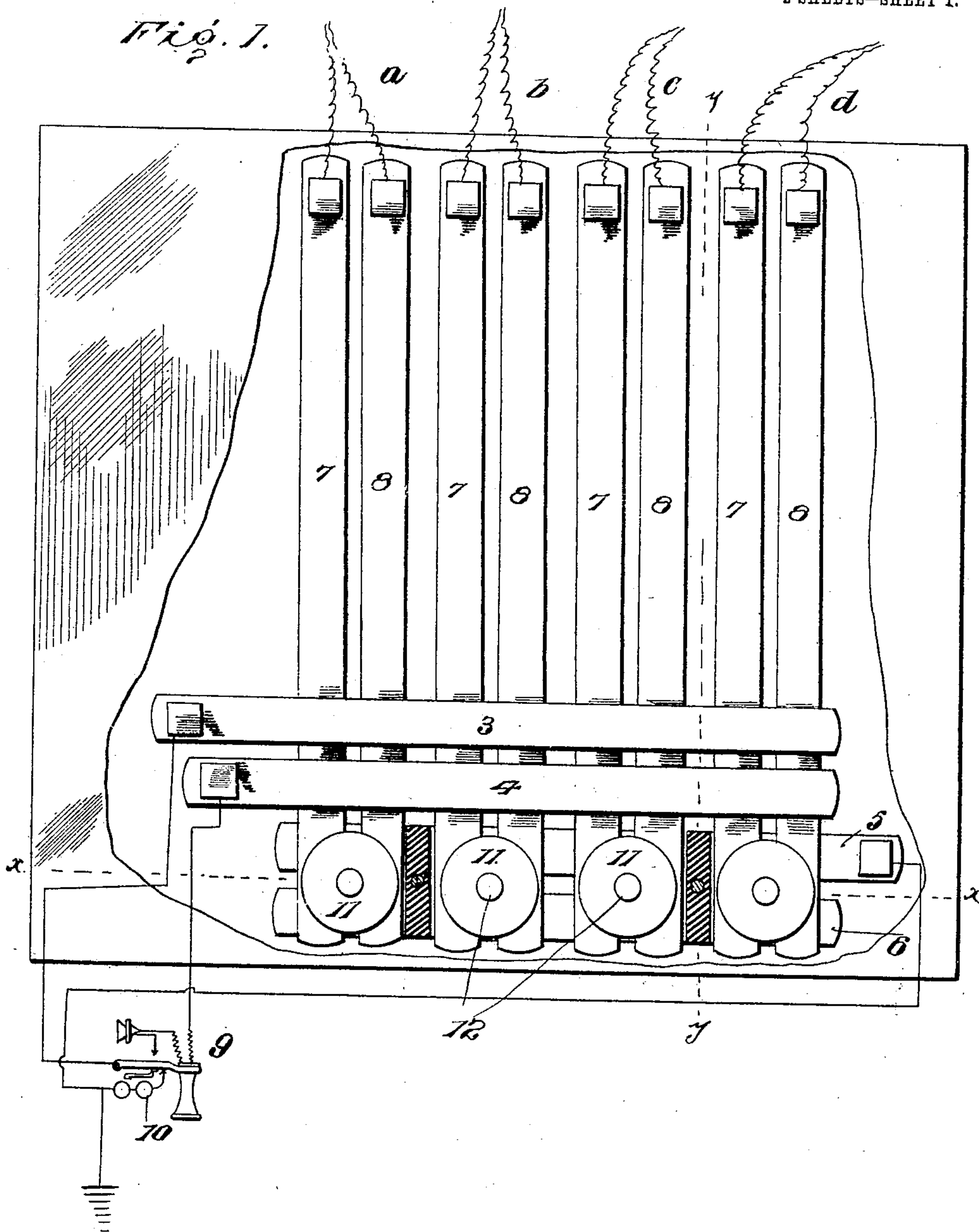


V. E. GREEN.  
TELEPHONE SWITCH.  
APPLICATION FILED AUG. 6, 1907.

898,576.

