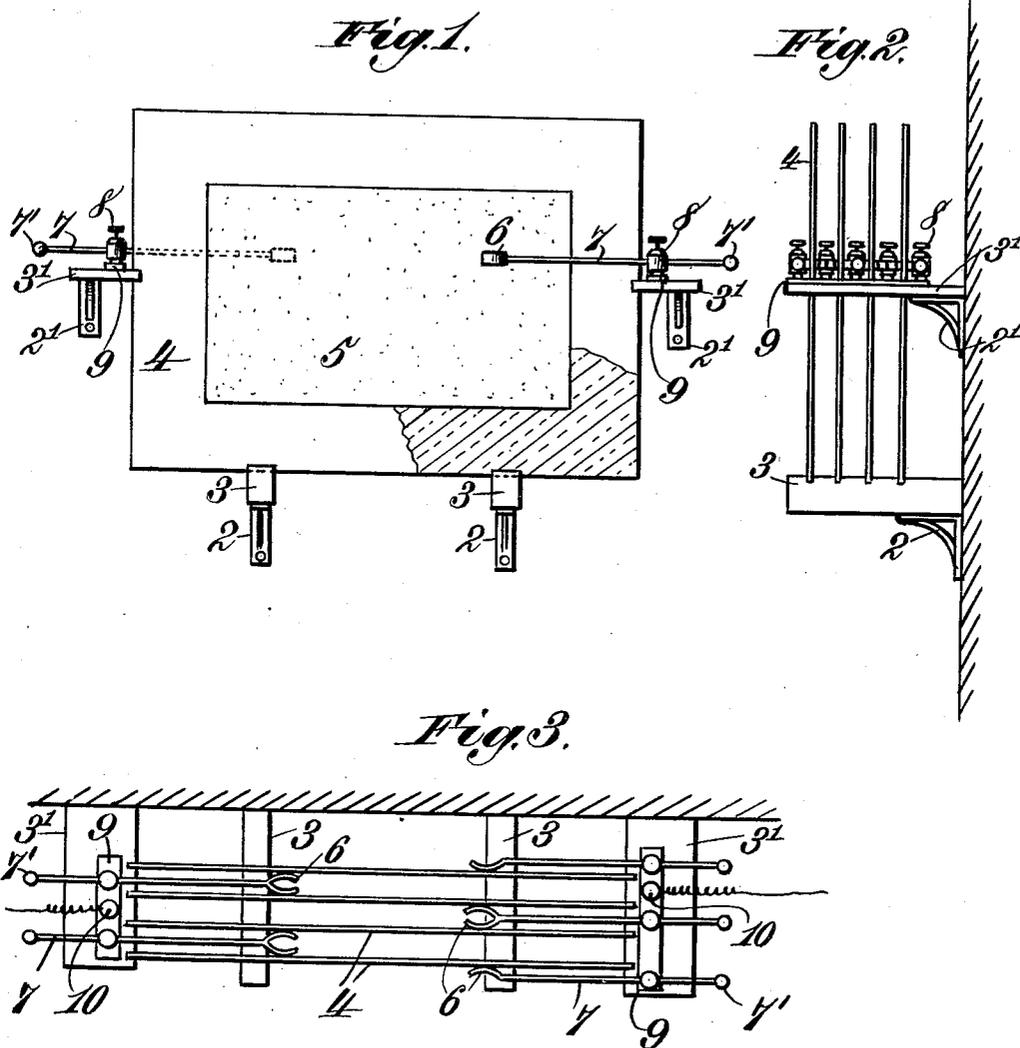


No. 820,363.

PATENTED MAY 8, 1906.

W. W. MASSIE.  
CONDENSER.  
APPLICATION FILED MAR. 2, 1905.



Witnesses:  
Albat Govett,  
James L. Norris, Jr.

Inventor:  
Walter W. Massie,  
By James L. Norris,  
Atty.

# UNITED STATES PATENT OFFICE.

WALTER W. MASSIE, OF PROVIDENCE, RHODE ISLAND.

