No. 827,951. PATENTED AUG. 7, 1906.

J. ANDERSON.

CABLE JOINT HOUSING.

APPLICATION FILED SEPT. 11, 1905.

2 SHEETS—SHEET 1.

Fig. 1

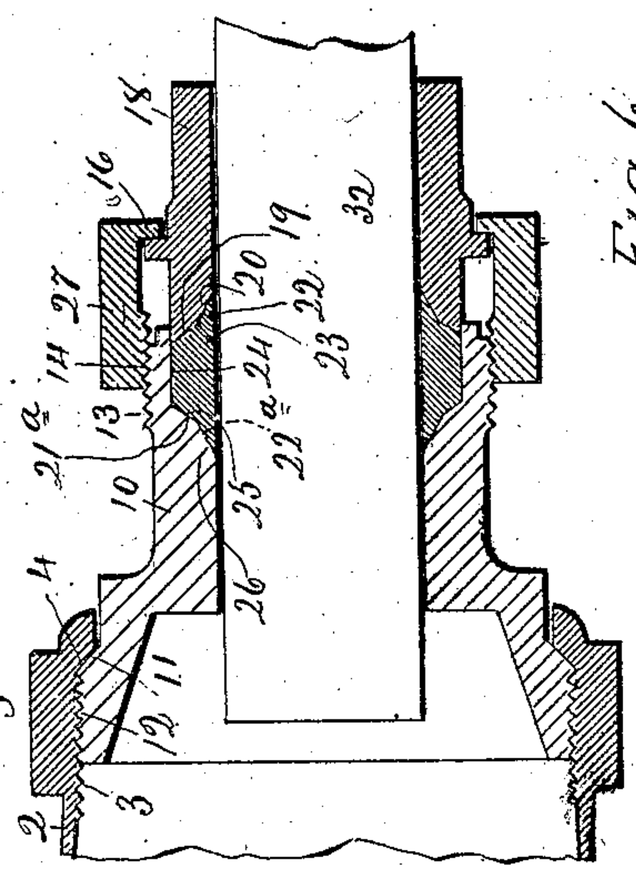


Fig. 6

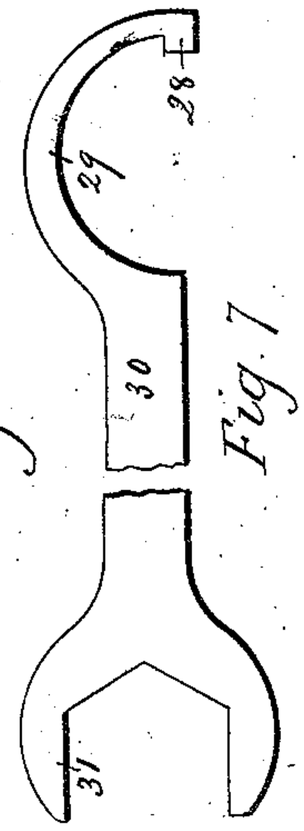


Fig. 7

