

(No Model.)

S. F. SHELBOURNE.

CONDUIT AND ATTACHMENT FOR ELECTRIC CONDUCTORS.

No. 297,183.

Patented Apr. 22, 1884.

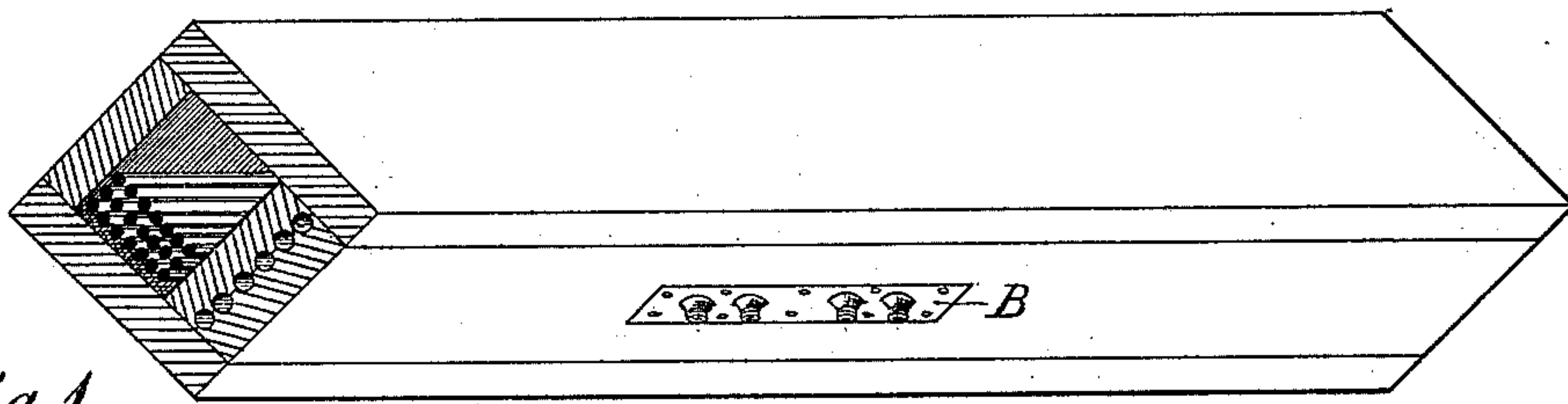


Fig. 1.

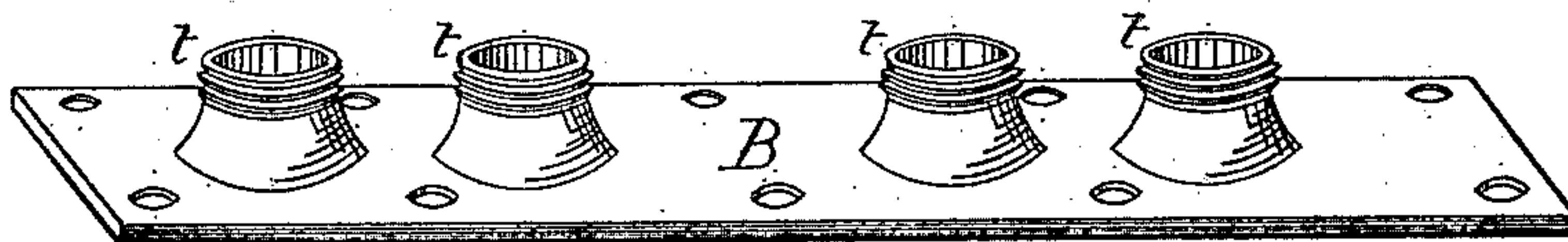


Fig. 2.

