

Sept. 4, 1928.

1,683,418

J. C. SHAW ET AL
TERMINAL FOR CONDUCTORS

Filed Nov. 12, 1926

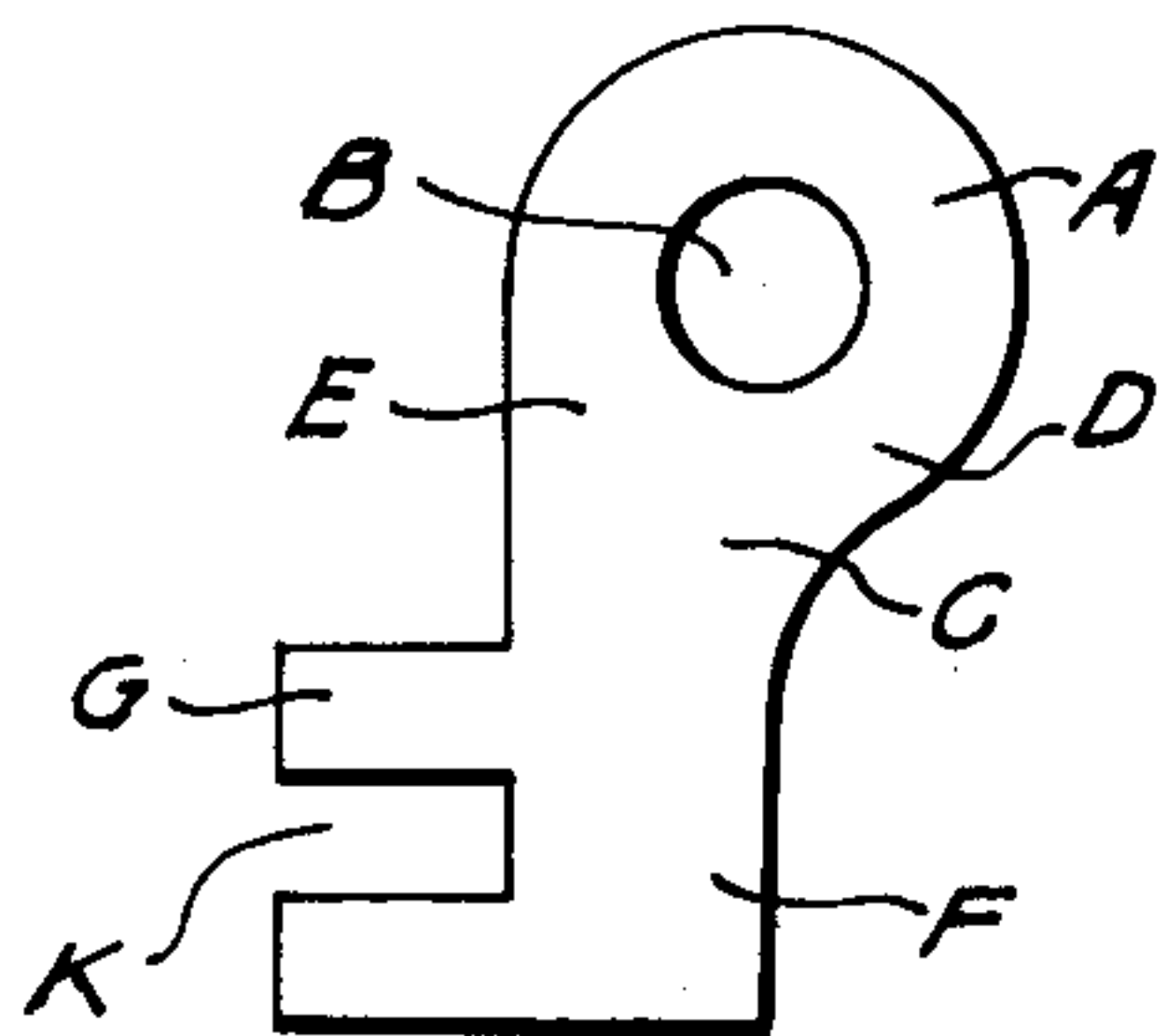


FIG. 1

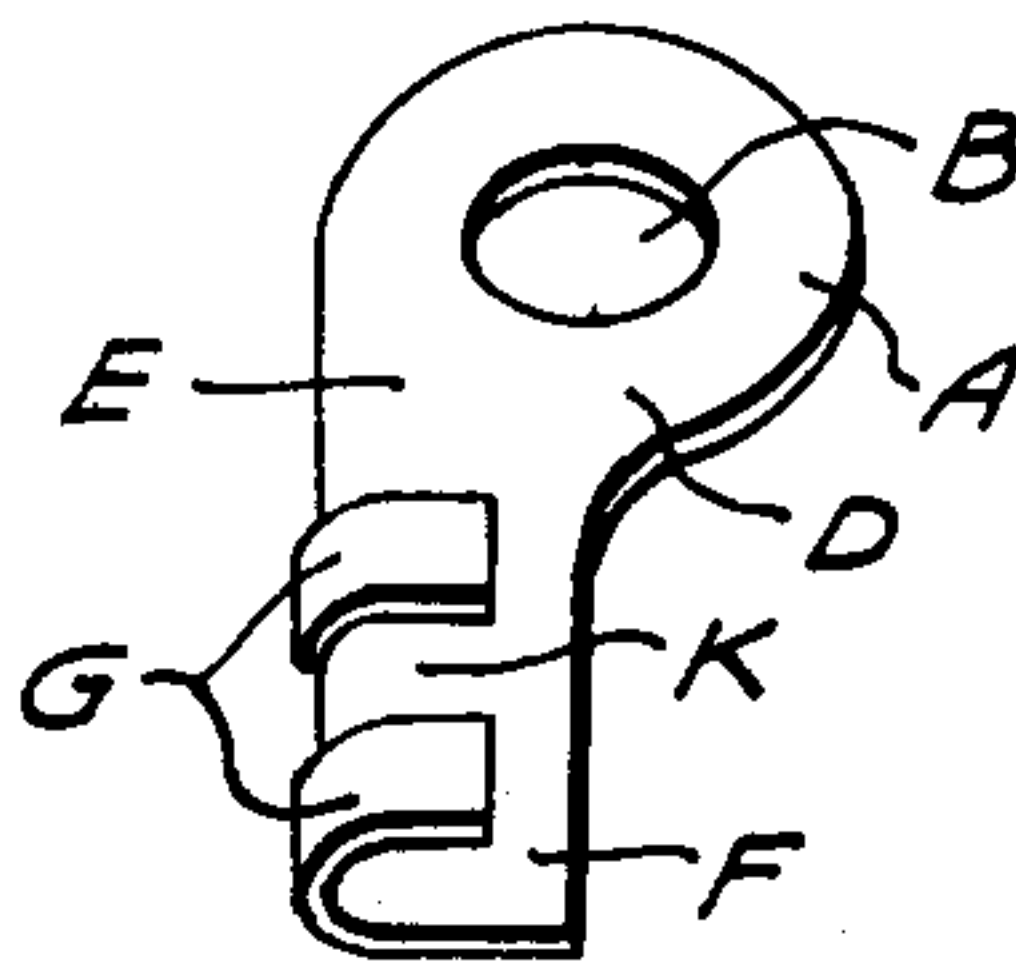


FIG. 2

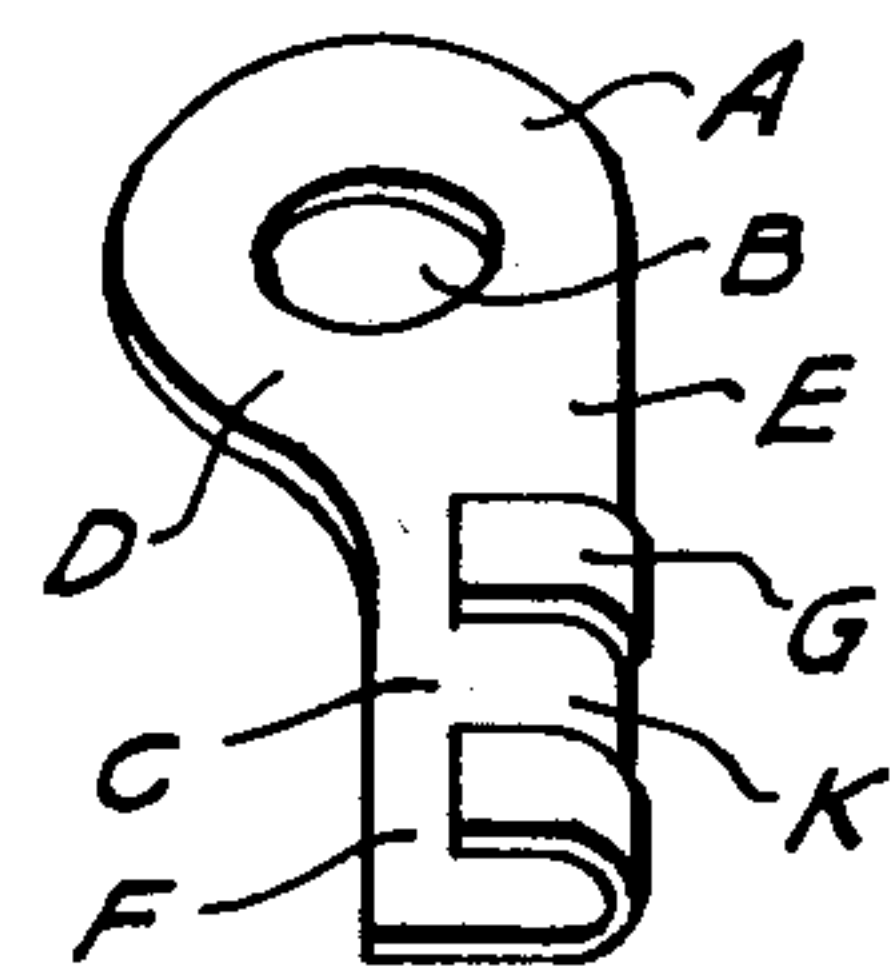


FIG. 3

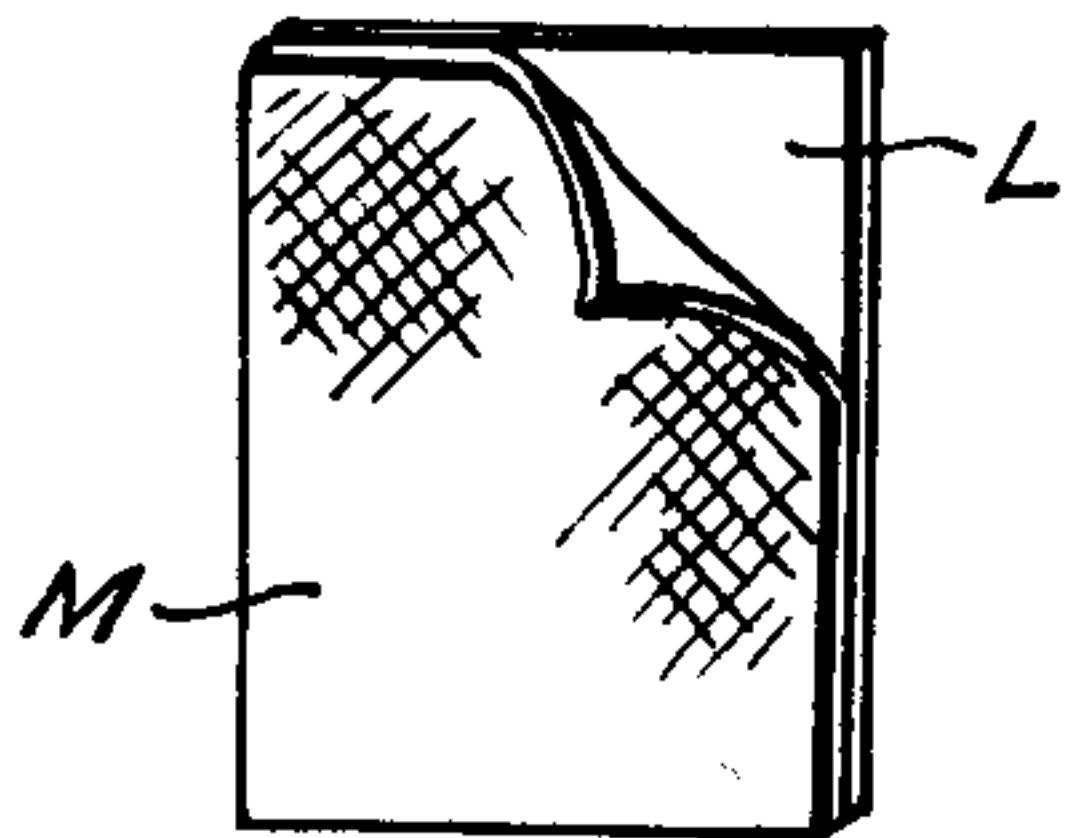


FIG. 6

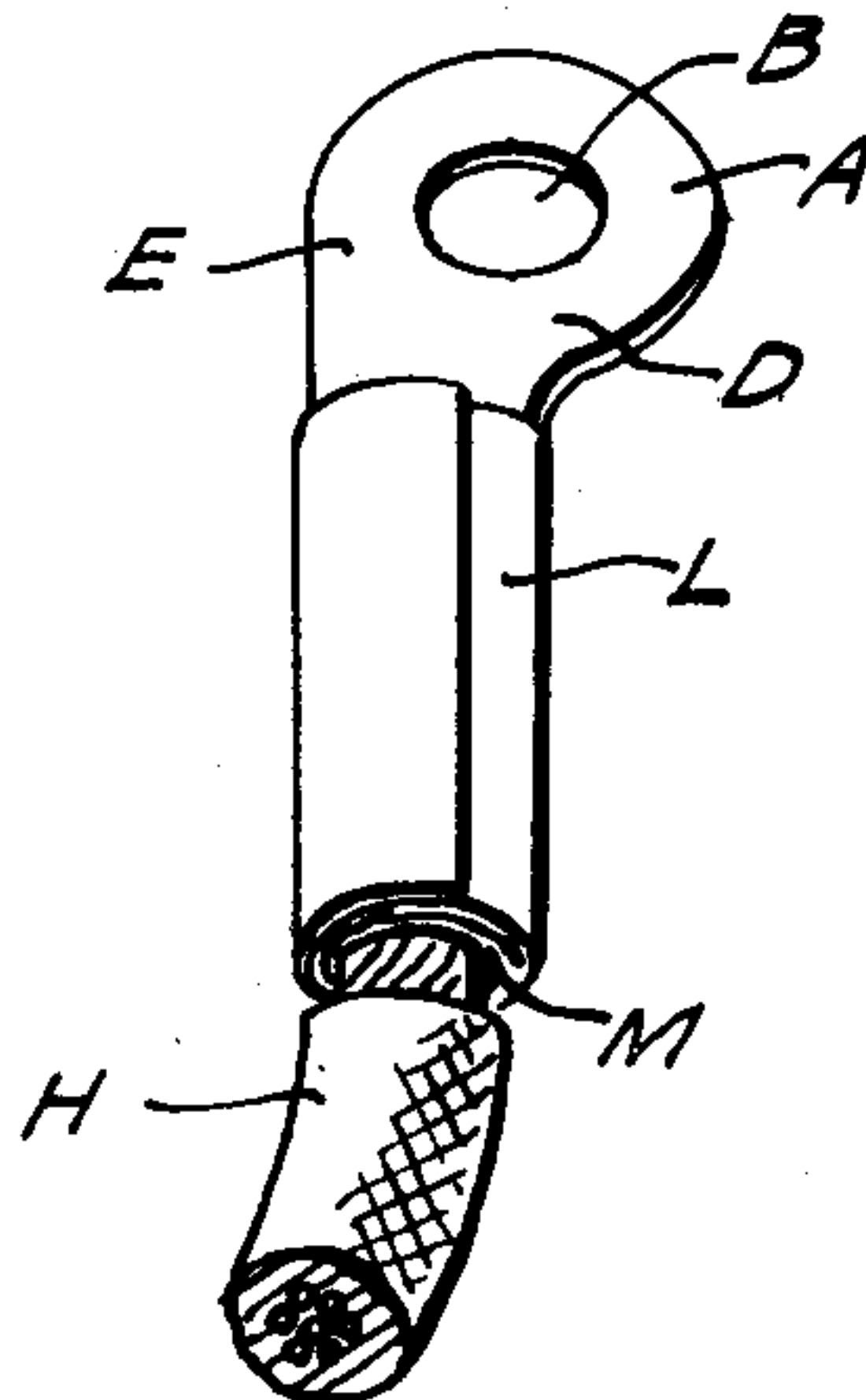


FIG. 5

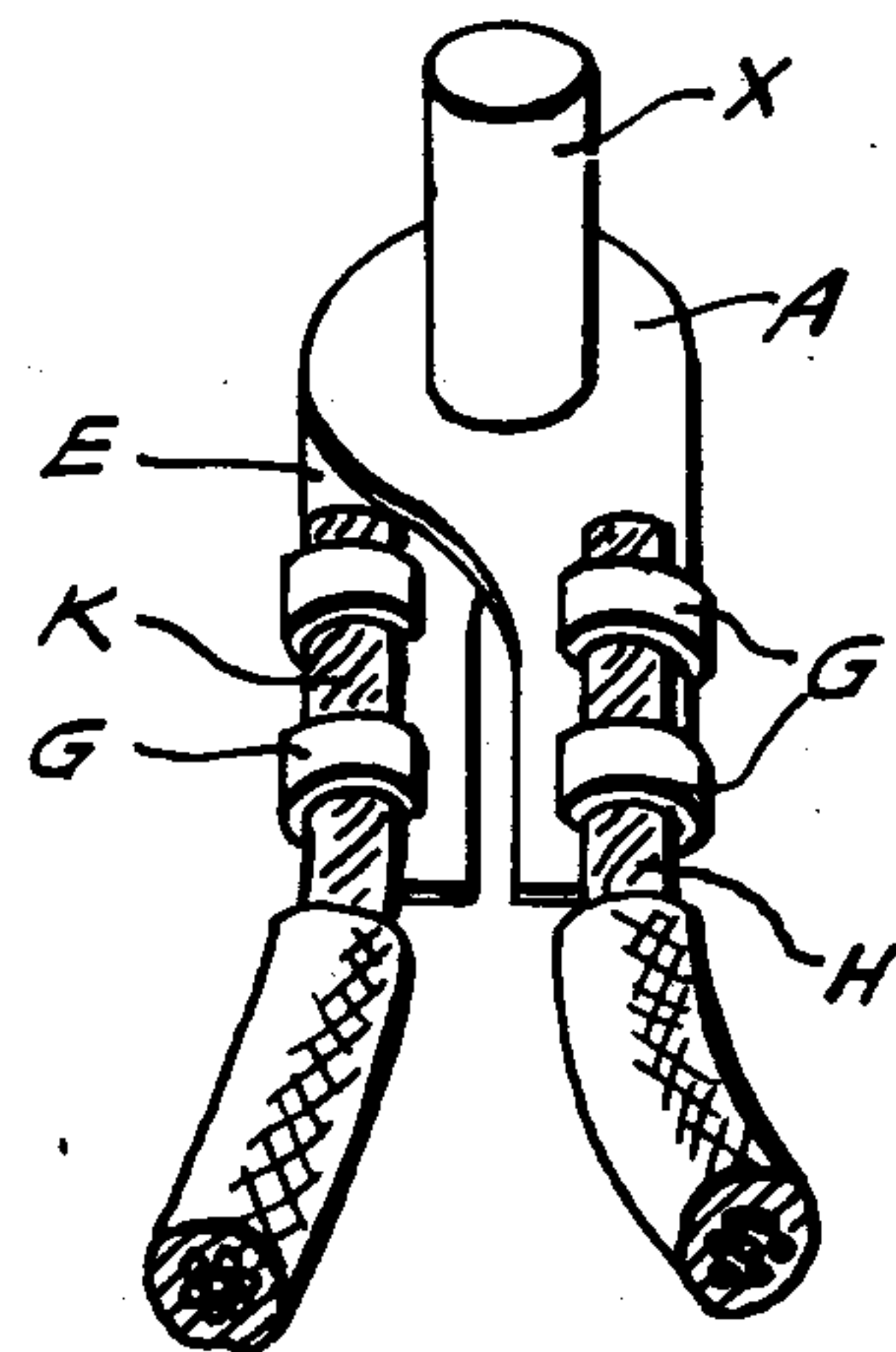


FIG. 4

INVENTOR.
John C. Shaw and
Robert D. Shaw
BY *M. H. Rockwood*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN C. SHAW AND ROBERT D. SHAW, OF BROOKLYN, NEW YORK, ASSIGNORS TO
KELLER MECHANICAL ENGINEERING CORPORATION, OF BROOKLYN, NEW YORK, A
CORPORATION OF NEW YORK.

TERMINAL FOR CONDUCTORS.

Application filed November 12, 1926. Serial No. 147,877.

