

R. McK. THOMAS.
CONDUIT COUPLING.
APPLICATION FILED MAY 22, 1908.

916,937.

Patented Mar. 30, 1909.

Fig. 1

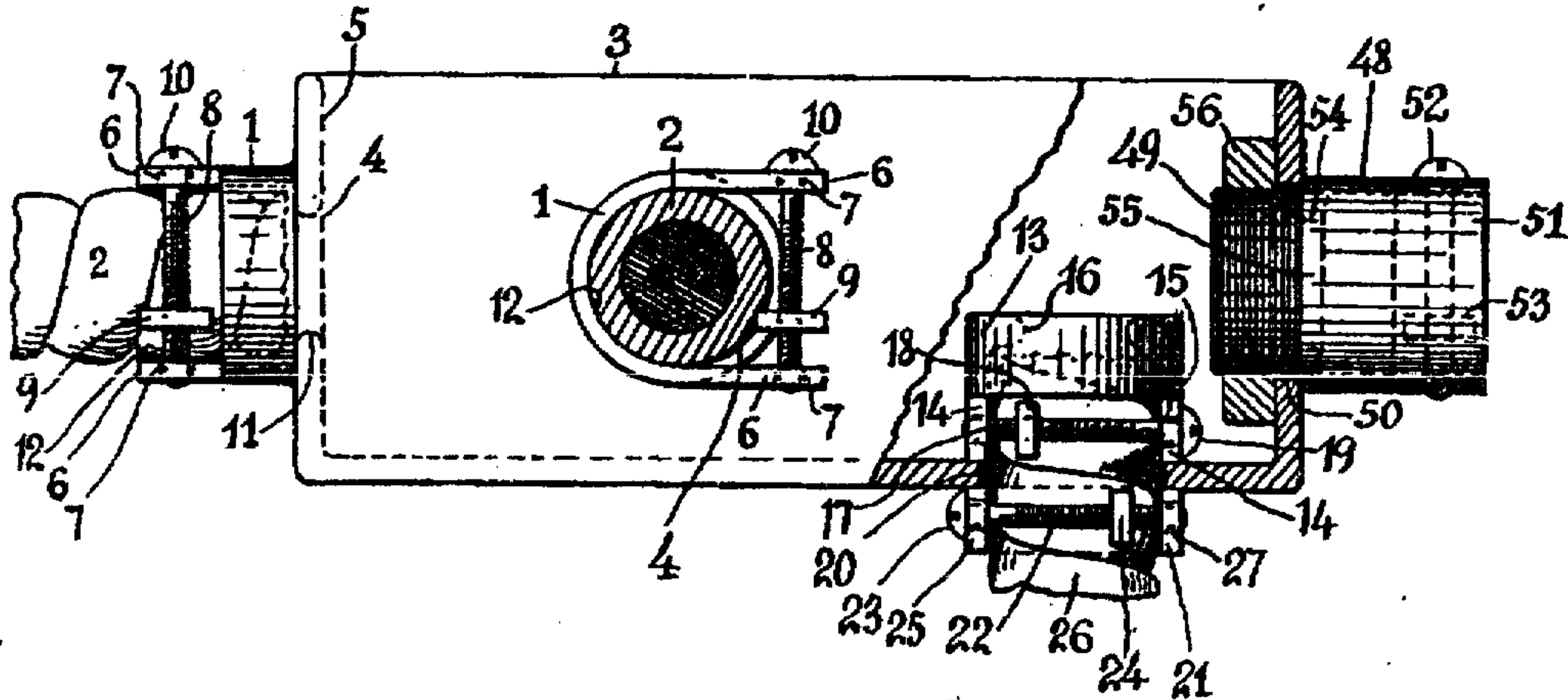


Fig. 2

