

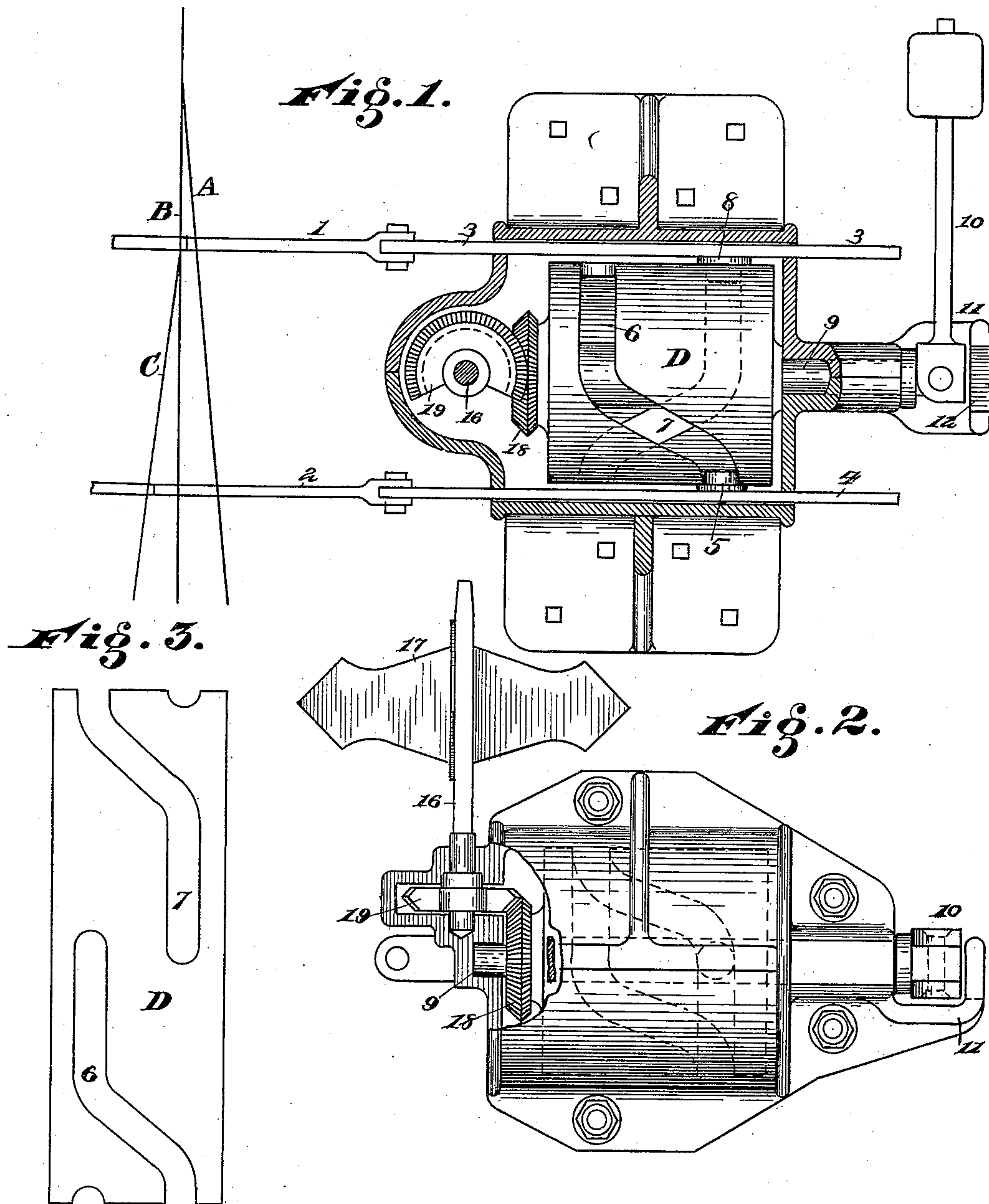
(No Model.)

2 Sheets—Sheet 1.

F. C. WEIR & N. O. GOLDSMITH.  
SWITCH STAND.

No. 407,755.

Patented July 23, 1889.



Attest  
*J. Watson Sims*  
*J. Simmons*

*Inventors*  
*Fredric C. Weir*  
*Nathaniel O. Goldsmith*  
*by Wood & Benge*  
*their Attorneys*

(No Model.)