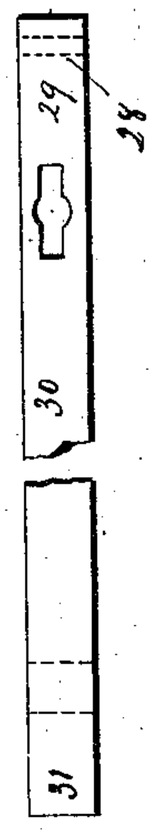


Fig. 4

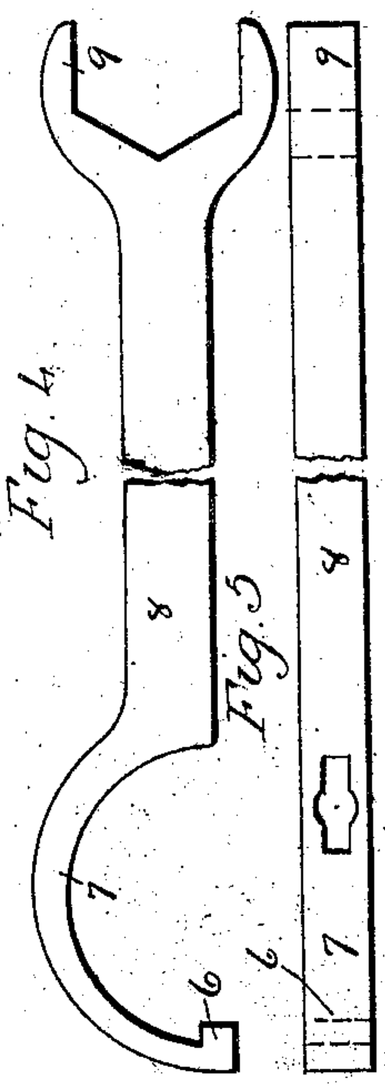


Fig. 5

Fig. 3

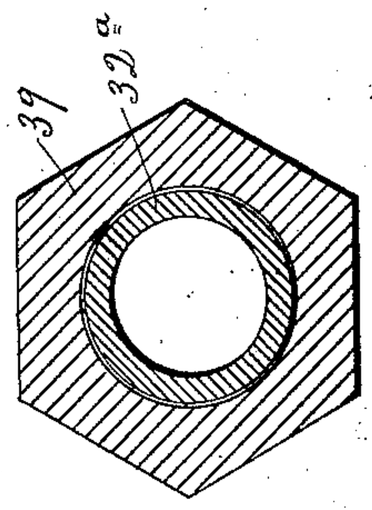


Fig. 2

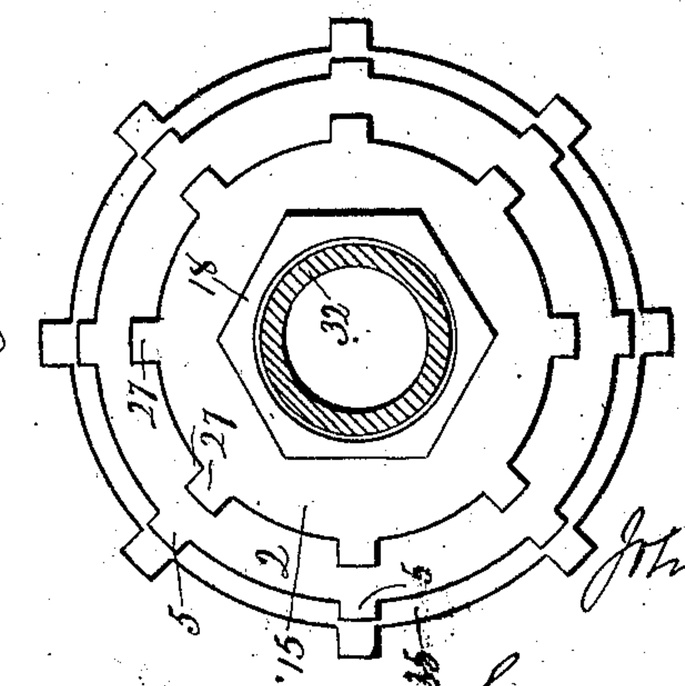
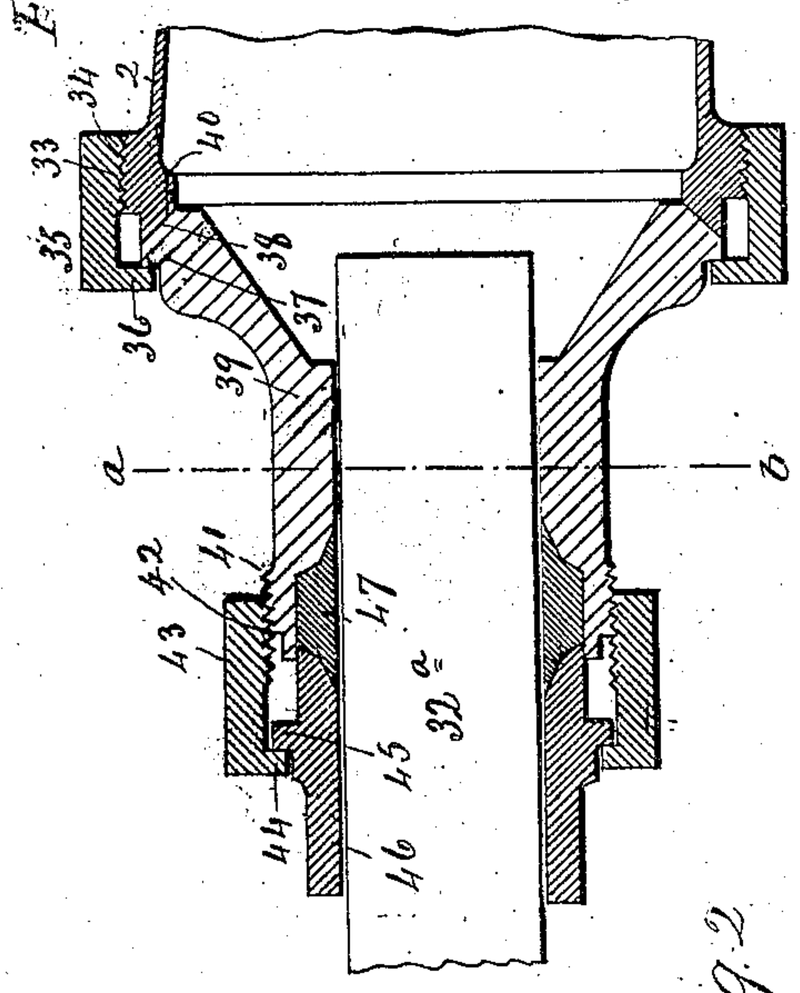


