

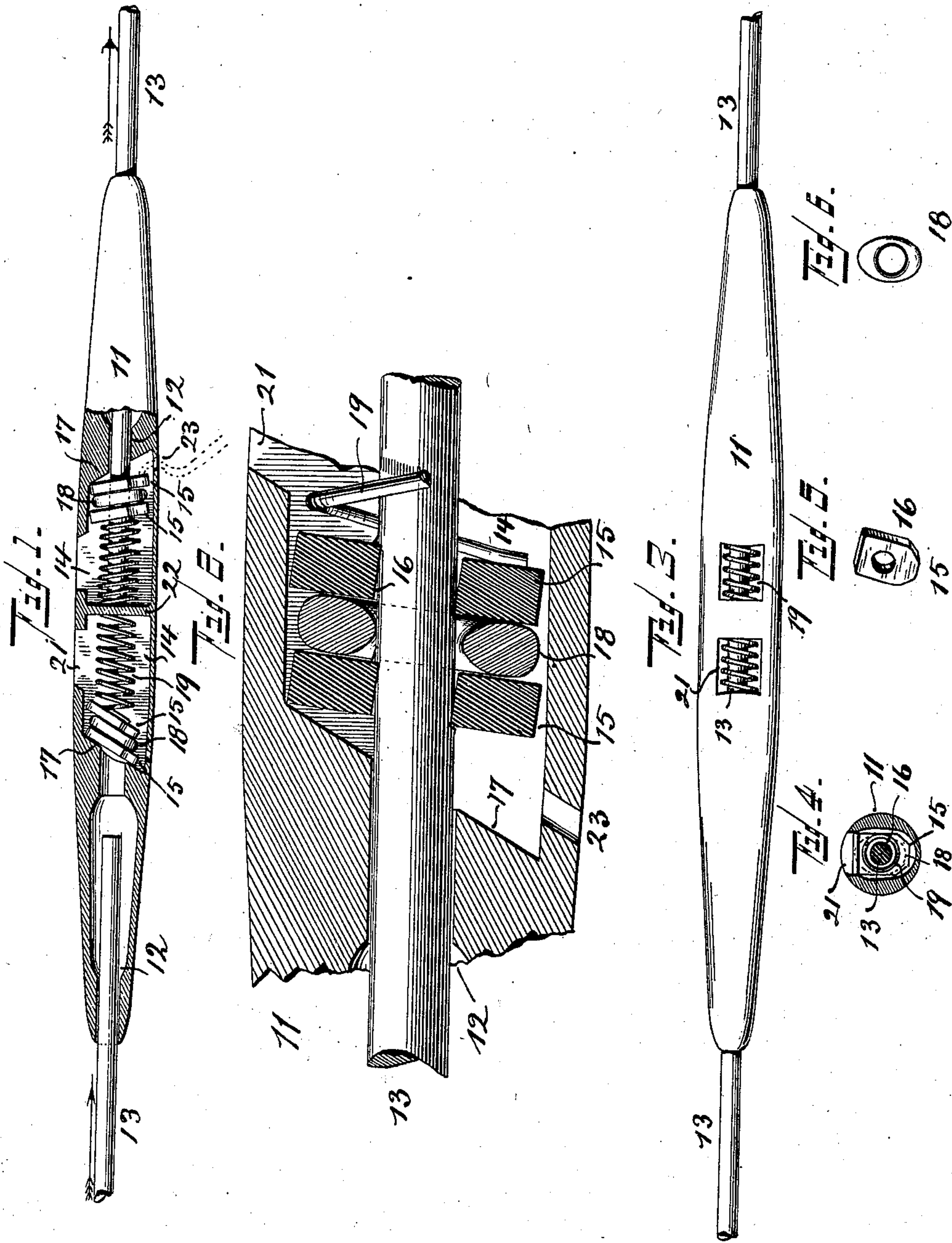
No. 698,127.

Patented Apr. 22, 1902.

G. L. MITCHELL.
WIRE COUPLING.

(Application filed June 12, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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WIRE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 698,127, dated April 22, 1902.

Application filed June 12, 1901. Serial No. 64,234. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. MITCHELL, a citizen of the United States, and a resident of Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Wire-Couplings; and I do declare the following to be a clear, full, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same, attention being called to the accompanying drawings, with the reference-numerals marked thereon, which form also a part of this specification.

This invention relates to improvements in
15 wire-couplings, such as illustrated in Patent No. 649,542, and of which patent I am part owner. The coupling described in said patent permits two wire ends to be connected in a rapid manner and without the aid of any
20 tools, for which reason the device is eminently well adapted to serve as a coupling to reestablish connection electrically, as well as mechanically, between the fractured ends of broken trolley-wires, such as are used with
25 electric-railway systems. This present invention intends to add improvements whereby the holding capacity of the device after engagement is increased to add greater security.