This invention relates more particularly to an improved flat metal terminal, provided with a perforated head or end, which may be slipped over a binding post stud and secured thereto, the head of the terminal being offset, so that successive conductors may be mounted on the same binding post so as to lie on opposite sides of a diametral plane.

It is frequently desirable to attach to the same binding post a plurality of conductors, leading outward therefrom in substantially the same direction and when the conductors are provided with the ordinary terminals, they do not stack properly on the binding post stud, and cannot be assembled in substantially vertical planes, but must be fanned out.

The object of our improvement, therefore, is to provide terminals, of sheet metal or the like, which may be attached to successive conductors, so that the terminal heads will be off-set in opposite directions, that is, on one side or the other of the axes of the respective conductors. In this way, rights and lefts are provided, so that the terminals may be conveniently stacked, as they are placed over the binding post stud and the conductors will lie in parallel relation and may extend outward from the binding post in substantially the same direction.

Obviously, this arrangement will facilitate attaching a plurality of conductors to the same binding post without the necessity of fanning them out and thereby provides a more compact arrangement, giving a neater appearance.

A further object is to provide terminals of this character, which may be blanked or punched out of sufficiently heavy sheet metal, and provided with clip lugs, which may be bent to one side or the other of the terminal pieces for securing them to the respective conductors, so that the ends of the terminals will be off-set to one side or the other of the axis of the conductor. The conductor holding clip lugs are preferably arranged in pairs with a space therebetween, for soldering the terminal to the conductor, the arrangement being such as to provide for a secure attachment of the terminal to the conductor, as well as the best possible conductivity across the joint.

For the purpose of illustrating our improved terminal and the arrangement for attaching the same, reference may be had to the

accompanying drawings, in which Fig. 1 shows the sheet metal terminal as blanked out or punched out and before the conductor securing clips or lugs are bent over; Fig. 2 shows the terminal with the securing clips bent up so that the off-set of the head will be to the right of