No. 794,343. PATENTED JULY 11, 1905.

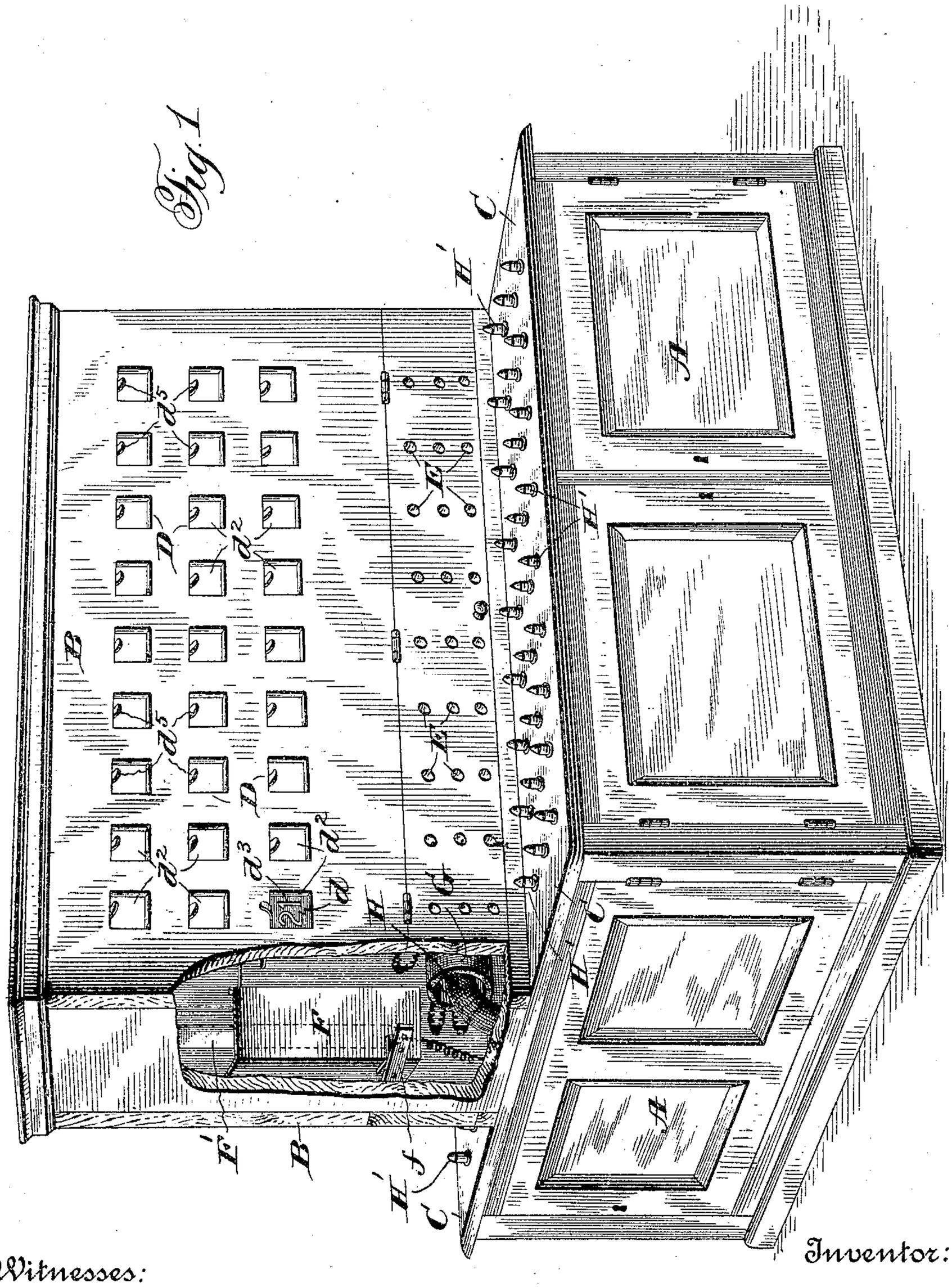
M. C. BURT.