Patented Sept. 15, 1908.

2 SHEETS—SHEET 1.



Inventor

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

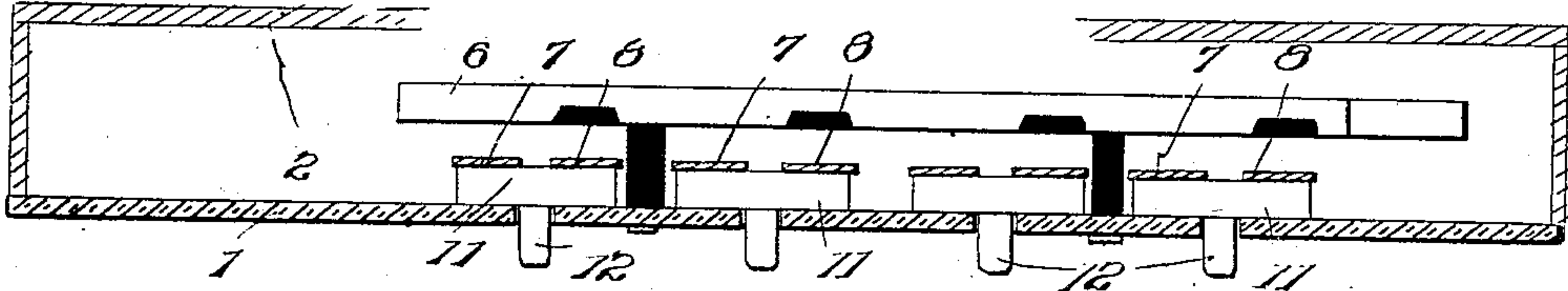


Fig. 3.

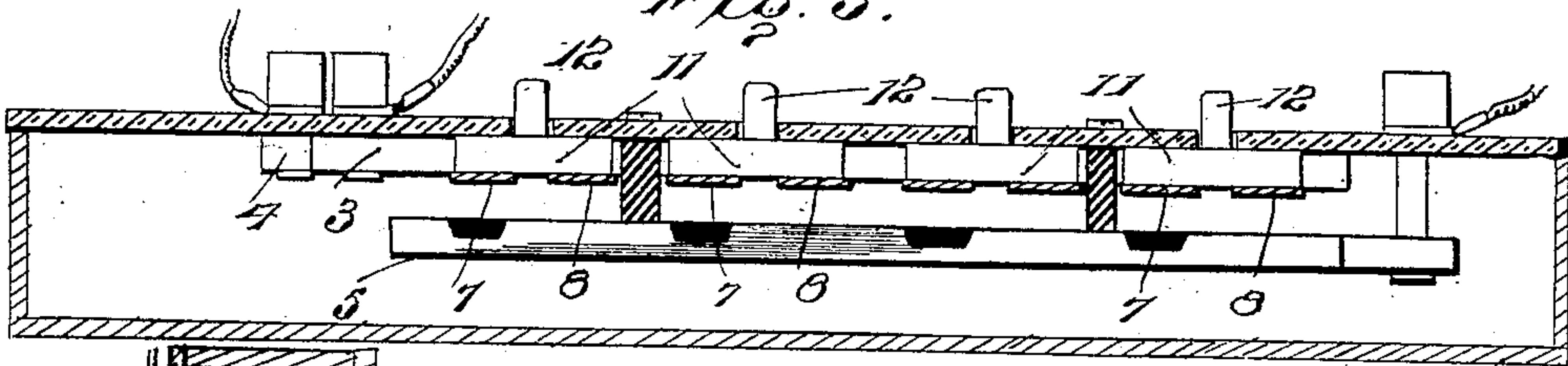


Fig. 4.