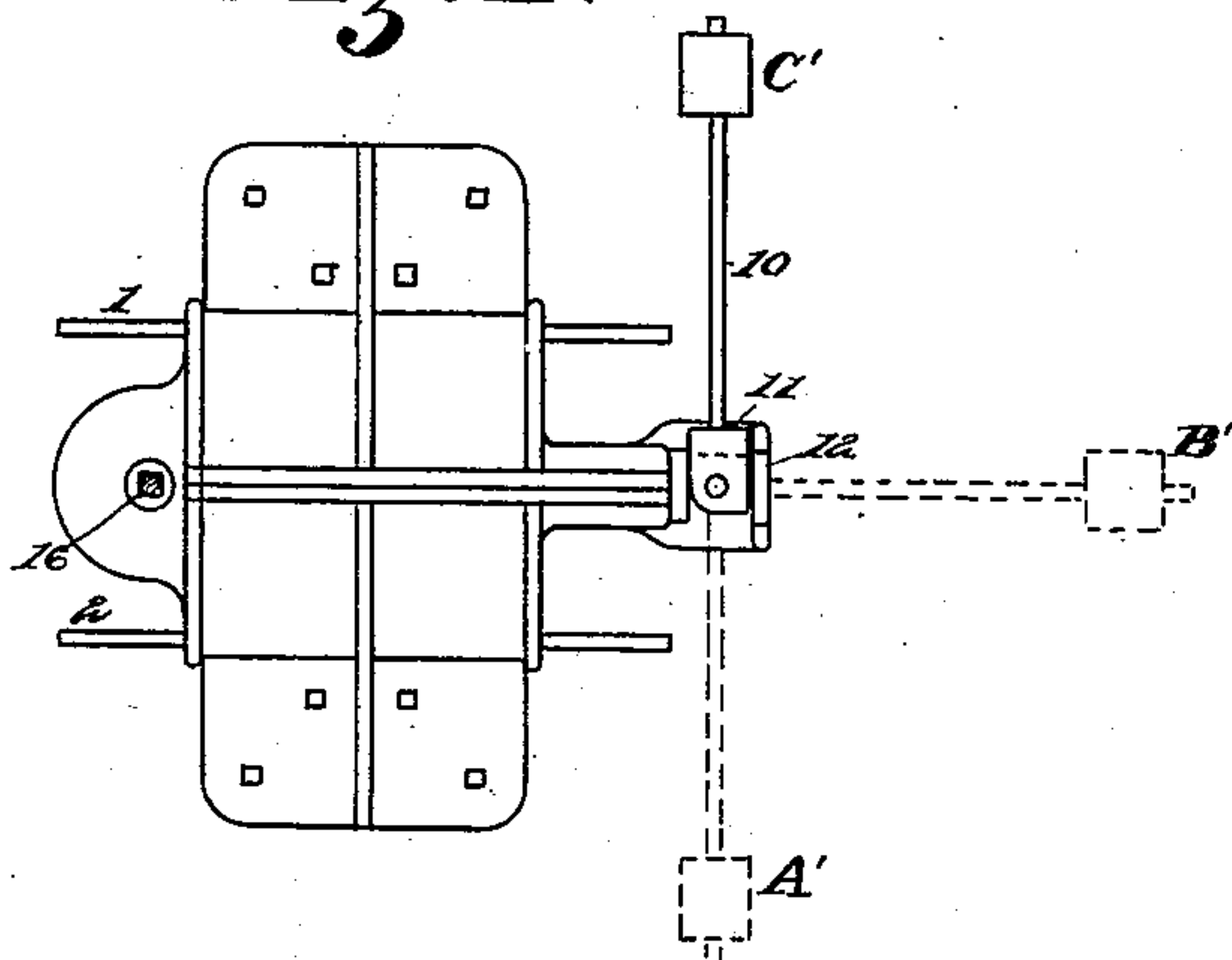
2 Sheets—Sheet 2.