TELEPHONE SWITCHBOARD.

APPLICATION FILED JAN. 26, 1904.

3 SHEETS—SHEET 1.

Fig. 1



Witnesses:

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Inventor:

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3 SHEETS—SHEET 2.

Fig. 2.

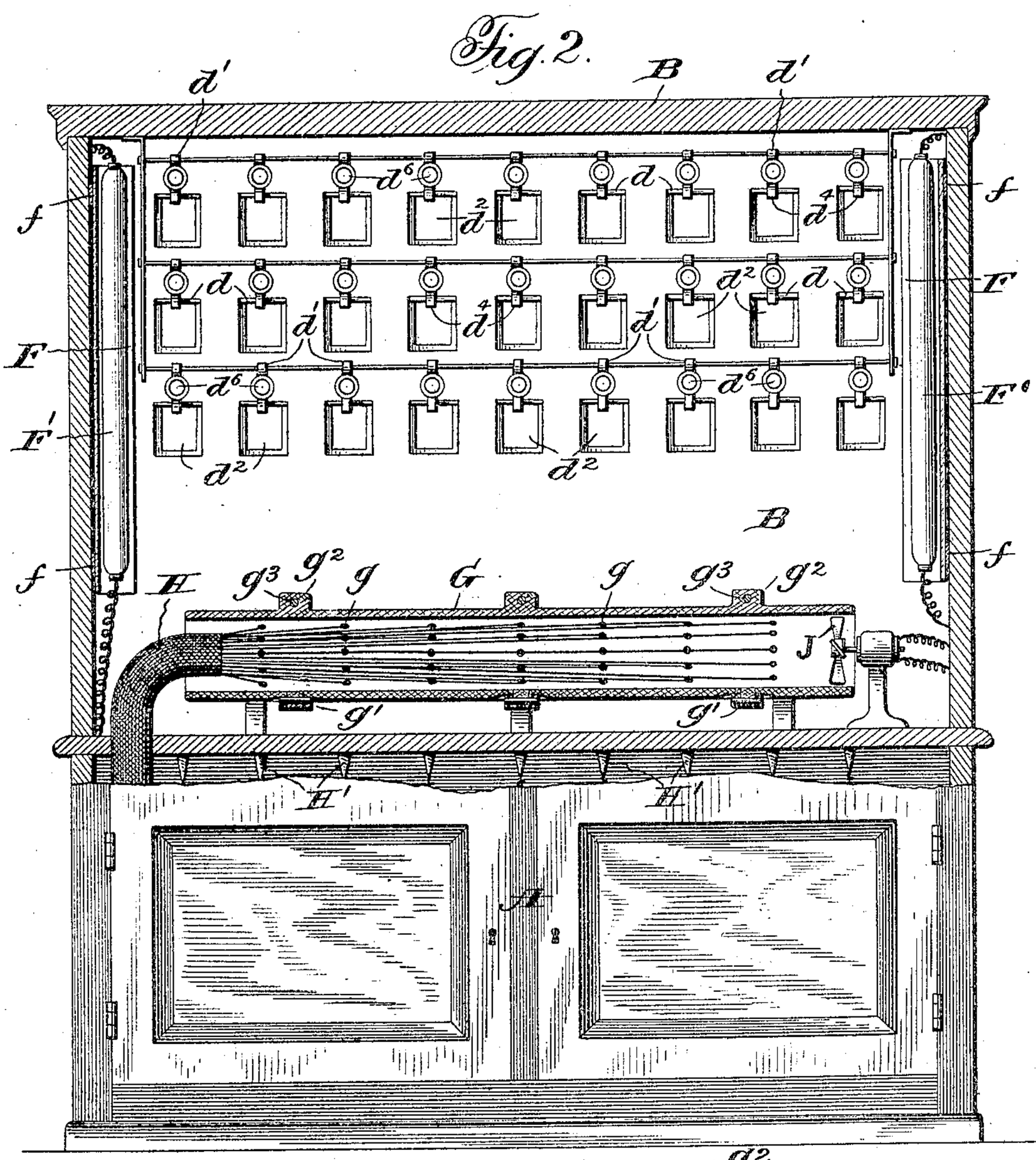


Fig. 5.