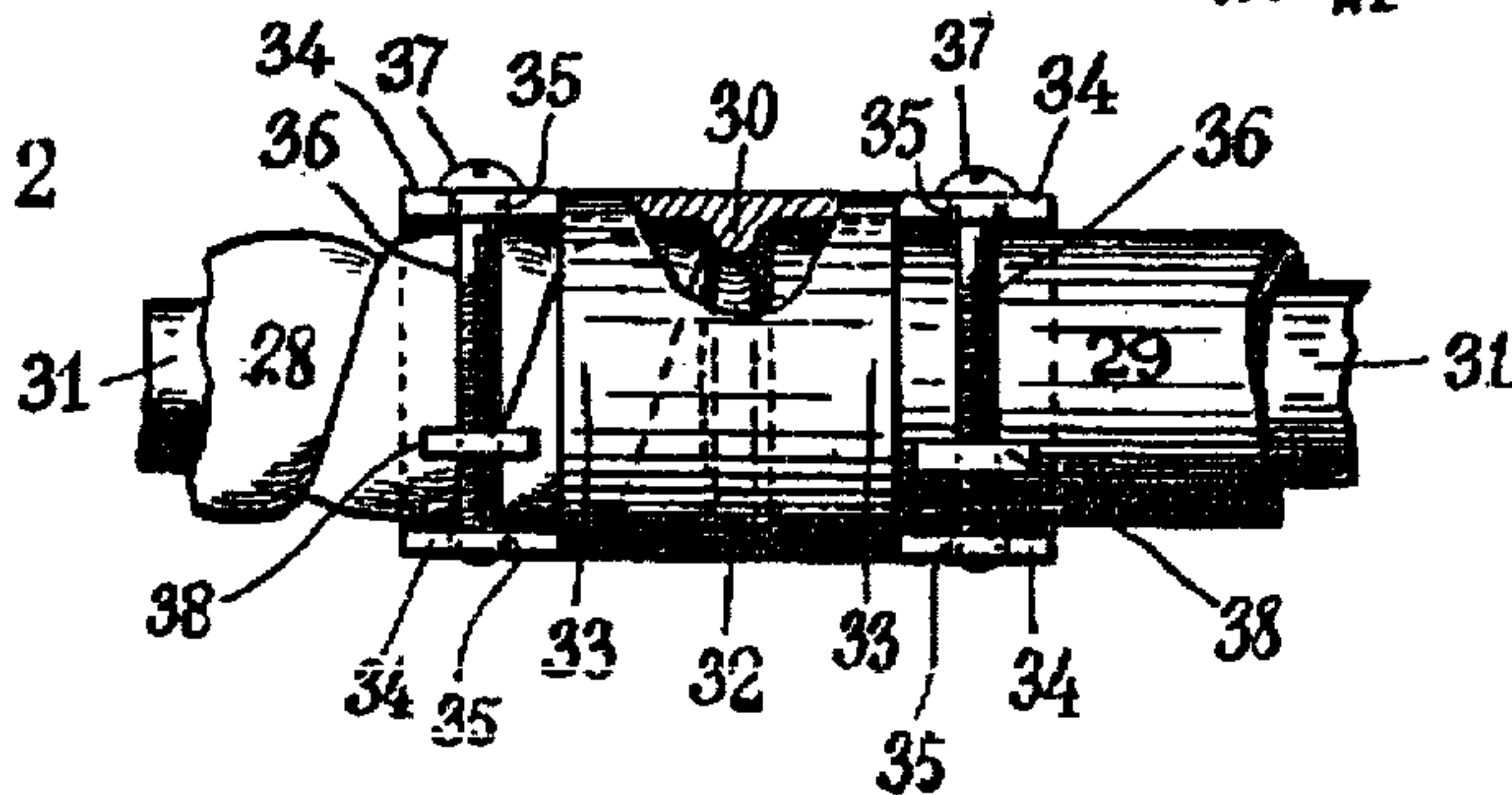


Fig. 3

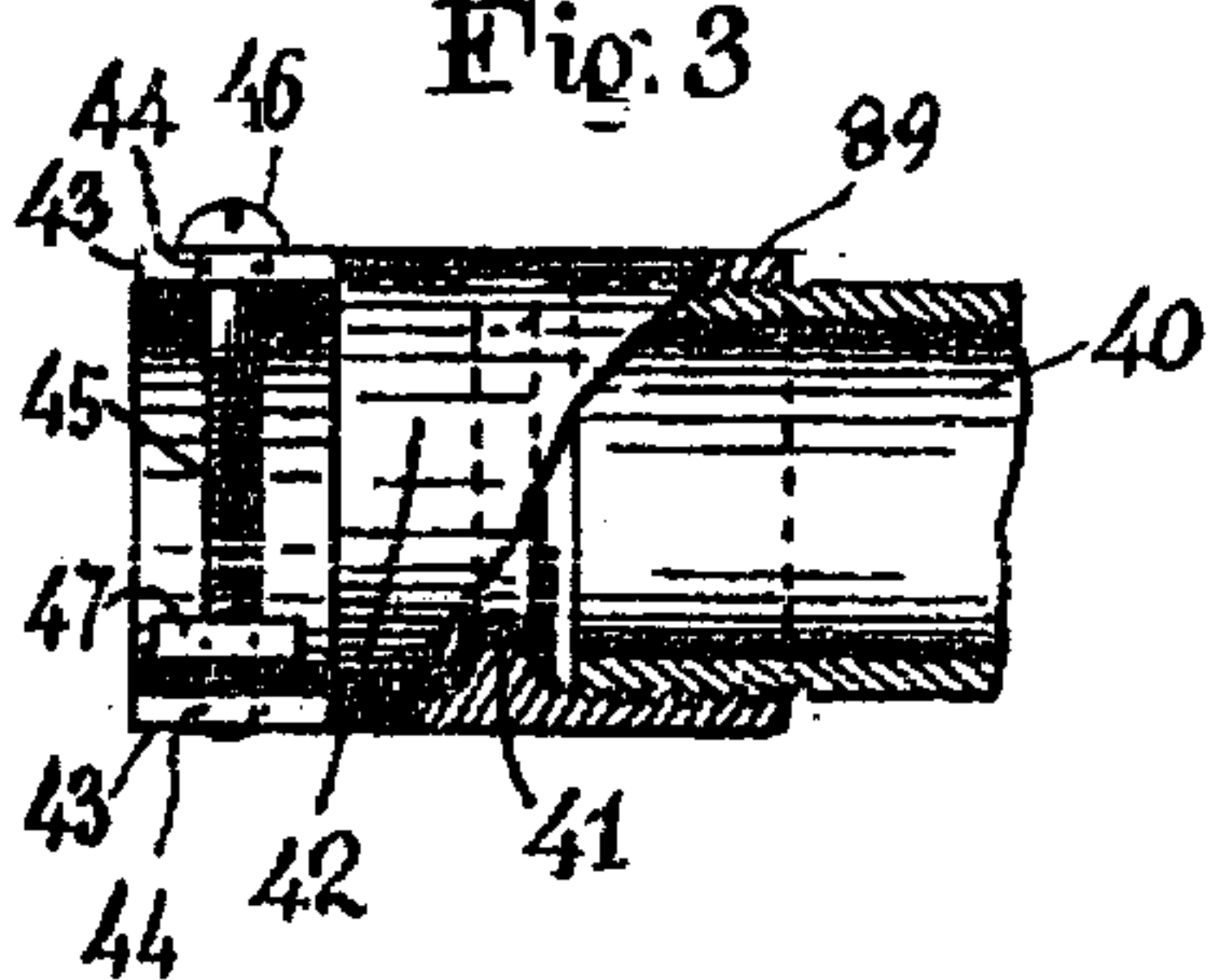


Fig. 4

