

934,851.

Patented Sept. 21, 1909.
4 SHEETS—SHEET 1.

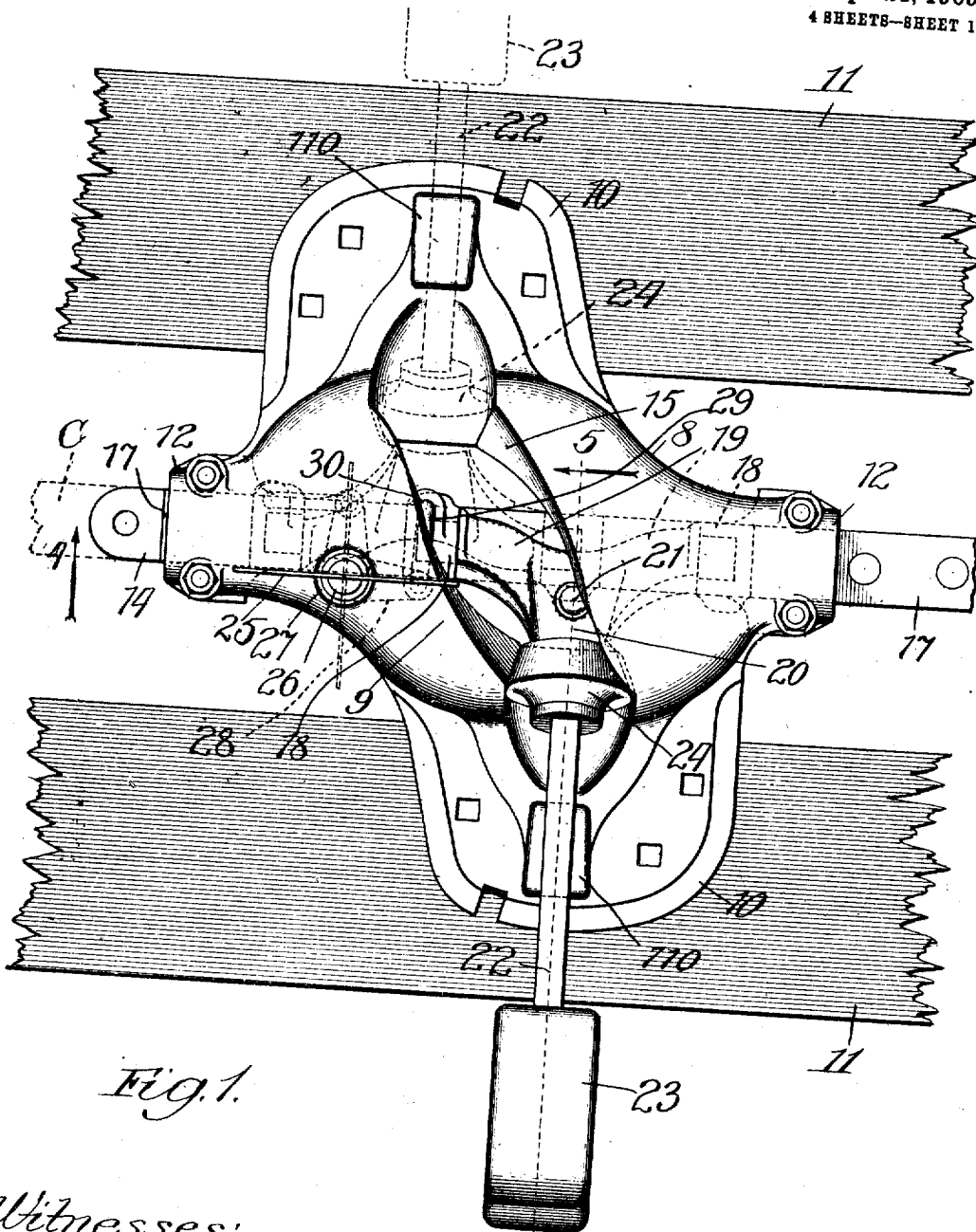


Fig. 1.

Witnesses:
John Enders
Chas. H. Buell.

Inventor:
Axel A. Strom,
By Dyrenforth, Lee, Crittenden & Wiles,
Attys.

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 4 SHEETS—SHEET 2.