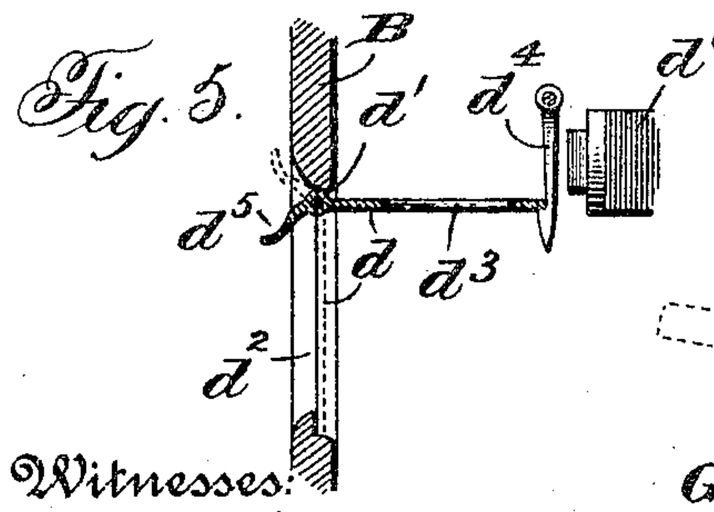
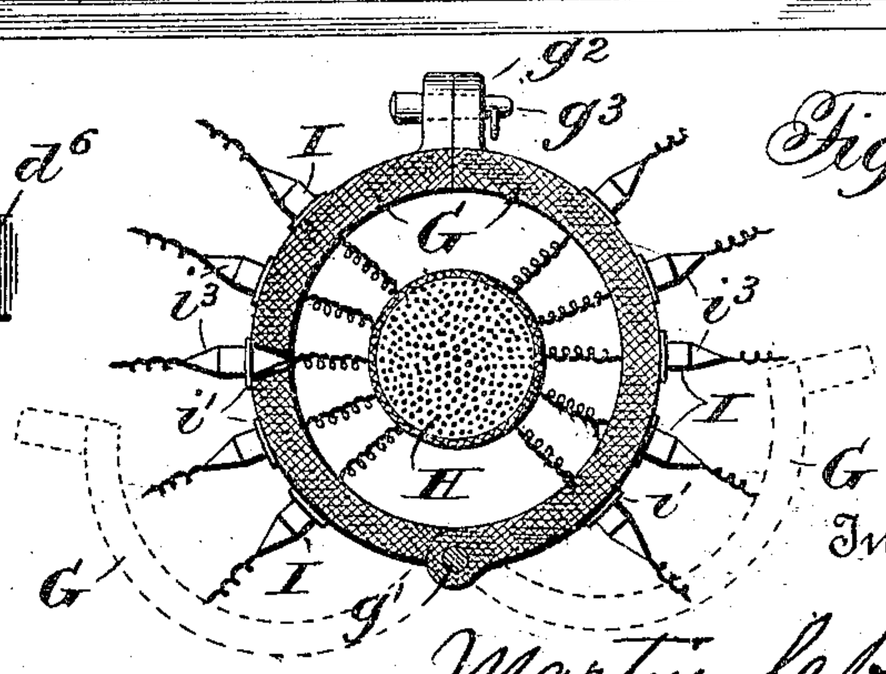


