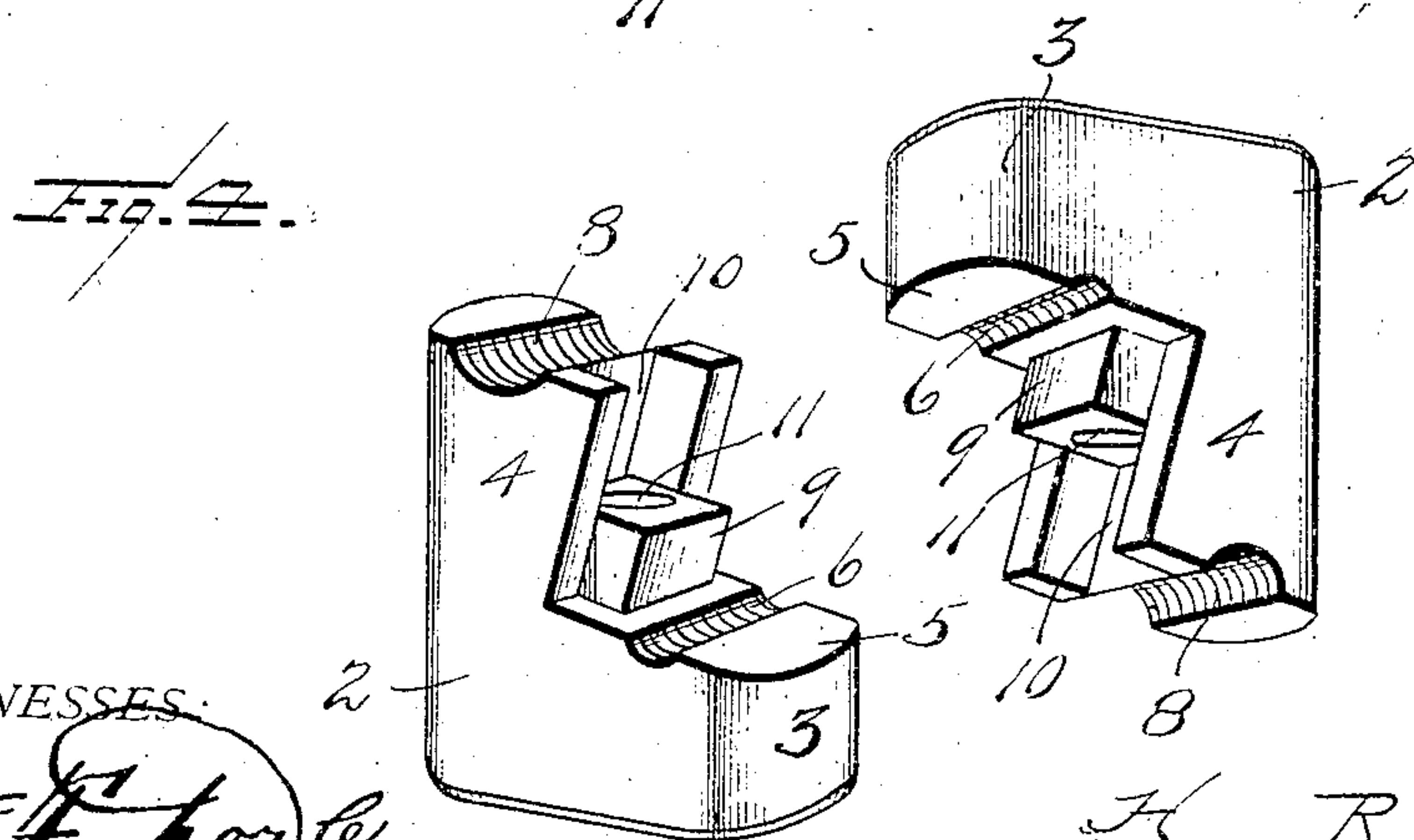