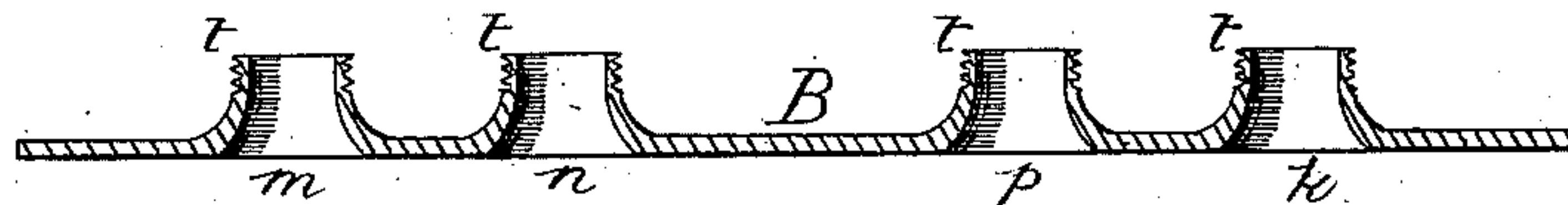


Fig. 3.

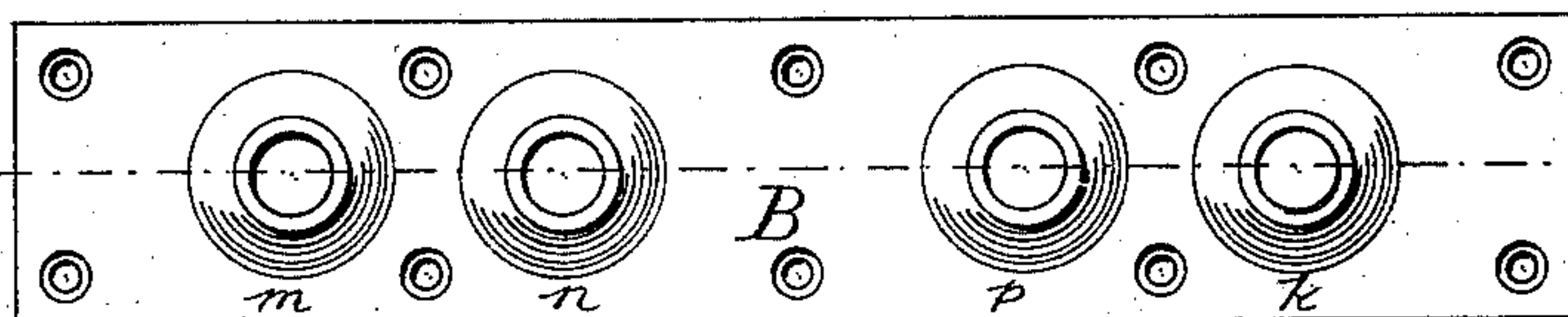


Fig. 4.

