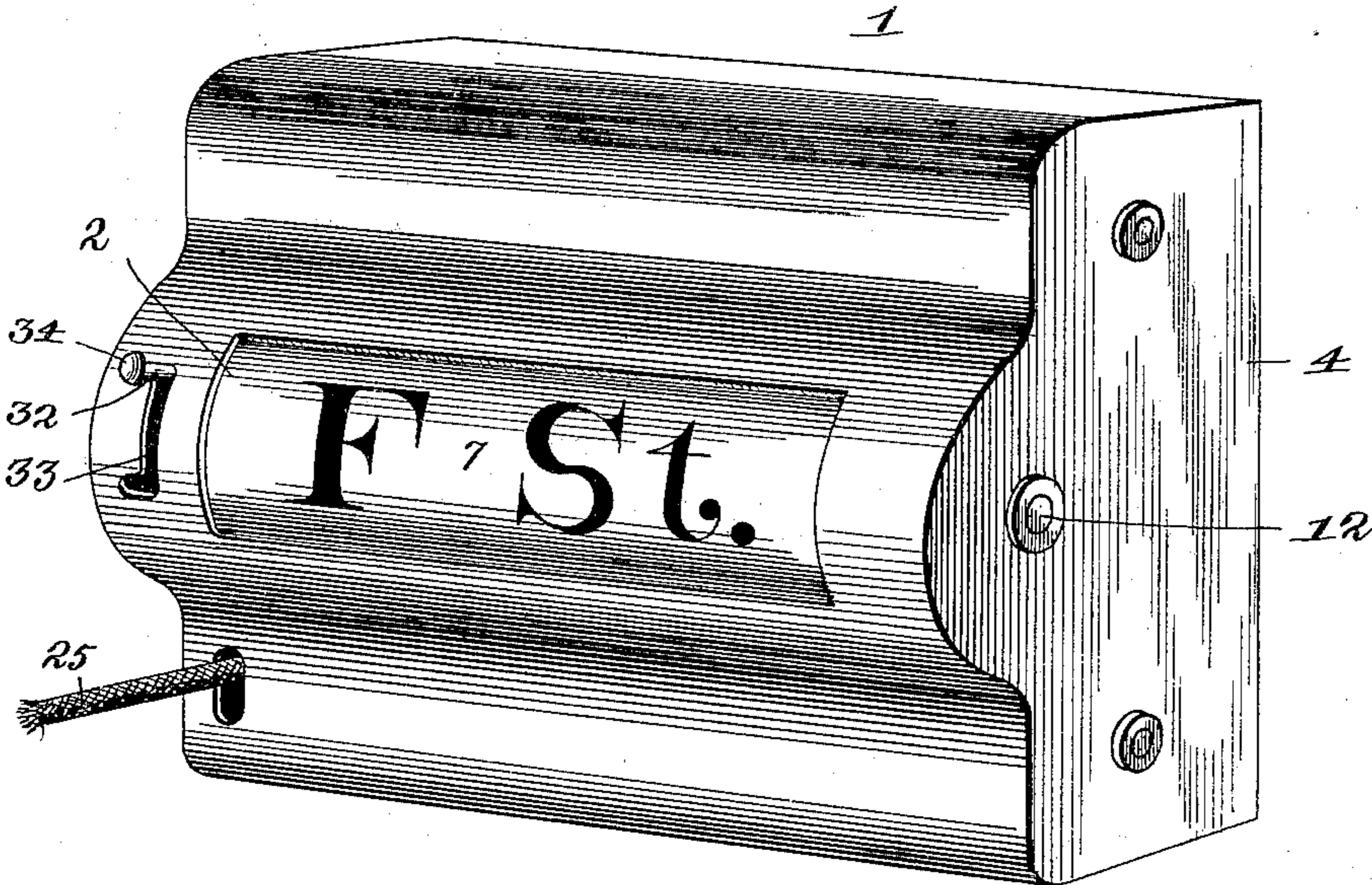