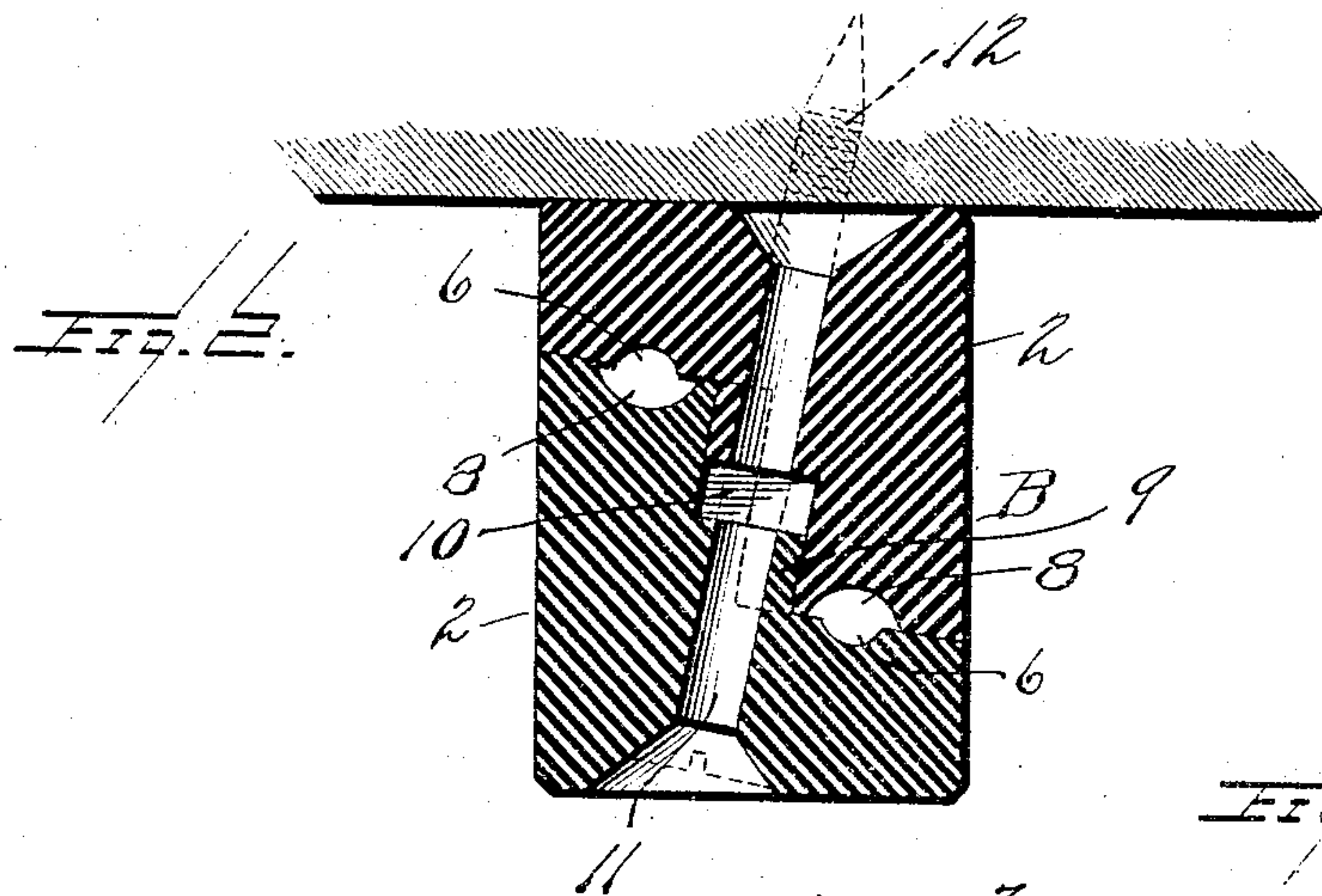
