

(No Model.)

E. F. FROST.
SWITCHBOARD.

No. 516,862.

Patented Mar. 20, 1894.

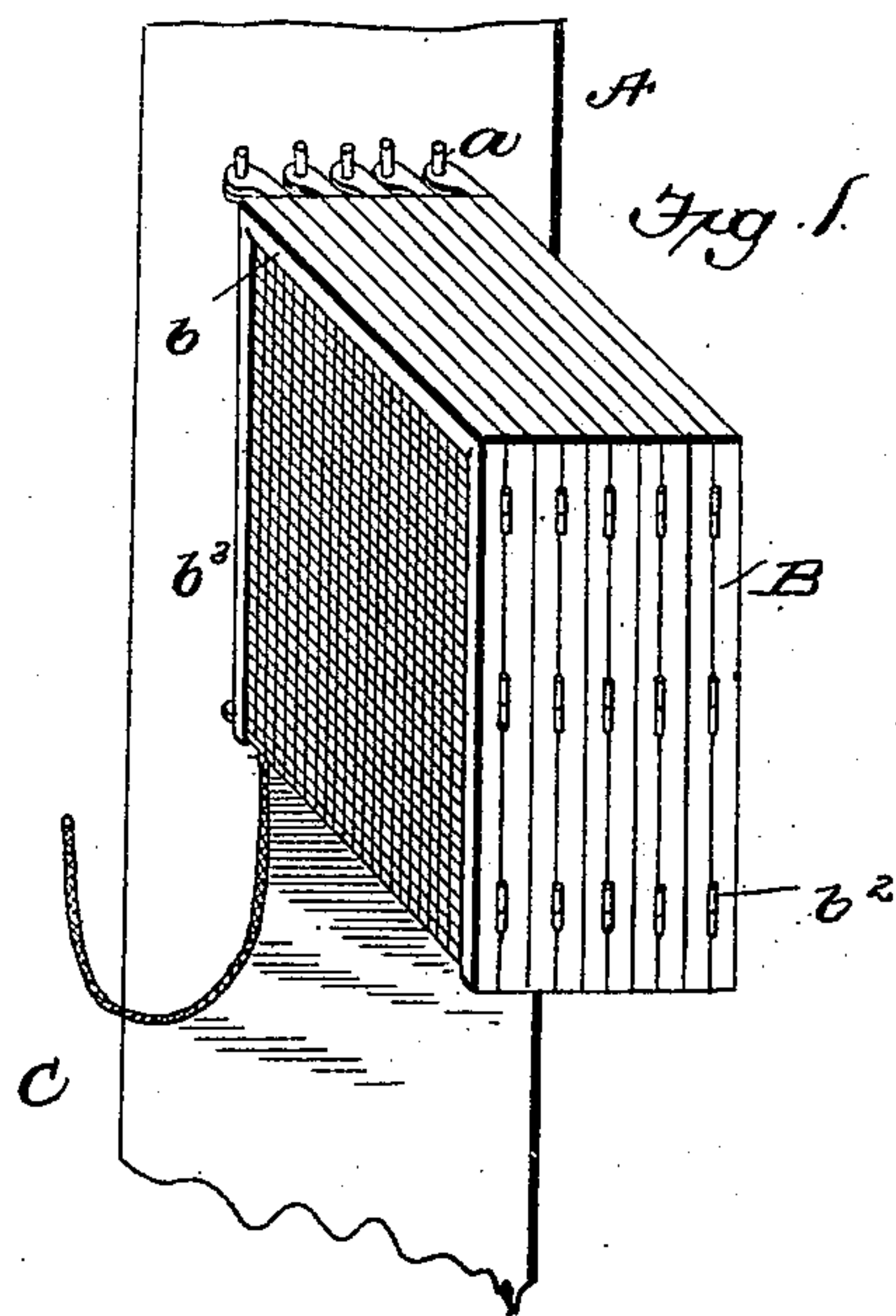


Fig. 1.