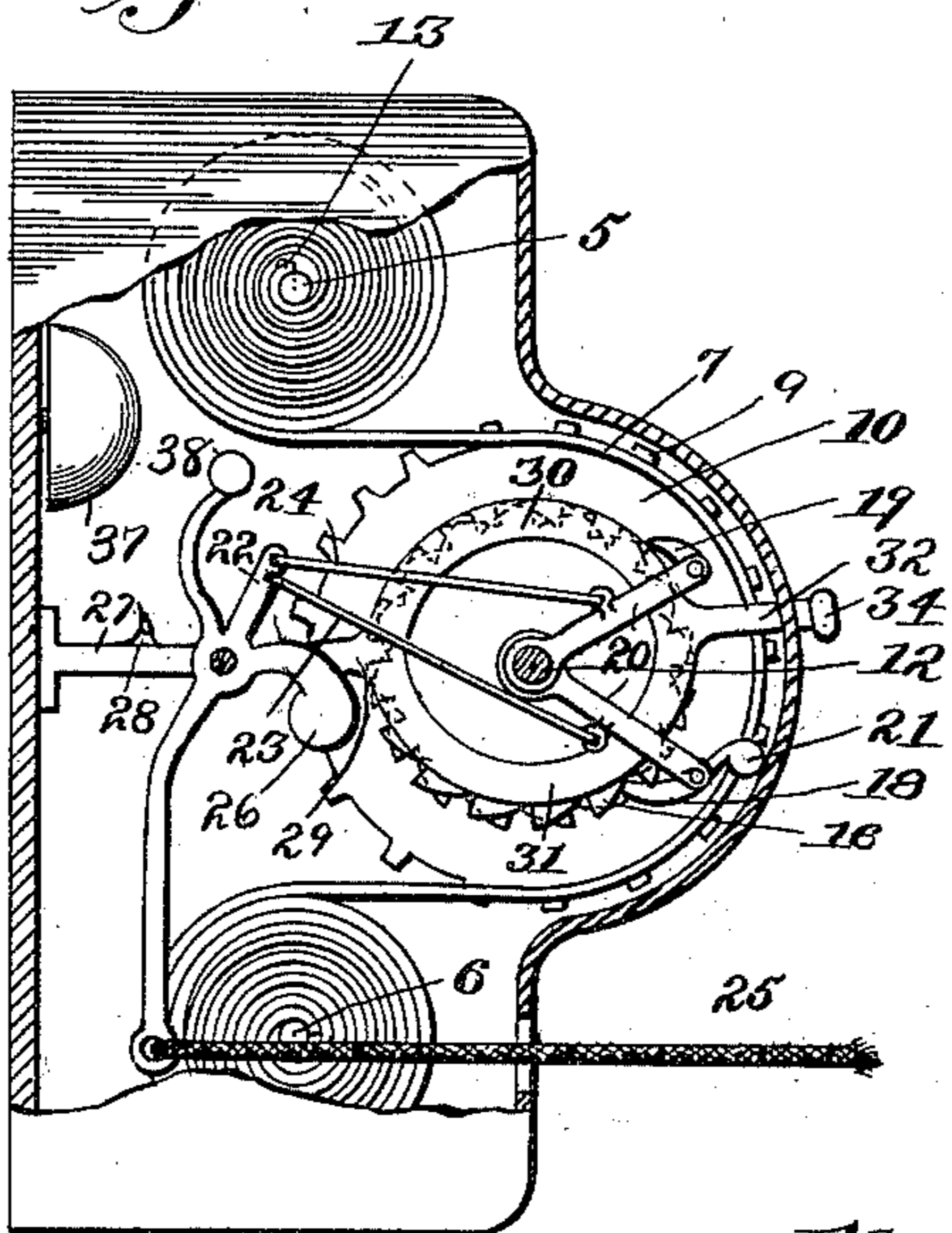


