

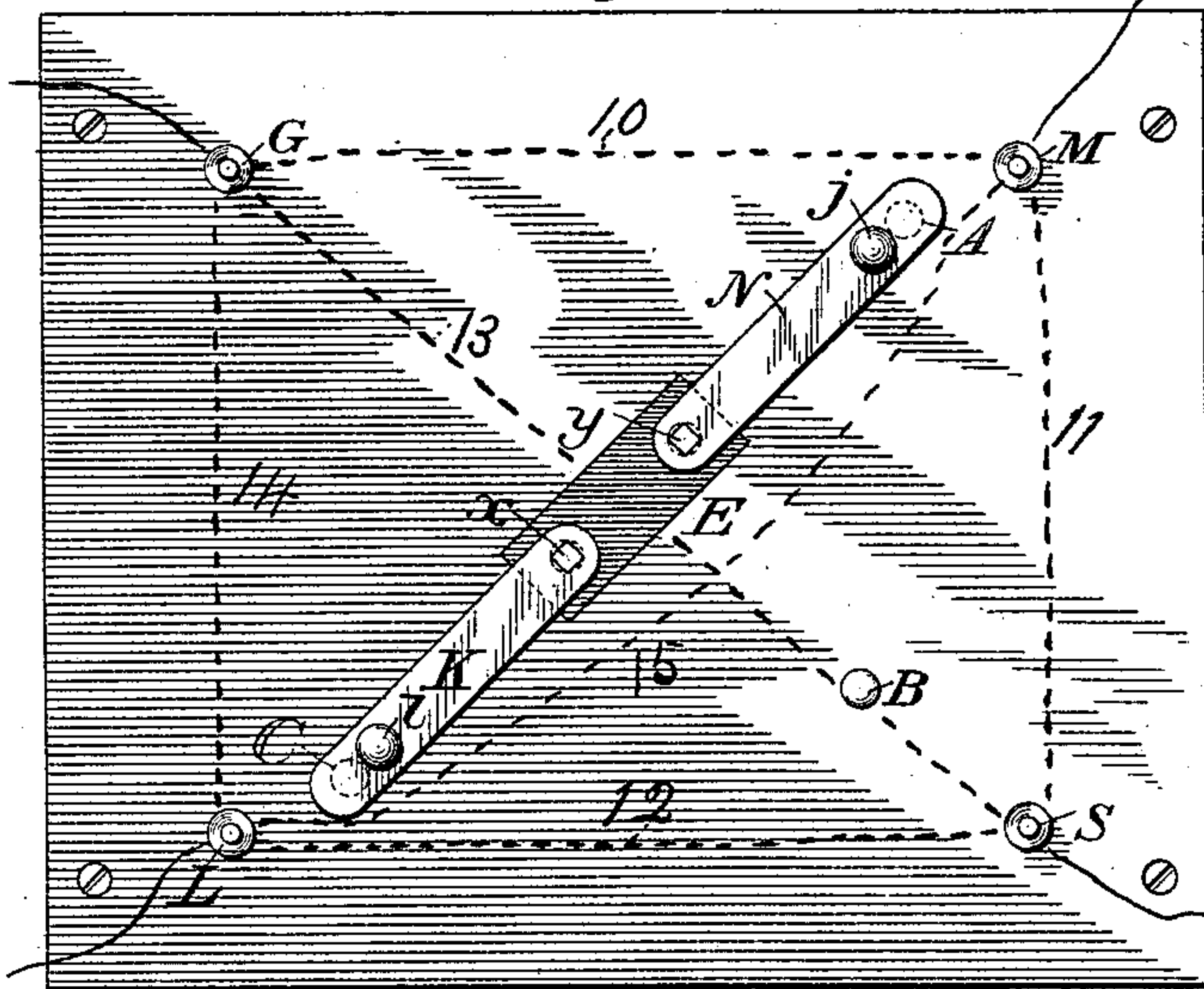
(No Model.)