Fig. 8



Witnesses
L. N. Shumway
C. L. Reed.

John Anderson
Inventor.
By atty. Seymour & Earle

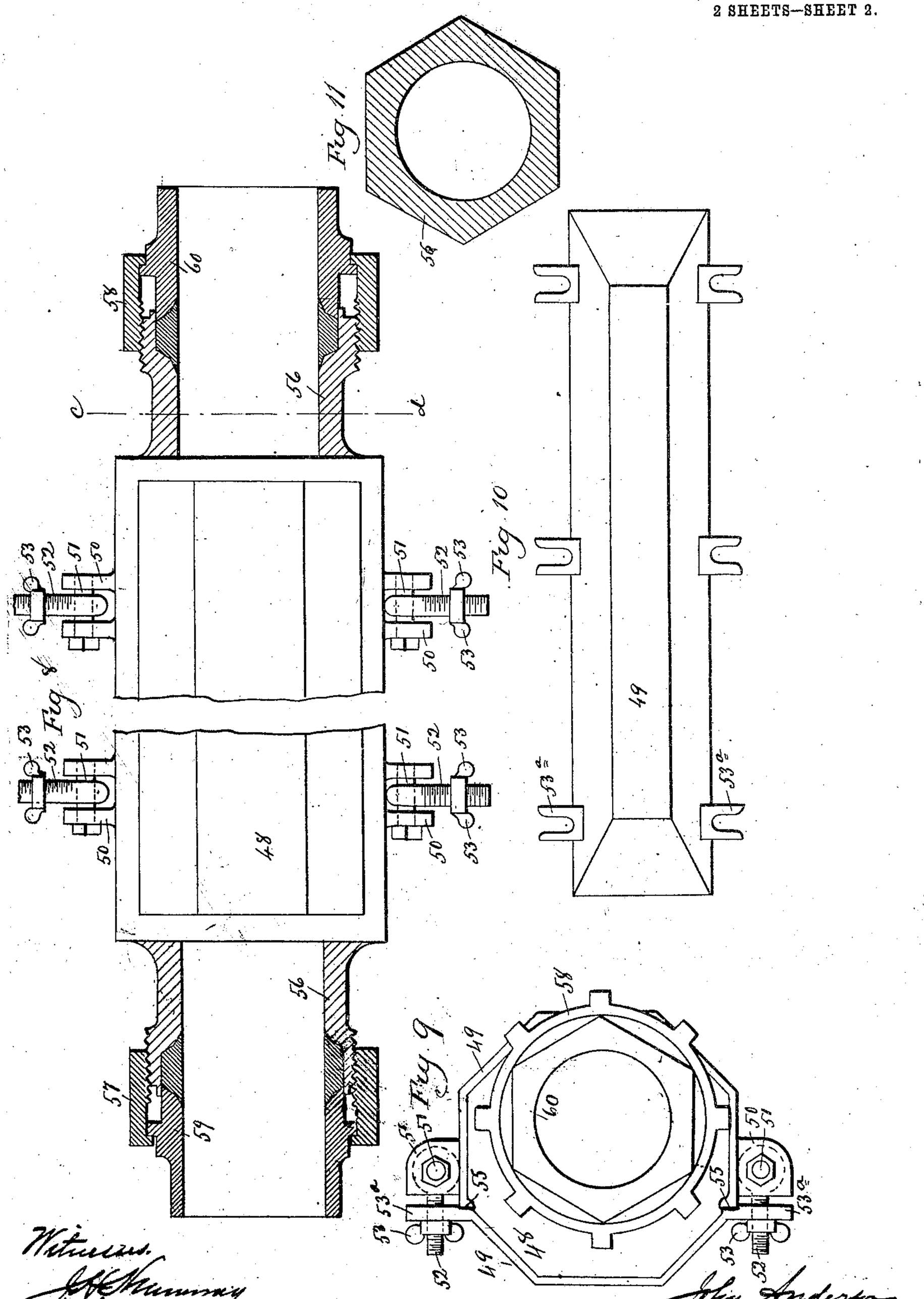
PATENTED AUG. 7, 1906.

