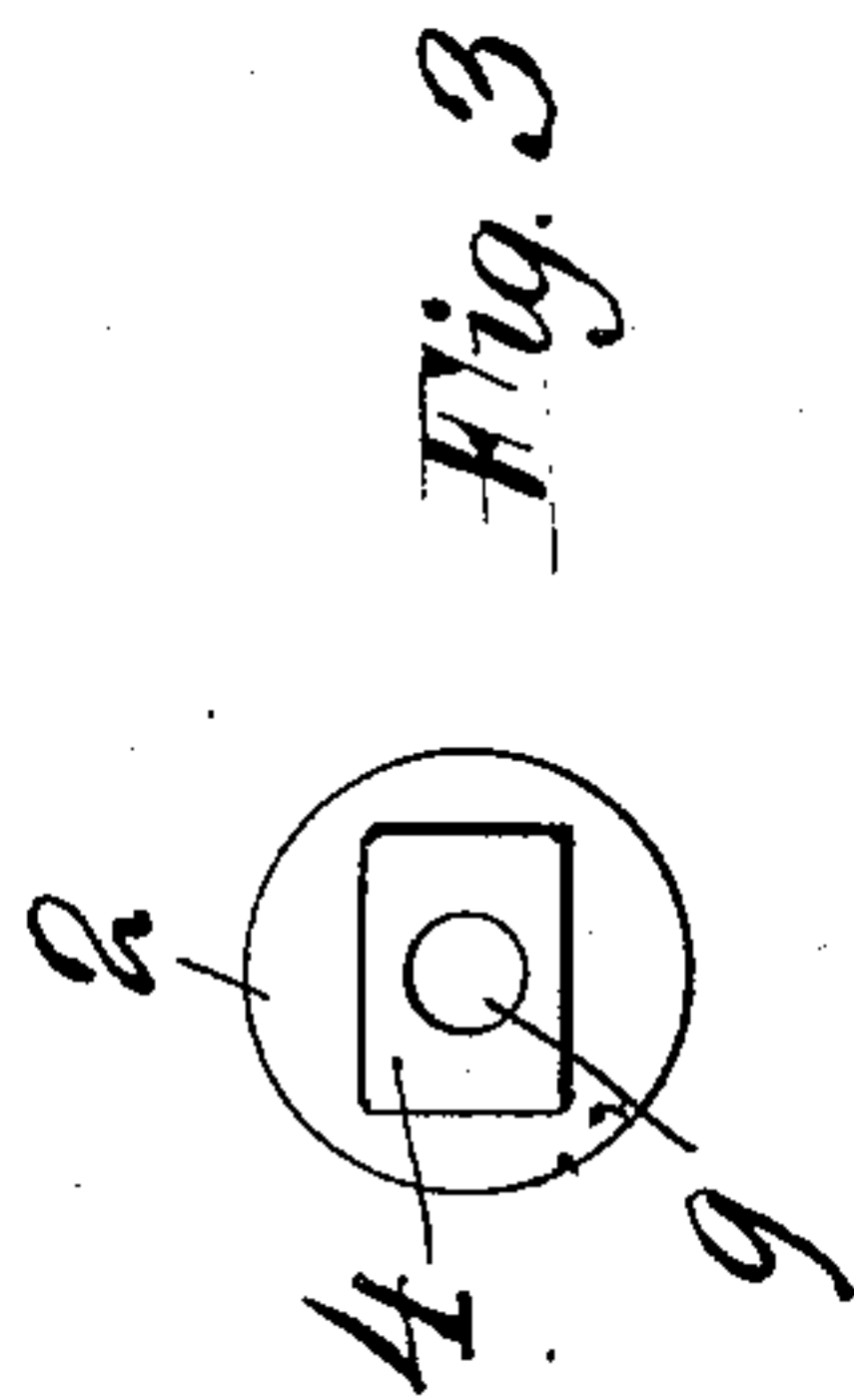
