

(No Model.)

C. W. JEFFERSON.  
ELECTRICAL INSULATING SHEET.

No. 563,716.

Patented July 7, 1896.

Fig. 1.

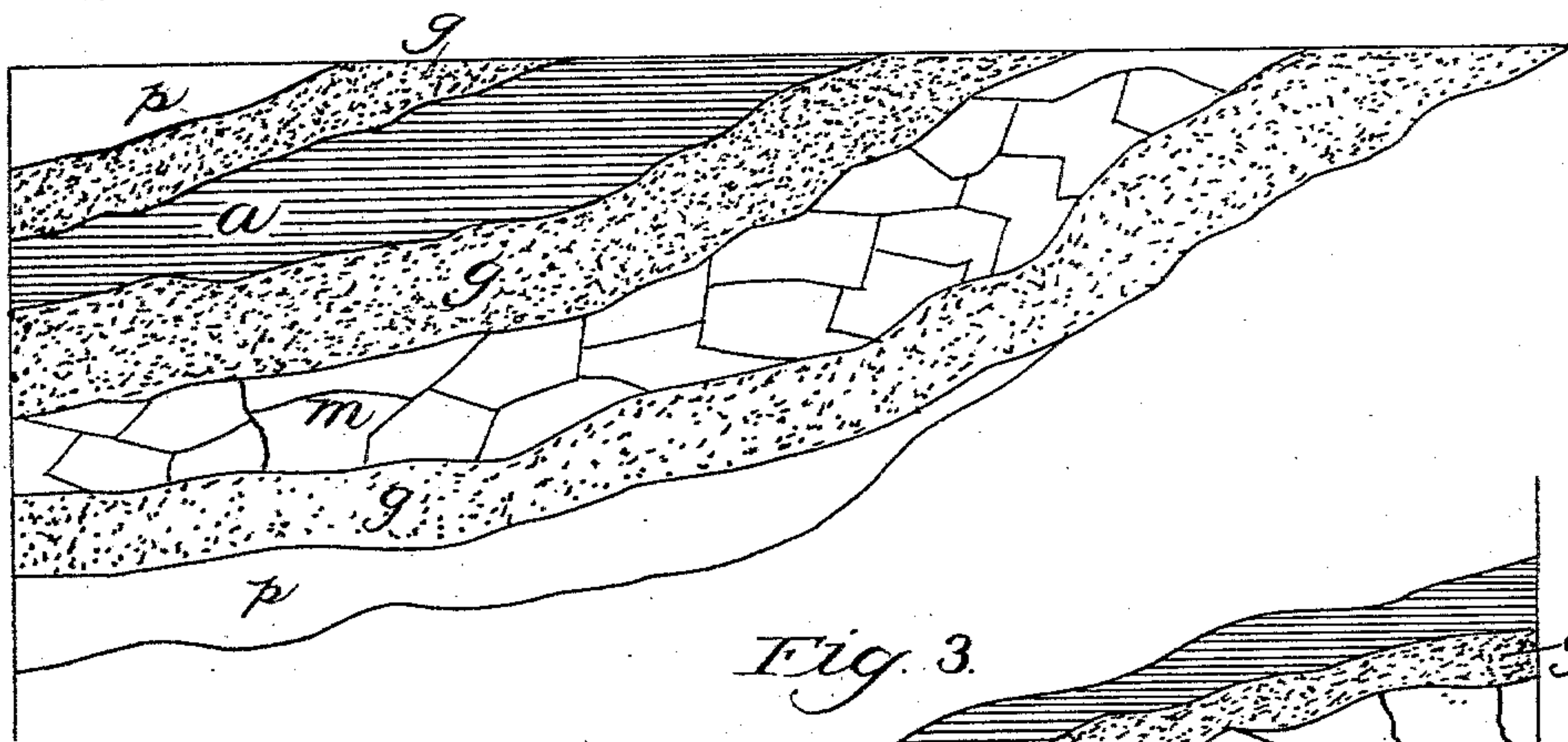


Fig. 3.