J. ANDERSON.

CABLE JOINT HOUSING.

APPLICATION FILED SEPT. 11, 1905.

2 SHEETS—SHEET 2.



Witnesses.
J. E. Hennessy
Clara L. Field.

John Anderson
Inventor
By atty Sequeira Keare

UNITED STATES PATENT OFFICE.

JOHN ANDERSON, OF PORTLAND, CONNECTICUT, ASSIGNOR TO THE ANDERSON COUPLING COMPANY, OF PORTLAND, CONNECTICUT, A CORPORATION OF CONNECTICUT.

CABLE-JOINT HOUSING.

No. 827,951. Specification of Letters Patent. Patented Aug. 7, 1906.

Application filed September 11, 1905. Serial No. 277,918.

To all whom it may concern:

Be it known that I, JOHN ANDERSON, a citizen of the United States, residing at Portland, in the county of Middlesex and State of Connecticut, have invented a new and useful Improvement in Cable-Joint Housings; and I do hereby declare the following, when taken in connection with the accompanying drawings and the figures of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in vertical longitudinal section of a cable-joint housing constructed in accordance with my invention, the central portion of the barrel of the housing being broken away; Fig. 2, a right-hand end view thereof; Fig. 3, a view thereof in transverse section on the line *a b* of Fig. 1; Fig. 4, a plan view on a reduced scale of the large combination-wrench constructed for use with my improved housing; Fig. 5, an edge view thereof; Fig. 6, a plan view on the same scale of the small combination-wrench constructed for use in conjunction with my improved housing; Fig. 7, an edge view thereof; Fig. 8, a plan view of one of the modified forms which my improved housing may assume, the ends of the case being shown in horizontal section on a line below the bearing edge of the case; Fig. 9, a right-hand end view thereof; Fig. 10, a detached plan view of the cover of the case; Fig. 11 a view in cross-section on line *c d* of Fig. 8.

My invention relates to an improved cable-joint housing, the object being to produce a simple, compact, and convenient housing which shall exclude air and moisture from the joined wires of telegraph, telephone, electric-light, &c., cables, and which shall permit ready access to the joint without destroying or injuring any part of the same.

