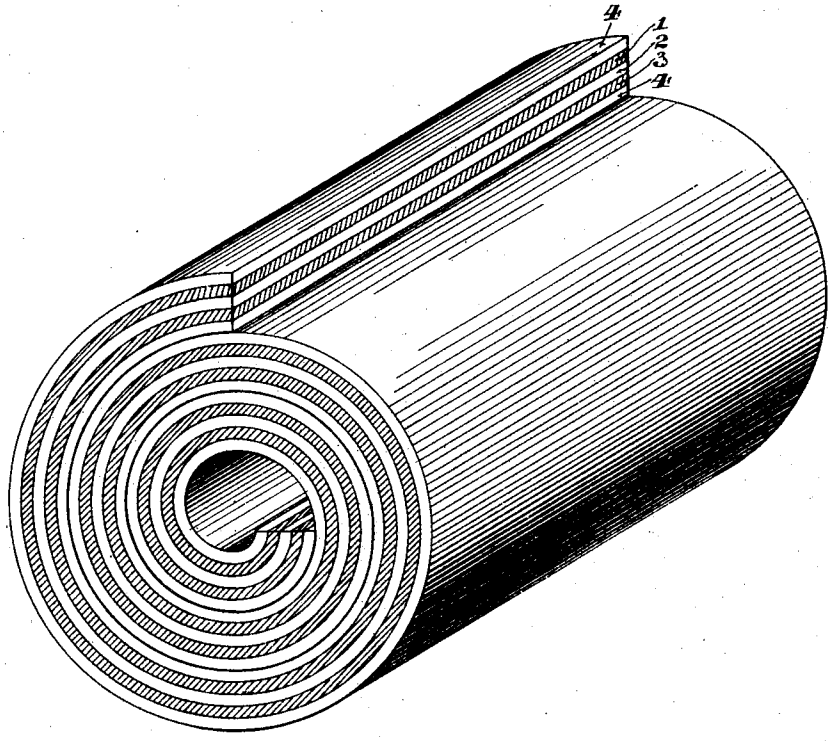
(No Model.)

A. WURTS.

ELECTRICAL CONDENSER.

No. 503,186. Patented Aug. 15, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

ALEXANDER WURTS, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF SAME PLACE.

ELECTRICAL CONDENSER.

SPECIFICATION forming part of Letters Patent No. 503,186, dated August 15, 1893.

Application filed October 5, 1892. Serial No. 447,973. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER WURTS, a citizen of the United States, residing in Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Electrical Condensers, (Case No. 507,) of which the following is a specification.

The object of my invention is to provide a novel form of condenser for electrical purposes, which shall combine cheapness in manufacture with minimum liability to destruction by static discharge through the dielectric. The difficulties which have hitherto stood in the way of the extensive use of condensers where high potentials and heavy currents were employed, has been the great expense incident to their manufacture, and the extreme liability to rupture of the dielectric through static discharges between the metal coatings, and consequent destruction of the condensers. I have found that certain insulating oils act as inexpensive dielectrics, and that, moreover, when static rupture occurs in a layer of oil it is quite unimportant, as the puncture is instantly closed by the inflowing liquid, and proper conditions are immediately restored. To use vessels full of oil with submerged plates would, however, present serious objections, in the matter of space, and I have therefore devised a means whereby the advantages of the oil dielectric may be combined with cheapness, permanence, portability and occupation of minimum space.

The accompanying drawing shows a preferred form of my improved condenser.

1 is a layer of tin foil or other metal sheet, against which is placed the strip 2 of cotton or other textile or absorbent material. A second sheet 3 of metal is placed on the other side of the layer of textile and an outside layer of textile 4 completes the condenser. When these layers have been thus juxtaposed, they are rolled up into a preferably close spiral, as shown, and the whole roll is submerged in the insulating oil. The textile coatings absorb a large quantity of oil, which remains in the roll after it is taken out of the bath and acts as described above in closing any aperture temporarily made by a static discharge. The oil which I have thus far found most efficient and convenient for this purpose is the hydrocarbon known as elaine oil; but it is evident that any insulating oil would act in the manner described.

Of course the process of submerging might take place before the coatings are rolled up, and my invention includes this modification.

It will be seen that this construction combines the portability and efficiency of older forms of condensers with increased cheapness in manufacture, and virtual impossibility of destruction by static discharge.

The rolling is not, of course, essential to my invention, and the coatings of textile and metal foil may be put up in any form desired. Neither are pliable condensing surfaces essential, but rigid conductors may be used if desired; the main point of my invention residing in the use of a textile substance soaked in oil, as a dielectric.

What I claim is—

1. In a condenser, a dielectric composed of a fibrous substance moist with oil, substantially as described.

2. In a condenser a dielectric composed of cotton moist with oil, substantially as described.

3. In a condenser a dielectric composed of a fibrous substance moist with a hydrocarbon oil, substantially as described.

4. In a condenser, a dielectric composed of a fibrous substance moist with elaine oil, substantially as described.

5. In a condenser, a dielectric composed of cotton moist with elaine oil, substantially as described.

6. A condenser composed of sheets of metal foil separated by a dielectric consisting of a fibrous substance moist with elaine oil, substantially as described.

7. A condenser composed of sheets of metal foil separated by a dielectric consisting of cotton moist with elaine oil, substantially as described.

8. A condenser consisting of sheets of metal foil separated by a fibrous substance moist with oil, the whole being rolled as described.

In testimony whereof I have hereunto subscribed my name this 3d day of October, A. D. 1892.

ALEXANDER WURTS.

Witnesses:
JAMES W. SMITH,
HAROLD S. MACKAYE.