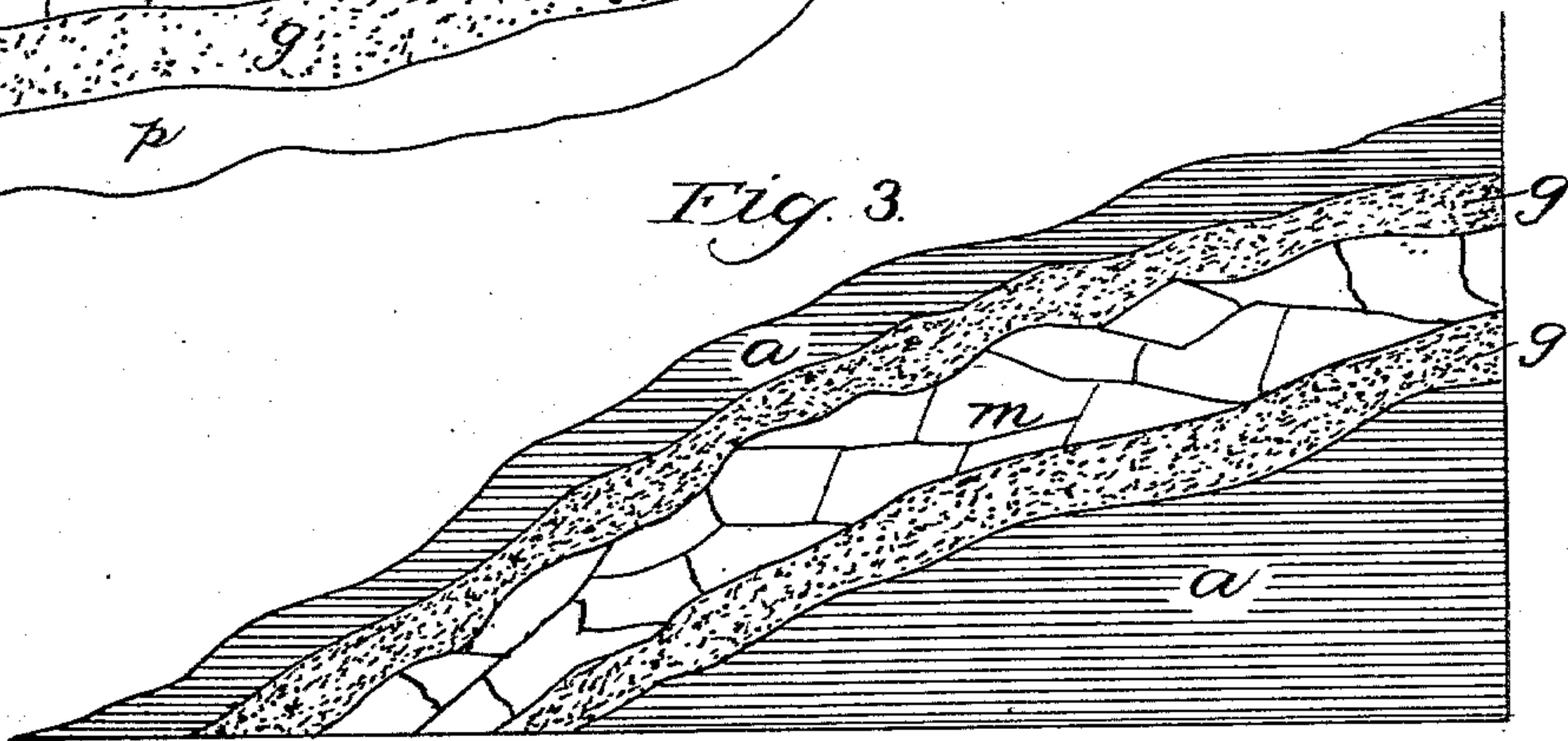
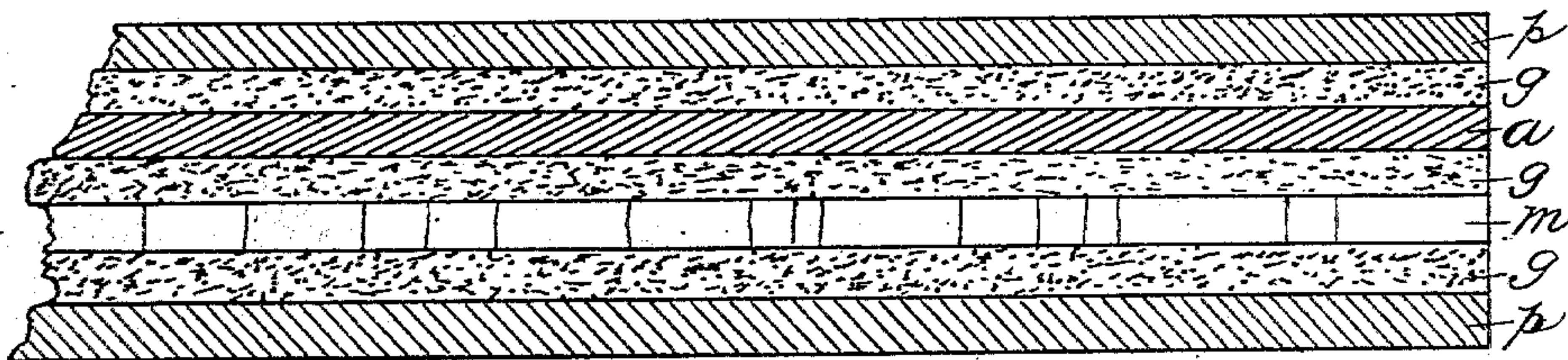


Fig. 2.



WITNESSES:

Edward C. Rowland  
M. H. Dumont

INVENTOR

Charles W. Jefferson  
Edward J. Thompson

ATTORNEY.