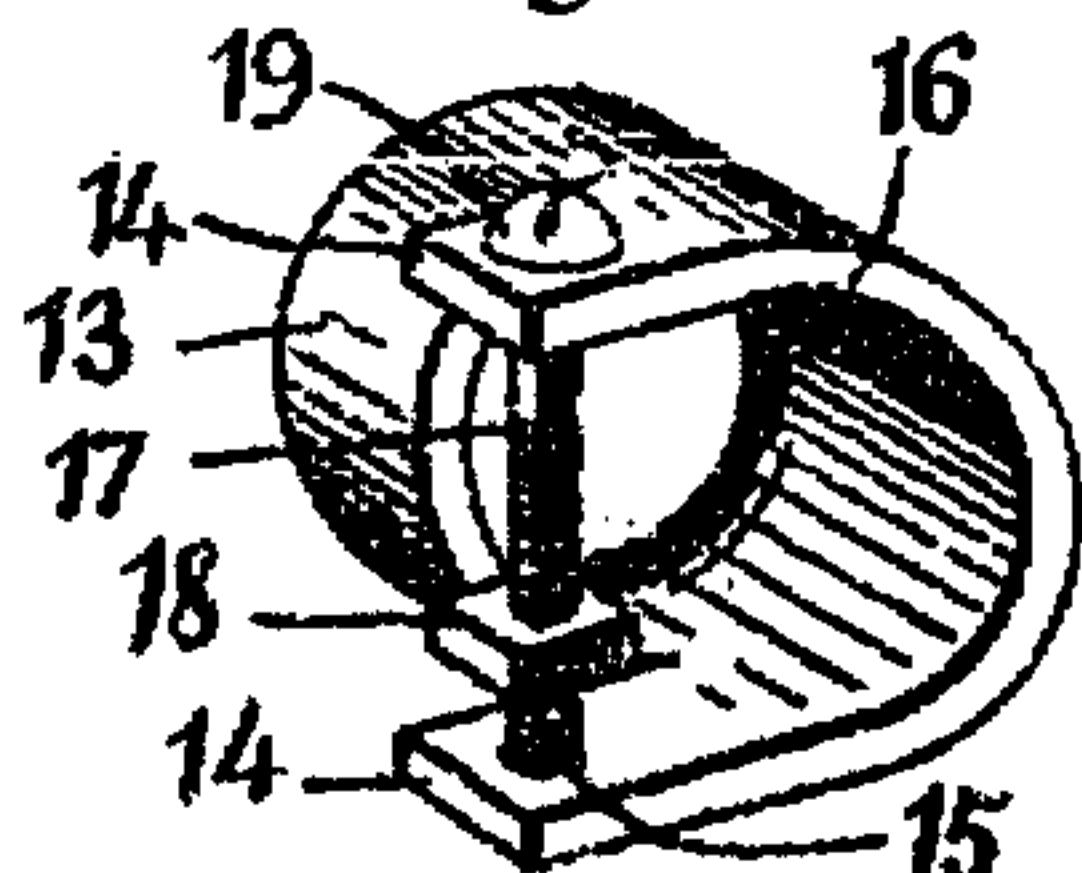
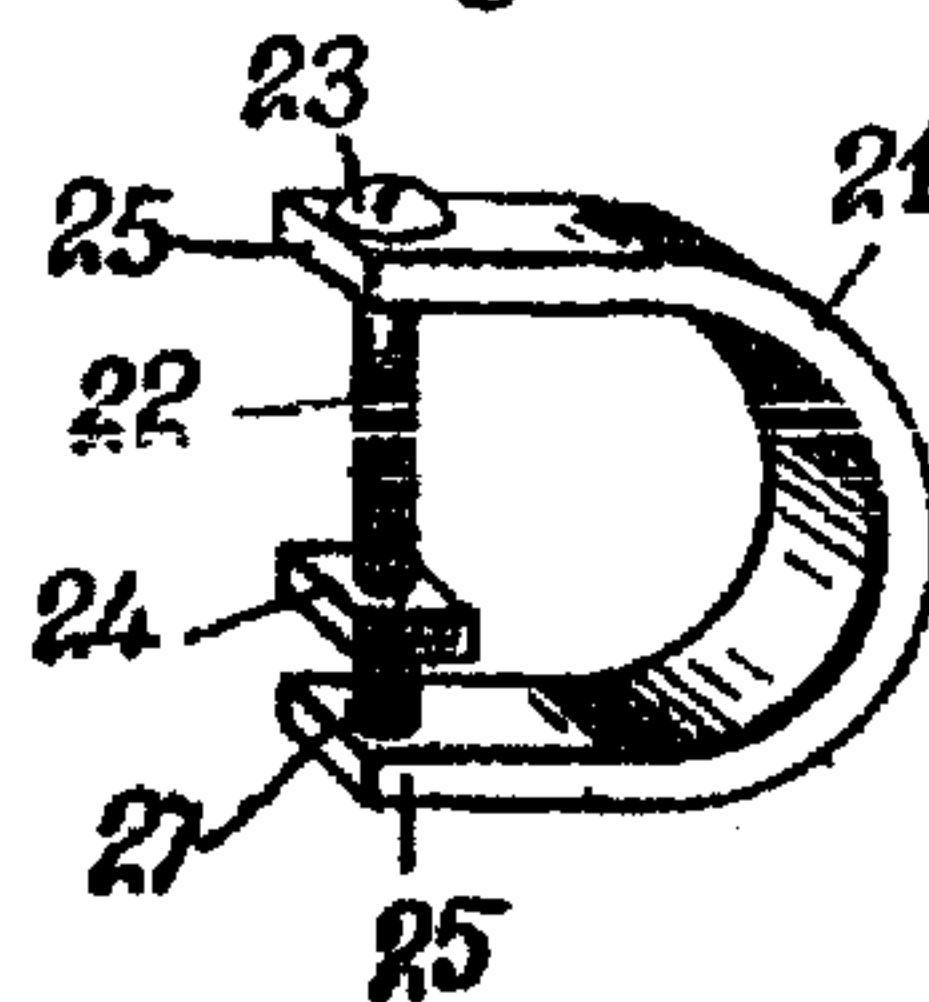