F. C. WEIR & N. O. GOLDSMITH.  
SWITCH STAND.

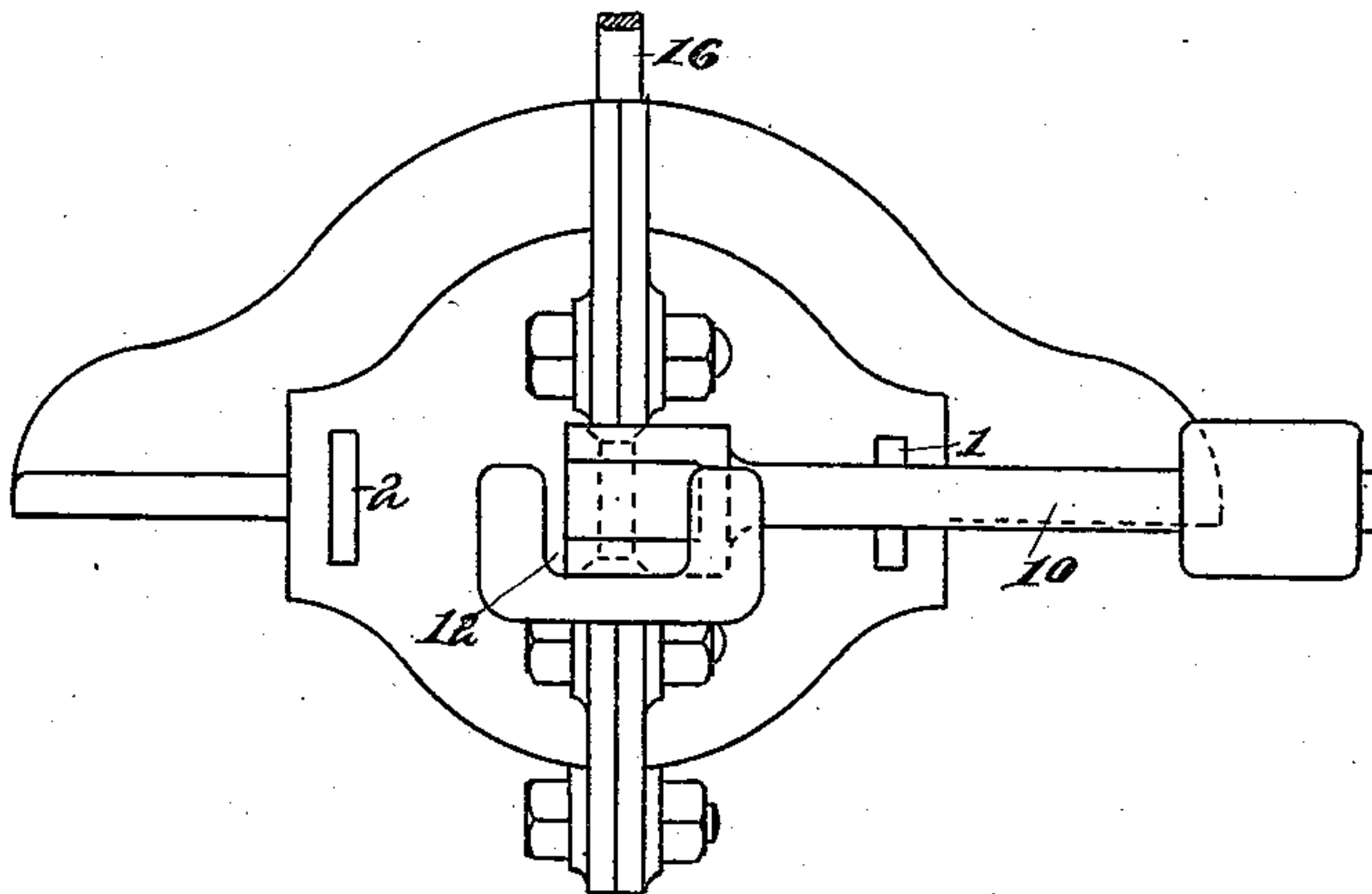
No. 407,755.

Patented July 23, 1889.