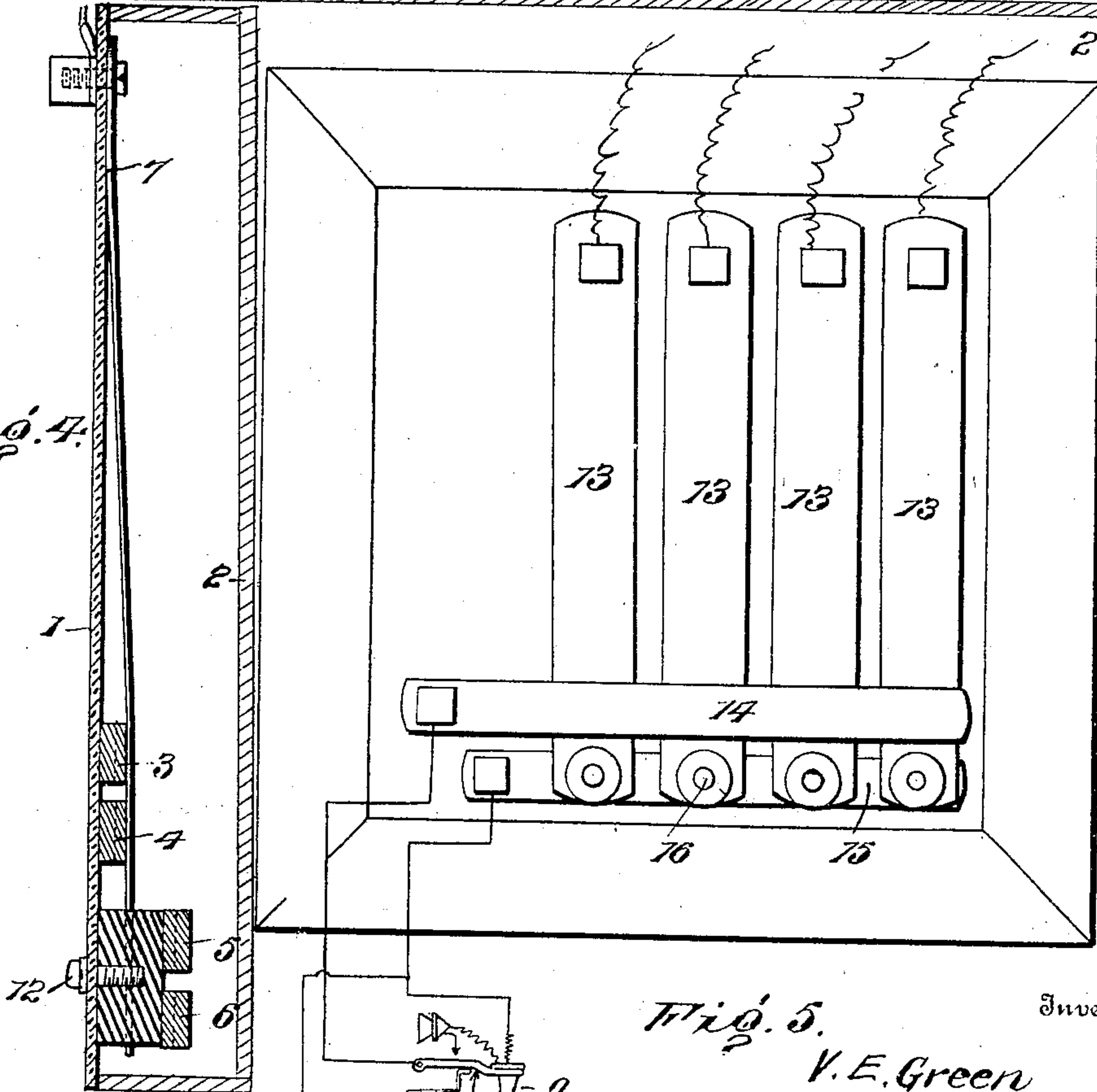


Fig. 5.

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# UNITED STATES PATENT OFFICE

VERNE E. GREEN, OF GALVA, ILLINOIS.

## TELEPHONE-SWITCH.

No. 898,576.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed August 6, 1907. Serial No. 387,354.