Fig. 5



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UNITED STATES PATENT OFFICE.

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CONDUIT-COUPLING.

No. 916,937.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed May 22, 1908. Serial No. 434,279.

To all whom it may concern:

Be it known that I, ROBERT McKEAN THOMAS, of Elizabeth, New Jersey, have invented certain Improvements in Electrical-
5 Conduit Couplers, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings designating like parts.

This invention relates to electrical conduit,
10 and is of special utility when used to couple together the abutting ends of the rigid or flexible metallic sheaths used to contain and protect from injury the electrical conductors constituting interior systems for electric
15 lighting, and also to couple such sheaths to the outlet boxes or similar electrical conduit members of such systems, although I contemplate the use of my invention in any field to which it is adapted by the nature of my
20 improvements.

By the term "sheath" I designate the protective armor whether the same has a separate identity or is formed as a unitary structure with the conductor, as in the case of the
25 "armored conductors" well known in the art.

An important object of my invention is to provide a powerful device to engage the end of such a sheath, or any suitable portion of it,
30 and retain it in adjusted position without the necessity for the expensive preliminary operation of threading the periphery of the sheath, or of threading apertures in the coupler itself to receive a threaded end of a
35 sheath or to receive the binding screw which forms the retaining means, the nature of the coupling engagement in my improved device being such as to insure proper electrical connection between the several conduit mem-
40 bers coupled.

Another object of my invention is to render available for use as such retaining and engaging member of the coupler a device commonly known as a "stove bolt", comprising a common headed screw and nut
45 which can be made at very low expense, is familiar in its mode of operation to the unskilled workman, and is reliable in operation wherever installed.

The various features of my invention will be illustrated and described fully in the accompanying drawings and specifications and pointed out in the claims.

In the drawings, Figure 1 is a view in side
55 elevation of a well known form of outlet box

in the construction of which my improvements have been embodied, parts being shown in section; Fig. 2 is a view in side elevation of a coupler for the abutting ends of a plurality of sheaths; Figs. 3 to 5 are similar
60 views of modified forms of couplers to be more fully described hereinafter.

In the embodiment of my invention selected for illustration and description to enable ready and complete understanding of
65 my improvements, the part designated by the reference numeral 1 is a metal strap or collar member, one of which is shown in side elevation at the left of Fig. 1, and another in end elevation at the center of Fig. 1, arranged to receive and surround partially a
70 sheath 2, preferably near the end of the latter, the sheath in this instance consisting of a section of flexible metallic conduit formed of spirally wound strips, it being desired to
75 couple this sheath to an outlet box 3 so that conductors can be led directly from the sheath into the box through an aperture 4 in the side wall 5 of the box, the collar 1, in the instance illustrated, being cast integrally
80 with the material of the side wall 5.

In accordance with my invention, in the preferred embodiment illustrated, I have left a gap in the strap 1 and extended the free ends or lugs 6 substantially parallel for a
85 short distance, providing each end with an aperture 7, which may be a plain, unthreaded hole, and these holes serve to receive the binding or retaining device, comprising in the instance illustrated a common and well
90 known form of "stove bolt" 8, with a nut 9 which lies between the lugs 6, while the head 10 of the bolt lies outside of one of the lugs and affords ready means for operation, the nut and head serving also to prevent acci-
95 dental displacement of the bolt from the strap during shipment and prior to installation of the sheath.