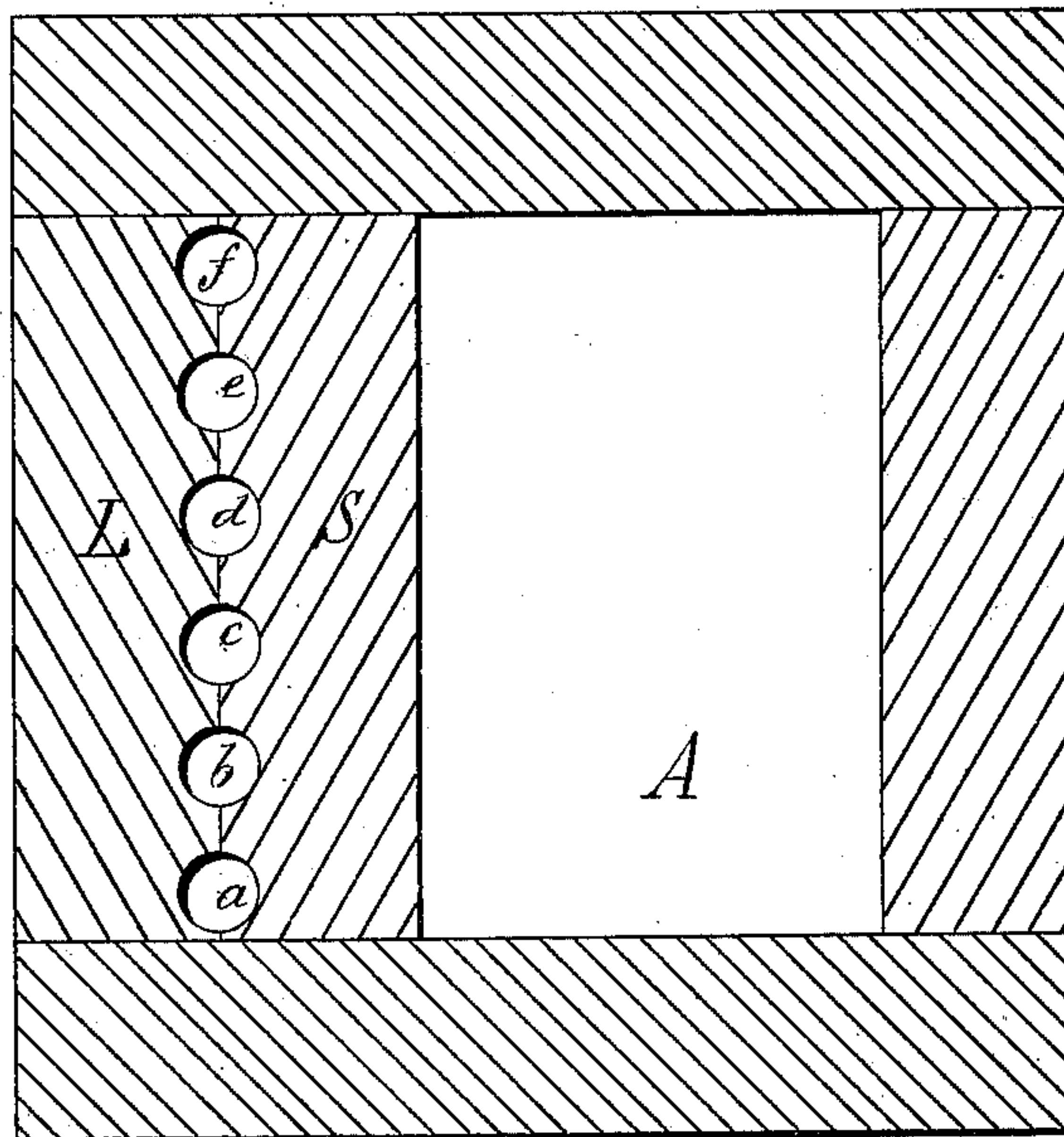


Fig. 5.

WITNESSES

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## CONDUIT AND ATTACHMENT FOR ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 297,183, dated April 22, 1884.

Application filed December 11, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, SIDNEY F. SHELBOURNE, a citizen of the United States, residing in the city of New York and State of New York, have invented certain new and useful Improvements in Conduits and Attachments for Distributing Electric Conductors for Purposes of Illumination, of which the following is a clear and exact description.

In the progress of electric illumination by the use of conductors placed under ground, it has hitherto been customary to lead the conductors through iron pipes to the points adjacent to the lamps erected or suspended above the surface, and sometimes, where wooden or plastic conduits have been used, the entire conduit has been designed to carry all the conductors together in a group or body, and without any special provision to distinguish or separate and distribute them, except at the ends of the pipes or other channels in which they are inclosed and protected. When, also, the conduits are made of iron, it is difficult and quite impracticable to cut into or divide the conduit and make proper connections and insulations by which the conductors may be taken into buildings along the line of the conduits as occasion may require, or calls be made for illumination in stores and residences.

The present invention is designed to avoid the difficulties just mentioned; and it consists in the provision of a main channel or channels within a conduit made of wood, cement, or equivalent bituminous plastic material, in combination with special channels for single insulated conductors arranged above each other in and near the sides of the conduits, through which they may readily be distinguished, and taken at pleasure, as hereinafter described, into adjacent buildings; also, in combination with such special channels, a metal plate with lateral openings and threaded nipples corresponding to the size and number of insulated conductors desired to be led from the conduits for local service.

Referring to the drawings herewith, Figure 1 represents in perspective such a conduit made of wood, and provided on the side of its special channels with the metal attachment for leading to service the local conductors. This at-

tachment is further shown in perspective in Fig. 2, while Figs. 3 and 4 are respectively a longitudinal section and plan view of the same. In Fig. 5 is seen a vertical cross-section of the combined conduits without the attachment shown in the other figures.

