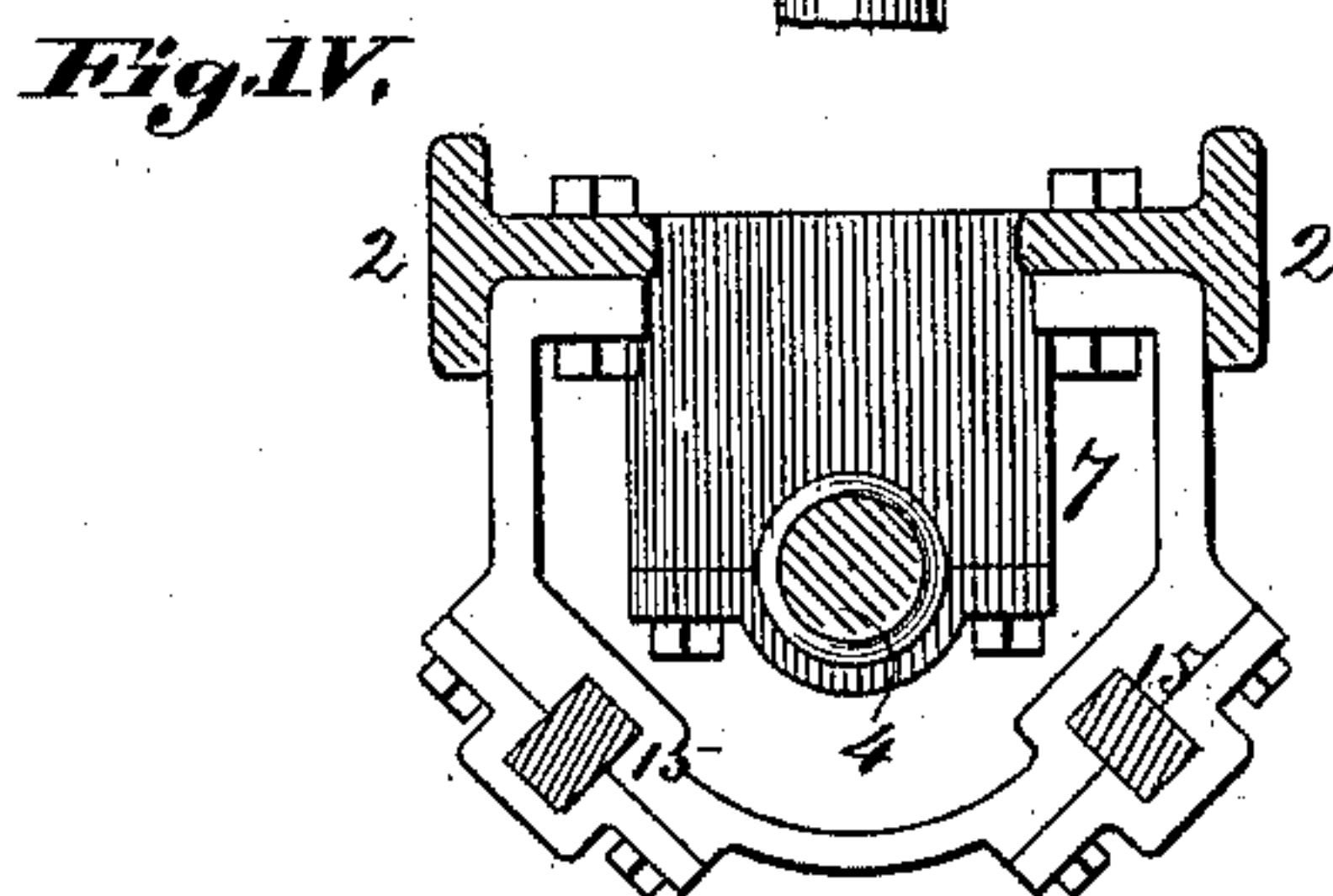