30 In the following specification, and particularly pointed out in the claims following, is found a full description of the invention, together with its manner of use, parts, and construction, which latter is also illustrated in
35 the accompanying drawings, in which—

Figure 1 is a longitudinal section of the device, showing one wire end in a position to about enter into engagement with the coupling, while the other end is shown with its
40 connection completed. Fig. 2 is an enlarged portion of the preceding figure and shows a wire end engaged. Fig. 3 is a top view of the device as it appears in Fig. 1 and after the connection is completed. Fig. 4 is a
45 cross-section of the coupling. Fig. 5 shows one of the locking-plates used for holding the wire. Fig. 6 is one of the separating-washers.

11 is a cylindrical sleeve of proper dimensions and suitable metal—like brass, for instance—and tapering toward opposite ends

to a thickness approaching the diameter of the wires to be connected. It has two longitudinal bores 12 entering inwardly from each end and centrally aligned. The size of these bores at their inner and outer ends is such as
55 to permit wires 13, which they are to receive, to enter freely. Between its ends each bore is enlarged, as shown, simply to lighten the coupling. Between the inner ends of each of these bores and communicating with them
60 there is a chamber 14, containing the means intended to engage and hold the wire ends which the coupling is to connect. These devices consist of locking-plates 15, each having a perforation 16 of a size to permit the
65 wire end to freely pass through. They are of a size to freely fit into chamber 14, against the outer end walls 17 of which they are intended to rest. The size of their openings 16
70 is, however, so limited that the locking-plate nearest end wall 17 is prevented from coming flatwise fully in contact with such wall without first impinging against the inserted wire
75 end, when by reason of frictional contact the outwardly-pulling wire tends to and does drag such locking-plate toward the end wall, which forms a shoulder, against which it comes to a stop. This motion, which tends to cant or
80 tilt the locking-plate so that one edge or corner of it only comes in contact with wall 17, causes the edges around perforations 16, each at a point at one side in one edge diagonally
85 opposite to a point on the other side of the other edge, to impinge against the wire between, as shown most plainly in Fig. 2. This impingement is sufficient to hold the wire
90 ends to the coupling for the purpose of connecting them. In order to increase this engagement, however, for the purpose of adding greater security to the connection, I propose to use a number of these locking-plates
95 15 on each wire end, two being here shown, so that in case the hold of one on the wire is not sufficient or incomplete such hold is augmented by the other plate or plates. Each one of these latter must be capable, however, of independent action, for which purpose I interpose separating-plates or spacing-washers 18, as shown, which prevent one
100 plate from bearing directly against the other

and also separate the points of their engagement with the wire. These spacing-washers are also perforated to permit the wire to pass through; but the perforation or bore is enlarged and the metal around the edge on both sides is removed to reduce the surface thereat sufficiently to prevent any engaging contact with the wire which would interfere with the self-adjustment of the locking-plates. The manipulation is simple and quickly performed, the wire ends being merely pushed into the bores of the coupling, as shown in Fig. 1, left side, and let go after fully introduced, as shown on right side of said figure, when engagement will at once take place, it being presumed, of course, that the locking-plates and separating-washers are all in proper position. This proper position is with the outermost locking-plate resting against the end or outer wall 17 of each chamber 14 and with the inner locking-plates resting each against the separating-washer ahead of it. For such purpose I use, preferably, a spring 19, which holds the internal parts in proper position against the outer end wall until the engagement is completed, after which the spring has no further function. These springs, as well as all other internal parts, are introduced through openings 21. It is preferable to have a stop limiting the extent to which a wire end may be introduced, which stop may be obtained by a partition 22.

If necessary or desirable, the coupling may be disconnected by using a hooked implement to release the locking-plates, which implement is introduced through an opening 23, as shown in dotted lines in Fig. 1, and then manipulated in a manner to force the plates back to a position which brings them about square to the wire, whereby the same is released.

Having described my invention, I claim as new—

1. A wire-coupling consisting of a sleeve having centrally-alined bores at each end and each intended to receive a wire, a chamber at the inner end of each bore, the end wall of which forms a shoulder or abutment around such inner end, a plurality of locking-plates in each chamber and spacing-washers to separate them to permit each of the former to act independently, all being perforated and alined to permit the projecting end of the inserted wire to enter and pass through them for engagement which latter is with the locking-plates only, the surface of the enlarged bore of the washers being reduced to prevent any engagement thereat.

2. A wire-coupling consisting of a sleeve having centrally-alined bores at each end and each intended to receive a wire, a chamber at the inner end of each bore, the end wall of which forms a shoulder or abutment around such inner end, a plurality of perforated locking-plates adapted to receive and hold the projecting end of the inserted wire, separating-washers between these locking-plates to permit them to act each independently, they having also perforations, but of larger size than those in the locking-plates, the perforations in all these latter and in the washers being alined to permit a wire end to enter, and a spring to hold them in proper position and alinement previous to the entrance of the wire.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

GEORGE L. MITCHELL.

Witnesses:

C. SPENGEL,

ARTHUR KLINE.