Fig. 2.



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2 Sheets—Sheet 2.

Fig. 3.

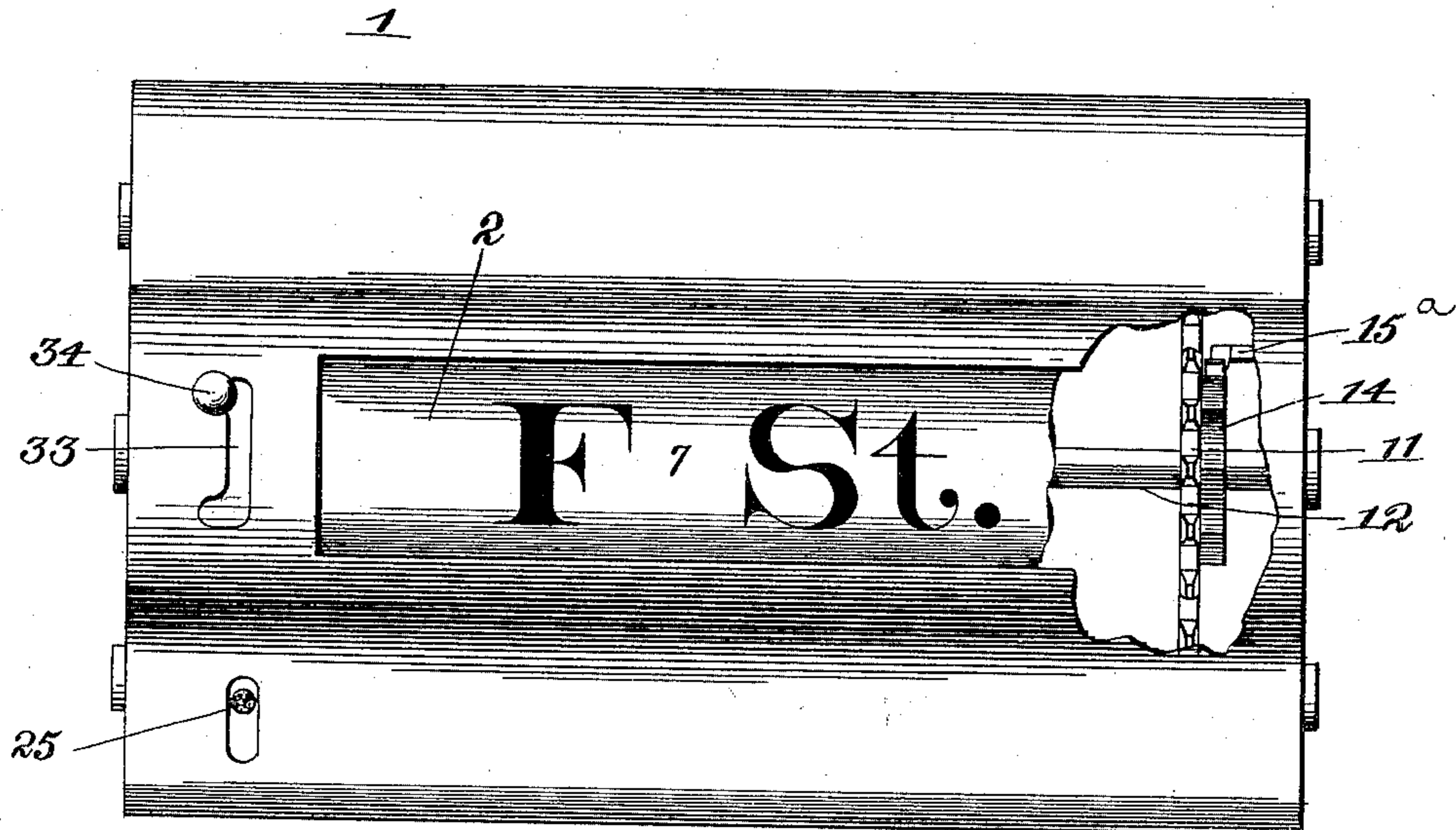


Fig. 4.