G. LAY.  
TELEPHONE LINE SWITCH.

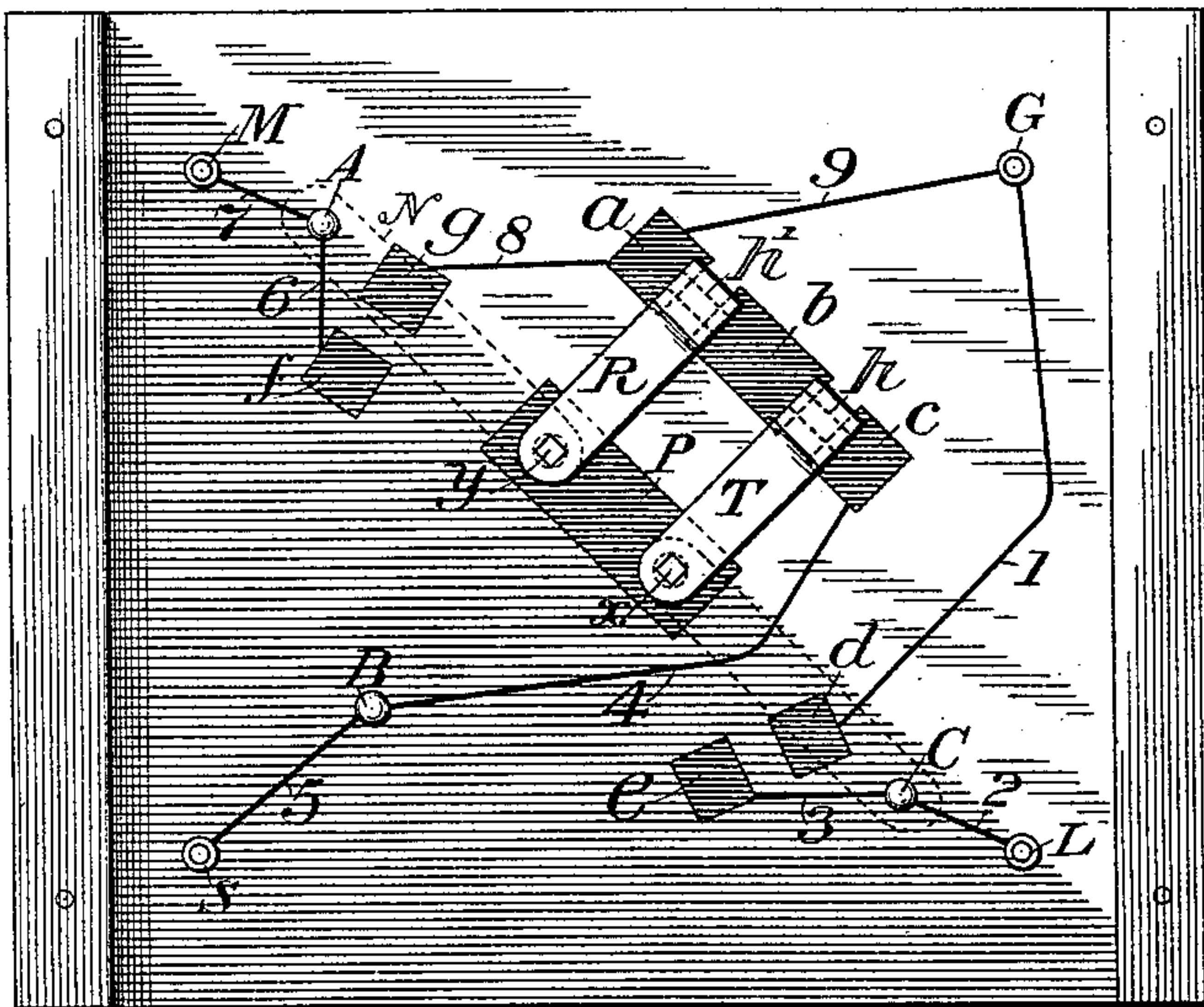
No. 594,407.