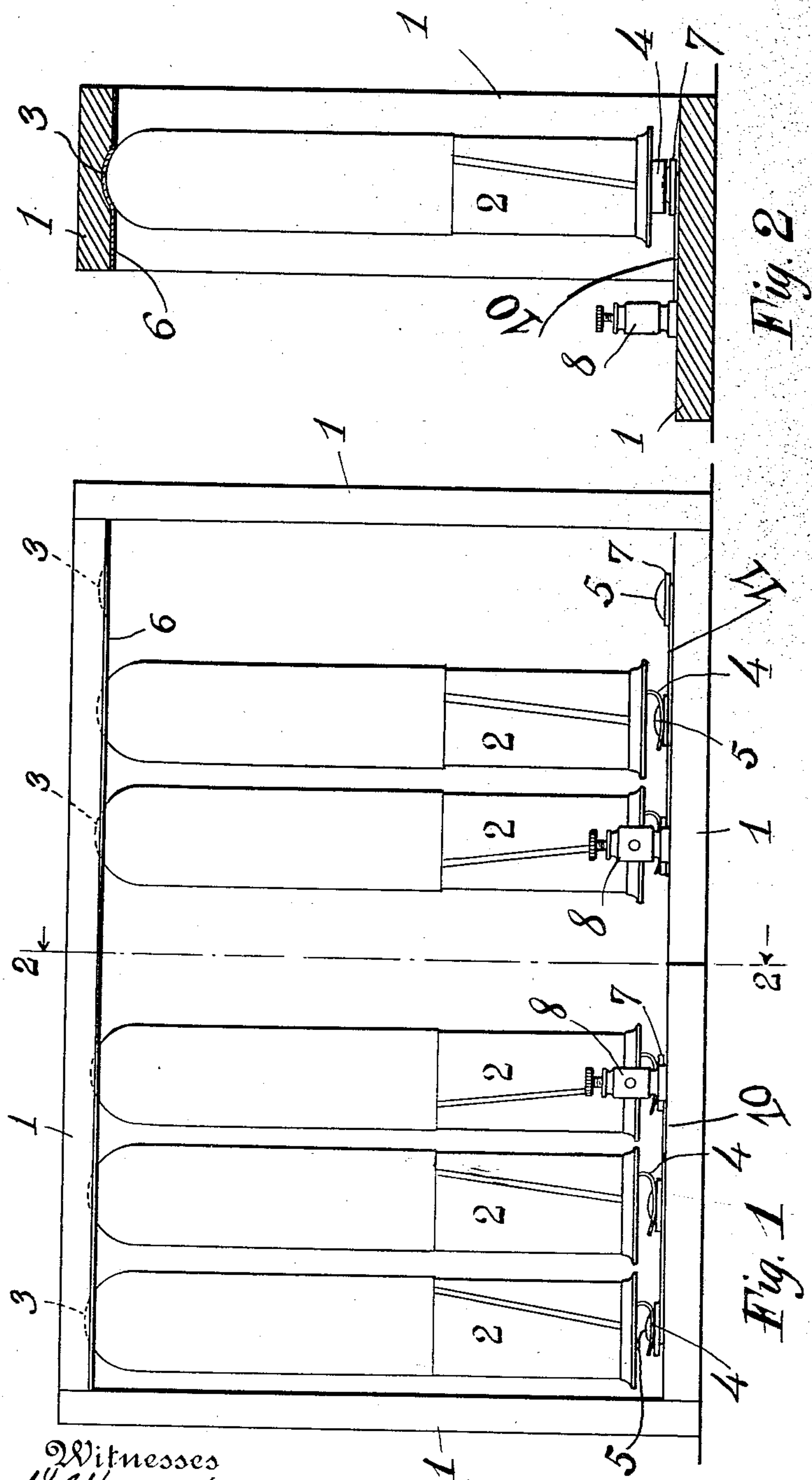