When constructed as above described, and after the sheath-end has been placed within
100 the strap with its mouth as near the aperture 4 as convenient, preferably in contact with a rounded shoulder 11 which I prefer to form with the strap, and the bolt resting loosely across the gap, in the holes 7, the nut 9 being
105 in the space between the periphery of the sheath and the lug farthest from the head 10, the latter may be engaged by a screw driver and turned to draw the nut 9 into engagement with the periphery of the sheath,
110

wedging the nut between the sheath and the bolt, the strap serving at its portion 12 as a seat for the sheath, while the bolt resists the thrust of the nut, being held in place by the lugs 6. The engagement of the nut with the sheath serves to prevent the bolt 8 from moving longitudinally, and therefore it cannot escape from the plain hole in the lug farthest from the head of the screw. The bite of the nut into the periphery of the sheath forms a very strong mechanical connection, and a proper electrical connection between the sheath, the nut, the bolt, the strap and the electrical outlet box.

In Fig. 1 at 13, and in Fig. 4, I have shown a collar or strap formed separately, and provided with lugs 14 having apertures 15, a rounded protective shoulder 16, and a bolt 17 with nut 18 and operating head 19, these parts all being similar in construction and operation to the parts similarly illustrated and already described, the device of this modified form however being capable of use as a nipple or bushing independently of its connection with an outlet box or similar electrical conduit member, as shown in Fig. 4. To afford means for readily connecting to a box or plate such a separate bushing or nipple, and the sheath on which it is mounted, I have shown the sheath-end as extended through the aperture 20 in the box wall and retained there by engagement of the strap with the box wall adjacent the aperture. If desired, a retaining collar 21 with a binding screw 22 may be provided outside the box wall, this collar being similar in construction and operation to the collars already described except that the protective shoulder is omitted, the term "collar" being used generically to designate a suitable form of attaching member to serve as a support for the bolt with its nut arranged to traverse the path of the article to which the attachment is to be secured, whether or not such member corresponds in specific detail to that illustrated. In this instance, when the head 23 of the bolt or screw 22 is rotated it draws the nut 24 toward the lug 25 and clamps the strap or collar upon the periphery of the sheath 26, the bolt rotating in the plain hole 27.

In Fig. 2 I have shown a coupler device suitable for joining the abutting ends of sheaths 28 and 29, the former being a flexible armored conductor, while the latter is a rigid unthreaded armor tube, the coupler preferably having a medial interior rounded shoulder 30 serving as a common abutment for the sheath-ends and protecting the conductors 31 from abrasion, as the shoulder preferably is less in interior diameter than the sheaths. The reference numeral 32 designates the body or shank of the coupler, which is provided in accordance with my invention with collars or straps 33 near each end, these

straps having preferably lugs 34 with plain holes 35 in which is mounted at each end a bolt 36 with head 37 and provided with a nut 38, these parts operating similarly to those described with reference to similarly constructed parts illustrated in Fig. 1.

Fig. 3 shows a coupling device having at one end a socket or interiorly threaded mouth 39 to receive the threaded end of a rigid armor tube 40, and preferably having a rounded inner shoulder or abutment 41, while at the other end the structure of the coupler includes a collar or strap 42 with lugs 43 having holes 44 in which plays a bolt 45 with head 46 and nut 47, these parts operating to bind together the coupler and a sheath such as that shown in Fig. 1, or any desired form of sheath which it may be desired to connect to the tube 40 by means of the coupler.

At the right hand side of Fig. 1, I have shown a form of coupling commonly known as a "box connector," comprising in the instance illustrated a body portion 48 having a reduced neck 49 to pass a wall aperture 50 in the box and having a strap or collar portion 51 provided with a bolt 52 and nut 53, operating as already described with reference to the similar parts illustrated elsewhere in Fig. 1. The reduced portion of the connector preferably terminates rearwardly in an interior rounded protective shoulder 54, to prevent abrasion of the conductors, and an exterior shoulder 55, to limit the entrance of the connector into the box, its neck preferably being threaded exteriorly to receive a retaining nut 56.

In Fig. 4 I have shown in perspective the coupler illustrated at the bottom of Fig. 1, the outlet box and sheath being omitted, and in Fig. 5 I have shown in perspective the lock collar also illustrated at the bottom of Fig. 1, these figures indicating the general utility as an attachment of the invention herein disclosed.