*To all whom it may concern:*

Be it known that I, VERNE E. GREEN, citizen of the United States, residing at Galva, in the county of Henry and State of Illinois, have invented certain new and useful Improvements in Telephone-Switches, of which the following is a specification.

The present invention appertains to a switch designed most especially for use in connection with telephone systems of the nature enabling parties to call one another without the intervention of central or exchange.

In systems affording telephonic communication of the type aforesaid, it frequently happens that two or more branch lines come close together at some point and a party resident near such point may advantageously use the present switch so as to avoid delay and vexation should one or more branches be in use, thereby permitting his calling another party whose branch is not in use, but the present invention enables such party to cut off the branch lines in use without interrupting communication between the parties talking, while at the same time affording opportunity for calling any other branch of the system that may not be in use.

The switch cannot be economically and advantageously used in systems requiring a central or exchange, but is designed for party lines in which the subscribers can call one another between themselves, as in rural districts and sparsely settled country.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a front view of a switch embodying the invention. Fig. 2 is a sectional view on the line  $x-x$  of Fig. 1, looking downward. Fig. 3 is a sectional view on the line  $x-x$  of Fig. 1, looking upward or in the opposite direction. Fig. 4 is a section on the line  $y-y$  of Fig. 1. Fig. 5 is a front view of a modification, showing a switch adapted for lines which are grounded.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The operating parts of the switch are attached to or mounted upon a support 1 of dielectric material and the same may be transparent or opaque according to the nature of the material selected. If the working parts of the switch are to be under observation, the support 1 is preferably of glass. A space is formed in the rear of the support 1 to accommodate the working parts and ordinarily a base or back 2 is provided and is spaced from the support 1, said space being closed at its edges to exclude dust and to prevent tampering with the working parts.

A pair of contact plates 3 and 4 are arranged transversely of the support and are connected thereto. Other contact plates 5 and 6 have a similar arrangement and are connected to the support 1, but are differently positioned with reference to the contact plates 3 and 4, so as to prevent interference. The contact plates 3 and 4 touch or are arranged close to the support, whereas the contact plates 5 and 6 are spaced some distance from the support 1. Pairs of spring blades 7 and 8 are arranged to cross the contact plates 3, 4, 5 and 6 about at a right angle and are secured at one end only to the support 1, their opposite ends being free to play between the pairs of contact plates 3—4 and 5—6. The spring blades 7 and 8 are the movable switch members and are normally in electrical contact with the plates 3 and 4 and form extensions of the several branch lines  $a$ ,  $b$ ,  $c$  and  $d$ . The blades 7 are electrically insulated from the plate 3 and normally are in electrical connection with the plate 4. The blades 8 are normally in electrical connection with the plate 3 and electrically insulated from the plate 4. The several branch lines, four being indicated, have their wires electrically connected by leads with the switch and blades 7 and 8 of the respective pairs. The telephone 9 at the point provided with the switch, has its leads connected with the plates 3 and 4, hence is in communication with the several branch lines, as will be readily understood. The plates 5 and 6 serve simply to electrically connect two or more parties that may be talking, thereby leaving the owner of the switch free to call on any other branch without interrupting the branch lines that are in use. An extension bell 10 is electrically con-



5 nected with one of the plates 5 or 6 to admit  
 of the parties electrically connected by  
 means of said plates to signal the person at  
 switch when temporarily cut off from the  
 10 main system by means of the switch. The  
 blades 7 are adapted to be electrically insu-  
 lated from the plate 5 and electrically con-  
 nected with the plate 6. The blades 8 are  
 adapted to be electrically connected with the  
 15 plate 5 and electrically insulated from the  
 plate 6. To electrically insulate the parts,  
 any suitable dielectric material may be em-  
 ployed and applied to either the blades or the  
 plates and by preference said material is set  
 20 into recesses in the parts to come flush with  
 the surface thereof.