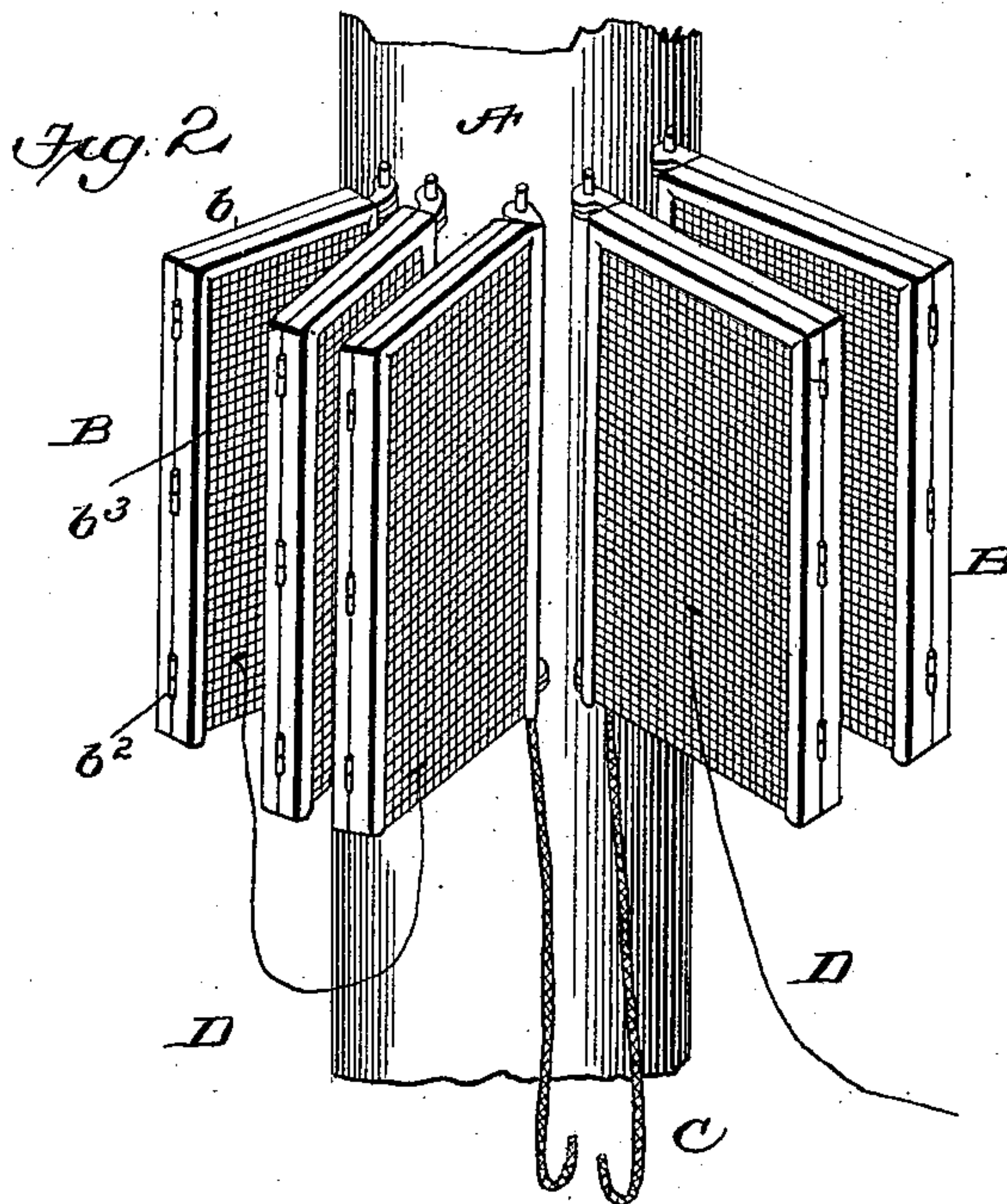


Fig. 2.

Fig. 3.

