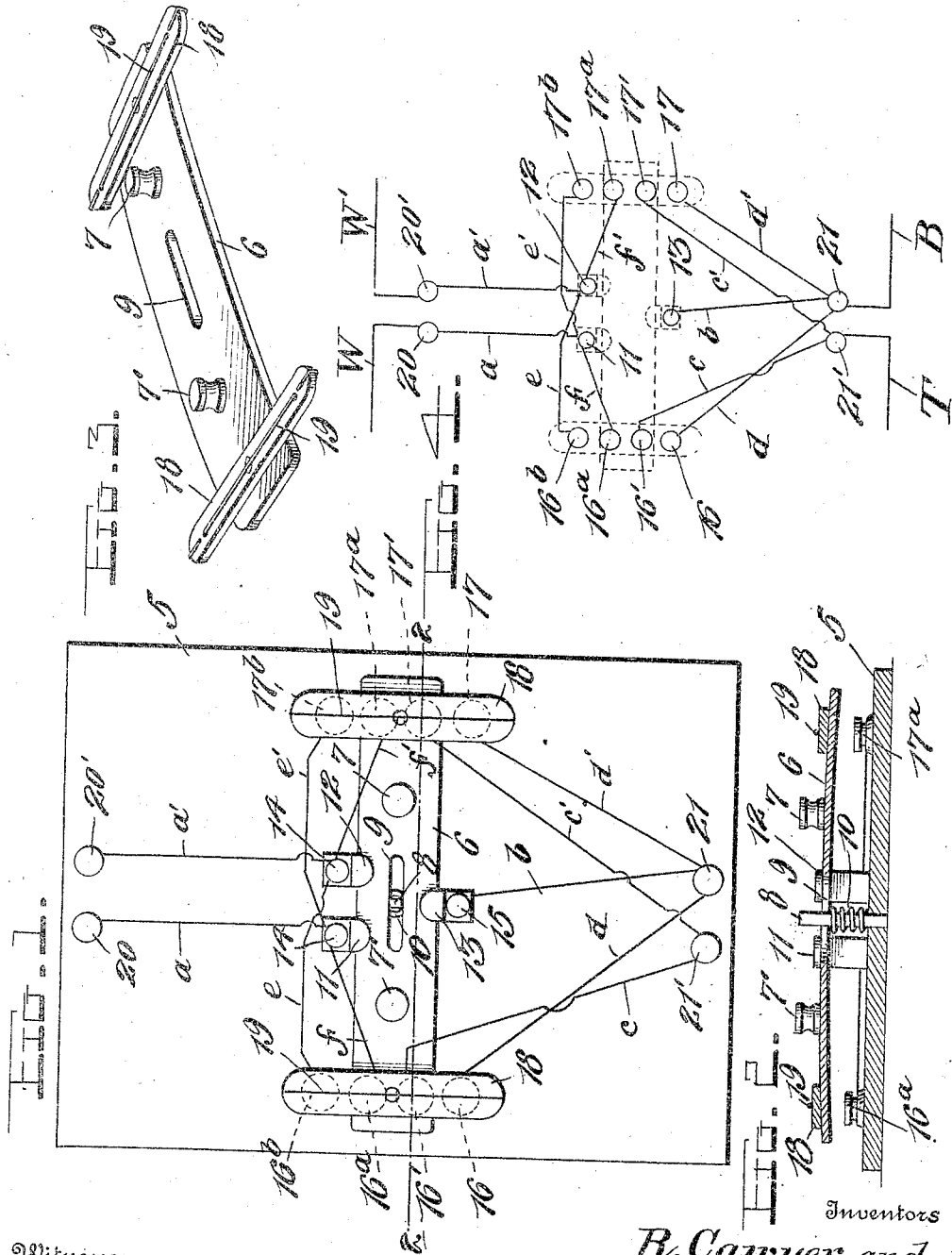


R. CAWYER & J. D. GATTIS,
 SWITCH.
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Witnesses
Chas. L. Giesbauer
J. D. Pinner

Inventors
R. Caywer and J. D. Gattis,
By Watson E. Coleman
 Attorney

UNITED STATES PATENT OFFICE.