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

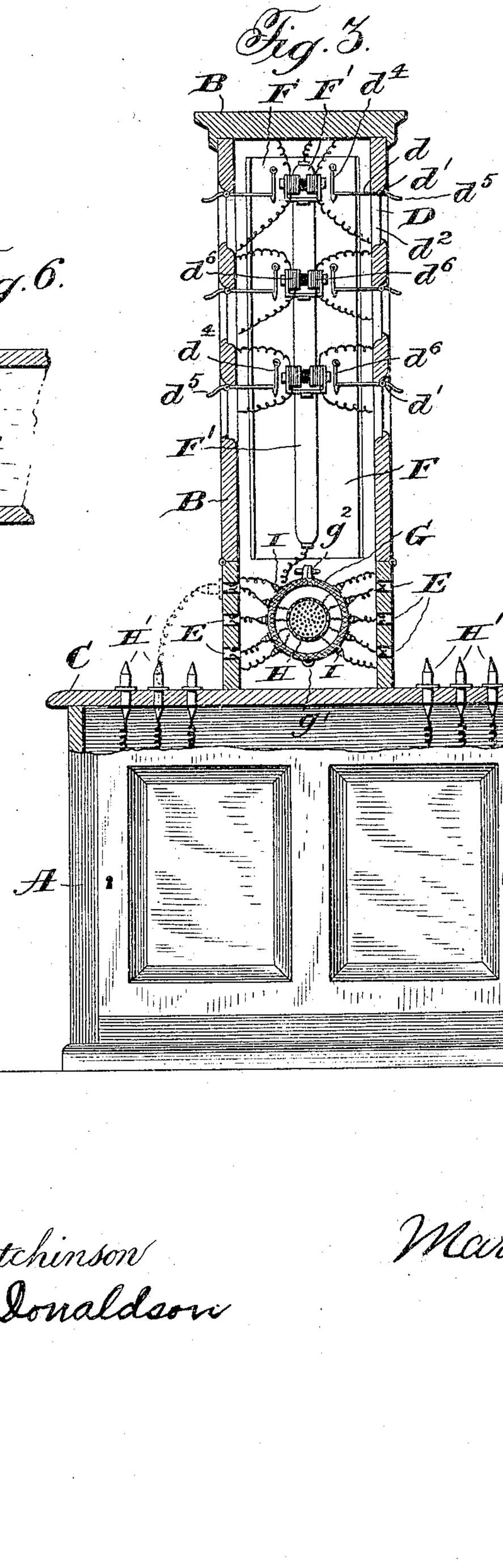

Fig. 6.

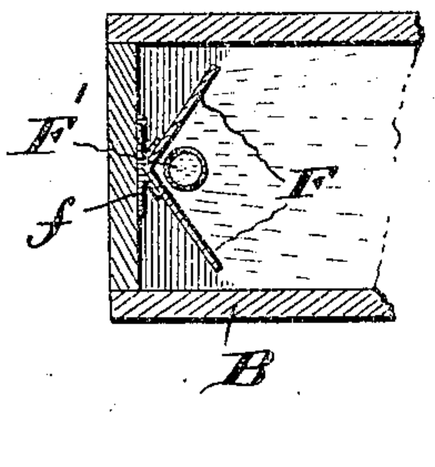

Fig. 7.

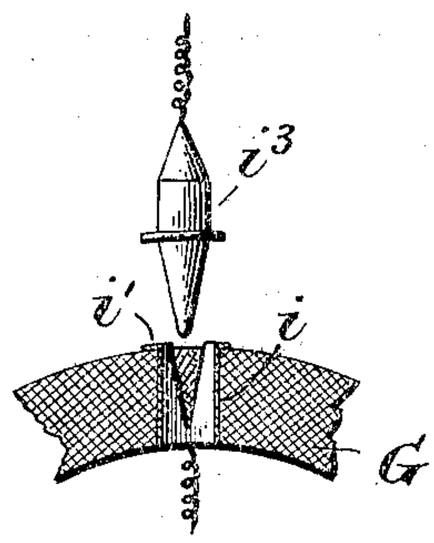

Fig. 8.

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No. 794,343. Patented July 11, 1905.

UNITED STATES PATENT OFFICE.

MARTIN C. BURT, OF CHICAGO, ILLINOIS, ASSIGNOR TO F. A. MEIDINGER, OF CHICAGO, ILLINOIS.