## CONDENSER.

No. 820,363.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed March 2, 1905. Serial No. 248,132.

*To all whom it may concern:*

Be it known that I, WALTER W. MASSIE, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Condensers, of which the following is a specification.

This invention relates to condensers.

I do not limit the use of the condenser to any particular field, but have found it of peculiar utility in conjunction with a wireless telegraphic system.

The condenser, hereinafter described, involves one or more glass plates upon the opposite surfaces of which are attached tin-foil sheets in such a way as to leave a margin surrounding each sheet. I desire to state at this point that I use the term "tin-foil" in a generic sense to include equivalent conducting-surfaces, and the same applies to the term "glass," although such substance serves as a satisfactory dielectric. By virtue of my invention the tin-foil sheets or equivalent conducting mediums cannot be oxidized, and therefore their life is prolonged. I also provide for the firm solid engagement between the contacts and the tin-foil sheets and an adjustable engagement, so as to bring the contacts against different portions of the tin-foil sheets. I also prevent brush-discharge. In the present instance I attach to opposite sides of a glass plate or equivalent dielectric tin-foil sheets in such a way that there will be a margin around the sheets. These margins I coat or paint with asphaltum varnish, which I find practically eliminates brush-discharge, which is very important, in that I am enabled to secure sharp and accurate tuning effects when the condenser is used in connection with a wireless telegraphic system. I consider within the scope of my invention substances of a nature equivalent to asphaltum varnish, whereby the elimination of brush-discharge is assured.

In the drawings accompanying and forming a part of this specification I have selected for illustration a simple form of embodiment, including my invention, which I will set forth in detail in the following description. I do not, however, limit myself to the disclosure thus made, for material variations may be adopted within the scope of my claims.

The condenser represented is particularly arranged for mounting upon a wall. Its glass plates and the tin-foil sheets upon opposite surfaces thereof can be placed within a

crate or box, should occasion require, these being matters of simple detail and immaterial.

In said drawings, Figure 1 is a front view of a condenser including my invention. Fig. 2 is a side elevation of said condenser, and Fig. 3 is a top plan view of the same.

Like characters refer to like parts throughout the several figures of the drawings.

In Fig. 1 I have shown two base-brackets (each denoted by 2) and which may be secured in any desired way to a wall or other structure. These base-brackets are separated apart a suitable distance and rigidly support blocks (each designated by 3) of some suitable non-conducting material. Two side brackets are shown at 2' and as rigidly carrying blocks, as 3'. The upper faces of the base-blocks 3 and the side faces of the side blocks 3' are notched or slotted to receive the glass plates 4. The several blocks space the glass plates apart at the proper intervals, while the base ones uphold the plates. Any number of glass plates 4 may be provided, and, as a matter of fact, the invention contemplates the use of but one. To the opposite faces of the glass plates 4 I attach permanently in some suitable way—say by cement—tin-foil sheets, (each designated by 5.) The superficial area of the tin-foil sheets is less than that of the glass plates, and the parts are so united that there will be a marginal portion about each tin-foil sheet, as clearly represented in Fig. 1. I apply to this marginal portion asphaltum varnish. The exposed surface of the glass is thoroughly covered. The plate, with the asphaltum-varnish-coated surface, will not absorb moisture, by reason of which brush-discharge is almost wholly avoided. The value of this is obvious in telegraphic uses, as in such a case I can obtain sharp and accurate tuning effects.

The contacts for the tin-foil sheets are each designated by 6, and they are of resilient construction, so that they can be maintained solidly against the outer or exposed surfaces of the tin-foil sheet. I ordinarily make them of thin spring-brass. By the use of contacts of the kind set forth I avoid oxidation, which causes sparking and the burning up of the foil. I am enabled by the use of the contacts, therefore, to prolong materially the life of the condenser. The contacts are shown as carried by bodies, (each designated by 7.) The bodies may be of any desirable form.

They are represented as consisting of rods having enlargements at their outer ends to prevent brush-discharge or leakage thereat.