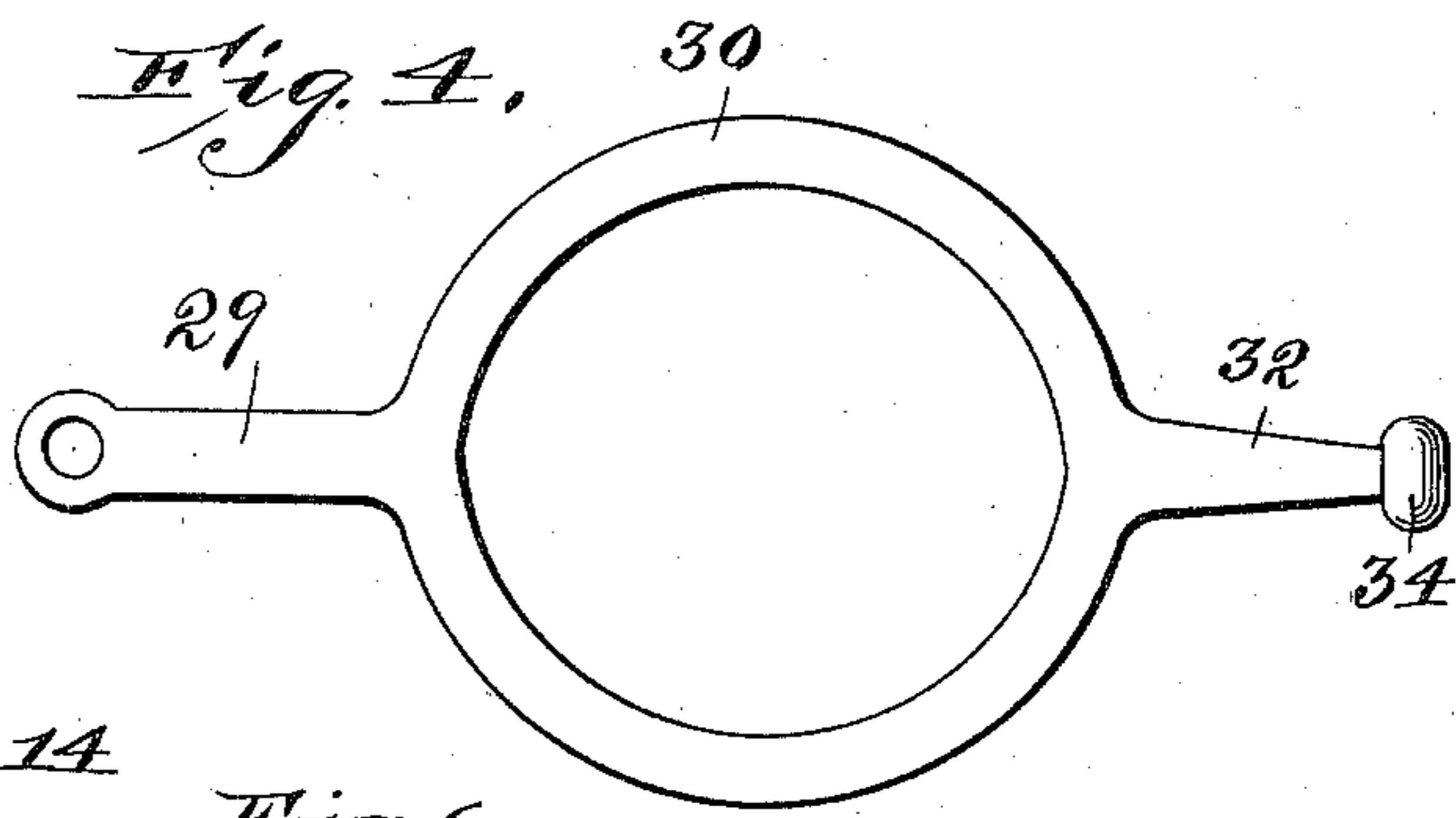


Fig. 5.