TELEPHONE-SWITCHBOARD.

SPECIFICATION forming part of Letters Patent No. 794,343, dated July 11, 1905.

Application filed January 26, 1904. Serial No. 190,711.

To all whom it may concern:

Be it known that I, MARTIN C. BURT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Telephone-Switchboards, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in telephone-switchboards, and has for its primary object the provision of a structure of this character possessing many desirable features tending to simplify its several appurtenances and increasing the operating efficiency thereof.

Among the more important elements of a practical embodiment of the invention may be especially noted an improved separator or distributer for the multitude of wires or strands of the outgoing or incoming cable, as the case may be, means for keeping the distributer and its contained wires or strands free from the accumulation of dust and its attending vermin, which is so destructive to the insulating material, instrumentalities facilitating the ready separation of the wires from the distributer and free access thereto within the latter, and also certain improvements in the call-indicators.

The above as well as many other novel details of construction and arrangement will be apparent from the detailed description hereinafter when read in connection with the accompanying drawings, forming part hereof, and wherein a convenient embodiment of the invention is illustrated.

In the drawings, Figure 1 is a perspective view of the switchboard, a portion of the framework or casing being broken away to enable a more complete showing of the interior parts. Fig. 2 is a longitudinal vertical section through the upper portion of Fig. 1, the lower portion thereof being in elevation. Fig. 3 is a transverse vertical sectional view of Fig. 1, the lower portion thereof being shown in elevation, as in Fig. 2. Fig. 4 is an enlarged transverse section of the wire-distributer, parts thereof being omitted to save needless duplication. Fig. 5 is a detailed sectional view through one face of the casing and one of the indicators, the latter being shown in its elevated position; and Figs. 6, 7, and 8 are detail views.

Referring more specifically to the drawings, wherein like reference characters refer to corresponding parts in the several views, A designates the base or stand, and B the superstructure of the switchboard, the whole being constructed as an inclosing housing or casing and having the forwardly and rearwardly extending horizontal ledges or tables C, whereby the front of the structure as also the rear thereof may be utilized for indicators and jacks, (indicated at D and E, respectively,) thus increasing the capacity of the switchboard with the sacrifice of but slightly more than the space ordinarily required for single boards.

The upper part of the front and rear faces of the superstructure B is devoted entirely to the subscriber's indicators D, before referred to. These indicators each comprise an opaque plate d, hinged at d' to the casing at the top of an opening d^2 therein, whereby the plate may drop into a vertical plane to close said opening. The plate also bears an indicating character, preferably constituted by perforating or cutting out portions of the plate, as at d^3, Figs. 1 and 5, whereby light within the casing may show through said character, enabling an easy reading thereof—as, for instance, "21" in Fig. 1. The indicator-plates are normally held up in horizontal position by a gravity-catch d^4, arranged to engage the lower edge thereof when the plate is elevated by the finger-piece d^5, projecting outwardly through the opening d^2. A magnet d^6 affords the immediate actuating medium for the catch aforesaid, said catch acting in the manner of an armature. It is obvious that a subscriber desiring to call "central" and closing his circuit in a predetermined manner, thereby effecting the energization of the magnet d^6, will attract the catch d^4 from engagement with the indicator-plate d, permitting the

same to fall by gravity into the position shown in dotted lines, Fig. 5, where it may be instantly seen by the operator.

To furnish the light within the casing, and to which I have already referred, I mount at the opposite ends thereof inwardly-disposed reflectors F, the same being secured to the casing in any desired manner, as by brackets *f*, and within the apices of these reflectors, they being approximately V-shaped in cross-section, I arrange what I will term "constantly-burning" lights F′, being in each instance a series of incandescent bulbs or, as is probably more expedient, elongated Hewett tubes disposed longitudinally of the reflectors. It is to be appreciated that by arranging the illuminating means as defined no direct or glaring rays of light will protrude through the openings d^2 in the casing, but that there will be a rather subdued even light afforded in rear of the openings which will be amply sufficient to clearly bring out the indicator characters on the plates *d*, while at the same time obviating the injurious effect on the eyes of the operator resulting from the use of direct light-rays. The openings d^2 are all normally unobstructed, so that there is at all times sufficient light therethrough to adequately light the room of the operator, or at least the space required by him, to properly manipulate the plugs and switches, this normal condition being varied only when a subscriber calls, which actuates the retaining means of the particular indicator in circuit, permitting the same to drop and close its opening until again elevated by the operator.