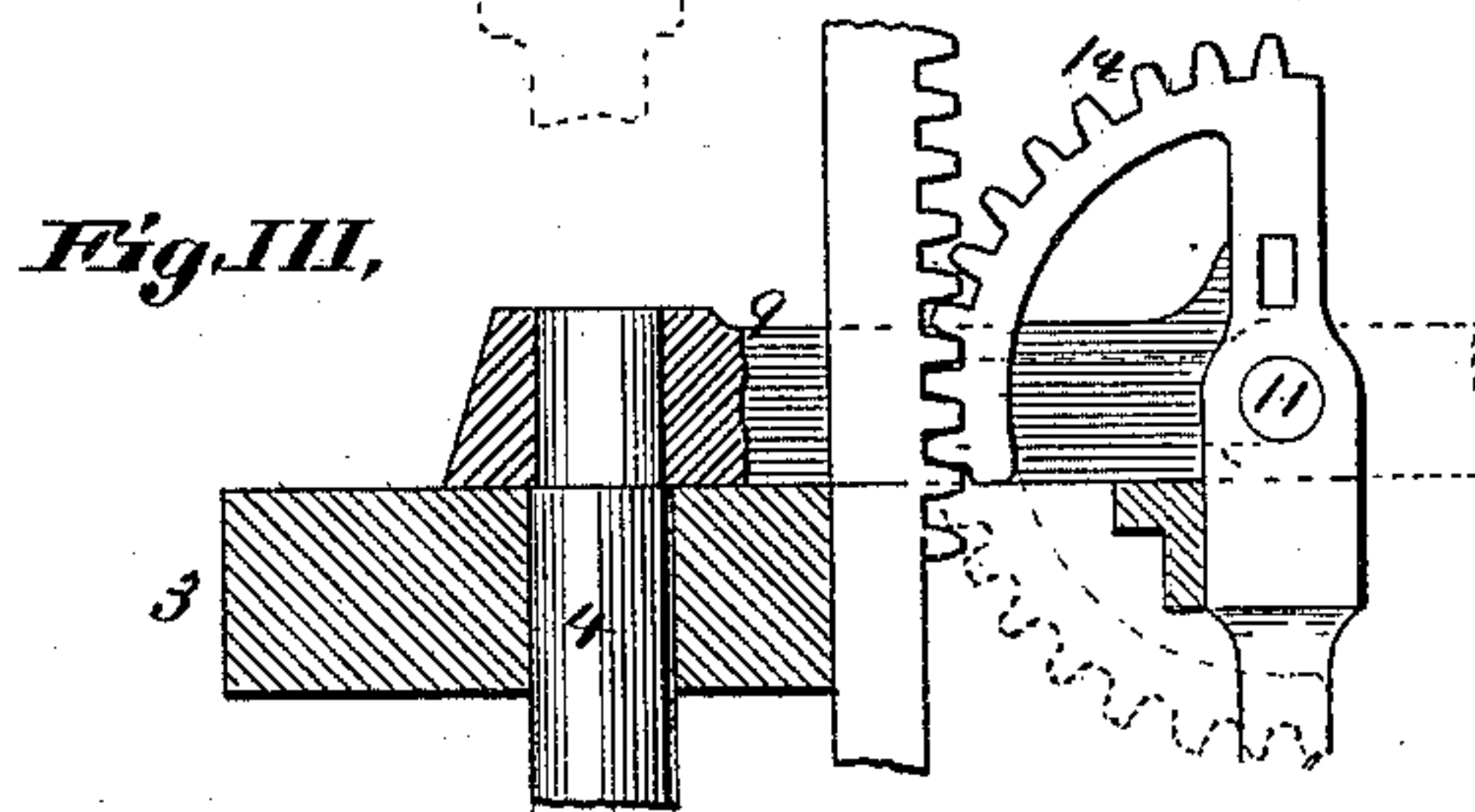
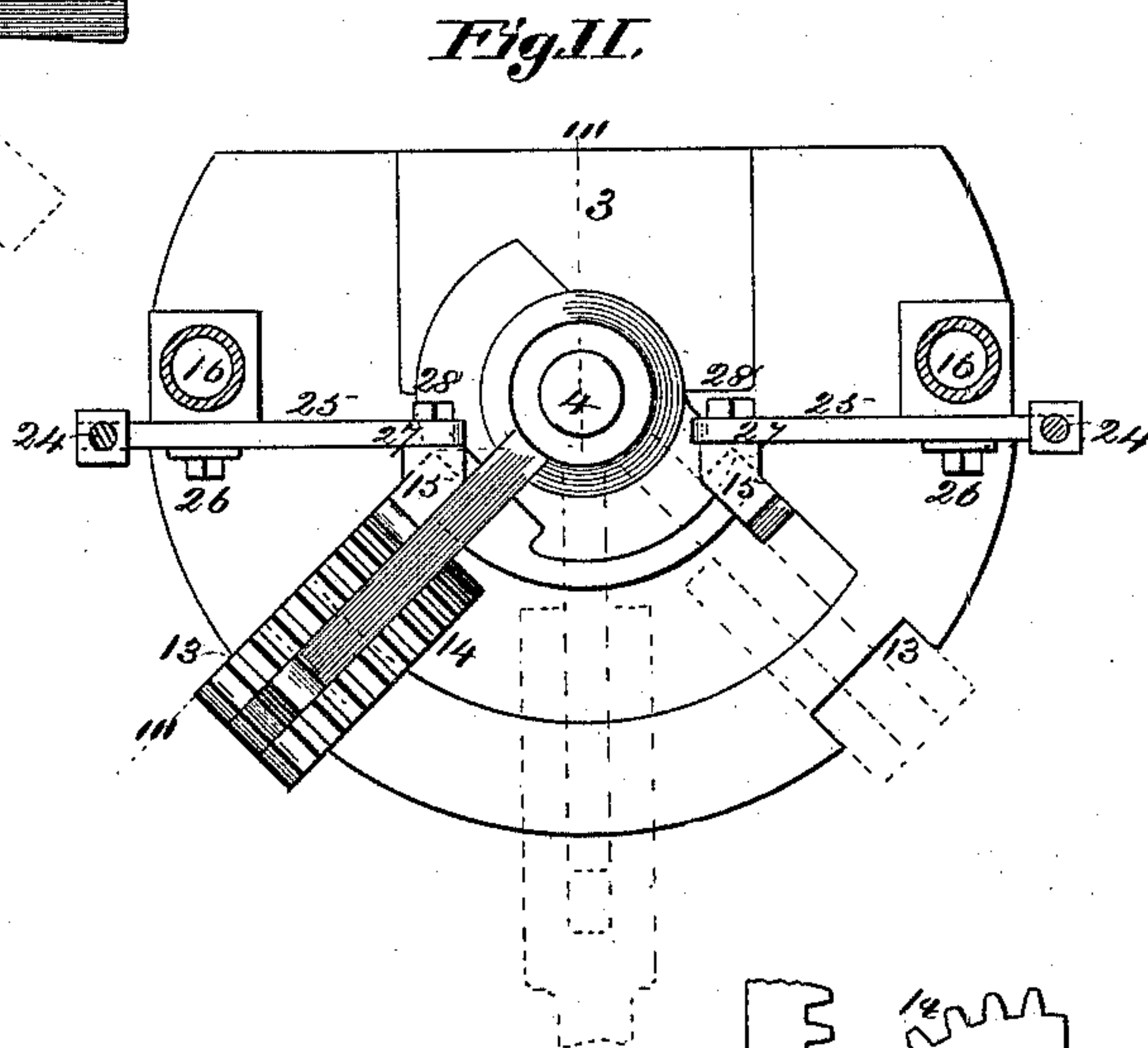