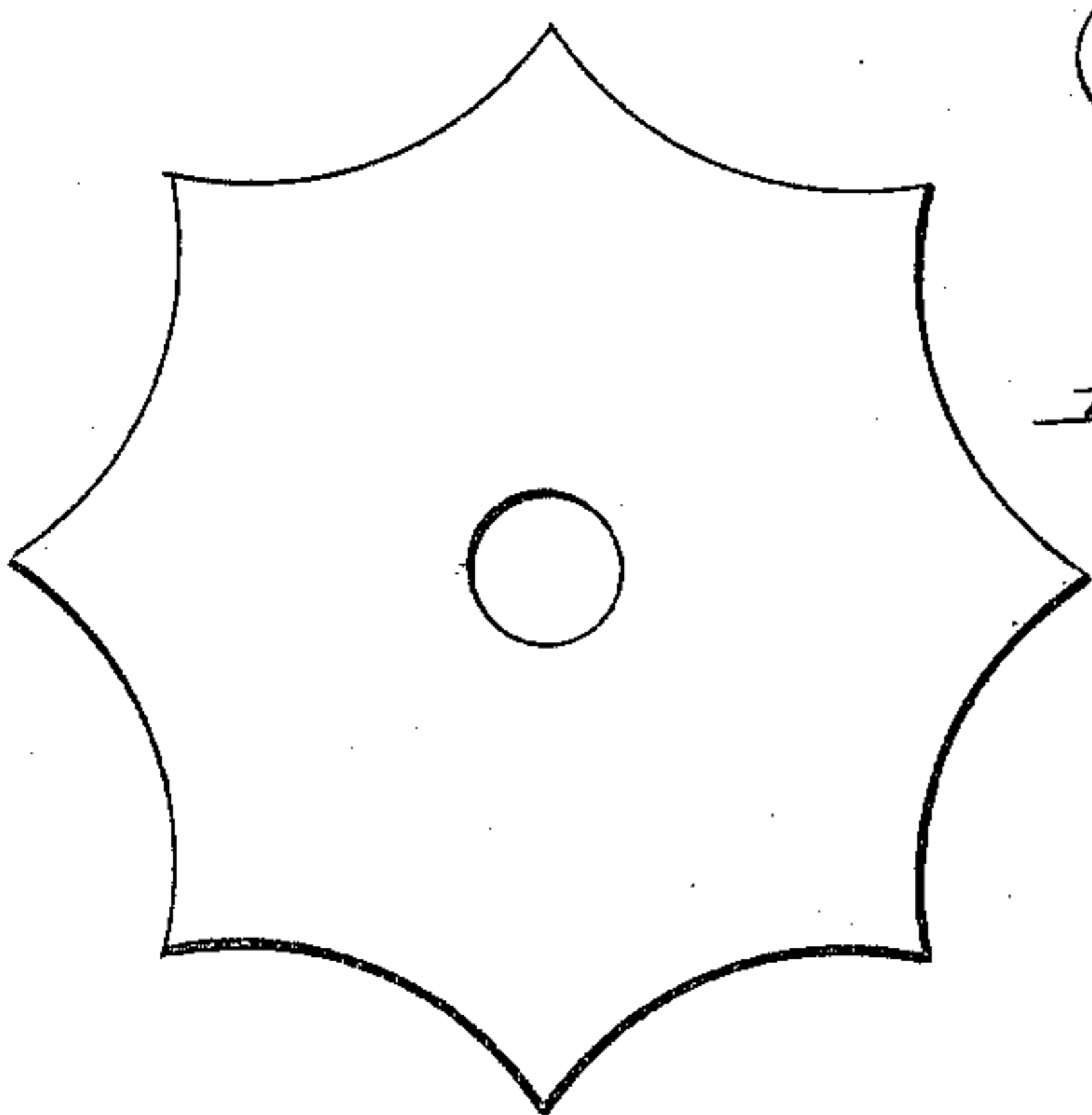
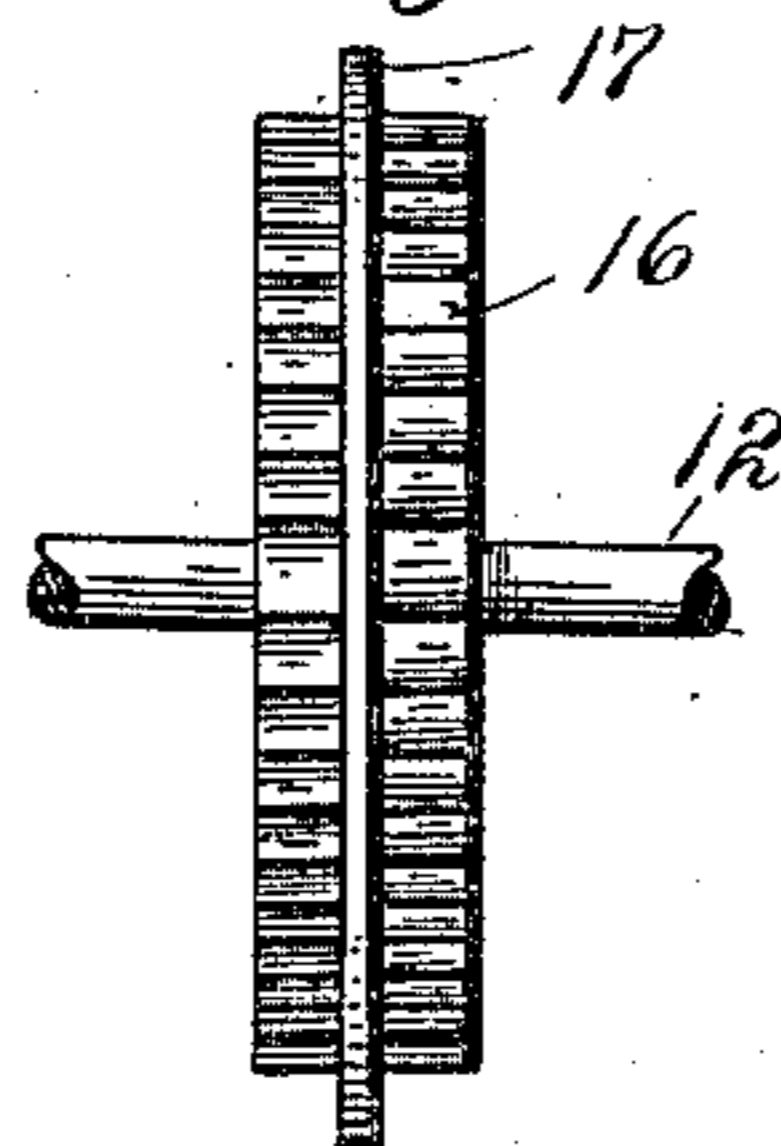