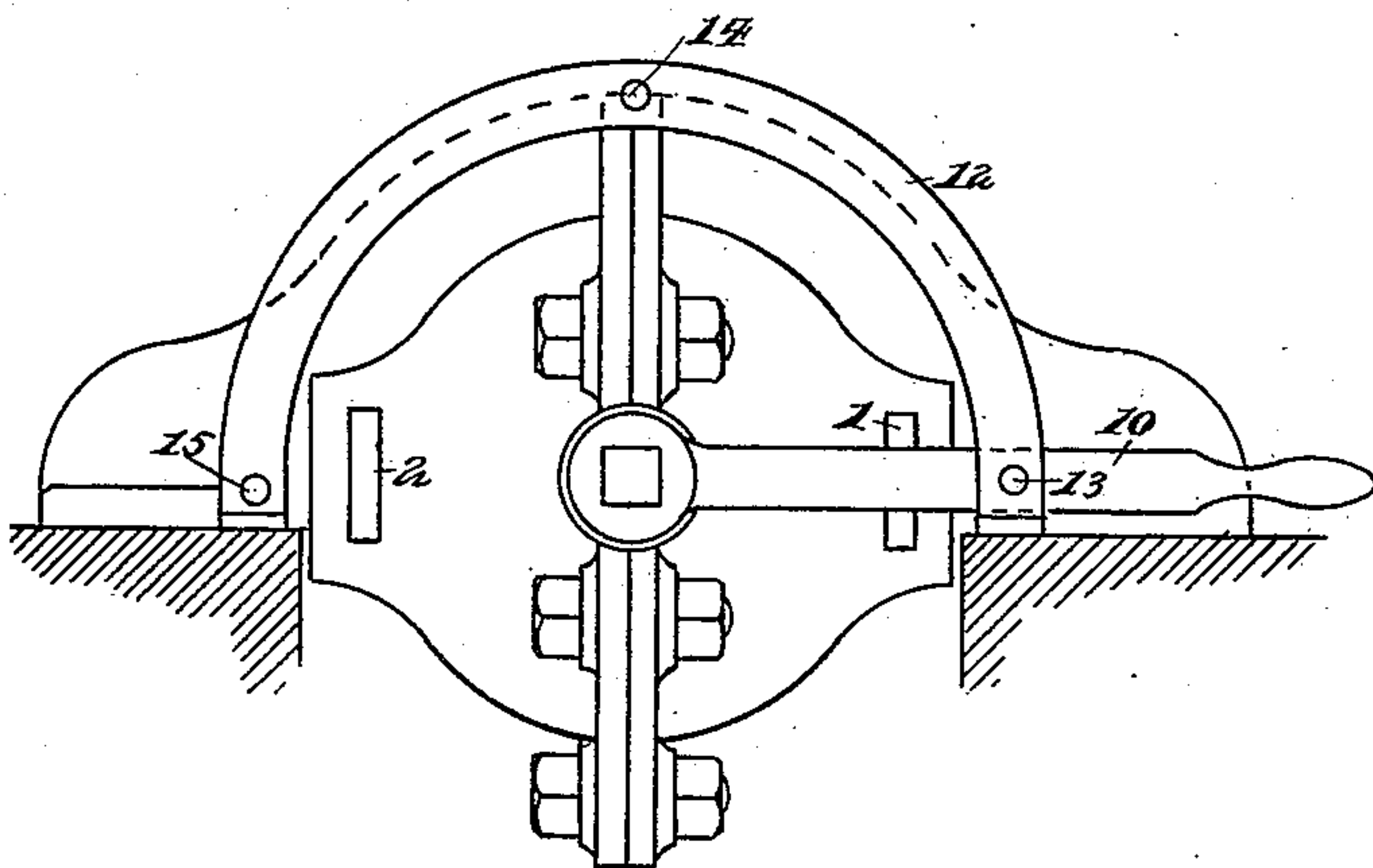
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



**Attest**

*Walter Sims*  
*F. Simmons*

**Inventors**  
*Fredric C. Weir*  
*Nathaniel O. Goldsmith*  
*by Wood & Bryd*  
*their Attorneys &c*



# UNITED STATES PATENT OFFICE.

FREDRIC C. WEIR AND NATHANIEL O. GOLDSMITH, OF CINCINNATI, OHIO,  
ASSIGNORS TO THE WEIR FROG COMPANY, OF SAME PLACE.

## SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 407,755, dated July 23, 1889.

Application filed March 30, 1889. Serial No. 305,469. (No model.)

*To all whom it may concern:*

Be it known that we, FREDRIC C. WEIR and NATHANIEL O. GOLDSMITH, citizens of the United States, and residents of Cincinnati in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Switch-Stands, of which the following is a specification.

The object of our invention is to provide a three-throw split-switch stand, which is cheap and convenient of construction, the features of which will be fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top plan view of our improvement with the top section of the casing removed. Fig. 2 is a side elevation of the same. Fig. 3 is a diagram view of the inclined slots. Fig. 4 is a top plan view showing the lever in three positions. Fig. 5 is an end elevation of Fig. 4. Fig. 6 is an end elevation of a modification.