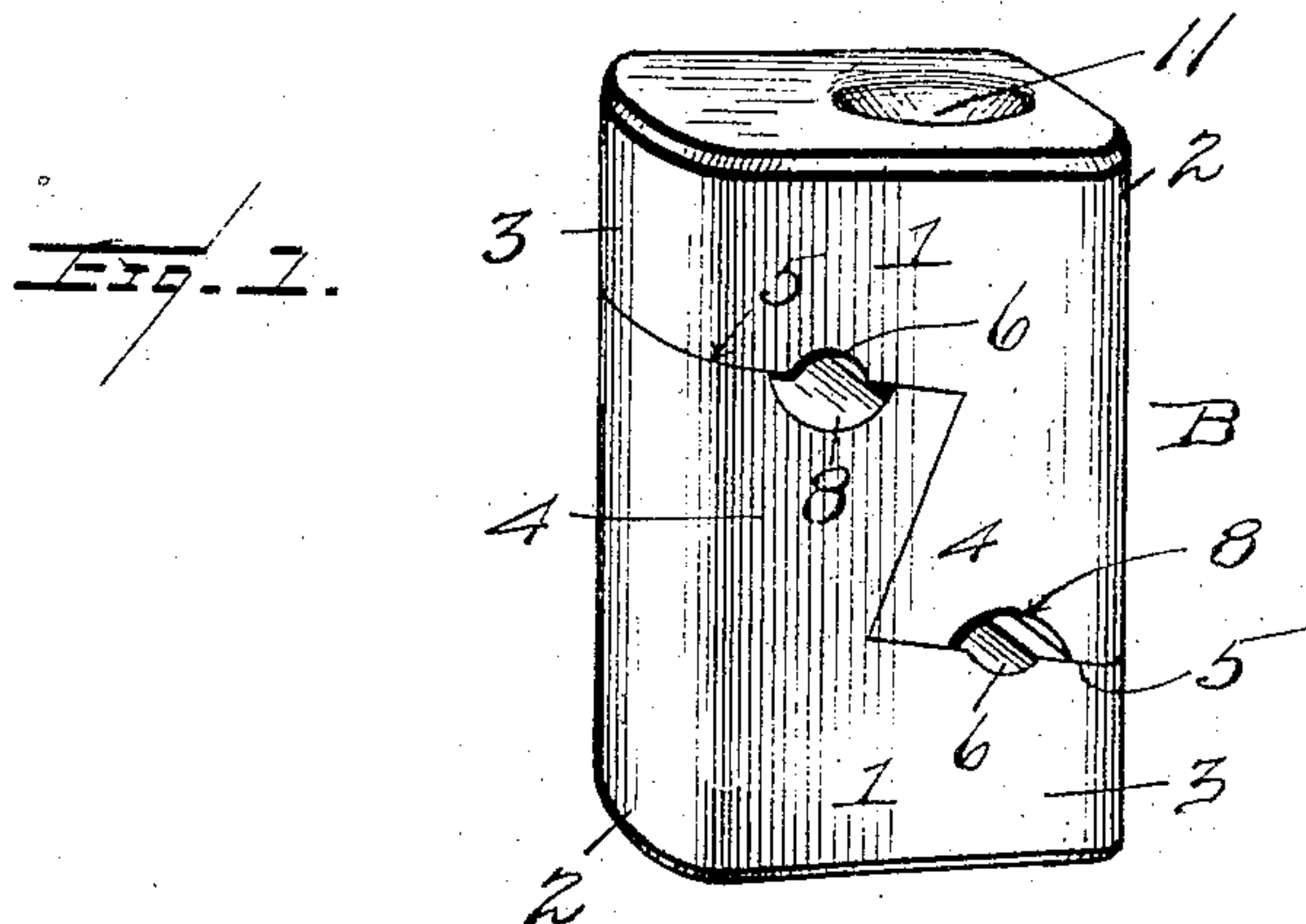