These enlargements are shown as knobs or spheres, each being designated by 7'. The yieldable or spring contacts 6 are, it will be understood, located at the inner ends of the rods 7. The intermediate contacts, or those which do not bear against the outer faces of the outermost plates, constitute the branches or arms of forks at the inner ends of the cooperating rods 7. The several rods 7 have a longitudinal motion through binding posts or screws, (each designated by 8,) rigidly associated with metallic strips, as 9, fastened to the upper sides of the two side brackets 3'. By reason of the longitudinal movement of the rods 7 they can be moved inward or outward to bring the contacts 6, carried thereby, against different parts of the tin-foil sheets—that is to say, I provide for the adjustment of said contacts. The rods 7 also have a movement sufficient to carry the contacts 6 out of engagement with the cooperating tin-foil sheets, so that by manipulating one or more of the rods to carry their contacts away from the cooperating tin-foil sheets the capacity of the condenser can be lowered. In other words, I provide for a variation in capacity of the condenser. In addition to the binding-posts 8 upon the conducting-strips 9 each of the latter also carries a post, as 10, to which wires or other conductors may be connected.

The device, as will be obvious, is of simple construction, it can be inexpensively made, its components can be readily assembled, and when in such relation brush-discharge is prevented or reduced to the least possible extent. I am enabled to secure desirable effects, as hereinbefore stated, in the art of wireless telegraphy. Other advantages of the condenser are manifest and will be obvious to those skilled in the art.

It will be evident that the condenser involves a plurality of glass plates, to the opposite faces of which are attached tin-foil sheets. Means are provided for carrying these plates and maintaining them in parallelism. The plate-carrying means also support the rods, provided at their inner ends with contacts. My condenser involves tin-foil sheets and a suitable dielectric therefor, both "dry," by which I mean that the said sheets and their dielectric are not immersed in a solution of any kind.

Having thus fully described my invention, what I claim is—

1. A condenser comprising glass plates arranged side by side and provided with tin-foil sheets upon opposite sides thereof, and two sets of rods provided with contacts, the

rods being adjustable to carry the contacts into and out of engagement with the tin-foil sheets.

2. A condenser comprising glass plates arranged side by side and provided with tin-foil sheets upon opposite faces thereof, two sets of rods provided with contacts, and conducting-strips for adjustably supporting the two sets of rods to permit the contacts to be moved into and out of engagement with the cooperating tin-foil sheets.

3. A condenser comprising base and side branches, glass plates arranged side by side and provided with tin-foil sheets upon opposite faces thereof, said plates being held in operative positions by the base and side brackets, conducting-strips supported by the side brackets, and rods longitudinally adjustably supported by the conducting-strips and provided with contacts to engage the tin-foil sheets.

4. A condenser involving a plurality of glass plates having tin-foil sheets upon opposite faces thereof, and suitably-mounted rods, some arranged between the plates and others outside of the plates, the intermediate rods having bifurcated resilient portions, the branches of which bear against the intermediate tin-foil sheets, and the outer rods having single resilient portions to bear against the outer tin-foil sheets.

5. A condenser involving a plurality of glass plates having tin-foil sheets upon opposite faces thereof, rods, some arranged between the plates and others outside of the plates, the intermediate rods having bifurcated resilient portions, the branches of which bear against the intermediate tin-foil sheets, and the outer rods having single resilient portions to bear against the outer tin-foil sheets, and carrying means for supporting and maintaining in parallelism the plates, also adapted to carry said rods.

6. A condenser involving a plurality of glass plates arranged in parallelism and having tin-foil sheets upon opposite faces thereof, suitably-mounted notched base and side blocks of insulating material, the notches in which receive the plates, binding-posts upon the side blocks, and rods adjustably related with the binding-posts, having enlargements at their outer ends and resilient portions at their inner ends to engage against the tin-foil sheets.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WALTER W. MASSIE.

Witnesses:

JOHN G. MASSIE,  
FRANKLIN D. FORD.