Fig. 6.



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UNITED STATES PATENT OFFICE.

EDUARD CYRUS CROSSMAN, OF ALLEGHENY, PENNSYLVANIA.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 610,844, dated September 13, 1898.

Application filed May 20, 1897. Serial No. 637,336. (No model.)

To all whom it may concern:

Be it known that I, EDUARD CYRUS CROSSMAN, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Street-Indicators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

This invention relates to improvements in street-indicators for railway-cars or other analogous purposes, the object of the same being to provide a device of this character that is
15 comparatively simple and cheap in construction and also possesses the additional advantages of being readily and conveniently operated to bring the names of the streets in proper alinement with the sight-opening, in-
20 cluding an arrangement for more effectually displaying the letters at night, the operation of the device in bringing the names in position being controlled by a pull-cord in the same manner as a fare-register.

To these ends and to such others as the invention may pertain the same consists in the employment of an inclosing case, rolls mounted therein and carrying a strip extending from one to the other and perforated at its edges,
30 intermediate cog-wheels engaging the perforations in the strip, and means for operating the cog-wheels to control the movement of the strip with respect to the sight-opening in the casing.

The invention also contemplates an arrangement for more effectually displaying the letters at night.

In the following specification I have entered into a detail description of the parts which constitute the invention, reference being had to
40 the accompanying drawings and to numerals thereon, which designate the different parts, and what I consider to be the novel features of construction are specifically set forth in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of the the street-indicator constructed in accordance with my invention. Fig. 2 is a side
50 elevation with a part of the inclosing casing removed to show the mechanism therein. Fig. 3 is a front elevation with the front of

the casing removed and a part of the strip broken away to show the brake or friction device, and Fig. 4 is a detail view of the de-
55 vice which is used for moving the pawls out of operative position in changing the direction of rotation of the driving-shaft. Fig. 5 is a detail view of the brake-wheel. Fig. 6 is a detail view showing the double ratchet-
60 wheel hereinafter referred to.

Referring to the drawings by numerals, 1 designates the inclosing case, which is made up in any suitable design or configuration, the object of the same being to inclose the me-
65 chanical parts of the device, the front wall of the casing having a horizontal slot or sight-opening 2, through which the names of the streets are displayed. Within this inclosing case and journaled within the side pieces 3
70 and 4 thereof are rollers 5 and 6, located a suitable distance above and below the sight-opening 2, and around these rollers is wound a strip or band 7, which contains the names of streets crossed by the line of cars or other
75 vehicles on which the indicator is used and extends from one of the rolls to the other. At each edge of this strip or band 7 are openings 8, spaced a distance apart corresponding with the teeth 9 of sprocket-wheels 10 and
80 11, around which the strip 7 runs, said wheels being mounted upon a transverse shaft 12, journaled in the side pieces of the inclosing case. The sprocket-wheels are located between the rolls and are so disposed with re-
85 spect to the inclosing case that they act to bring the intermediate portions of the strip between the said rolls close to the front of the casing at the sight-opening therein, and the strip being moved by means of these
90 sprocket-wheels is preferably made of thin sheet metal which is pliable. The sheet metal is also employed because of its strength and durability, as well as possessing the additional advantage of not being likely to stretch.
95 In order to keep the sheet wound tightly upon the rolls as they are fed from one to the other, the shafts upon which the said rolls are mounted are turned against the action of the sprocket-wheels by means of coil-springs 13,
100 secured thereto and to the stationary casing at the ends of the respective rolls, the tendency of the springs being neutralized by means of a friction device or brake 14, consisting of a