the conductor; Fig. 3 shows the securing clips bent so that, when the terminal is secured to the conductor, the head thereof will be off-set to the left of the axis of the conductor; Fig. 4 shows the stacking of the terminals when rights and lefts are successively mounted on the binding post stud; Fig. 5 represents one of the terminals secured to a conductor, with the joint therebetween protected by a sleeve, and Fig. 6 represents the protecting sleeve of Fig. 5 before it is coiled about the joint.

Referring to the drawings, it will be seen that, as shown in Fig. 1, the terminal may be punched or blanked out of sheet metal, with an annular washer-like head or tip A of ample width to give good contact, the head being provided with a perforation B to fit the stud of any desired binding post. Preferably the metal of the terminal is of ample thickness to provide good conductivity and the width of the annular portion of the washer-like head is sufficient not only to provide for the best conductivity, but to provide ample clearance beyond the clamping nut. The annular terminal head A is preferably provided with an arm C taperingly connected at D with the washer-like head, so as to provide great mechanical strength so as to prevent breaking at this point, and, at the same time, offer the least resistance to the passage of the current. The arm C is preferably off-set from the head A, so that its lateral edge E is tangential to the outer circle of the annular head, as indicated in Fig. 1. The inner edge of F of the arm C preferably extends radially or lies substantially in a diametral plane, passing through the center of the annular head A.