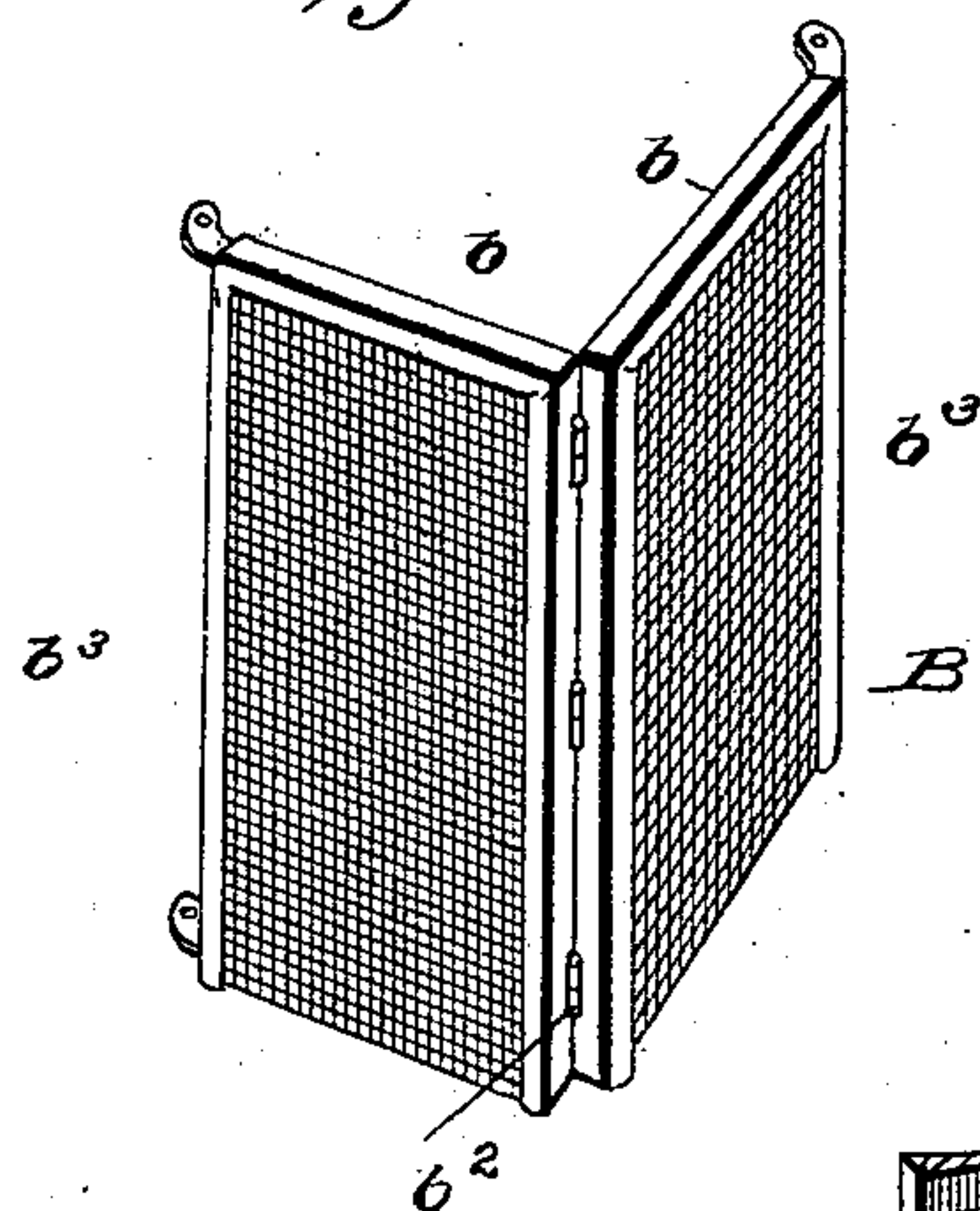


Fig. 4.