scalloped wheel 15, fixed on the shaft 12, which is pressed upon by a spring-arm 15^a, mounted on the inside of the case. The letters or other characters are preferably cut
 5 through the metal strip or sheet 7 and a white or colored transparent backing is attached to said sheet, showing through the spaces which are cut out to represent the letters or other characters. This manner of forming the let-
 10 ters upon the strip provides for displaying them at night by the use of a small electric light placed within the inclosing case in the rear of the strip. The strip is moved to bring the names thereon in line with the sight-open-
 15 ing by means of a pawl-and-ratchet mechanism. To this end a double ratchet-wheel 16 is fixed upon one end of the shaft 12, the said ratchet-wheel having two sets of teeth pitched in opposite directions and located at opposite
 20 sides of a central flange 17 extending therefrom, said ratchet-teeth engaging independent pawls 18 and 19, carried by levers 20 20, fulcrumed upon the shaft to which the ratchet-wheel is attached. The pawl 19 engages the
 25 upper part of the ratchet-wheel while the pawl 18 engages the lower part thereof, the last-mentioned pawl having a weighted end 21 to insure its proper engagement with the teeth. The pawls are operated from a suit-
 30 ably-supported lever 22, which is fulcrumed in the rear of the ratchet-wheel and connected at one end to the arms 20 by connecting-rods 23 and 24, while to the other end of the said operating-lever is attached a pull-cord 25,
 35 which may extend to any convenient point for manipulation. The operating-lever 22 is provided with a counterbalancing-weight 26, which brings it to a normal position, and the throw of said lever is limited, so as to
 40 provide for a proper turning of the shaft 12. A bracket 27 supports this operating-lever and is provided with a stop 28, that limits the throw of the same. It will be apparent that
 45 should the operating-lever be thrown without some provision for holding one of the pawls out of engagement with the ratchet-wheel said pawls would act against each other and prevent the turning of the said wheel. For
 50 the purpose of moving the parts out of an operative position I have provided a device which consists of an arm 29, fulcrumed upon the bracket 27 and shaped to present curved
 55 portions 30 and 31, located on opposite sides of the ratchet-wheel, the said portions being brought together in front of the ratchet-wheel and joined to an arm 32, which extends through an S-shaped slot 33 in the front of the inclos-
 ing case and is provided with a knob 34. This arm is manipulated to move one or the other
 60 pawl out of engagement with the ratchet-wheel to control the rotation of the main driving-shaft, which carries the sprocket-wheels, and by providing the S-shaped slot the arm will be held in an adjusted position.
 65 From the foregoing description, in connection with the accompanying drawings, the construction and operation of my improved

street-indicator will be readily apparent, for by the operation of the lever 22, either by the pull-cord 25 or other device, the pawl which
 70 is in engagement with the ratchet-wheel will act to turn the shaft 12, giving a corresponding movement to the sprocket-wheels mounted thereon, and said sprocket-wheels, being in
 75 engagement with the indicating-band, will turn the same to bring the next name in alinement with the sight-opening, the said lever being operated for each street or station. The
 80 springs which are attached to the roller-shafts act to wind the strip or band tightly thereon, the tension of the said springs when tightly wound by the unwinding of the strip being
 85 offset by the brake or friction shoe which engages the main shaft. By providing the strip with the openings which are engaged by the
 90 sprocket-wheels and by turning the sprocket-wheels, as hereinbefore described, a positive and regular movement is imparted to the strip or indicating-band, so as to bring each street
 95 or name in proper alinement with the sight-opening. It will be understood that upon the return trip of the car the reversing arm or lever is manipulated to throw the other pawl in engagement with the ratchet-wheel, and thereby reverse the winding of the indicat-
 ing-band.