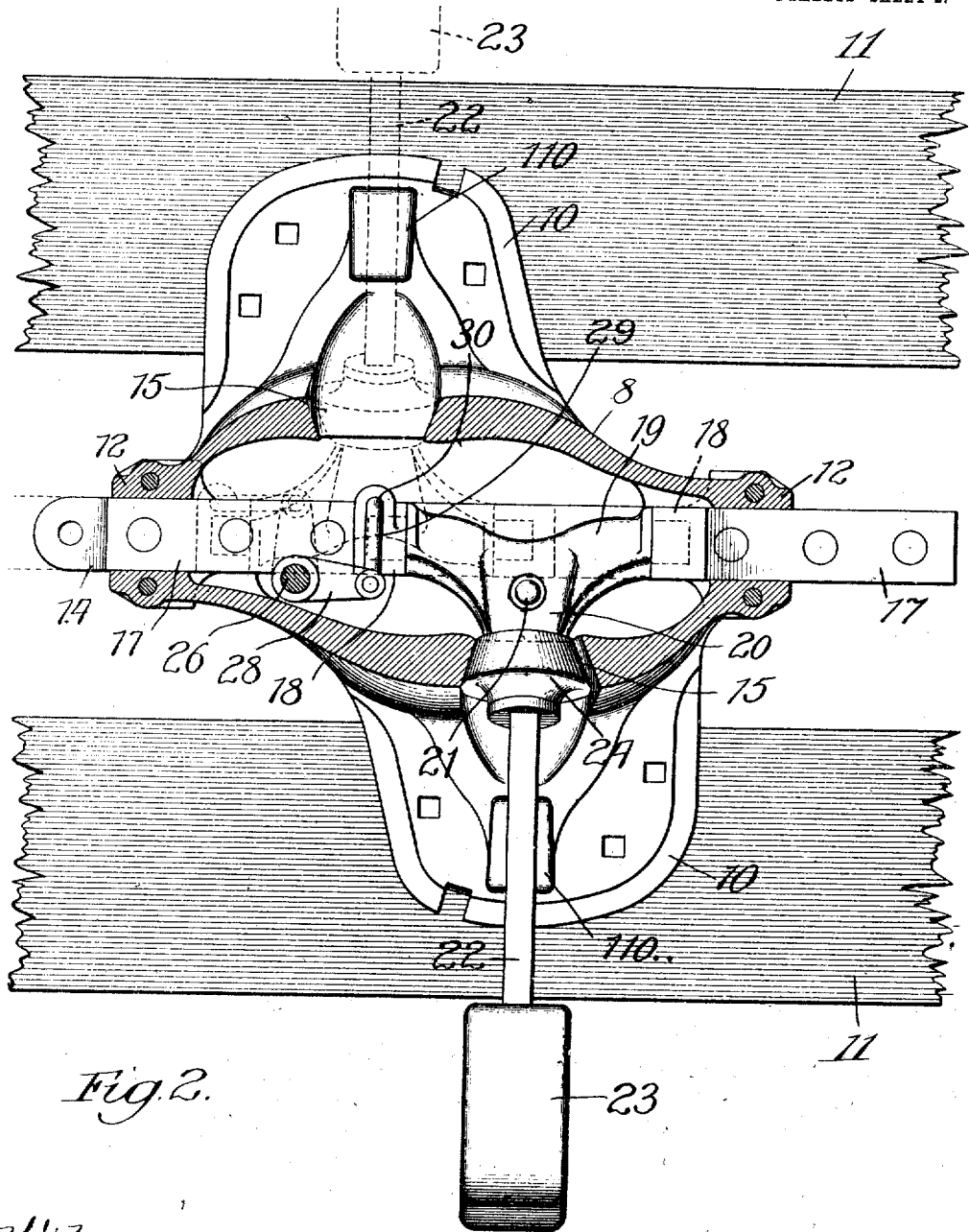


Fig. 2.

Witnesses:
 John Enders
 Chas. H. Buell

Inventor:
 Axel A. Strom
 By Dyrenforth, Lee, Carleton & Miles,
 Attys

SWITCH STAND.

Patented Sept. 21, 1909.

4 SHEETS--SHEET 3.

Witnesses:
John Enders
Chas. H. Buell.

Inventor:
Axel A. Strom,
Att. Sec. Carlton & Wiles,
Attys.

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 4 SHEETS—SHEET 4.