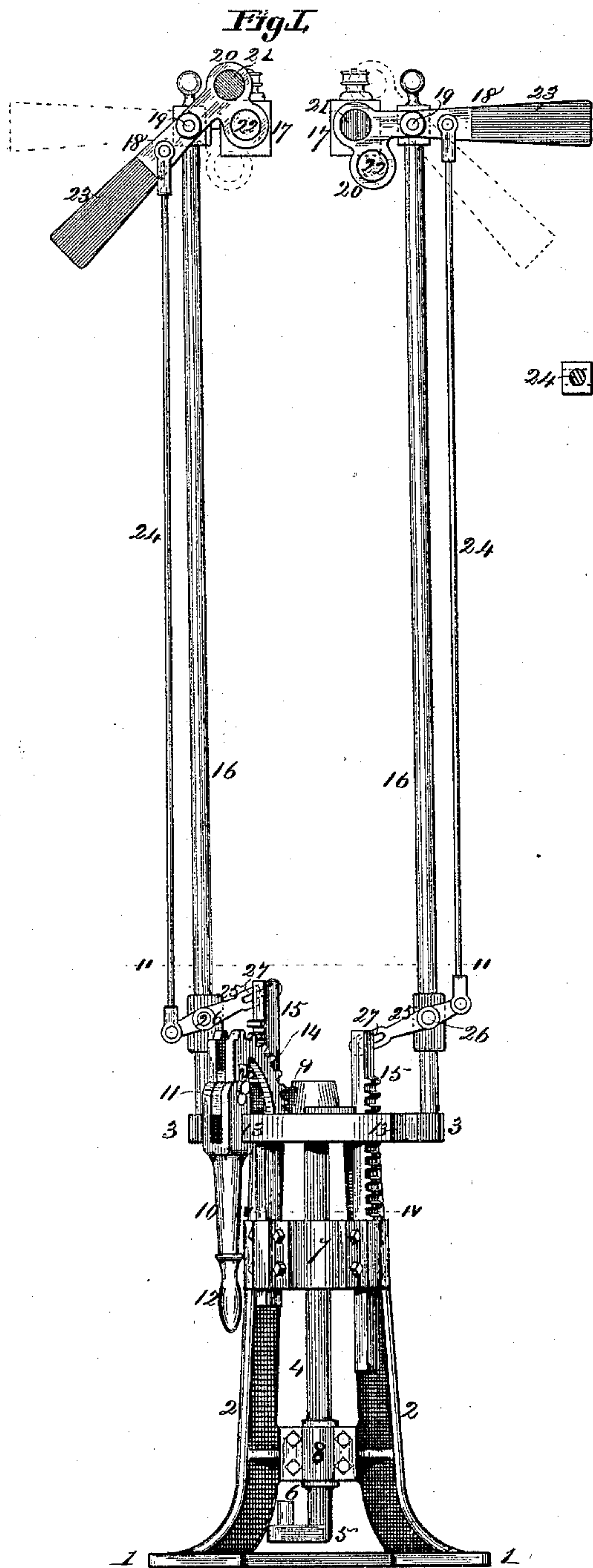


