

(No Model.)

J. G. SCHREUDER.
SIGNAL APPARATUS.

No. 570,062.

Patented Oct. 27, 1896.

FIG. 1.

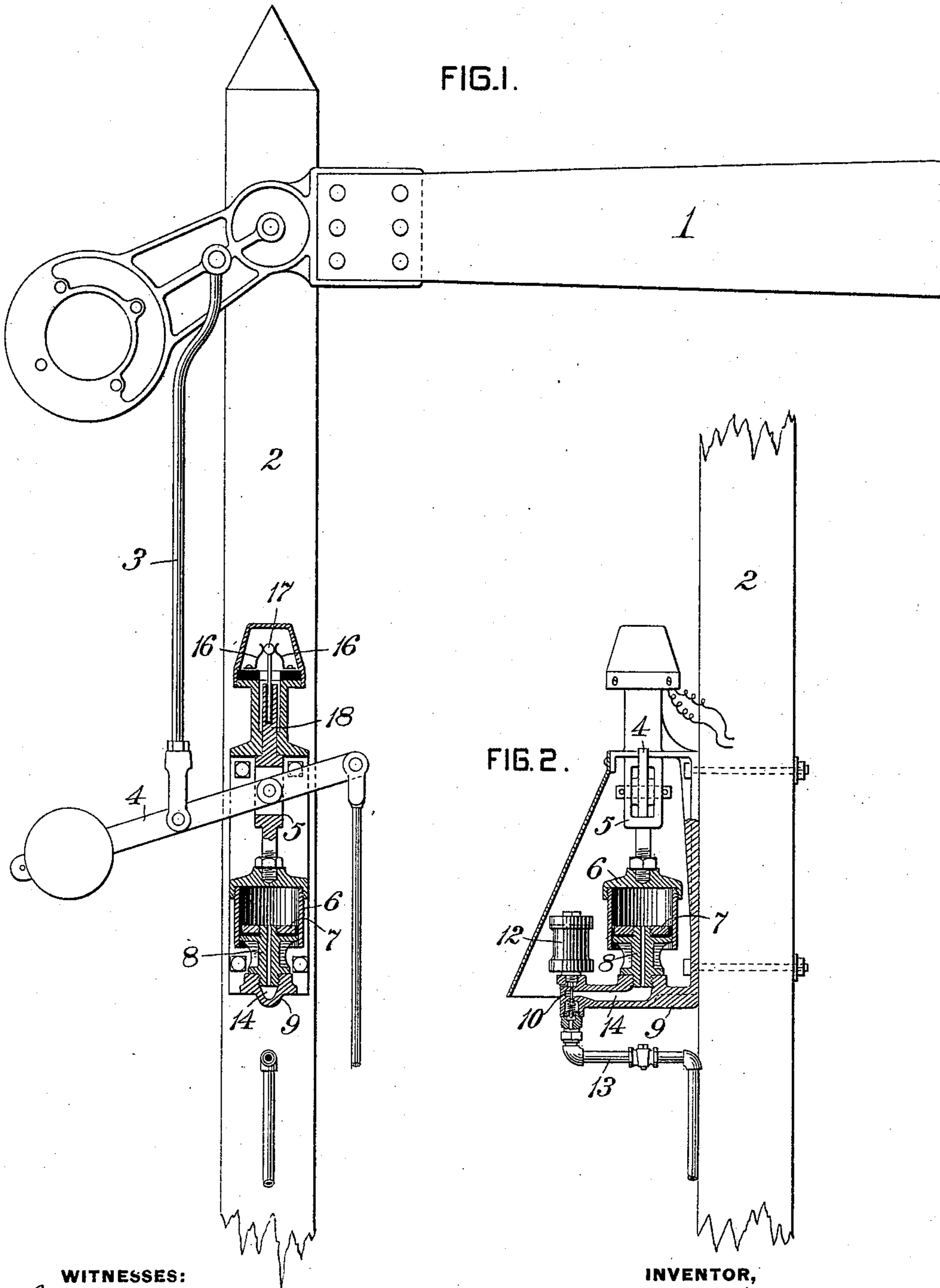
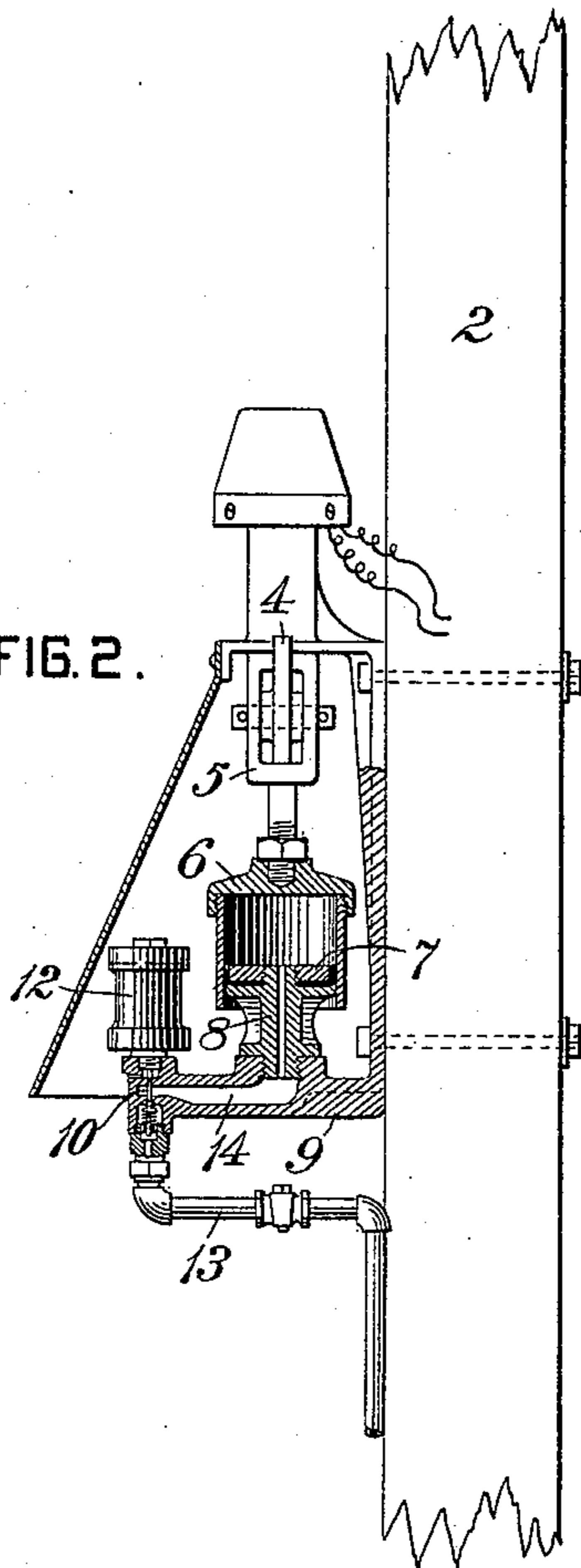