In Fig. 1 of the accompanying drawings we have shown our improved switch-stand as connected to two split-switch rails, A representing the main or stationary rail, B one of the movable rails, and C the inner moving rail. The opposite rail of said pairs are not shown, but the switch-bars are connected to both rails of the switch in the usual manner.

1 represents the switch-bar connected with the switch-rails B, and 2 the switch-bar connected to and operating the switch-rails C.

3 represents the drive-bar hinged to switch-bar 1, and 4 a drive-bar hinged to switch-bar 2.

5 represents a stud secured to drive-bar 4 and engaging with the slot 6 of the drum D. Said drum journals in the case E, which is of the same general construction as that shown in Letters Patent of the United States No. 251,235, granted F. C. Weir, August 19, 1886.

Drive-bar 3 is provided with a stud 8, engaging with slot 7, formed in said drum D. A plan view of said slots is shown in Fig. 3, which will represent the drum drawn out in a horizontal plane. It will be observed that the working portion of the slots are formed of inclined portions, and that the straight portions of said slot are idlers, and that the

working portion of slots 6 and 7 start upon the opposite sides of the drum and are so arranged that as stud-pin 5 is traveling in the inclined or working portion of slot 6 the stud 8 is traveling as an idler in slot 7, and vice versa. The inclines are such as to move one of the switches during one-quarter of the revolution of the axial shaft 9.

10 represents a lever for turning the drum D upon its axis. It is shown as hinged to the axis. When the drum and rails are in position shown in Fig. 1, the handle 10 is upon the right side, as shown in Fig. 5. When the handle 10 is raised into the vertical position, the stud 5 has traveled up the inclined plane of slot 6 and moved the switch-rails C inward, opening said switch. Now, if said lever 10 be stopped or locked in this position, switch-rails C are opened and B closed. If the lever 10 is turned over into the left side, as shown in dotted lines, Fig. 4, the stud 8, which has been running as an idler in the straight portion of slot 7 during the first quarter of the revolution, has reached the incline of said slot and then moves through the incline and throws switch-rail B the required distance and opening it from contact with rail A, and both switch-rails C and B are open and track A is ready for the passage of trains.

A' B' C' represent the positions of the lever 10 for corresponding use of the rails A B C. In order to lock the switch in the upward position, we have provided a bracket 11, in which is pierced a slot 12 of sufficient width to allow the hand-lever 10 to drop down into said slot when it is in an upright position and lock it there.

In Fig. 6 we have shown a modified form of locking, which consists of the semicircular guide 12, preferably made of two arms, between which the shank of lever 10 passes.

13 14 15 represent pin-holes for locking said lever in either of the positions.

16 represents the target-shaft; 17, the target. The target is turned by means of the bevel 18 on the shaft 9 and the bevel 19 on the target-shaft 16; but these features are shown in said former patent, with the exception that the bevels herein are of such size as to move



the target appropriately with the quarter-throw of the switch-lever 10. The two switches C and B are alternately operated, one at each quarter-revolution of the drum D, by means of the two slots 6 and 7 and the studs and drive-bars connected thereto, the device being at once cheap, simple, durable, and effective.

Having described our invention, what we claim is—

1. In a three-throw switch-stand, the horizontal rotating drum having the slots 6 and 7, each formed with an inclined working portion, from which runs a straight idle portion substantially at right angles to the axis of the drum, in combination with drive-bars 3 and 4, connected with different switch-bars and having studs which respectively engage the slots, substantially as described.

2. In a three-throw switch-stand, the horizontal drum having two independent slots 6 and 7, in combination with the casing, the two parallel drive-bars 3 and 4, movable in

the casing and having studs respectively engaging the slots, and two different switch-bars 1 and 2, connected, respectively, with the drive-bars, substantially as described.

3. The combination of the casing, the horizontal drum having two independent slots 6 and 7 and a shaft 9, the two parallel drive-bars 3 and 4, moving in the casing and having studs respectively engaging the slots, the two switch-bars connected to the drive-bars, the hand-lever 10, connected with the drum-shaft, and a locking device for holding the lever in the three different positions required for the use of the main and switch rails, substantially as described.

In testimony whereof we have hereunto set our hands.

FREDRIC C. WEIR.

NATHANIEL O. GOLDSMITH.

Witnesses:

J. WATSON SIMS,

T. SIMMONS.