Patented Nov. 30, 1897.

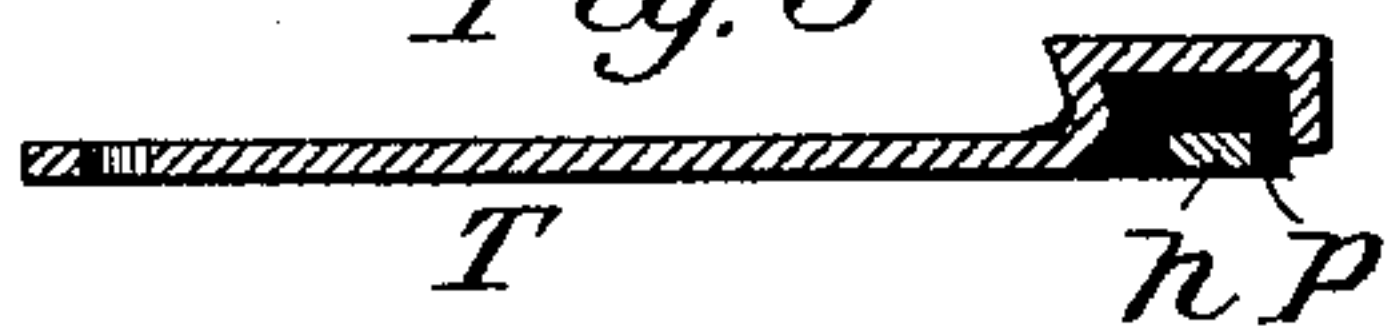
*Fig. 1.*



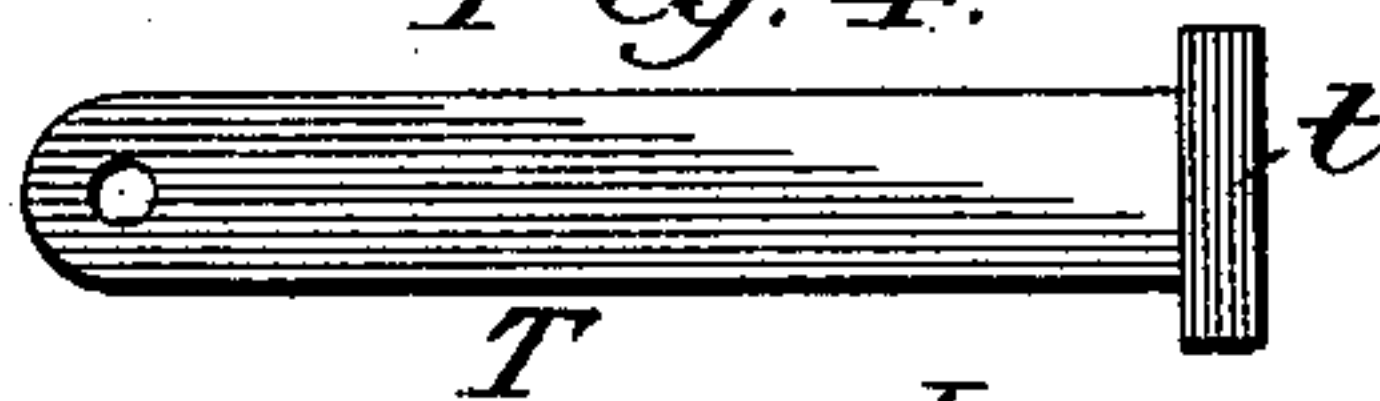
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses.

A. M. H. Lay.

E. J. Leech.

Inventor.

Gilbert Lay.

# UNITED STATES PATENT OFFICE.

GILBERT LAY, OF LICKING, MISSOURI.

## TELEPHONE-LINE SWITCH.

SPECIFICATION forming part of Letters Patent No. 594,407, dated November 30, 1897.