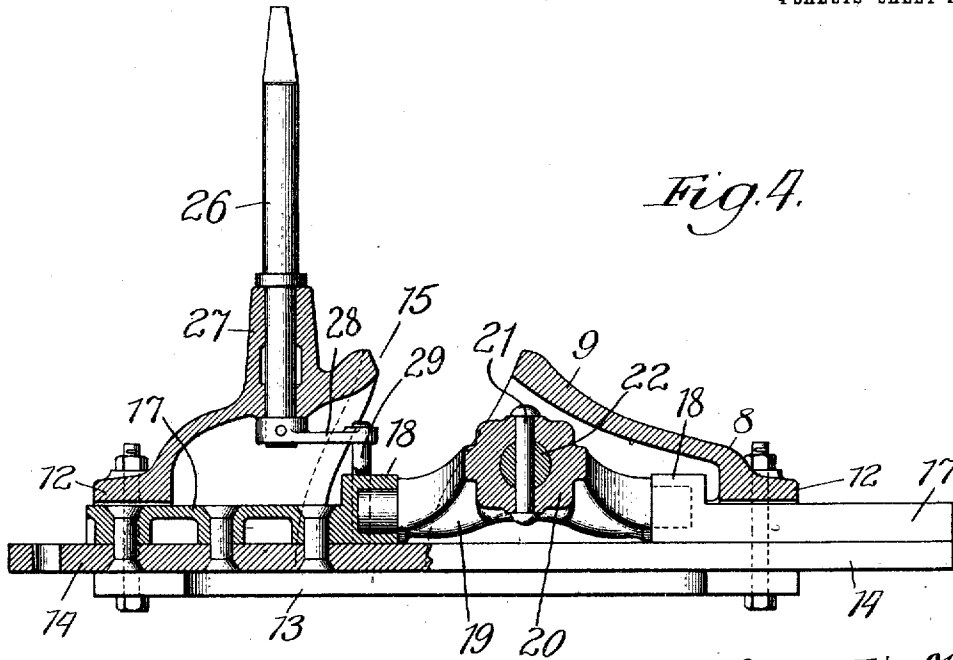


Fig. 4.

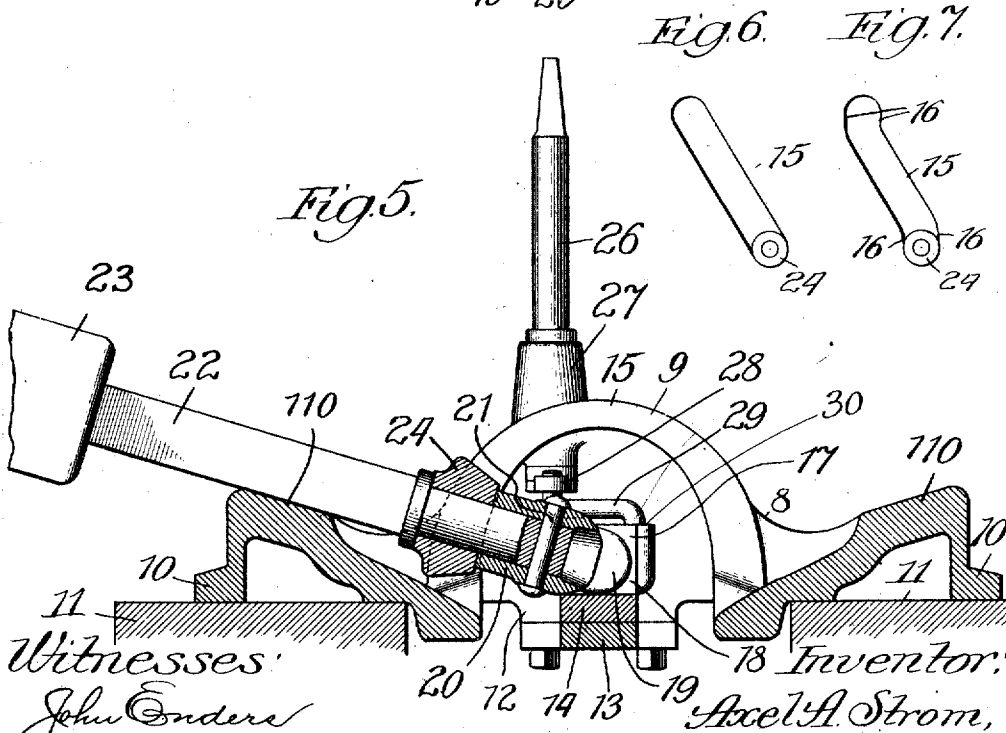


Fig. 6. Fig. 7.

Witnesses:
 John Enders
 Chas. H. Buell.

Inventor:
 Axel A. Strom,
 By: Dyrenforth, Lee, Crittton & Miles.

UNITED STATES PATENT OFFICE.

AXEL A. STROM, OF AUSTIN, ILLINOIS, ASSIGNOR TO PETTIBONE, MULLIKEN & CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SWITCH-STAND.

934,851.

Specification of Letters Patent.

Patented Sept. 21, 1909.

Application filed July 15, 1909. Serial No. 507,854.

To all whom it may concern:

Be it known that I, AXEL A. STROM, a citizen of the United States, residing at Austin, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Switch-Stands, of which the following is a specification.

My invention relates to an improvement in the class of switch-stands in which the throwing of the switch is controlled by a weighted lever connected with it through the stand and adapted to be turned through an arc of a circle in a vertical plane to operate the switch.