Having described my invention thus fully and suitable means for carrying the same into effect I wish it understood that I do not limit myself to any specific material, nor to the specific construction and arrangement of parts herein illustrated and described, nor in general otherwise than as set forth in the claims read in connection with this specification.

Specific claims upon the form of my invention illustrated in Fig. 3, and that illustrated at the right hand side of Fig. 1, are contained in my application Serial No. 453,838, which has been divided from this present application.

What I claim and desire to secure by Letters Patent is:—

1. An attachment of the class described; comprising an actuating member; a binding member thereon; and means to support said

actuating member on both sides of said binding member adjacent the path of the article with which attachment is to be effected, to permit traversal by said binding member upon, and by means of, operation of said actuating member, to move said binding member into binding engagement with said article, to couple together said article and attachment; substantially as described.

10 2. An attachment of the class described; comprising a screw; a nut thereon; and means to support said screw on both sides of said nut adjacent the path of the article with which attachment is to be effected, to permit
15 traversal by said nut upon, and by means of, rotation of said screw, to move said nut into binding engagement with said article, to couple together said article and attachment; substantially as described.

20 3. An attachment of the class described; comprising an attaching portion to receive the end of a sheath; an actuating member provided with a binding member; and means to support said actuating member on
25 both sides of said binding member with said binding member in position to be moved by said actuating member into binding engagement with said sheath, to couple together said sheath and attachment; substantially as
30 described.

4. An attachment of the class described; comprising an attaching portion to receive the end of a sheath; an actuating member provided with a binding member; and means
35 to support said actuating member on both sides of said binding member with said binding member in position to be moved by said actuating member transversely across, and into binding engagement with said sheath,
40 to couple together said sheath and attachment; substantially as described.

5. An attachment of the class described; comprising an attaching portion to receive the end of a sheath; an actuating member provided with a binding member; and means to support said actuating member on
45 both sides of said binding member with said binding member in position to be moved by said actuating member into binding engagement with said sheath to couple together said sheath and attachment; and means to connect said attaching portion
50 with another electrical conduit member; substantially as described.

55 6. An attachment of the class described; comprising an attaching portion to receive the end of a sheath; an actuating member provided with a binding member; and means to support said actuating member on both
60 sides of said binding member with said binding member in position to be moved by said

actuating member into binding engagement with said sheath, to couple together said sheath and attachment; said attaching portion having a rounded protective shoulder
65 adjacent the mouth of said sheath, and of less diameter than the bore thereof; substantially as described.

7. An attachment of the class described; comprising an attaching portion to receive
70 the ends of a plurality of sheaths; a plurality of actuating members each provided with a binding member; and means to support said actuating members respectively on both sides of their several binding members with each
75 of said binding members in position to be moved by its actuating member into binding engagement with one of said sheaths, to couple said sheaths to said attachment and to each other; substantially as described. 80

8. A coupler of the class described; comprising a strap member arranged to surround partially and engage a conduit member and having opposed apertures in its ends; a screw
85 in said apertures and bridging the gap between said ends; and a nut upon said screw and arranged to be moved, by rotation thereof, into binding engagement with said conduit to secure said coupler and conduit together, substantially as described. 90

9. A binding device of the class described comprising a collar or strap having a gap, a screw bolt engaging said collar on each side of the gap and supported by said strap across
95 said gap and a nut mounted on said screw bolt in said gap, and actuated by rotation of said screw bolt to traverse said gap, substantially in the manner and for the purpose set forth.

10. A binding device of the class described; comprising a strap or collar member having a plurality of apertured lugs; a screw bolt mounted loosely in said lug apertures; and a nut on said bolt intermediate said lugs,
105 said bolt having an operating head outside of one of said lugs; substantially as described.

11. An attachment of the class described; comprising a U-shaped collar provided with apertures near the ends of its arms, and a screw supported loosely in said apertures
110 and provided with a nut between said arms and having an actuating head outside one arm; said parts being arranged to operate substantially in the manner and for the purpose set forth. 115

Signed at New York in the county and State of New York this eleventh day of May, 1908.

ROB. McKEAN THOMAS.

Witnesses:

ALEXANDER C. PROUDFIT,
ADNAH McMURTRIE.