Dec. 29, 1925. 1,567,067

J. F. LINDBERG

CONDENSER

Filed July 20, 1922

Fig. 1.

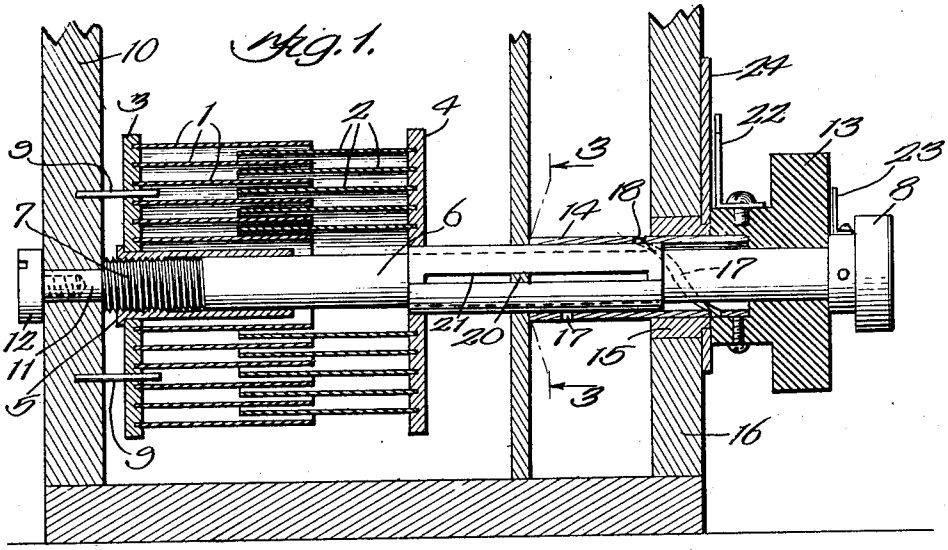


Fig. 2.

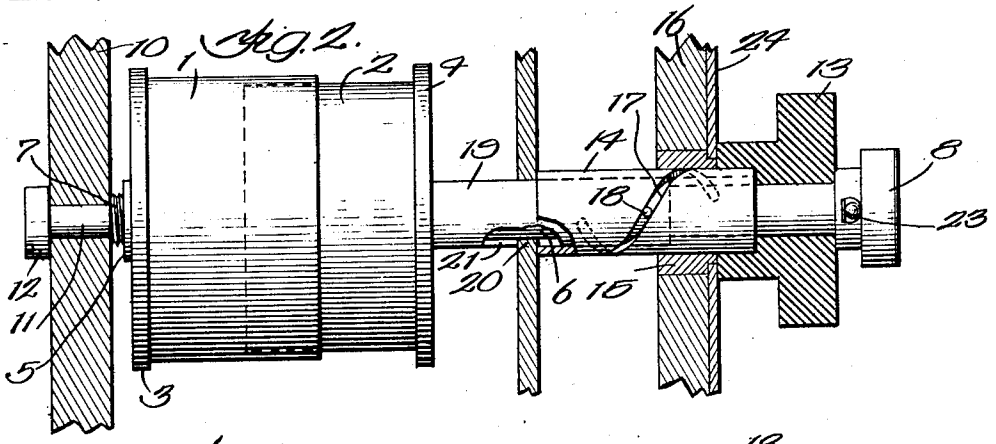


Fig. 3.

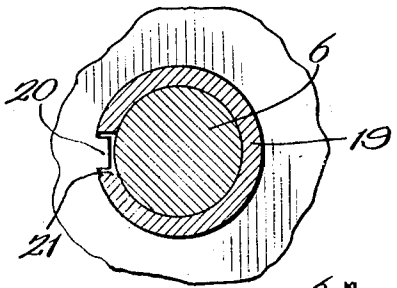
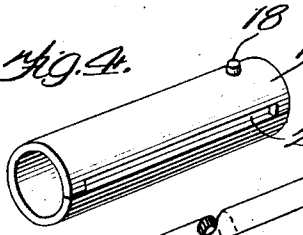


Fig. 4.



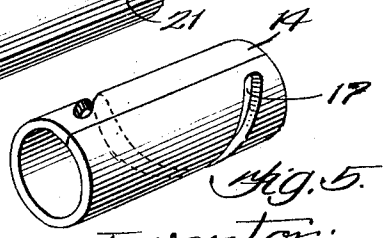
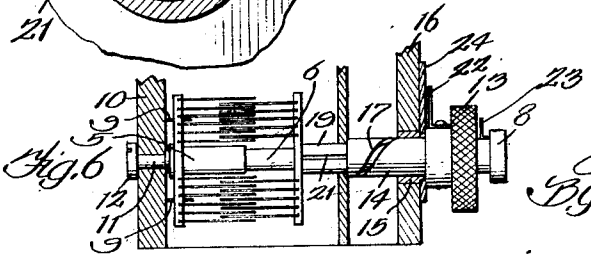


Fig. 5.

Fig. 6



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UNITED STATES PATENT OFFICE.

JOHN F. LINDBERG, OF CHICAGO, ILLINOIS, ASSIGNOR TO RELIANCE DIE AND STAMPING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CONDENSER.

Application filed July 20, 1922. Serial No. 576,227.

To all whom it may concern:

Be it known that I, JOHN F. LINDBERG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Condensers, of which the following is a full, clear, concise, and exact description.

My invention relates to electrical condensers and has for its object the provision of improved adjusting mechanism for varying the capacity thereof.