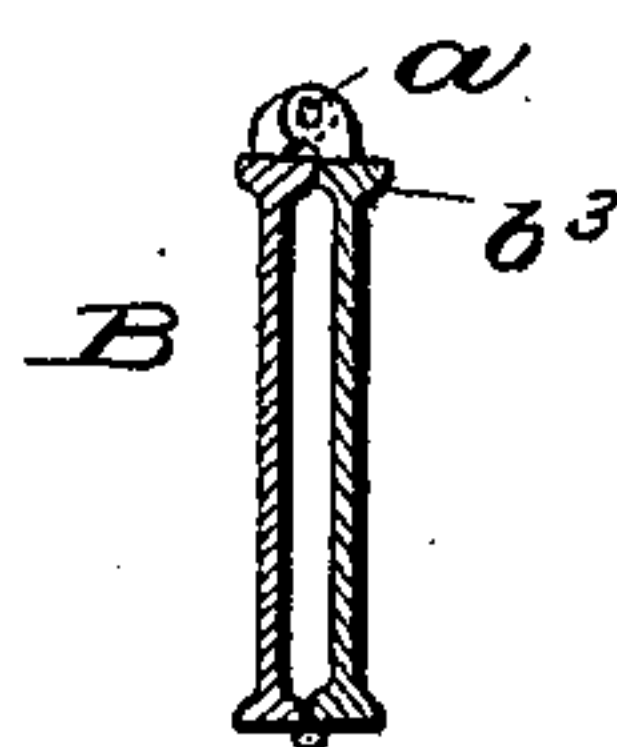
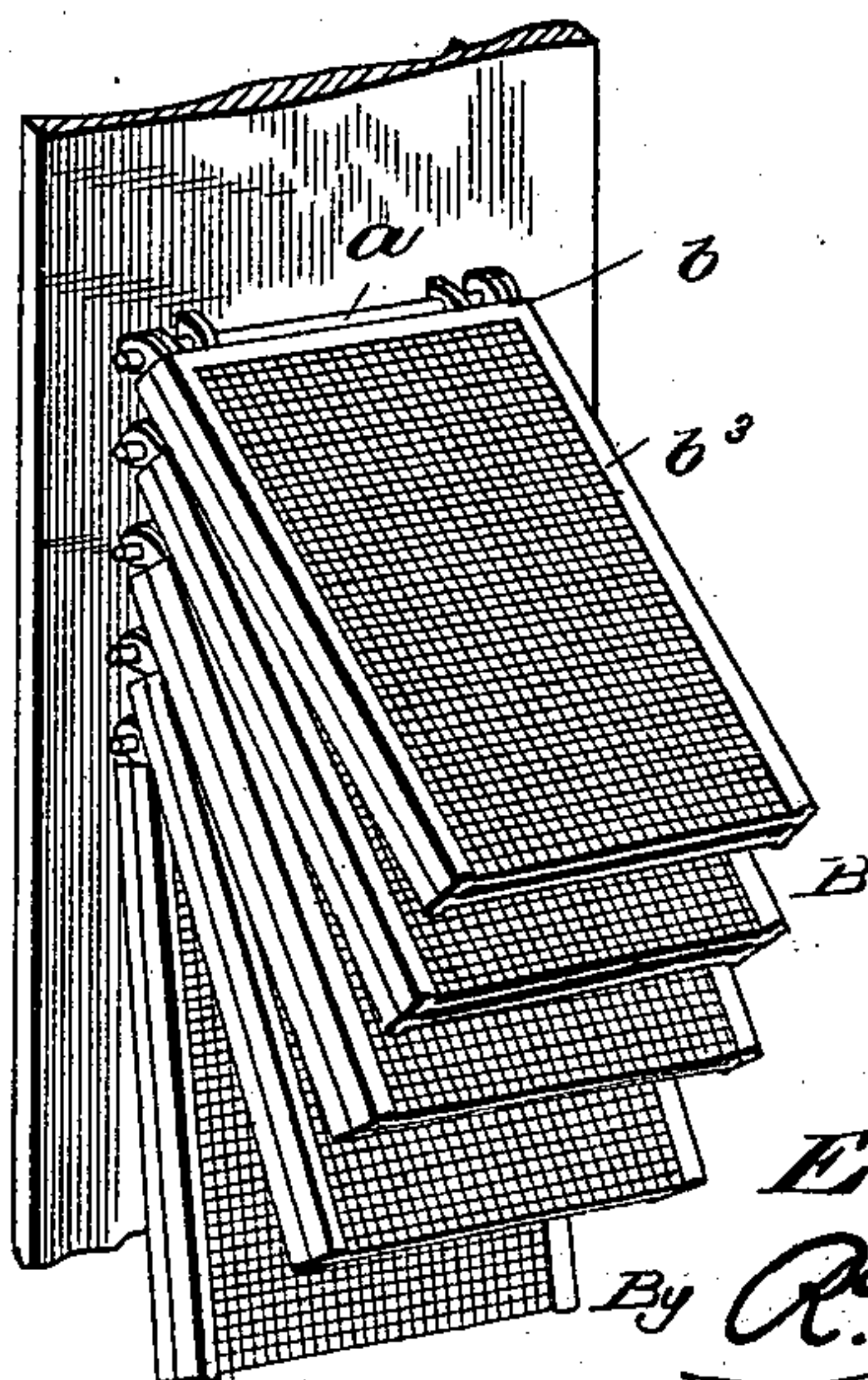


Fig. 5.



Witnesses

John H. H. H.
David St. Mend.

Inventor

Ellis F. Frost.

By *A. S. Dyke*,
his Attorney

UNITED STATES PATENT OFFICE.

ELLIS F. FROST, OF WASHINGTON, DISTRICT OF COLUMBIA.

SWITCHBOARD.

SPECIFICATION forming part of Letters Patent No. 516,862, dated March 20, 1894.

Application filed May 31, 1893. Serial No. 476,150. (No model.)

To all whom it may concern:

Be it known that I, ELLIS F. FROST, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Switchboards; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to switchboards.

The object of the invention is to produce a switchboard designed for use in telephone or other stations, of such construction that the number of wires within the reach of a single operator will be greatly increased over what has been possible in switchboards as heretofore made; furthermore, the object of the invention is to produce a switchboard of such construction that the addition or taking away of any number of wires may be accomplished at the expenditure of a small amount of labor and money, and, wherein such addition or taking away, will not in any way disorganize the switchboard as originally constructed.