Application filed October 10, 1896. Serial No. 608,460. (No model.)

*To all whom it may concern:*

Be it known that I, GILBERT LAY, a citizen of the United States, and a resident of Licking, in the county of Texas and State of Missouri, have invented a certain new and useful Telephone-Line Switch, of which the following is a specification.

My invention relates to a new and improved telephone-line switch designed especially to connect any two of four independent party-lines converging to the same office, or for small exchange, where there are no more than four lines entering central office, though it may be put to other uses, wherein two pairs of movable arms are employed in opening and closing the various circuits; and the objects of my invention are, first, to connect any two of four independent party telephone-lines; second, that when any two of said lines are connected the other two are also connected; third, to make it impossible to leave any line cut out when using another line. I attain these objects by the mechanism set forth in the accompanying drawings, in which—

Figure 1 is a front view of the switch. Fig. 2 is a back view of the switch; Fig. 3, a vertical section of one of the arms R or T. Fig. 4 is another form of switch-arm.

Similar letters and figures refer to similar parts throughout the several views.

In Fig. 1, G, M, S, and L are binding-posts, to which are attached the four independent lines. B is a metal (preferably brass) bolt-head raised somewhat above the surface of the board. Under the ends of the arms at A and C are other bolts similar to B. A and M, C and L, B and S are connected by copper wires, as shown in Fig. 2. E is a metal plate let down somewhat into the board. K and N are metal arms. *i* and *j* are hard knobs for handles.

In Fig. 2, G, M, S, and L are nuts of binding-posts G, M, S, and L, Fig. 1. B, A, and C are nuts of bolts B, A, and C, Fig. 1. P is a plate similar to E. R and T are two metal arms. *a b c d e f g* are small metal plates let down somewhat into the board. 1 2 3 4 5 6 7 8 9 are copper wires connecting the bind-

ing-posts with the bolts and plates, as shown in the drawings. These wires should be let down in grooves below the surface of the board and soldered to the plates they touch. X and Y are two metal bolts which turn in E and P, but firmly hold the pairs of arms N and R, K and T, respectively, Figs. 1 and 2, and are also connected by A, B, and C as well as by the binding-posts G, M, S, and L.

Fig. 3 shows one form of R or T. *p* is an insulating-block. *h* is a metal strip let into the face of said block, but insulated from T. *p* also insulates T from *a b c d*, &c.

Dotted lines 10 11 12 13 14 15, Fig. 1, represent the various circuit connections that can be made with this switch.

If it is desired to close circuits 13 or 15, place arms K and N in position shown in Fig. 1. Circuits 10 11 12 14 are then open. 13 is closed through S, 5, 4, *c*, *h*, *b*, *h'*, 9, and G. 15 is closed through L 2 C K E N A 7 M. If circuit 11 or 14 is to be closed, move K around till the end rests upon B. Circuits 10 12 13 15 will then be open. T will have been carried around till *h* spans the space between *e* and *d*. Circuit 11 will be closed through S 5 B K E N A 7 M, and 14 will be closed through L 2 3 *e h d* 1 G. If circuit 10 or 12 is to be closed, turn N till the end rests upon B. R will be carried around till *h'* spans the space between *g* and *f*. Circuits 11 13 14 15 are then open. Circuit 12 will be closed through S 5 B N E K C 2 L. Circuit 10 will be closed through M 7 6 *f h' g* 8 *a* 9 G.

What I claim as my invention, and which I desire to secure by Letters Patent, is—

A telephone-line switch comprising a movable pair of connected metallic arms N, R; a second pair of such arms T, K, insulated bridging-strips on one arm of each pair, and stationary contact-points connected to the line-wires, and an intermediate connecting-plate *b* spanned by the bridging-strips, substantially as set forth.

GILBERT LAY.

Witnesses:

CLARK DOOLEY,  
ROBT. LAMAR.