The lower portion of the superstructure B is devoted to the jacks E, the same being simply shown diagrammatically, inasmuch as the present invention involves no special detail thereof.

Arranged longitudinally of the casing and centrally of the series of jacks at the front and rear thereof I interpose my distributer G. The distributer is of cylindrical formation and is adapted to receive at one end thereof the ordinary cable H, made up of the multitude of wires desired to be distributed and placed in communication with their respective switch members, the diameter of the distributer being considerably greater than that of the cable, whereby sufficient space is left therein for the manipulation of the wires in initially arranging them or rearranging or repairing the same. Throughout the length of the distributer I arrange a plurality of apertures *g*, disposed in radial series at the respective sides thereof, the number of the apertures on each side corresponding in number with the jacks E facing the same. The wires from the cable H are separated and pass through the openings in the distributer, whence they are connected with the various jacks or switches to which they belong. (See Figs. 3 and 4.) The employment of the cylindrical distributer, enabling as it does the radiation of the wiring, affords the best possible means of definitely separating the wires or strands, thereby overcoming to a marked degree the natural tendency of the same to bunch and become indefinitely arranged if not hopelessly tangled when confined to the small or inadequate space ordinarily provided therefor. To further perfect the distributer just described, I insert in the apertures *g* thereof removable couplings I, the same including a split bushing *i*, having a head *i′* and offset ends i^2. This bushing may be readily withdrawn by pressing the offset ends i^2 together and forcing the bushing inwardly. The wires from the cable H are connected to this bushing, while the leads therefrom are connected at one end to the jacks E and at the other end to removable contact-plugs i^3, insertible into the bushing to preserve the continuous circuit. This coupling enables the wiring within the distributer to be tested or adjusted without disturbing the leads from the jacks, it simply being necessary, as stated, to remove the plugs i^3 from the bushings *i*, when said bushings may be shifted to any aperture of the distributer desired. To afford ready access to the interior of the distributer, the same is conveniently formed into separable sections hinged together at *g′* along their lower edges and provided with abutting ears g^2 at their upper edges, normally locked together by removable pins g^3. By removing the pins the distributer may be opened in a manner clearly apparent from an inspection of Fig. 4.

The means for keeping the distributer and its contained wires free from the accumulation of dust and its attending vermin comprises a fan or blower J, arranged in line with and adjacent to one end of the distributer-cylinder G, it being observed that the cylinder is open at both ends, and said fan or blower is adapted to create a forced current of air through the distributer sufficiently to carry off all dust and other matter which would ordinarily collect therein.

The ledges or tables C are for the ordinary switch-plugs H′ for the jacks E.

It is to be understood that although special disclosures have been made herein it is not the intention to be limited to any details of construction or arrangement excepting in so far as any such may be specifically included in the hereto-appended claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In combination with a telephone-switchboard, a tubular wire-distributer open at both ends, a wire cable entering one end thereof and its wires radiating from its longitudinal axis, radially-disposed couplings for said wires mounted on the distributer, and a fan at the

other end of the distributer arranged to force a current of air directly into said end and through the distributer and the wires therein.

2. In combination with a telephone-switch-board, a tubular wire-distributer open at both ends, a wire cable entering one end thereof and its wires radiating from its longitudinal axis, radially-disposed couplings for said wires mounted on the distributer, and means at the other end of the distributer arranged to create a current of air directly through said end and through the distributer and the wires therein.

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

MARTIN C. BURT.

Witnesses:

JULIA DONALDSON,

FRANCIS S. MAGUIRE.