Referring to the accompanying drawings—Figure 1 is a plan view illustrating a switch-stand embodying my invention and showing, by dotted representation, the mechanism housed in the casing of the stand and the position of the parts opposite that denoted by the full-line representation of the weighted lever. Fig. 2 is a view like that presented in Fig. 1, but with the crown-portion of the casing cut away to disclose the mechanism housed within it. Fig. 3 is a view showing the switch-stand in end elevation. Figs. 4 and 5 are sections taken, respectively, on the lines 4 and 5 in Fig. 1 and viewed as indicated by arrows. Fig. 6 is a view, in the nature of a diagram, showing the shape of the cam-slot in the casing, with which the weighted lever coöperates for operating the switch; and Fig. 7 is a similar view of the same in a modified form.

The casing 8 comprises a crown-portion 9 of generally rounded shape, with laterally-extending wings 10, 10 adapted to seat on head-blocks 11, and with yoke-like extensions 12 at right-angles to the wings, for supporting a reciprocating switch-bar, preferably through the medium of a metal bar 13 extending between the yokes and bolted thereto through its end-portions. On this bar is imposed the reciprocating switch-bar 14, one end of which is adapted to have pivotally joined to it the connecting-bar (indicated at C in Fig. 1) which links the switch to the operating mechanism of the stand.

A cam-slot 15 is formed in the crown 9 to extend at a suitable inclination between the relatively-offset wings 10 and of the shape represented in Fig. 6 or that represented in Fig. 7, which latter differs from the former in terminating in straight end-

sections 16, for the purpose hereinafter explained. Similar bearing-bars 17, 17 surmount, in spaced relation, and are riveted to the bar 14 to be practically integral therewith, and they terminate at their inner ends in relatively-aligning socket-heads 18 forming bearings for the trunnion-ends of a yoke 19 provided between said ends with a socketed extension 20, in which is fastened, as by a riveted pin 21, the inner end of the operating lever 22, which preferably carries a weight 23 on its outer end. On the lever, adjacent to the part 20, where the lever is of round cross-section, is rotatably confined, to work in the cam-slot, a beveled anti-friction roller 24.

The shape and length of the cam-slot 15 are such as to cause turning of the lever on its fulcrum from the position shown by its full-line representation to that represented by dotted lines, or in the contrary direction, to effect a complete throw of the switch for setting it one way or the other; and at the ends of the throw of the lever it bears against the suitably-inclined shoulder-portions 110 of the seating-wings 10, provided as stops for the lever. This result is due to the action of the cam-slot against the lever, through the medium of the roller 24, of moving the bar 14 lengthwise through the guiding yokes 12 on its support 13.

As the cam-slot is shown in Fig. 6 it adapts the switch-stand to be operated from the switch by the wheels of a car moving upon it, thus automatically, as well as at the lever 22 by throwing the latter by hand, since the thrust against the switch will move the bar 14 and drive the weighted lever through the cam-slot to turn it for completing the throw of the switch. In the shape of the cam-slot illustrated in Fig. 7, however, with the straight end-sections 16, the operation of the stand is non-automatic, being only operative by turning the weighted lever by hand, since any thrust against the switch is resisted by the resultant impingement of the roller against a perpendicular wall of a section 16 of the cam-slot.

Where a target 25 (Fig. 1), lamp or other form of semaphore is provided to coöperate with the switch-operating mechanism, it may be supported in a usual manner on a vertical rotary spindle 26, which in the present case

is shown to be journaled in a bearing 27 rising from the casing 8 and carrying on its lower end a crank-arm 28, in which is journaled one end of a crank 29 having its opposite end journaled in a bearing 30 in the adjacent socket-head 18. This double-crank connection with the bar 14 of the target rotates the latter through a quarter-turn (as indicated in Fig. 1) each time the switch-stand is operated as described, to move the bar 14 lengthwise.

What I claim as new and desire to secure by Letters Patent is—

1. In a switch-stand, the combination of a casing comprising a crown-portion having wings projecting from opposite sides in off-set relation to each other, with a cam-slot in the crown-portion inclining between said wings, switch-throwing mechanism in the casing, and an operating lever connected with said mechanism and actuated by its movement through said slot to move said mechanism in the direction for throwing a switch.

2. In a switch-stand, the combination of a casing comprising a crown-portion having wings projecting from opposite sides in off-

set relation to each other, with a cam-slot in the crown-portion inclining between said wings and stop-forming lever-seats on the wings at the ends of said slot, switch-throwing mechanism in the casing, and an operating lever connected with said mechanism and carrying an anti-friction roller engaging the cam-slot to actuate the lever by its movement through said slot to move said mechanism in the direction for throwing a switch.

3. In a switch-stand, the combination of a casing comprising a crown-portion having wings projecting from opposite sides in off-set relation to each other, with a cam-slot in the crown-portion extending between said wings, a switch-bar support at the casing-base, a switch-bar longitudinally movable on said support, and an operating lever connected with said switch-bar for moving it by the throw of the lever through the cam-slot.

AXEL A. STROM.

In presence of—

R. A. RAYMOND,
L. HEISLAR.