# UNITED STATES PATENT OFFICE.

CHARLES W. JEFFERSON, OF SCHENECTADY, NEW YORK.

## ELECTRICAL INSULATING-SHEET.

SPECIFICATION forming part of Letters Patent No. 563,716, dated July 7, 1896.

Original application filed March 16, 1895, Serial No. 541,996. Divided and this application filed November 23, 1895. Serial No. 569,866. (No model.) Patented in England December 2, 1895, No. 6,048.

*To all whom it may concern:*

Be it known that I, CHARLES W. JEFFERSON, a subject of the Queen of Great Britain, and a resident of Schenectady, in the county of Schenectady and State of New York, have invented a new and useful Improvement in Electrical Insulating-Sheets, (for which I have obtained British Patent No. 6,048, provisional specification filed March 23, 1895, complete specification filed December 2, 1895,) of which the following is a specification.

The subject-matter of this application for a patent relates to an insulator built up in sheet form, which may be put upon the market and cut up by the purchasers into any desired shape and bent for use into troughs, rings, and other insulating articles.

The application is a division of my pending application, Serial No. 541,996, filed March 16, 1895.

The present invention relates particularly to a specific form of insulator consisting as hereinafter set forth.

The object of my invention is, from a broad point of view, as exhibited in my other application, to produce a mica sheet which is held to another mica sheet or to other material by means of a cement which remains at ordinary temperatures pliable in all directions, especially in a superficial direction, whereby it may be elongated when subjected to tension and returned to its original dimensions when released from tension. To this end this application relates particularly to a combination in which the mica is cemented to particular materials.

Figure 1 is a plan of a sheet having layers of different materials and broken away to different extents, so that each layer is partly visible. Fig. 2 is a cross-section of the sheet which is shown in Fig. 1, the thickness being greatly magnified in order to better illustrate the different layers. Fig. 3 is a similar view to that shown in Fig. 1 of a modification of the arrangement and of the particular materials.

Referring to Fig. 1, the sheet consists of materials as follows: The first layer consists of paper and is lettered *p*, the second of gutta-percha tissue and is lettered *g*, the third of asbestos and is lettered *a*, the fourth of gutta-

percha tissue and is lettered *g*, the fifth of mica and is lettered *m*, the sixth of gutta-percha tissue and is lettered *g*, and the seventh of paper and is lettered *p*.

In Fig. 3 the sheet consists of, first, a top layer of asbestos *a*, then a layer of gutta-percha *g*, then a layer of mica *m*, then a layer of gutta-percha tissue *g*, and then a last layer of asbestos *a*.

It is necessary to notice that there is a layer of gutta-percha tissue between any two layers of the other materials. Otherwise my invention is of such a nature as to include a change in the arrangement of the layers from that shown in Fig. 1. An illustration of such a change is exhibited in Fig. 3.

In order that any one versed in the art may be able to construct and use this insulator, the process will be briefly described. Suppose it is determined to build a sheet exhibited in Fig. 1. A layer of paper is taken, and upon this is placed the gutta-percha tissue in the condition in which it is bought in the market. Upon the gutta-percha tissue are laid by hand or by any convenient tool pieces of waste mica having dimensions of from one by two or two by three inches, &c., but generally of about these dimensions. They are laid with their edges abutting or overlapping one another. Upon the mica is put another sheet of gutta-percha tissue as before, and upon this a further thin sheet of asbestos, for example, as it comes in the market, in appearance, to a great extent, like a sheet of cloth or paper. Next comes a sheet of gutta-percha tissue and then the paper. In order to make the gutta-percha tissue adhesive and thereby form a cement, it is heated to a temperature below its kindling-point and also below that temperature at which it might become changed as to its chemical nature. While it is in a heated condition the whole sheet is subjected to heavy pressure in order to form close contact and to drive out occluded gases. When the sheet becomes cool, it is ready for use.

By the process above named the gutta-percha tissue becomes an adhesive substance and to the touch is sticky, and therefore it is preferable not to manufacture this sheet with gutta-percha tissue on the outside be-



cause it would adhere to anything upon which it was placed during handling for commercial purposes.

5 It is evident that when I specify paper I include also cloth, for the two are equivalent, both being made of substantially the same chemical elements and having substantially the same fibrous texture.

I claim as my invention—

10 1. An electric insulator in sheet form consisting of layers of asbestos and mica; and adhesive gutta-percha tissue between any and every two of said layers.

2. An electric insulator in sheet form consisting of layers of paper, asbestos, mica and 15 paper and adhesive gutta-percha between any and every two of said layers, which are arranged in the order named.

In testimony that I claim the foregoing as my invention I have signed my name, in pres- 20 ence of two witnesses, this 19th day of November, 1895.

CHARLES W. JEFFERSON. [L. S.]

Witnesses:

HARRY W. DENNINGTON,  
FRANK L. SAUTER.