Push buttons are provided for the several  
 pairs of spring switch blades 7 and 8 and each  
 push button consists of a head 11 and a stem  
 25 12, the latter operating through an opening  
 in the support 1, whereas the head 11 over-  
 laps end portions of a pair of blades 7 and 8  
 so as to simultaneously move the same away  
 from the plates 3 and 4 and into contact with  
 30 the plates 5 and 6, as when cutting out a  
 branch line to admit of the owner of the  
 switch establishing communication with any  
 other branch of the system not in use. The  
 switch blades 7 and 8 normally bear against  
 35 the plates 3 and 4 and upon exerting pressure  
 upon any push button, the branch line corre-  
 sponding to the switch blades controlled by  
 said push button, is electrically disconnected  
 from the plates 3 and 4 and electrically con-  
 40 nected with the plates 5 and 6.

Under normal conditions, the owner of the  
 switch is in electrical connection with each  
 subscriber of the party line. Suppose *a*  
 should call *b* and while the branch lines *a* and  
 45 *b* are in service, the party owning and con-  
 trolling the switch should desire to call *c*.  
 The party after ascertaining that the branch  
 lines *a* and *b* are in use, depresses the push  
 buttons controlling the switch blades 7 and 8  
 50 of such lines, thereby connecting the branch  
 lines *a* and *b* with each other through the  
 plates 5 and 6, thereby enabling the party *c*  
 to be called and communication established  
 without interrupting *a* and *b*. When pres-  
 55 sure is removed from the push buttons con-  
 trolling the switch blades of the branch lines  
*a* and *b*, the respective switch blades thereof  
 move away from the plates 5 and 6 and into  
 contact with the plates 3 and 4, thereby restor-  
 ing the party line system to normal condi-  
 tion. The switch may be used to locate  
 trouble in the event of one or more of the  
 branch lines getting out of order, since the

party controlling the switch may test each of  
 the branch lines in succession and thereby 60  
 determine which is out of order.

In the construction shown in Fig. 5, the  
 switch blades 13 are single, since the branch  
 lines are grounded. The plates 14 and 15 are  
 also single and are arranged upon opposite 65  
 sides of the switch blades 13, the latter nor-  
 mally being in electrical connection with the  
 plate 14 and adapted to make electrical con-  
 nection with the plate 15 when moved by the  
 application of pressure upon the push but- 70  
 tons 16. The telephone 9 is connected with  
 the plate 14 and is grounded at 17. The ex-  
 tension bell 10 is connected with the plate 15  
 and is grounded at 17. The operation of the  
 switch is precisely the same as that hereto- 75  
 fore described. Two or more parties may be  
 connected electrically through the plate 15  
 and the respective switch blades 13, thereby  
 leaving the party desiring to use the line  
 free to call and establish communication 80  
 with any other branch in the system not us-  
 ing the line.

Having thus described the invention, what  
 is claimed as new is:

1. In a switch of the character specified, 85  
 the combination of a pair of contact plates,  
 pairs of switch blades having one blade of the  
 respective pairs in electrical connection with  
 one of said plates and electrically insulated  
 from the other plate, and having the other 90  
 switch blade electrically insulated from the  
 first mentioned plate and electrically con-  
 nected with the other plate, and a second  
 pair of contact plates arranged to electrically  
 connect pairs of switch blades when moved 95  
 out of contact with the first mentioned pair  
 of plates.

2. A switch of the character specified,  
 comprising a pair of plates 3 and 4, pairs of  
 switch blades having one blade of each pair 100  
 electrically connected with one of said plates  
 and electrically insulated from the other  
 plate and having the other blade electrically  
 insulated from the plate with which the first  
 mentioned blade is in electrical connection 105  
 and electrically connected to the other plate,  
 and a second pair of plates 5 and 6 normally  
 out of contact with the switch blades and  
 adapted to electrically connect the same.

In testimony whereof I affix my signature 110  
 in presence of two witnesses.

VERNE E. GREEN. [L. s.]

Witnesses:

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 ERLE M. THOMPSON.