With these objects in view, the invention consists, essentially, of a switchboard of such construction that the entire superficial area of a given cubic space will be utilized, and in which a number of wires corresponding to the number of points in the space accommodated, allowance being made around each point of space may be for connection.

Furthermore, the invention consists of a switchboard composed of a series of movable leaves, each face of each leaf being provided with the greatest possible number of points of attachment for wires consistent with proper operation, the leaves being movable to cause them to occupy the smallest possible amount of space, and, also, to allow access to each face of each leaf.

Furthermore, the invention consists of a switchboard, composed of a series of leaves, hinged to a suitable support, the leaves being capable of being folded compactly together, and of being separated to expose their faces.

Furthermore, the invention consists of a switchboard, composed of a number of movable leaves, the surfaces in which are provided with a large number of attaching points, the surfaces being provided with projections,

by which, when the leaves are folded together, they are separated a sufficient distance to allow for the passage of wires from the surface of one leaf to that of another.

Furthermore, the invention consists of various novel details of construction, whereby the objects of the invention are attained, and the operativeness of the invention assured.

The invention is illustrated in the accompanying drawings, in which—

Figure 1— is a representation, in perspective, of one embodiment of my invention, the leaves being shown in a compact position. Fig. 2— is a perspective view of an embodiment of my invention, the leaves being shown separated, giving access to the surfaces. Fig. 3— is a perspective view of one of the leaves detached from the supporting post or pillar. Fig. 4— is a sectional view of one end of one of the leaves; and Fig. 5— is a view of a modified form of device.

In the drawings, A represents a post or pillar of suitable size, which is provided with a series of projections, having openings within for the reception of pins or bolts, *a*, by which the leaves B are attached in such manner as to allow them to be swung freely.

The leaves B are preferably suspended, as illustrated in Figs. 1 and 2 of the drawings, in order that they may swing after the fashion of the leaves of a book, but, if desired, they may be pivoted as shown in Fig. 5, and thus have a vertical swinging motion, or they may be arranged to slide in and out of a frame after the manner of the drawers of an article of furniture. The leaves are each preferably composed of two members *b*, *b*, suitably connected by hinges *b*² or in any other suitable way to permit their ready separation to expose their inner faces. The inner and outer faces of each member *b* are provided with projections which prevent their surfaces meeting in order to allow for the accommodation of wires. One means of accomplishing this is shown, and consists of beads or strips *b*³ attached to all the edges of the leaf except the lower one, so that when the surfaces are in close proximity a space for the outlet of wires is provided. The surfaces of the leaves are provided with a large number of divisions isolated from each other and provided with any suitable means for the attachment to them,

permanently or temporarily, of line or switch wires. The line wires preferably enter the space between the members of the leaves in the form of cables C, and are distributed to the different points of contact. Switch-wires D are utilized for connecting the points on the surfaces of different leaves, and these wires are connected to the points in any suitable way.

With switchboards as ordinarily constructed, the capacity for and ability to handle even a small increase in the number of electrical lines becomes a matter of consideration important both for mechanical and financial reasons. Such increase necessitates a disadvantageous division of work to the impairment of rapidity and simplicity of operation, and also necessitates an outlay that is out of all proportion to the first cost of the switchboard. Also, the present construction of such boards greatly limits the number of lines capable of operation by a single operator.

My invention is of value, in that it puts at the disposition of each operator means for reaching every line when from one to one hundred thousand wires, more or less, are in use, and thus a smaller and less costly construction is achieved, and the addition or taking away of wires may be accomplished in a manner not interfering with the original construction.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A switchboard composed, essentially, of

a plurality of movable leaves, substantially as described.

2. A switchboard composed of a plurality of movable leaves, each leaf being provided with exposed faces, each face having a number of attaching points for the reception of conductors, the leaves being all of substantially the same form.

3. A switchboard composed of a number of movable leaves supported at their edges and capable of swinging, substantially as described.

4. A switchboard composed of a plurality of hinged leaves, substantially as described.

5. A switchboard composed of a number of movable leaves, each leaf being provided around its edge with a bead or projection whereby the faces are kept apart when the leaves are folded.

6. A switchboard composed of a number of movable leaves, each leaf composed of a plurality of members detachably connected, substantially as described.

7. A switchboard composed of a series of leaves, each leaf being composed of a plurality of members detachably connected, the inner and outer faces of each member being provided with projections, substantially as described.

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

ELLIS F. FROST.

Witnesses:

DAVID H. MEAD,

E. H. PARRY.