FIG. 2.



WITNESSES:

Chas. F. Miller.
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INVENTOR,

J. G. Schreuder
by *Danini S. Wolcott*

Att'y.

UNITED STATES PATENT OFFICE.

JENS G. SCHREUDER, OF EDGEWOOD PARK, PENNSYLVANIA, ASSIGNOR TO
THE UNION SWITCH AND SIGNAL COMPANY, OF SWISSVALE, PENNSYLVANIA.

SIGNAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 570,062, dated October 27, 1896.

Application filed May 21, 1896. Serial No. 592,413. (No model.)

To all whom it may concern:

Be it known that I, JENS G. SCHREUDER, a subject of the King of Sweden and Norway, residing at Edgewood Park, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Signal Apparatus, of which improvements the following is a specification.

The invention described herein relates to certain improvements in the construction of the type or kind of slot mechanism described and shown in application Serial No. 592,393, filed 21st day of May, 1896, and has for its object an arrangement of the slot mechanism whereby the pivotal support of the balance-lever is shifted by the slot mechanism in accordance with the condition of the track-section guarded by the signal to which the slot is applied.

In general terms the invention consists in the construction and combination substantially as hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view in elevation of a signal having my improved slot applied thereto, the slot mechanism being shown in section; and Fig. 2 is a sectional elevation of the slot mechanism, the plane of section being indicated by the line IIII, Fig. 1.