The condenser of my invention includes the two complemental sides thereof and an adjusting device, individual to each side, capable of adjusting such side along the other side in a rectilineal direction.

In the preferred embodiment of the invention the adjusting mechanism for one of the condenser sides is adapted to effect rapid adjustment of this particular condenser side to secure approximate regulation of the condenser capacity. The adjusting device for the other condenser side serves to move such other side slowly with respect to the adjusting motion to secure a fine adjustment that supplements the coarse adjustment in completing the regulation of the condenser capacity.

I will explain my invention more fully by reference to the accompanying drawing in which Fig. 1 is a sectional view, partially in elevation, of a condenser constructed in accordance with one embodiment of the invention; Fig. 2 is a view in elevation of the condenser shown in Fig. 1; Fig. 3 is a sectional view on line 3—3 of Fig. 1; Figs. 4 and 5 are perspective views illustrating component parts of one of the adjusting devices; and Fig. 6 is a view in elevation illustrating another form of the invention.

Like parts are indicated by similar characters of reference throughout the different figures.

The form of the invention illustrated in Figs. 1 to 5 inclusive will be first described.

The condenser shown in these figures has one condenser side composed of co-axial or nested cups 1 and the other condenser side composed of co-axial or nested cups 2, the cups of both condenser sides being co-axial and therefore parallel. The cups 1 are electrically connected by a support 3 and the cups 2 are electrically connected by a support 4. The support 3 is provided with a central hub portion 5 that is in the nature of a sleeve which is interiorly threaded. A shaft 6 is also threaded, as indicated at 7, to have threaded engagement with the threads upon the interior of the hub 5, the threading upon the elements 5 and 6 being preferably fine so that when the shaft is turned with respect to the hub the movement of the condenser side 1 will be slow with respect to the turning movement of the shaft which is preferably effected by turning the knob 8 upon the shaft.

The base 3 of the condenser side 1 slides upon pins 9 which are carried upon the cabinet wall 10 whereby this condenser side is prevented from rotating but is forced to move longitudinally of the shaft 6 as this shaft is turned, longitudinal movement of the shaft being prevented by the cabinet wall portion 10 which surrounds a reduced portion 11 of the shaft and which is interposed between a larger portion of the shaft and the head of the assembling screw 12 that is screwed into the outer end of the shaft. Said shaft is journaled at one end in the wall 10 at its reduced portion 11. It is journaled at its other end in another knob 13 which is provided upon a hollow or quill shaft 14 that is disposed in a bearing 15 provided in another cabinet wall portion 16. The quill shaft 14 is formed with a long spiral slot 17 which receives the pin 18 carried upon the sleeve 19 that surrounds the shaft 6 that constitutes a bearing for this sleeve. The base 4 of the condenser side 2 is mounted upon the sleeve 19 and this condenser side is prevented from turning by means of a stationary key 20 that enters a longitudinal slot 21 formed in the sleeve. The knob 13 carries an index or pointer 22 and the knob 8 carries an index or pointer 23. The pointer 22 moves in front of a dial plate 24 registering marks thereon. The pointer 23 moves in front of the registering marks formed upon the front face of the knob 13. In adjusting the capacity of the condenser the knob 13 is turned to turn the quill shaft 14 and cause the rapid rectilineal and non-rotary movement of the condenser side 2 to secure an approximate adjustment of the condenser capacity. After this approximate adjustment has been secured the adjustment is completed by the fine regulation that is effected by turning the knob 8, the engaging threads upon the

interior of the hub portion 5 and the shaft 6 being of slight pitch.

The condenser shown in Fig. 6 does not employ nested cups but has its sides formed of flat plates. The mechanism for adjusting the condenser sides of the structure shown in Fig. 6 is similar to that which is employed in connection with the structure shown in Figs. 1 to 5 inclusive, and like parts are given similar characters of reference.

While I have herein shown and particularly described both forms of my invention I do not wish to be limited to the precise details of construction shown as changes may readily be made without departing from the spirit of my invention, but having thus described my invention I claim as new and desire to secure by Letters Patent the following:—

1. A condenser including two substantially parallel sides both mounted to move along a straight line; and an adjusting device individual to each condenser side for moving it with respect to the other condenser side, said adjusting devices being constructed to adjust the condenser sides pertaining thereto at different rates.

2. A condenser including two sides both mounted to move along a straight line; and an adjusting device individual to each condenser side for moving it with respect to the other condenser side, said adjusting devices being constructed to adjust the condenser sides pertaining thereto at different rates.

3. A condenser including two substantially parallel sides both mounted to move along a straight line; an adjusting device individual to each condenser side for moving it with respect to the other condenser side; and means for preventing the condenser sides from turning.

4. A condenser including two substantially parallel sides both mounted to move along a straight line; an adjusting device individual to each condenser side for moving it with respect to the other condenser side, said adjusting devices being constructed to adjust the condenser sides pertaining thereto at different rates; and means for preventing the condenser sides from turning.

5. A condenser including two sides both mounted to move along a straight line; an adjusting device individual to each condenser side for moving it with respect to the other condenser side; and means for preventing the condenser sides from turning.

6. A condenser including two sides both mounted to move along a straight line; an adjusting device individual to each condenser side for moving it with respect to the other condenser side, said adjusting devices being constructed to adjust the condenser sides pertaining thereto at different rates; and means for preventing the condenser sides from turning.

In witness whereof, I hereunto subscribe my name this eleventh day of July, A. D. 1922.

JOHN F. LINDBERG.