

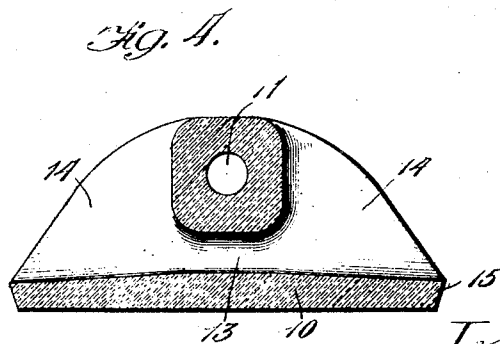
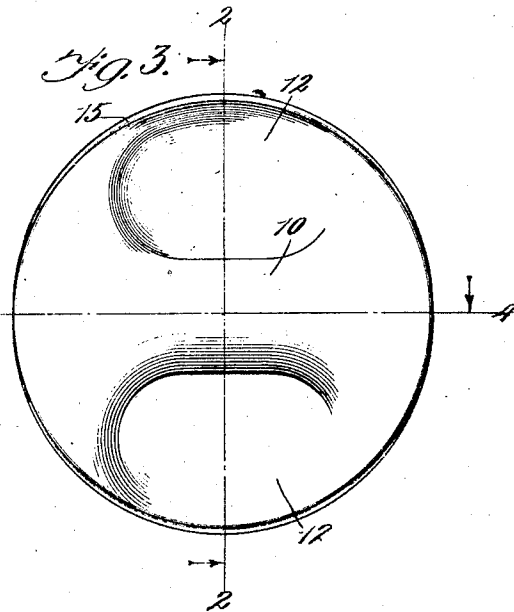
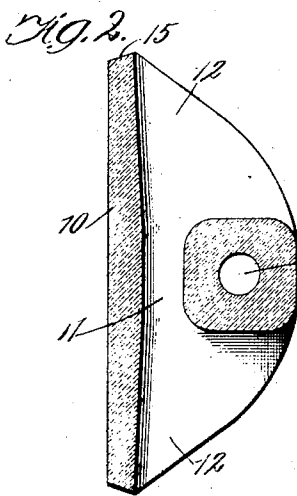
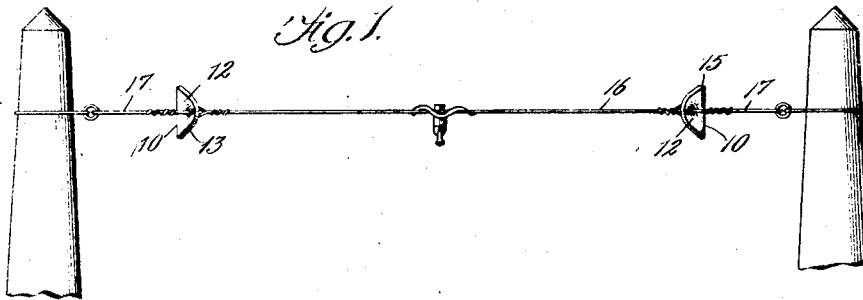
G. A. MEAD.
INSULATOR.

APPLICATION FILED JULY 29, 1908.

1,048,992.

Patented Dec. 31, 1912.

2 SHEETS—SHEET 1.



Witnesses:

J. A. Gochman Jr.

Inventor:

George A. Mead

By *Brown & Hays*
Attys

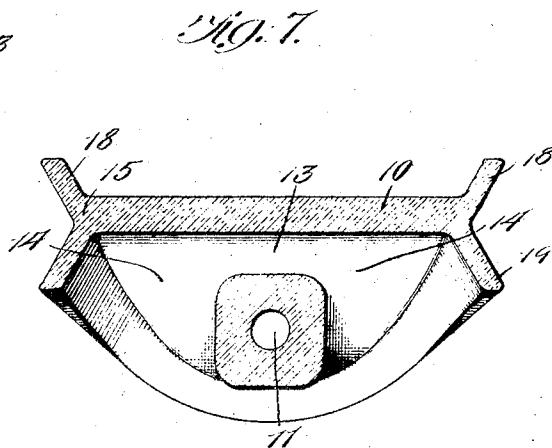
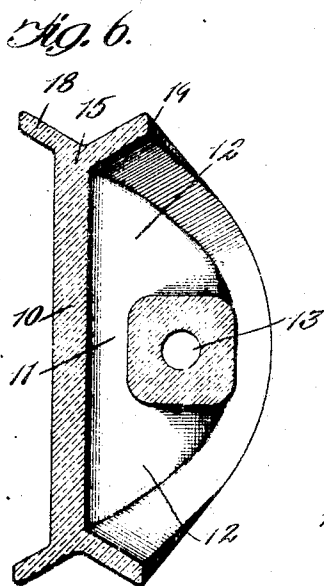
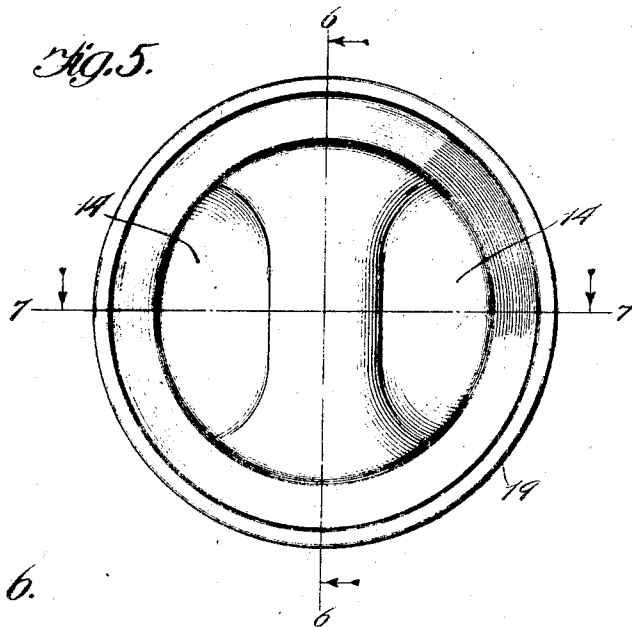
G. A. MEAD.
INSULATOR.

APPLICATION FILED JULY 29, 1908.

1,048,992.

Patented Dec. 31, 1912

2 SHEETS-SHEET 2.



Witnesses:
D. D. Perry
J. L. Gochman Jr.

Inventor:
George A. Mead
By Brown & Hopkins
Attys

UNITED STATES PATENT OFFICE.

GEORGE A. MEAD, OF MANSFIELD, OHIO, ASSIGNOR TO THE OHIO BRASS COMPANY, OF MANSFIELD, OHIO, A CORPORATION OF NEW JERSEY.

INSULATOR.

1,048,992.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed July 29, 1908. Serial No. 445,858.

To all whom it may concern:

Be it known that I, GEORGE A. MEAD, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Insulators, of which the following is a specification.

This invention relates to improvements in insulators and more particularly to strain insulators, and the primary object of the invention is to provide an improved insulator of this character for insulating a conductor carrying high voltage from the ground or other conductors.

A further object is to provide an improved, compact insulator of this character for attaining the maximum resistance to mechanical strain and of sufficient dielectric strength to withstand the high voltage.

A further object is to provide improved means for shedding the water and which means also serves to increase the leakage distance between the span wires.

A further object is to provide an improved insulator of this character which will be simple, durable and cheap in construction, readily installed and effective and efficient in operation.

To the attainment of these ends and the accomplishment of other new and useful objects, as will appear, the invention consists in the features of novelty, in the construction and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings, illustrating an embodiment of the invention, and in which—

Figure 1 is an elevation of a span wire and the supports therefor having a pair of insulators applied thereto, constructed in accordance with the principles of this invention. Fig. 2 is an enlarged detail sectional view on line 2—2 of Fig. 3. Fig. 3 is an elevation of one of the faces of this improved insulator. Fig. 4 is a detail sectional view on line 4—4 of Fig. 3. Fig. 5 is a view similar to Fig. 3, of a modified form of the invention. Fig. 6 is a detail sectional view on line 6—6 of Fig. 5. Fig. 7 is a detail sectional view on line 7—7 of Fig. 5.

Referring more particularly to the drawings, and in the exemplification of the invention shown in Figs. 1 to 4, the numeral 10 designates generally the insulator, which may be constructed of any suitable insulating material, such as porcelain or the like, and may be of any desired form, but is preferably circular or disk-like in configuration. Passing through the body of the insulator adjacent one of the faces and in a plane substantially parallel therewith is an aperture 11, and the diametrically opposite portions of the body of the insulator adjacent the ends of the aperture 11 are reduced to form enlarged openings 12 adjacent the periphery of the insulator, which openings form continuations of and have communication with the aperture 11, thereby forming a straight and unobstructed opening or passage through the insulator adjacent one of the faces thereof, and with its extremities opening through the opposite face of the disk. A similar aperture 13 passes through the body of the insulator adjacent the opposite face of the disk and substantially parallel thereto, and this aperture 13 is disposed transversely with respect to the aperture 11. The diametrically opposite portions of the body of the insulator at the extremities of the aperture 13 are reduced to form enlarged openings 14 adjacent the periphery of the insulator, which openings communicate with and form continuations of the aperture 13, to form an unobstructed and straight passage there-through for the span wires, and the extremities of this passage open through the face of the disk opposite to that through which the extremities of the other passage open. With this improved construction, the apertures pass through the body of the insulator opening through opposite faces thereof, and each aperture is arranged in close proximity to one of the faces of the insulator opposite to that through which the respective apertures open, thereby producing a compact insulator which may be quickly installed. The enlarged openings 12, 14, or the reduced portions of the body of the insulator adjacent the periphery thereof, serve to form a narrow, irregular or undulating

periphery 15 on the body of the insulator, so that the entire edge of the insulator will not stand within the same plane.