No. 878,302.

PATENTED FEB. 4, 1908.

H. R. MARKEL.  
INSULATOR.

APPLICATION FILED JULY 10, 1907.



WITNESSES

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# UNITED STATES PATENT OFFICE.

HARLEY R. MARKEL, OF DAYTON, OHIO.

## INSULATOR.

No. 878,302.

Specification of Letters Patent.

Patented Feb. 4, 1903.

Application filed July 10, 1907. Serial No. 382,989.

*To all whom it may concern:*

Be it known that I, HARLEY R. MARKEL, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Insulators, of which the following is a specification.

This invention relates to devices for supporting and insulating electrical conductors, and has special reference to an improvement in that type of electrical porcelains commonly termed insulators, and designed for use in wiring buildings.

To this end the invention contemplates a simple and practical construction of insulator embodying means for securely supporting electrical wires in various positions, while at the same time securing a thorough and effective insulation thereof. In this connection, the invention also has in view an insulator intended to meet all the requirements of the fire underwriters' associations in regard to the distance for supporting electrical conductors from wood work, and also from the metallic fasteners employed for securing the insulator to the studding or other portions of the building to carry the wires.

A special object of the invention is to provide certain practical improvements in that type of insulators known as divided insulators, and made up of two parts or pieces between which the wire is held or clamped. In reference to this class of insulators, one of the objectionable features of most of the same is that the two parts of the insulator are not duplicates or interchangeable, and hence when the workman is setting them up, he has to make two selections, (one piece of each kind) from the common lot, or else is compelled to have two lots of the separate pieces to pick from, and then take one from each. Again, when arranging to go out on a job, it is necessary at times to pair up the separate pieces to make the complete insulator in order that in setting the insulators in position to carry the wires the same may fulfil one of the requirements that the wire must be kept at least an inch away from the wood work.

The above objectionable features are entirely obviated by the present invention, which provides a divided insulator made up of a pair of duplicate, matching, registering, and interchangeable members, so that the workman is required to exercise no care whatever in the selection of the two pieces to

make up the insulator, nor is he required to be mindful as to which end of the insulator is placed against the wood work.

A further object of the invention is to so construct the duplicate parts of the insulator as to provide a secure non-slipping interlocking connection between the two parts, while at the same time entirely guarding against the possibility of the wire working, or creeping, into contact with the metallic screw or fastener for the insulator.

Another object of the invention is to provide a novel arrangement for the fastener, or fastening screw, whereby a greater range of movement is permitted the workman in placing up the insulator, and furthermore, means are provided whereby the wire is kept the required distance away from the screw or fastener. Also, the arrangement of the screw or fastener effects a saving in the amount of material necessary for the insulator since its size is considerably reduced.

Another general object of the invention is to strengthen and reinforce the insulator throughout along the line of division or separation between the two members thereof.

With these and many other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

The essential features of the invention involved in carrying out the objects above indicated are necessarily susceptible to a wide range of modification without departing from the spirit or scope of the invention, but a preferred embodiment thereof is shown in the accompanying drawings, in which:

Figure 1 is a perspective view of a divided insulator embodying the present invention. Fig. 2 is a longitudinal sectional view of the insulator shown in its applied position. Figs. 3 and 4 are details in perspective, respectively, of the separate duplicate parts or members of the insulator.

Like references designate corresponding parts in the several figures of the drawings.

The insulator as an entirety is made of porcelain or other insulating material, and consists of a divided or two part body B preferably of an oblong approximately rectangular form having flattened sides 1 which are of utility in providing a positive surface to pull against in tightening the wire. How-



ever, the precise form or shape of the insulator body or block is not a necessary or essential feature and may be varied by the manufacturer without affecting the invention.

The distinctive feature of the present invention resides in the novel construction and relation of the component parts of the insulator body, and referring to the drawings, it will be observed that the said body is of a two part or divided construction and consists of a pair of duplicate block members 2. The two members 2 are exact duplicates of each other and are designed to have a matching, registering, and interchangeable relation, so that irrespective of the manner in which the insulator is handled or positioned, it is only necessary for workmen to take two of the members 2 and place them in registering relation, with either member next to the wood work or other point of support for the insulator.

Each block member 2 may be characterized as being of an approximate L-shape in longitudinal section, the same being formed with a base or head portion 3, and an arm portion 4, the latter projecting from the inner side of the base portion 3 at one side of the plane of the longitudinal center or axis of the block member. By reason of the approximate L-shape of both block members, it is only necessary to arrange the latter in reverse relation to bring them into perfect registration, as plainly shown in Figs. 1 and 2 of the drawings, and in order to secure a proper interlocking of parts and a proper holding and protection of the wires, it is to be noted that the head portion 3 of each block member 2 is formed with an inclined inner face 5 provided therein with a transverse wire holding or binding groove 6, while in the end face of the arm portion 4 there is formed a somewhat larger wire seat or groove 8 adapted to lie opposite the smaller wire holding groove 6 in the base portion of the other block member. The grooves 6 and 8 may, if deemed necessary, be provided with transverse corrugations to avoid slipping of the wire, as shown in Figs. 3 and 4 of the drawings. In addition to the features mentioned, each block member 2 is provided centrally thereof, and at the inner side of its base portion 3, with an inwardly offset or projecting guard tenon 9, of a square or other angular formation and projecting into and partly out of a keeper mortise 10 channeled in the inner face of the arm portion 4 of the block member, and disposed longitudinally of said arm portion, the said keeper mortise 10 extending from the top of the tenon 9 to the extremity of the said arm portion.