With these ends in view my invention consists in a cable-joint housing having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

As shown in Figs. 1, 2, and 3 of the drawings, my improved housing comprises a barrel 2 or housing proper large enough in diameter to receive the joined ends of the cables and formed at its right-hand end with internal screw-threads 3, which merge at their outer ends into the bevel 4 of a ground joint. This end of the barrel 2 is also formed, as shown, with cog-like spanner-grips 5 for engagement by the hook 6 at the end of the spanner 7 of a combination-wrench 8, the other end of which is formed with wrench-jaws 9, adapted to engage with the hexagonal waist or central portion of a coupling 10, which is formed at its flaring inner end with a ground-joint bevel 11 for coaction with the said bevel 4 and with external screw-threads 12, taking into the threads 3 aforesaid. At its outer end the coupling 10 is slightly enlarged and formed with external screw-threads 13, which are taken into by the internal screw-threads 14 of a coupling-nut 15, formed at its outer end with an annular flange 16 for engagement with an annular shoulder 17, formed near the inner end of a sleeve-like follower 18, extending in line with the said barrel and coupling and having its inner end cut away to form bevels 19 and 20, which coact with the outer bevel 21 and outer feather-edge 22 of a washer 23, set into a recess 24 in the outer end of the coupling 10, the said recess also having bevels 25 and 26 for the reception of the inner bevel 21^a and the inner feather-edge 22^a of the said washer 23. The nut 15 is formed upon its periphery with cog-like spanner-grips 27, which are engaged by the hook 28 of the spanner 29 of a combination-wrench 30, the other end of which is formed with jaws 31, corresponding to the jaws 9 of the combination-wrench 8, which is the larger wrench of the two.

It may now be explained that the coupling 10, the follower 18, and the washer 23 all correspond in inside diameter, which is made just large enough to receive the pipe 32, which incloses the bundle of wires (not shown) forming one end of the cable, which in the drawings is represented by the said pipe 32. By properly turning the nut 15 the sleeve-like follower 18 is drawn inward over the pipe 32, whereby the washer 23 is compressed and forced inward into intimate contact with the pipe 32, so as to exclude the possibility of the admission of any air or moisture at this point into the barrel 2, which is also sealed by the coaction of the bevels 4 and 11, forming the ground joint.

At its left-hand end the barrel 2 is formed

with external screw-threads 33, which are taken into by the internal screw-threads 34 of a union-nut or coupling-ring 35, the outer end of which is formed with an annular flange 36, which coacts with an annular shoulder 37, formed near a ground bevel 38 at the flaring inner end of a coupling 39, corresponding to, but in detail differing somewhat from, the coupling 10, before mentioned, the said ground bevel 38 coacting with a ground bevel 40, formed near the left-hand end of the barrel 2. At its outer end the coupling 39 is formed with external threads 41, which are taken into by the internal threads 42 of a nut 43, corresponding to the nut 15 and formed with an annular flange 44, coacting with an annular shoulder 45 on a sleeve-like follower 46, corresponding in construction and operation to the follower 18 and operating in the same way to compress a washer 47, corresponding to the washer 23 already described, upon a pipe 32^a, which incloses the bundle of wires (not shown) forming the other end of the cable, which in the drawings is represented by the said pipe 32^a. The said washers 23 and 47 may be described in general terms as cross-sectionally wedge-shaped and wider at the inner than at the outer periphery, whereby pressure upon their inclined sides tends to force them laterally inward at a right angle to the direction of the pressure.