Though I have described the invention as being applied to a railway-car, it is apparent that its application need not be limited to
 100 this particular use, for it could be located in any other traveling vehicle. In order to plainly display the letters at night, I propose to inclose a small electric lamp or other light
 105 within the inclosing case, and by providing the said indicating-band with a colored transparent sheet located in the rear of the same the effectiveness of the device will be in-
 creased.

I also contemplate providing the device with an alarm attachment actuated by the
 110 operating-lever. To this end a cup-shaped bell 37 is attached behind the inclosing case and the counterbalancing end of the operating-lever extended, as shown, to form a clapper 38, which strikes the bell at each move-
 115 ment of the lever, attracting attention to the device.

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

1. In a street-indicator, the combination with an inclosing case having a sight-opening therein, of upper and lower spring-rollers, an
 125 indicating-band wound about the rollers and extending from one to the other and provided with perforations or openings adjacent to its edges, sprocket-wheels arranged in the ends
 130 of the case between the upper and lower rollers, a shaft upon which said sprocket-wheels are keyed, closely-arranged ratchet-wheels on the said shaft having their teeth pitched in opposite directions, levers mounted upon
 said shaft and carrying pawls engaging the said ratchet-wheels, a weighted lever sup-

ported in rear of said ratchet-wheels and connected to the said levers carrying the pawls, a pull-cord attached to the lower end of said weighted lever and an arm mounted on the support of the said weighted lever and having curved portions in advance thereof, and a front arm in connection with said curved portions projecting through a slot in the case, substantially as described.

2. In a street-indicator, the combination with an inclosing case having a sight-opening therein, of spring-rollers mounted within the case and spring-actuated in opposite directions, an indicating band or strip having its opposite ends connected with the respective spring-rollers, said indicating-band having perforations adjacent to its edges, a shaft extending longitudinally of the case between the rollers, sprocket-wheels mounted on the said shaft adjacent to its opposite ends and adapted to engage the perforations in the indicating-band, closely-arranged ratchet-wheels near one of the sprocket-wheels and having their teeth pitched in opposite directions, a pair of levers mounted on the said shaft and carrying pawls adapted to engage the said ratchet-wheels, a rear weighted operating-lever having a pull-cord attached to the lower end thereof, and rods connected to the upper end of said weighted lever and to the separate levers carrying the pawls, substantially as described.

3. In a street-indicator, the combination with an inclosing case having a sight-opening therein, of spring-rollers located within the upper and lower portions of the said case, and spring-actuated in opposite directions, a shaft extending from end to end of the case intermediate of the said rollers and having thereon opposite sprocket-wheels, an indicating band or strip having perforations adjacent to the edge thereof and engaging the said sprocket-wheels, a scalloped wheel mounted on the shaft adjacent to one of the sprocket-wheels and having a spring-arm engaging the same,

a pair of ratchet-wheels closely arranged near one of the sprocket-wheels and having their teeth pitched in opposite directions, a pair of levers mounted on the said shaft, each carrying a pawl to engage one of the sprocket-wheels, a weighted operating-lever in rear of the ratchet-wheels having a pull-cord attached to the lower portion thereof and adapted to be limited in its required movement and also to operate a gong or alarm, connections between the upper end of the operating-lever and the said levers carrying the pawls, and an arm pivotally connected to the support of the operating-lever having curved portions, and a forwardly-projecting part extending through the casing and adapted to release the pawls, substantially as described.

4. In a street-indicator, the combination of an inclosing case, upper and lower, oppositely-movable, spring-actuated rollers inclosed by the said case, a shaft intermediate of the said rollers having sprocket-wheels on opposite portions thereof, an indicating band or strip engaging the said sprocket-wheels and adapted to be wound upon the said rollers, closely-arranged ratchet mechanism having the teeth of opposite parts thereof pitched in opposite directions, adjacently-situated independent pawls engaging the said ratchet mechanism, an operating-lever connected to the said pawls and having a pull-cord attached thereto, and an arm pivotally mounted on the support of the said operating-lever and having opposite curved portions and forwardly-extending ends projecting through the said case whereby the pawls may be released from the ratchet mechanism, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDUARD CYRUS CROSSMAN.

Witnesses:

MABEL E. GIBSON,
E. W. MOORE.