H. GERNSBACK.
ELECTRO ADJUSTABLE CONDENSER.
APPLICATION FILED JAN. 9, 1909.

951,788.

Patented Mar. 8, 1910.



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ELECTRO-ADJUSTABLE CONDENSER.

951,788.

Specification of Letters Patent.

Patented Mar. 8, 1910.

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To all whom it may concern:

Be it known that I, HUGO GERNSBACK, a subject of the Kingdom of Luxemburg, and residing in the United States, in the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electro-Adjustable Condensers, of which the following is a full, clear, and exact specification.

This invention relates to electro-adjustable condensers, which consists of a plurality of Leyden or other jar condensers, for use in connection with commercial wireless telegraphy, and also for use in connection with the conducting of experiments of all kinds in wireless telegraphy and in all high tension work, for the purpose of changing or varying the capacity of the electric circuit.

One object of this invention and of my improved construction is to enormously increase the sending radius of a wireless telegraph station, by increasing the length of duration of the oscillations of the waves across the spark gap, as well as rendering the waves considerably more powerful.

Another object is to provide an inexpensive electro-adjustable condenser with a maximum simplicity of construction and of correspondingly high efficiency, and, by reason of my improved construction, the capacity of which may be increased or decreased by simply snapping into or pushing or pulling out of operative position in the frame, one or more Leyden jars, or other condenser jars.

Another object of my invention is to construct an improved electro-adjustable condenser without the employment of connecting wires, and without the use of screws for holding the jars in place, and to make leakage absolutely impossible.

Another object is to provide each of the jars at the bottom thereof with a spring clip, by means of which the jars may be snapped into or out of position in the frame, and held firmly by this means in conjunction with small iron or other metal knobs fastened in the bottom of the condenser frame and by means of circular indentations or recesses in the top of said frame.

The foregoing and other objects of my invention will be fully understood from the following description and accompanying drawings, in which—

Figure 1 is a front elevation of my improved electro-adjustable condenser, in its preferred form. Fig. 2 is a view in section,

taken on the line 2—2 of Fig. 1, and Fig. 3 is a plan view of the spring clip provided at the bottom of each condenser jar.

Referring to the drawings (Fig. 1), it will be seen that the frame or receptacle 1 holds in operative position a plurality of condenser jars 2, by means of circular indentations or recesses 3 at the top of the frame on the inner side thereof, and by means of spring clips 4 provided at the bottom of said condensers, the said spring-clips 4 engaging the two groups of small round metal knobs 5, which latter are suitably fastened to the bottom of the rectangular frame. The frame or receptacle 1 may be made of wood or any other suitable material, and the spring clip 4 may consist of phosphor bronze sheeting, or any other suitable metal.

When it is desired to remove one or more of the condenser jars 2, for the purpose of changing or varying the capacity of the condenser, the said condenser jars, by reason of my improved construction, may be easily pushed or pulled out of position, and when it is desired to increase or change the capacity of the condenser, the said condenser jars may be readily snapped into the frame and firmly held therein by means of the said spring clips 4 and the circular recesses or indentations 3, in connection with the small round knobs 5.

The inner surface of the top of the frame 2, as well as the indentations 3, is covered with metal foil 6, and which metal foil acts as a suitable conductor. The metal foil 6 is glued or pasted to the frame by means of glue or other adhesive liquid. The bottom portion of the frame is provided with two groups of small iron buttons or knobs 5, and underneath the heads of said buttons or knobs, washers 7 are provided, the said buttons and washers being suitably fastened to the frame. Binding posts or terminals 8 are provided for holding in proper position the conduction members or wires 10 and 11, and are fastened to the bottom of the frame by screws, or other convenient fastening means (not shown). The said connecting wires 10 and 11 communicate with the respective condenser jars 2, and are held in position by the knobs 5 and washers 7, which in turn are suitably fastened to the bottom of the frame as above explained.

Referring to Fig. 3, it will be seen that the spring clip 4 is provided with a round opening or recess 9 in the center thereof,

which is adapted to engage the top of the knob 5.

It will be understood that my invention may be embodied in various other forms and modifications not herein shown or described without departing from the spirit or scope thereof, and I do not wish to be considered as confining myself to the exact construction, instrumentalities or materials herein shown and described.