The longitudinally arranged keeper mortise 10 in the arm portion 4 of each block member 2 is of an angular form, and may be characterized as being open-ended to facili-

tate the insertion and registration therein of the guard tenon 9 of the other complementary block member.

It will be observed that the walls of the keeper mortises 10, and the sides of the guard tenons 9, are disposed obliquely with reference to the longitudinal center of the block and follow the inclination of the oblique fastener hole 11 which extends through the two parts of the insulator body at an angle or inclination to the longitudinal axis or center of said body, and the separate portions of the hole, in the separate parts, are so arranged as to pierce the inside centrally located guard tenons 9.

The oblique fastener hole 11 is designed to receive a screw or equivalent fastener 12 which performs the several functions of securing the insulator upon the studding or other points of support, holding the two parts of the insulator body together, and clamping such parts upon the wire.

It will be noted that by reason of the complementary interlocking relation of the tenons and mortises 9 and 10 of the separate block members, the latter are absolutely prevented from lateral slipping or displacement, while at the same time the tenons 9 act in the capacity of shoulders which prevent the wire from slipping or creeping against the metallic fastener 12 in the event of the insulator parts becoming loosened. In this connection it is to be observed that the tenon of each block member is preferably of a squared formation and projects from and beyond the face 5 so as to present a wide, well defined guard shoulder projecting materially beyond the adjacent groove 6 and thereby effectually securing the function just referred to. Furthermore, the tenons 9 and the flanges formed by the channeling of the mortises 10 act as reinforcing elements for the insulator body and serve to materially strengthen the same along the line of division or separation between the two parts or members when assembled.

A distinct advantage arises from the inclination or obliquity of the fastener hole 11, in view of the fact that the same admits of the wire being held one-eighth of an inch away from the screw or fastener. At the same time the angling effects a saving of material, and also provides more room for the workmen when fastening the insulators between the studding. With straight holes for the insulator the workmen are compelled to work at right angles to the studding, and have only the distance between the two studs to work in, while by elevating the head of the screw, they will, of course, have more room to work, which is a matter of material advantage in mounting up the insulators.

From the foregoing it is thought that the construction, operation and advantages of the herein described insulator will be appar-



ent to those familiar with the art without further description, and it will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

I claim:

1. An insulator having a two-part body consisting of a pair of duplicate matching members provided with similarly arranged wire openings, and each having a central guard tenon presenting a shoulder next to the adjacent wire opening, and a keeper mortise for the tenon of the other member.
2. An insulator having a two-part body consisting of a pair of duplicate matching block members provided with similarly arranged wire openings and each having an inside centrally located angular guard tenon presenting a shoulder next to the adjacent wire opening, and also having a keeper mortise extending beyond said tenon and receiving the corresponding tenon of the other block member.
3. An insulator having a two-part body consisting of a pair of duplicate matching block members, each block member being of

an approximate L-shape and provided in the inner side of its base portion with a wire holding groove and in the end of its arm portion with a wire seat, each member being further provided upon the inner side of its base portion with an angular guard tenon offset to present a shoulder next to said groove, each member also having on the inner side of its arm portion a longitudinally disposed keeper mortise extending beyond said tenon.

4. An insulator having a two piece body provided in each member with a diagonal fastener hole extending therethrough.

5. An insulator having a two part body consisting of a pair of duplicate, matching, and interlocking members, provided with similarly arranged wire grooves upon opposite sides of the longitudinal axis of the body, the latter being further provided in each member with an oblique fastener hole.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

HARLEY R. MARKEL.

Witnesses:

E. E. SILER,  
H. M. MAXWELL.