ROSCOE CAWYER AND JAMES D. GATTIS, OF MERCURY, TEXAS.

SWITCH.

1,003,430.

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To all whom it may concern:

Be it known that we, ROSCOE CAWYER and JAMES D. GATTIS, citizens of the United States, residing at Mercury, in the county of McCulloch and State of Texas, have invented certain new and useful Improvements in Switches, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in switches and more particularly to a telephone switch for use in party line circuits.

The invention has for its principal object the provision of a switch of the above character which may be actuated to cut out of the telephone circuit, all other parties than the one to whom the subscriber is talking.

Another object of our invention is to provide novel and efficient means for preventing one or more parties connected in the party line circuit from overhearing the conversation carried on between two of the parties in the telephone line circuit.

A still further object of the invention is to provide means for breaking the talking circuit between the parties who are conversing and the other parties in the line, while at the same time the bell circuit remains closed.

With the above and other objects in view, the invention consists of the novel features of construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a telephone switch constructed in accordance with our invention; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a detail inverted perspective view of the switch blade; and Fig. 4 is a diagrammatic view illustrating the telephone line and bell circuits.

Referring in detail to the drawings 5 designates the switch base which may be arranged at any convenient point upon the telephone box but is preferably located within the same and immediately beneath the top thereof which provides an arm rest for the user. This switch base is spaced from the top of the telephone box and between the top of the box and the base 5 the movable switch blade 6 is arranged. Buttons 7 and 7' are fixed to the switch blade upon opposite sides of its center, said buttons being located in the top of the tele-

phone box to be pressed by the subscriber to break the telephone circuit with the other parties thereof than the one with whom he is conversing. The switch blade 6, as will be noted from reference to Fig. 2, is slightly curved and is mounted for vertical movement upon a rectangular post 8 which extends through a short longitudinal slot 9 in the switch blade. A coiled spring 10 is arranged on said post between the blade 6 and the switch base 5 and normally acts to yieldingly hold the opposite longitudinal edges of the switch blade in engagement with the contact members 11, 12 and 13. The members 11 and 12 are fixed to the base 5 on one side of the switch blade by means of the binding posts 14, and the contact member 13 is fixed to said base on the opposite side of the switch blade by means of the binding post 15. The longitudinal slot 9 in the switch blade permits a slight longitudinal movement of said blade on the post 8 while the longitudinal curvature of said blade insures the close contact of the same with the members 11 to 13.

Upon one side of the switch base 5 a series of binding posts 16, 16', 16^a and 16^b are arranged and upon the opposite side of said base a similar series of posts 17, 17', 17^a and 17^b are arranged. A bridge element 18 is transversely arranged upon each end of the switch blade 6. These members are formed of insulating material and are rigidly fixed to the switch blade at their centers. A current conducting wire 19 is arranged longitudinally upon each of said members and is fixed to the same at its ends. The ends of these wires are adapted to engage the posts 16 and 16^b or 17 and 17^b to close the bell circuit when either of the party lines are disconnected as will appear from the following description.

The telephone line and bell circuits are clearly disclosed in Fig. 4 and are arranged in the following manner. The party line wires W and W' are connected to the binding posts 20 and 20' arranged upon one end of the switch base 5, and the bell circuit wire B and the wire T of the subscriber's telephone are connected to similar binding posts 21 and 21' arranged upon the opposite end of the switch base. The wires *a*, *a'* connect the binding posts 20 and 20' with the contact members 11 and 12 and a current conducting wire *b* connects the other of the contact members 13 with the binding

post 21 to which the bell circuit wire B is connected. The binding post 21' to which the telephone circuit wire T is connected is also wired to the binding posts 16' and 17' as indicated at *c*, *c'* respectively, while wires *d*, *d'* connect the binding posts 21 with the posts 16 and 17 respectively. The binding post 16^b is connected by means of the circuit wire *e* with the contact member 12 and the binding post 17^b is connected by means of a wire *e'* with the contact member 11. A wire *f* connects the binding post 16^a to the contact member 11 and a wire *f'* also connects the binding post 17^a to the contact member 12:

The practical operation of the switch is substantially as follows: When the subscriber takes the telephone receiver off of the hook to talk to one of the parties in the line whose telephone, we will assume is connected through the wire W to the subscriber's telephone, in order to disconnect the line W' and the subscriber's telephone line T, the subscriber depresses the button 7' at the left hand side of Fig. 1. It must be understood that normally the lines W and W' are connected in the bell circuit only. Therefore it will be seen that when the switch blade is depressed in the above manner, the telephone circuit is broken through the contact members 11, 12 and 13 and the switch blade. The connection is made between the subscriber's telephone line T and the party line W through the wire *c* which connects the binding post 21' and the binding post 16', from whence the current is conducted by the switch blade 6 through binding post 16^a, wire *f*, binding post 11, and wire *a* to the binding post 20 to which the wire W is connected. The line W' is thus disconnected from the talking circuit of the telephone but is connected in the bell circuit through binding post 21, wire *d*, binding post 16, conducting wire 19, binding post 16^b, wire *e*, binding post 12 and wire *a'*. It will be obvious that all parties on the wire W' are disconnected from the talking circuit so that the conversation carried on between the subscriber and the party calling over the line W cannot be overheard. The line W' may be connected in the telephone circuit while the line W is only included in the bell circuit by simply reversing the above operation and depressing the button 7 at the right hand end of the switch blade.

From the foregoing it is thought that the construction and operation of our improved telephone switch will be readily understood.

The device is comparatively simple in its construction and eavesdropping upon telephonic conversation carried on over party telephone lines is rendered absolutely impossible. Such a switch is of great convenience in telephone lines of this character which are widely used in rural communities.

Such a switch may be constructed at a nominal cost and readily installed in telephone systems of the present construction. It may also be easily and quickly operated and is highly efficient and reliable in practical use.

While we have shown and described the preferred construction and arrangement of the various parts, it will be understood that the device is susceptible of considerable modification without departing from the essential feature or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:—

1. In a switch of the character described, the combination with a party line telephone circuit including a main line circuit and a bell circuit, of a spring held depressible switch blade, contacts normally engaged by said switch blade to close the bell circuit, contacts arranged in each of said circuits, and means carried by the switch blade to engage certain of said contacts and maintain the bell circuit closed, said switch blade engaging other of the contacts to close the telephone circuit through the party line.

2. In a switch of the character described, a telephone circuit including a party circuit having two line wires and a bell circuit, in combination with a switch comprising contact members each wired to one of the party line wires, a contact member wired to the bell circuit, binding posts wired to the first named contacts and to the local telephone line, a movable switch blade, a spring yieldingly holding said blade in engagement with the contacts to normally close the bell circuit through the party lines, two series of contacts each wired to the bell and line circuits, and means arranged upon each end of the switch blade whereby when the end of said blade is depressed the talking circuit is connected through one of the party line wires and the bell circuit through the other party line wire.

3. In a switch of the character described, a telephone circuit including a party talking circuit having two line wires and a bell circuit, contacts wired to the party line, a contact wired to the bell circuit, a switch blade provided with a central longitudinal slot, a post extending through said slot, a spring on said post bearing against the blade and normally holding the same in engagement with the contacts to close the bell circuit through the party lines, a series of binding posts arranged beneath each end of the switch blade, said post being wired to the party line and bell circuits, a bridge member of insulating material arranged on each end of the switch blade, an electrical conductor fixed to said bridge member for engagement with certain of the binding posts, whereby upon the depression of the switch blade at one end the talking circuit is con-

ected through one of the line wires by the
engagement of the switch blade with certain
of the contacts, and the bell circuit is con-
nected through the other of the line wires by
5 the engagement of the conductor with the
remaining contacts.

In testimony whereof we hereunto affix

our signatures in the presence of two wit-
nesses.

ROSCOE CAWYER.
JAMES D. GATTIS.

Witnesses:

HAM. E. MCBRIDE,
EVERETT C. ROBERTSON.