A. H. FREEMAN.

TELEGRAPH SWITCH.

No. 112,798. Patented Mar. 21, 1871.

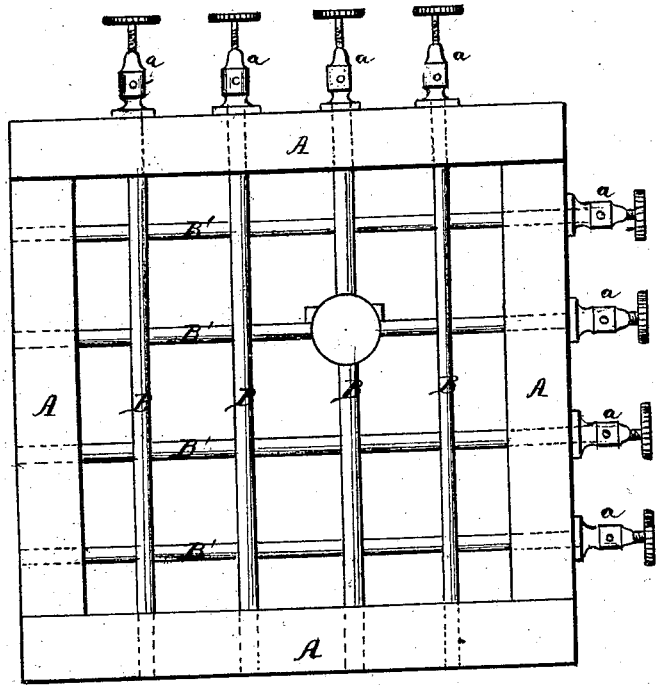

Fig. 1.

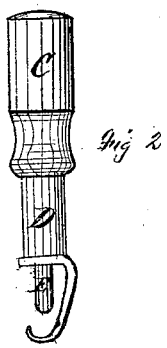

Fig 2

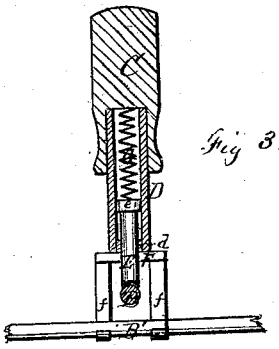

Fig 3.

WITNESSES

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ALEXANDER H. FREEMAN, OF CHICAGO, ILLINOIS.

Letters Patent No. 112,798, dated March 21, 1871.

IMPROVEMENT IN TELEGRAPH-SWITCHES.

The Schedule referred to in these Letters Patent and making part of the same.

I, ALEXANDER H. FREEMAN, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Telegraph-Switches, of which the following is a specification.

My invention relates to a device for connecting and disconnecting the wires of a telegraph-switch board, where the said wires cross one another; and

It consists in a clasp attached to an insulating-handle, and arranged to clasp or hook under the lower wire, while a pressure-rod, operated by a coiled spring or its equivalent, presses upon the upper wire.

The said clasp and rod are of metal, and in contact, and thereby form the connection, the object being to provide a connecting device which may be readily applied and disengaged, all of which will presently be more fully explained.

In the accompanying drawing, which, with the letters of reference marked thereon, forms part of this specification—

Figure 1 is a view of the switch-board.

Figure 2 is a side elevation of the connecting-device.

Figure 3 is a central vertical section of the same, showing its application to the wires.

General Description.

A is the frame of the switch-board.

a a are the set-screws for connecting the telegraph-wires thereto, and

B B′ are the wires of the switch-board, which cross each other at right angles, but are not in contact.

I usually make these wires round, as I find that to be the most convenient form.

C is a handle, of any ordinary insulating material, say, of gutta-percha, or it may be of wood.

Fitted into this handle is the metallic tube D, provided at its lower end with a shoulder, *d*.

E is a pressure-rod projecting from the tube D.

This rod is made with a head, *e*, to prevent it from sliding out of the tube.

The lower or outer extremity of this pressure-rod is cut to fit the wire of the switch, as is clearly shown in the drawing.

F is a clasp, made of metal and fastened to the end of tube D, and it consists of two hooks *f f*, with an intervening space somewhat larger than the thickness of the switch-wires, so that the said hooks *f f* may pass one each side of the upper switch-wire in coupling.

When it is desired to couple any wire of the switch-board to any other thereof I place the pressure-rod against the upper wire and force down the spring G by pressing the handle until I can engage the hooks *f f* with the lower wire, when the recoil of the spring G will hold it firmly in position, and the connection between the two wires is complete.

I am aware that a connecting device has been made, which consists of a plug inserted through a hole in the upper wire, and fitting into a hole in the lower wire; but the drilling of these holes not only weakens the wires, but is only to be done with great trouble and expense; and, furthermore, the connection is liable to fail by insulation caused from dirt collecting about the holes, which latter is a disadvantage attendant upon almost all ordinary connections.

In some ordinary switch-boards cams are used, which are fastened to the upper wire, and in the use of which it is necessary to have one cam at least to each upper switch-wire. These are constantly causing trouble by sliding down and forming connection where it is not wanted, and by failing where connection is wanted.

By making the outer extremity of the pressure-rod concave, to fit the switch-wire, I greatly increase the connecting-surface of the metals.

The curved shape of the hooks *f f*, fitting closely around the lower wire, accomplishes this same object.

The connecting-surface, as will be seen, is always in view of the operator.

As will be readily understood, the clasp F carries the circuit to the tube D; whence it passes down the rod E to the upper wire.

If the immediate contact of the clasp F and rod E should fail the connection is not lost, but the circuit passes up the tube D to a solid portion of the same, to which is soldered the end of the wire forming the spring G, down which it passes to the pressure-rod, which is soldered thereto, or *vice versa*, as may be the direction of the current. This forms what may be termed a solid connection.

Having thus fully described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The telegraph-switch connector, consisting of a pressure-rod, E, working in a tube, D, to which is attached a clasp, F, with hooks *f f*, constructed and operating substantially as described and shown.

2. The pressure-rod E, cut at its outer extremity to fit the wire of a switch-board, to increase the connecting-surface of the metals.

3. The clasp F, having bent hooks *f f*, shaped to surround the wire of a switch board, to increase the connecting-surface.

4. The combination of the clasp F, the pressure-rod E, tube D, and spring G, when the said spring forms a solid connection between the rod E and tube D, substantially as and for the purpose set forth and shown.

5. The detachable forked connector, constructed to clasp under the lower switch-wire, and press upon the upper switch-wire, whereby the connecting-surface is increased, and holes in the switch-wire are dispensed with, as described and shown.

Witnesses:
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