I prefer to make the conduit of wood which has been properly treated by withdrawing its sap and then impregnated with a preserving material, or of wood prepared by a recent process, so that its albuminous and perishable matters are preserved and changed under the influence of combined pressure and heat. It is obvious, however, that a preparation of wood or straw pulp and bitumen or clay or cement may be used in its construction; and also, if made of wood, and it is desirable that it should be air and water tight, that its joints may be luted with asphaltic cement, or the entire conduit may be cemented in a body, or with a coating of such material.

The conduit, as shown in section in Fig. 5, may be eight inches square, (more or less,) on the outside, and the pieces of which it is composed an inch and one-half thick. The space or channel for the through-wires is shown at A in this figure. These wires are also delineated in Fig. 1. The conduit on one or both sides is made of two pieces of identical shape and dimensions, as shown at L and S, Fig. 5. These pieces have half-round grooves formed in them by machinery, and being reversed and brought face to face, the opposite grooves form, as at a, b, c, d, e, and f in the figure, round channels or conduits for the single insulated conductors. These side channels are intended for the local conductors—i. e., those distributed therein to be taken out through the side of the conduit into buildings at some local position between the test and connection chambers located at the corners of the streets. It will be observed that the exact position in vertical measurement and lateral distance of each one of these conductors is known from the exterior. To make the local diversion, therefore, a longitudinal slot sufficient in width to cover one or two wires, as the case may be, is made through the piece L, the wire or wires are cut in the middle of the slot, and the ends are taken out through the openings



*m n p k* of the plate B. This plate is then seated over the slot, with a water-proof strip or packing beneath it, and fastened to the piece L in any convenient manner. The nipples through which these openings in the plate B are made have screw-threads on their outer edges. The electric-wire connection having been made and insulated outside of these with the branch wires into the building or under the sidewalk, and a length of small tubing having been previously slipped over each of the branch wires, these lengths of tubing are screwed fast to the nipples by means of the usual couplings or thimbles. A water-tight diversion of the conductors into the adjacent building has thus been made in a durable and very inexpensive manner.

It should be observed that for arc-lights the plate B requires but two openings, which may be *m* and *k*, while for lighting by incandescence, where connection requires to be made with the home division of the circuit for the portion of the current diverted, the four openings, as shown in the figures of the drawings, will be necessary. The plate B is shown in position in the perspective of Fig. 1.

The conductors employed under ground require to be effectively insulated, so that their size, when thus insulated, may be as much as five-eighths of an inch or more in diameter. It is preferable, also, for underground use, that these conductors should have a light tubular jacket of lead inclosing their insulations. The channels or single conduits *a b c*, &c., are therefore made three-quarters of an inch or more in diameter.

The test-boxes, located at the street-corners at convenient distances apart, furnish the means of distributing into the local channels *a b c*, &c., as many conductors from the group of through-wires in A as may be required for diversion into buildings until the succeeding test-box is reached. It is a further advantage of the local single channels that a service may be made or discontinued at any building and

its wires changed or removed without disturbing or abrading the wires of any contiguous service; and, moreover, the conduit being once placed, there is no expense for copper or insulation until each particular service calls for its own specific requirement of copper conductors and their connections.

What is claimed as new is—

1. An underground conduit for electric conductors having grooved pieces in the sides thereof, forming, by the matching together of said grooved pieces face to face, a vertical line of passages for single conductors, said conduit having in addition thereto a central passage or passages to contain groups or assemblages of conductors, substantially as described.

2. A conduit for electrical purposes, constructed with a central passage or passages for through-wires and side passages for single local wires, with elongated lateral openings reaching said side passages, and a plate or cover for each of such openings, having itself two or more localized openings, as set forth.

3. A subterranean electric conduit having elongated lateral openings to the longitudinal passages within the conduit, in combination with a plate or cover for each of such openings, having two or more outlets through it for the ends of the conductors when divided and diverted, such elongated lateral openings being made longitudinally upon the conduit, substantially as and for the purpose set forth.

4. The electric conduit having main passage A, side passages, *a, b, c, d, e*, and *f*, and in connection with such side passages a metal plate or attachment, B, with nipples surrounding the openings *m, n, p*, and *k*, and screw-threads *t t* on such nipples, substantially as described.

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Witnesses:

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