(No Model.)

M. WUERPEL.  
RAILWAY SWITCH STAND AND SIGNAL.

No. 432,106.

Patented July 15, 1890.



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# UNITED STATES PATENT OFFICE.

MORRIS WUERPEL, OF ST. LOUIS, MISSOURI.

## RAILWAY-SWITCH STAND AND SIGNAL.

SPECIFICATION forming part of Letters Patent No. 432,106, dated July 15, 1890.

Application filed April 10, 1889. Serial No. 306,666. (No model.)

*To all whom it may concern:*

Be it known that I, MORRIS WUERPEL, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Railway-Switch Stands and Signals, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 This is a device by which one or more signals are moved in the act of unlocking the lever by which the switch is operated.

15 Figure I is a side elevation. Fig. II is an enlarged section at II II, Fig. I, looking downward and showing parts below the section plane. Fig. III is a vertical section at III III, Fig. II. Fig. IV is a horizontal section at IV IV, Fig. I, looking downward.

20 1 is the base of the stand, and 2 2 the up-rights, upon which is supported the horizontal table 3.

4 is the crank-shaft, having at the lower end a crank-arm 5, to whose wrist-pin 6 the switch is connected in the usual or in any suitable manner. The shaft 4 turns in a bearing at the table and in bearings 7 and 8. (See Figs. I and IV.)