When the housing is in use, air and moisture are excluded from both ends of the barrel. Should occasion arise for access to any of the wires entering into the joint between the cable ends, the nut 35 is unscrewed by the wrench 8 and entirely disengaged from the barrel 2, which is then bodily turned by the application of the said wrench 8 to the spanner-grips 5 until its screw-threads 3 are entirely disengaged from the screw-threads 12 of the coupling 10, after which the barrel is bodily drawn from left to right over the coupling 10 and the union-nut 15 and follower 18. In this way all of those portions of the cable ends which are normally inclosed and protected by the barrel are entirely exposed and as free of access as though no provision were made for housing them. After the cable ends have been rejoined the barrel is slid over them from right to left until its threads 3 are again engaged with the threads 12 of the coupling 10, after which the barrel is turned into its home position by the wrench 8, whereby the bevels 4 and 11 are brought into coaction. Then the nut 30 is screwed upon the barrel to reëstablish the joint between the ground bevels 33 and 35.

It will be understood that both of the wrenches 8 and 30 are used at the same time, one to hold the coupling 10 or 39, as the case may be, while the nut 15 or 43, as the case may be, is being screwed in either direction. It will also be understood that the jaws 9 of the wrench 8 and the corresponding jaws 31 of the wrench 30 will be applied to the hexagonal waists of the coupling 10 or 39, as the case may be, while the spanner 17 is being used to turn the nut 35 in either direction or the barrel 2 in either direction.

In the modified construction shown by Figs. 8 to 10, inclusive, the barrel 2 is replaced by a hexagonal case forming the housing proper and consisting of a body 48, having a cover 49, the body being formed along its sides with ears 50, receiving pins 51, carrying pivotal screw-bolts 52, furnished with thumb-nuts 53, coacting with correspondingly-arranged lugs 53^a, projecting from the sides of the cover 49, the edge of which is ground to rest upon a thin packing 55, placed upon the correspondingly-ground edge of the body 48. In this construction the detachable couplings 10 and 39 are dispensed with and their place taken by couplings 56 56, cast integral with the ends of the body 48 and located within the edge thereof, as shown by Fig. 9. In other words, the axial centers of the couplings 56 56 are located at one side of the axial center of the body and cover taken together. The said couplings are adapted for the reception of washers corresponding in construction to those described and threaded for the application of union-nuts 57 and 58, operating sleeve-like followers 59 and 60. The washers are forced into intimate contact with pipes inclosing the wires forming the cable ends, whereby access of air and moisture into the housing through its ends is prevented. When it is desired to reach the ends of the wires, the cover is removed.

It is thus apparent that in carrying out my invention some changes from the construction herein shown and described may be made. I would therefore have it understood that I do not limit myself thereto, but hold myself at liberty to make such departures therefrom as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cable-joint housing, the combination with the housing proper, of couplings located at the ends thereof, union-nuts located at the outer ends of the said couplings, sleeve-like followers extending in line with the couplings and moved longitudinally by the said nuts, and cross-sectionally wedge-shaped packing-washers interposed between the outer ends of the couplings and the inner ends of the followers and forced inward at a right angle under the compression produced by moving the followers inward by the nuts.

2. In a cable-joint housing, the combination with the housing proper, of couplings located at the ends thereof and formed at their outer ends with inclined surfaces, sleeve-like followers extending in line with the said couplings and formed at their inner ends with in-

clined surfaces, union-nuts located at the outer ends of the said couplings and engaging with the said followers for the operation thereof, and cross-sectionally wedge-shaped washers interposed between the outer ends of the couplings and the inner ends of the followers and engaged by the inclined surfaces thereof, whereby the washers are compressed and forced laterally inward upon cable ends entering the housing proper through the said followers and couplings.

3. In a cable-joint housing, the combination with a barrel forming the housing proper, of a coupling applied to one end of the said barrel, a coupling-ring for joining the said barrel and coupling, a coupling screwed into the opposite end of the barrel, sleeve-like followers located in line with the outer ends of the said coupling, union-nuts applied to the outer ends of the said couplings and engaging with the said followers, and cross-sectionally wedge-shaped washers interposed between the outer ends of the couplings and the inner ends of the followers and forced inward at a right angle under the compression produced by moving the followers by the said nuts.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN ANDERSON.

Witnesses:
E. I. BELL,
OLIVER GILDERSEN.