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

1. The combination of a frame, a conducting member fastened to the upper side of said frame, separate conducting members fastened to the bottom side of said frame, a plurality of condenser jars, and spring-pressed means for supporting said condensers between the opposite sides of said frame.

2. The combination of a frame, a layer of metal foil fastened to the upper inner part of said frame, a plurality of conducting members on the bottom of said frame, a plurality of condenser jars, and means for supporting said condenser jars between the top and bottom of said frame in such a manner that the metal foil forms an unbroken conductor between the said condenser jars.

3. The combination of a rectangular frame having indentations on the upper inner side thereof, a conducting member carried by said upper inner side and fitting into said indentations, and means for supporting a plurality of condensers within said frame.

4. The combination of a rectangular frame having circular recesses on the inner upper side thereof, a layer of metal foil fastened to said inner upper side and forming part of said circular recesses, a plurality of condenser jars, and means for removably supporting said condenser jars in such a manner that the conducting surfaces of the said condenser jars contact with the said metal foil forming part of said circular recesses.

5. The combination of a rectangular frame, a conducting member on one side thereof, a plurality of projections on the opposite side thereof, condensers provided at their lower ends with spring-pressed means, adapted to be supported between the said conducting member and the said projections and held in place by said spring-pressed means, and a conducting member connecting said condensers.

6. The combination of a rectangular frame having indentations on the inner upper side thereof, a conducting member glued to said inner upper side and fitting into said indentations, a plurality of buttons on the bottom portion of said frame, a plurality of condenser jars adapted to be carried by said frame and being held therein by said inden-

tations and said buttons, and a plurality of conducting wires connecting said buttons.

7. The combination in a rectangular frame having recesses on one side thereof and round knobs at the opposite side thereof, means for fastening said knobs to said frame, a layer of metal foil pasted on one side of said frame and fitting into said recesses, a plurality of condenser jars adapted to be carried between said recesses and said round knobs in such a manner that the contacting surfaces of said condenser jars complete the electrical circuit.

8. The combination of a receptacle composed of a top and bottom portion and two side portions, a conducting member carried by the top portion and fitted into indentations in said top portion, a plurality of buttons divided into two groups on the bottom portion of said frame, connections between the buttons in each group independently and separately from each other, a plurality of condenser jars, spring members on the said condenser jars adapted to contact with the said buttons for retaining the condenser jars in position, and the top of said condenser jars being adapted to fit into the aforesaid indentations.

9. The combination of a rectangular frame having indentations on the inner upper side thereof, a layer of metal foil glued to said inner upper side and fitting into said indentations, a plurality of round knobs divided into two groups on the bottom side of said frame, means for fastening said knobs to the bottom of said frame, washers between said knobs and said fastening means, a plurality of condenser jars provided with spring clips at one end thereof, said spring clips being adapted to contact with said round knobs for retaining the condenser jars in operative position, a plurality of wires for connecting the respective groups of knobs with the source of supply of electric current, and means for holding said wires in fixed position.

10. The combination of a plurality of condenser jars, each of which is provided with a conical end, a rectangular frame for supporting said condenser jars in operative position, the said frame being provided with indentations at the top thereof for receiving the said conical ends of said condenser jars, and a continuous conducting member fitted into said indentations for the purpose of electrically connecting the said condensers.

11. The combination of a plurality of condenser jars, one end of each of which is of conical conformation and the other end of each of which is provided with a spring clip, a frame for supporting said condensers, the said frame being provided with indentations at the top thereof for receiving the conical ends of said condenser jars, and the said frame being provided at the bottom thereof

5 with a plurality of buttons for contacting with said spring clips for holding the condenser jars in operative position, a continuous conducting member fitted into said indentations at the top of the frame for the purpose of electrically connecting the said condensers at one end thereof, a conducting wire held in position by said buttons at the bottom of the frame, said wire being con-

nected with the source of supply and with 10 the said buttons respectively.

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

HUGO GERNSBACK.

Witnesses:

CARL WITTEMANN,
OTTO ROTHE.