30 9 is a horizontal arm rigidly attached to the shaft and extending radially therefrom and forming part of a lever by which the shaft is turned to throw the switch. The other portion 10 of the lever is hinged at 11 to the end of the arm, so that it may be moved from a horizontal to a vertical position.

35 12 is a handle on the part 10. When the part 10 is in a vertical position, as seen in Figs. I and II, it engages in a notch 13 of the table, so as to firmly lock the shaft 4 and prevent the rotation of the shaft and movement of the switch. When the part 10 is in horizontal position, it may be used to turn the shaft 4 and throw the switch.

No novelty is claimed in the parts above specially described.

45 14 is a cog sector or quadrant fast upon the handle part 10 of the lever, and whose periphery is concentric with the hinge 11.

50 15 is a cog-rack with which the sector engages, so that the depression of the part 10 will cause the elevation of the cog-rack, and vice versa. The cog-rack works through the

table, and its movement causes the movement of the signal, as will be explained hereinafter.

16 is a signal-staff, which I prefer to make tubular for combined strength and lightness. 55 The staff is fixed at the lower end in the table.

17 is a lantern having a round glass face or lens.

18 is a signal plate or semaphore connected to the shaft by a pivot 19 between its ends. 60 One end 20 has two round orifices occupied by plates or frames 21 and 22, of colored glass, one of which may be red and the other green, or any other colors preferred, to indicate, respectively, "danger" and "safety," the upper 65 one 21 indicating "danger," and being preferably red, while the other may properly be green, as this color is used for that purpose. It will be seen that when the signal-plate is in a horizontal position the light shows through the 70 red pane 21 and indicates "danger."

23 is a blade, which may be painted of any color to render it prominent, and which by its position indicates either "danger" or "safety." 75

24 is a rod connecting the pivoted plate 18 to one arm of a lever 25, fulcrumed at 26 to the staff 16 or other fixed point. This lever is slotted at 27 to receive a pin or stud 28 upon the rack-bar 15. The weight of the rack- 80 bar 15 is sufficient to keep the signal in a position indicating "danger" when the said bar is not thrown up by the action of the quadrant 14.

Supposing two signals are used on one 85 stand, as shown, it will be understood that when the part 10 of the hand-lever is in a horizontal position both signals are at "danger," and that they remain in this position until the switch is closed in one position or 90 the other and the part 10 turned down into one of the notches 13. The turning down of the lever by means of the quadrant 14 throws up the rack with which it is engaged, and the signal 18, in connection with such rack, will 95 then indicate "safety," the other signal remaining in position indicative of "danger." Thus it will be seen that danger will always be indicated except for a track on which the switch is fully closed, for the part 10 of the hand-lever 100 must enter one of the notches 13 before the signal reaches the position indicating

"safety." Where there are two signals, as shown, upon one stand, the part 10 of the lever carries two of the quadrants 14—one upon each side of the arm 9—so that when the arm 5 is in contact with the side of the rack-bar 15 the quadrant upon that side is in engagement with the rack-bar.

An invention somewhat similar to this is also shown and described in my application, 10 Serial No. 311,375, filed May 20, 1889.

I claim herein as my invention—

1. The combination, with the signal having a cog rack-bar connected thereto, of a lever consisting of the two parts 9 10, hinged 15 together, and a quadrant carried by the part 10, engaging said cog rack-bar, substantially as described.

2. The combination, with a switch-stand,

of the two signals connected to the rack-bars 15, and the jointed lever consisting of the 20 arm 9, attached to the shaft 4, and the handle part 10, carrying the quadrants 14, adapted to engage the rack-bars 15, substantially as and for the purpose set forth.

3. The combination, in a switch-stand, of 25 two signals pivoted upon staffs 16, erected on the stand, the lever 9 10, connected to the switch-shaft 4, quadrants 14 on the part 10, the rack-bars 15, adapted to be engaged by the quadrants, levers 25, and connecting-rods 30 24, all constructed substantially as and for the purpose set forth.

MORRIS WUERPEL.

Witnesses:

SAML. KNIGHT,  
THOMAS KNIGHT.