The punched or blanked out terminal is preferably provided with two clip lugs G, extending laterally from the tangential edge E and adapted to be bent or folded over, either upward and over toward the inner edge F of the terminal as indicated in Fig. 2, or downward and over toward the edge F, as indicated in Fig. 3. In this way, the pair of clip lugs G is adapted for securing the end

of the conductor H, which will be held thereunder, as shown in Fig. 4, the terminals being formed and attached as rights and lefts. The conductor holding clips G are provided with a space K therebetween to facilitate soldering the terminal to the end of the conductor. Preferably the clip lugs G are spaced well away from the annular head A, so as to provide ample clearance for the application of a socket wrench or other means for tightening the binding post clamping nut. Obviously, the sheet metal from which the terminals are blanked or punched should be of relatively heavy gage, the thickness, of course, depending upon the size of the conductors to which they are to be attached, so as to provide for ample strength and the desired conductivity.

As previously pointed out, the advantage of our improved terminal is that a plurality of conductors may be readily secured to the same binding post by alternately mounting thereon right and left terminals, as indicated in Fig. 4. In this way, it will be seen that the terminals stack so that the conductors or the clips securing the terminals to the conductors will not interfere and the conductors may be closely packed, that is, substantially in parallel relation, which cannot be satisfactorily done with the usual form of terminal.

In this form of terminal, where the terminal head is securely clamped to the binding post, it frequently happens that, from excessive handling of the wire conductors, the latter may break off at the terminal, for the protecting and insulating covering is of necessity, removed in order to attach the conductor to the terminal. In order to prevent this, as far as possible, and protect the joint between the terminal and the conductor, a sleeve L of thin sheet metal is preferably lined with insulating material M and rolled around and clamped over the joint, substantially as indicated in Fig. 5. Fig. 6 represents the construction of this protecting sleeve, with the insulating pad or member shown with one corner turned back.

From the above, it will be understood that when the terminal blanks are punched out of suitable sheet metal in the size desired, the conductor retaining clips G, which extend from the tangential edge, may be bent in an easy curve back over the flat surface of the metal toward the inner edge F, which, as previously pointed out, is parallel to the edge E and substantially in a plane passing

through the center of the opening B. The lugs or clips may be bent either as shown in Fig. 2 or as in Fig. 3, so as to throw the conductor to the right or left of a diametral plane, as indicated in Fig. 4, where the terminals are shown assembled on the stud X of the binding post. Obviously, by arranging the terminals and conductors in this manner, two, three or four or any desired number of terminals may be assembled on the binding post stud, with the conductors in close proximity, without any interference between the joints or connections between the respective conductors and terminals. As a further protection for the joint, the latter may be enclosed, as indicated in Fig. 5, by a metal sleeve lined with insulating material and in this manner the joint is fully protected and insulated.

It will be understood that the form of terminal shown represents the preferred form, but we do not wish to be limited to the specific details of construction nor to the method of assembly for various modifications in the arrangement and details thereof may be made without departing from the spirit and scope of the invention.

We claim:—

1. A terminal for conductors, comprising a washer-like head, an arm extending therefrom, said arm being off-center, so that its outer edge is substantially tangential to said washer head, and conductor holding clip lugs extending from said tangential edge and adapted to be bent over the conductor on one side of the arm to form rights and lefts.

2. A terminal for conductors, comprising a flat sheet metal member formed with an annular washer-like head, an arm extending therefrom, the outer edge of which is tangential with the outer edge of said annular head, while the inner edge of said arm is substantially radial and parallel with said tangential edge, and conductors securing clips extending from said tangential edge and adapted to be bent over toward the radial edge for securing the terminal to the conductors.

3. The terminal for conductors as claimed in claim 2, in which said conductor securing clips are adapted to be turned over on one side of said arm with the head to the right and on the other side with the head to the left, thereby facilitating the formation of rights and lefts.

JOHN C. SHAW.
ROBERT D. SHAW.