With this construction the web thus produced will form a guard which extends entirely around the body from a plane at the outer side of the axis of one passage to the outer or farther side of the axis of the other passage and at both ends. In use, the insulator is preferably supported on edge, and one end of one of the span wires 16 is threaded through one of the apertures in the insulator and bent back and fastened in the usual manner to the body portion of the wire, and one end of another span wire 17 is threaded through the other aperture and fastened in a similar manner, so that the span wires will be disposed at substantially right angles to the respective faces of the insulator, and the insulator will extend transversely of the wires and for some distance therebeyond to prevent arcing from one of the wires to the other. The apertures 11 and 13 are spaced from each other and are arranged on opposite sides of an imaginary center line drawn between and substantially parallel with the faces of the disk, and being disposed transversely with respect to each other, will cause the extremities of the span wires to be looped one within the other when the latter are secured to the insulator, so that a portion of the insulator will stand between the loops, which portion will be under compression. With insulators of this type, the body portion is first shaped of soft material and while still soft the apertures for the span wires are formed therein by means of any suitable tool or instrument. In the manufacture, considerable difficulty is experienced where the apertures are curved with respect to the plane of the face of the insulators, to properly guide the instrument through the body portion to form or position the apertures with respect to each other to produce a wall between the apertures which will be thick enough to hold the wire sufficiently spaced to prevent arcing and at the same time form the apertures a sufficient distance from the respective face of the insulator, owing to the fact that the manufacturer is obliged to guess at the position and direction of the curved apertures as he is unable to see or follow the active portion of the instrument through the body. Furthermore, the wall between the apertures frequently becomes disintegrated, owing to the fact that it is not of sufficient thickness, which not only permits the water to form an electrical connection between the wires, but the wall will crumble or break down under the strain of the wires. With this improved form of insulator and by providing apertures which pass straight through the body substantially parallel with

the face of the insulator, the apertures will be unobstructed and the manufacturer may follow the instrument with his eye, thereby enabling him to properly position the apertures with respect to the faces of the insulator and from each other to form a wall of sufficient thickness between the apertures, thereby producing a wall of uniform thickness in all of the insulators. Furthermore, by arranging the apertures straight through the insulator, the latter may be easily installed by reason of the fact that the ends of the span wires will pass readily through the apertures, without necessitating the forcing of the wires through curved or irregular apertures.

In the exemplification of the invention shown in Figs. 5 to 7, the body portion 10 of the insulator is provided with flanges 18, 19, which project from the peripheral edge 15 of the body portion at angles to the faces of the insulator. These flanges diverge from each other to form a water shed, and each flange projects beyond the plane of one of the faces of the insulator. These flanges also extend around the entire body portion and serve as means for increasing the leakage distance between the span wires.

With this improved form of insulator, it will be apparent that there is produced a compact insulator constructed for attaining the maximum resistance to mechanical strain, and one in which the electrical strength of the insulator may be increased by increasing the diameter of the insulator and also the diameter of the flanges, and by providing an irregular edge or periphery to the insulator the leakage distance between the span wires is greatly increased.

In order that the invention might be fully understood, the details of the foregoing embodiment thereof have been thus described, but

What I claim as new is:

1. An insulator having means for connecting conductors to opposite sides thereof and embodying substantially straight passages, both ends of the respective passages opening through the same face of the insulator, said passages being disposed in close proximity and transversely with respect to each other so as to intersect, with a portion of the insulator between the passages, the extremities of the passages terminating short of the periphery of the body of the insulator, the periphery of the body of the insulator being shaped to form an encircling open groove
2. An insulator having means for connecting conductors to opposite sides thereof and embodying substantially straight passages, both ends of the respective passages opening through the same face of the insulator, said passages being disposed in close proximity and transversely with respect to each other

so as to intersect, with a portion of the insulator between the passages, the extremities of the passages terminating short of the periphery of the body of the insulator, the periphery of the body of the insulator being 5 shaped to form an encircling open groove, the sides of which groove are deflected laterally to project beyond the respective faces of the insulator.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 23d day of July, A. D. 1908.

GEORGE A. MEAD.

Witnesses:

CHAS. H. SEEM,
J. H. JOCHUM, Jr.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."