In the practice of my invention the signal-blade 1, which is preferably of the semaphore character, is mounted, as is customary, upon a post 2 in such manner that the signal will, when free to move, go automatically to "danger." A rod 3 is connected at its upper end with the signal-blade and at its lower end to the balance-lever to one side of the fulcrum-point thereof. This lever is connected, as is customary, to a signal-operating lever. (Not shown.) The balance-lever is pivotally mounted in a yoke 5, which has its lower stem secured to the head of the cylinder 6, preferably constructed with an open lower end. The piston 7 of the cylinder is attached to a stem 8, whose lower end is secured upon a bracket 9, secured to the signal-post. On this bracket is also secured the valve mechanism, consisting of a pin-valve 10, attached at its upper end to the armature 11 of the magnet

12. This valve is constructed to control the flow of fluid-pressure from the pipe 13 through the passage 14 in the bracket 9 and the passage through the stem 8 of the piston, and also the escape of fluid-pressure from the cylinder through the exhaust-port 15.

The electromagnet is included in a signal-circuit controlled by a track-relay in the usual manner, said circuit and its make-and-break mechanism controlled by the track-relay being so arranged that when the track-section is unoccupied the signal-circuit will be held in closed position and the pin-valve so shifted as to admit fluid-pressure to the cylinder 7, thereby holding the fulcrum of the balance-lever 4 in normal position or in such position that when the operating-lever is reversed the signal may be shifted to "clear" position. As soon, however, as a train enters upon the track-section governed by the signal the signal-circuit will be opened and the pin-valve so shifted as to prevent the flow of fluid-pressure to the cylinder and to open the exhaust-port therefrom. This exhaust of fluid-pressure from the cylinder permits the latter to drop, thereby lowering the fulcrum-point and permitting the free end of the signal-rod also to drop, whereby the signal is returned to "danger." As long as the exhaust-port is held open by the presence of a train upon a track-section any movement of the operating-lever will not affect the signal, as the balance-lever will simply move on the pin *a*, connecting it with the signal-rod 3 as a fulcrum. As soon as the train passes off the section the position of the pin-valve will be reversed, thereby permitting fluid-pressure to flow into the cylinder 7, and, if the operating-lever is in reversed position, to clear the signal by forcing the fulcrum of the balance-lever up, the lever turning on the pin *b*, connecting the lever to the operating-rod; but if the lever is in normal position the flow of fluid-pressure into the cylinder will simply have the effect of locking the cylinder and piston in normal position, as shown in Fig. 1, so that by shifting the operating-lever to reverse position the balance-lever will turn on the pin *c* as a fulcrum and the signal may be cleared.

In some cases it is desirable to control one

signal, *e. g.*, a distant signal, by another, *e. g.*, a home signal, such control being generally effected by a make-and-break mechanism included in the circuit of the distant signal and
5 operated by the home signal or its operating mechanism. In my improved apparatus this make-and-break device is formed by two springs 16, secured in but insulated from a hollow standard on the upper end of the
10 bracket 9, and a metal block 17, carried by but insulated from the stem 18 of the yoke 5. This stem passes up through the hollow standard, and when the yoke is raised, as hereinbefore described, the block is forced between
15 the springs, electrically connecting the same.

I claim herein as my invention—

1. The combination of a signal, mechanism for operating the signal, a lever connected to the signal and its operating mechanism, and
20 mechanism independent of the signal-operating mechanism applied to the fulcrum of the

lever for raising and lowering the fulcrum, substantially as set forth.

2. The combination of a signal, means for operating the signal, a lever connected to the
25 signal and its operating means and a fluid-pressure cylinder and piston for shifting the fulcrum of the lever, substantially as set forth.

3. The combination of a signal, means for operating the signal, a lever connected to the
30 signal and its operating means, a fluid-pressure cylinder and piston for shifting the fulcrum of the lever, and an electrically-controlled valve mechanism for controlling the
35 flow of fluid-pressure to and from the cylinder, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JENS G. SCHREUDER.

Witnesses:

DARWIN S. WOLCOTT,
M. S. MURPHY.