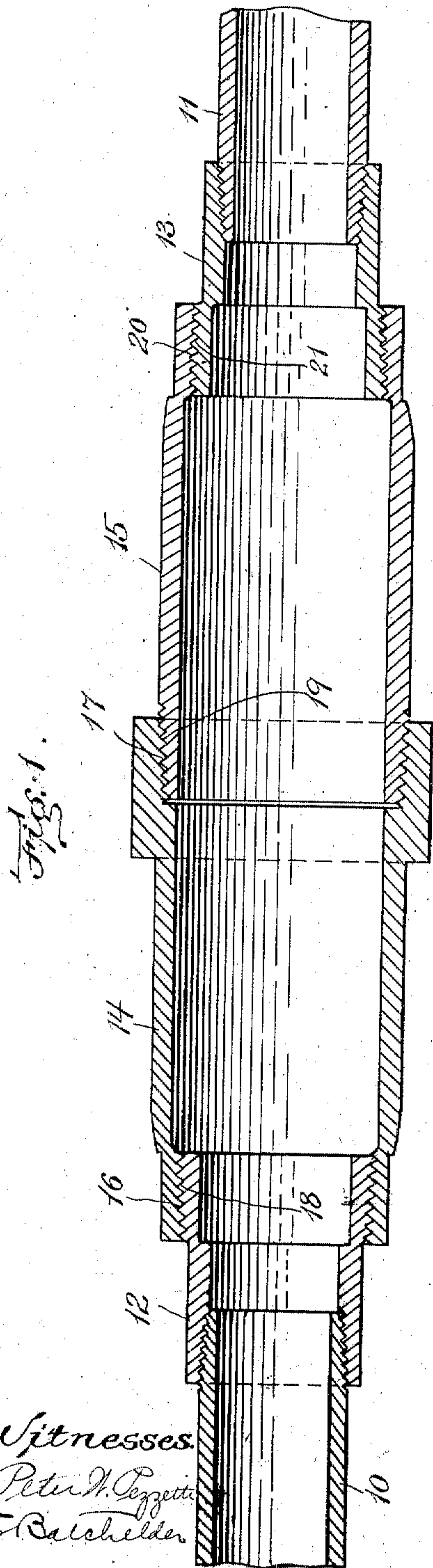


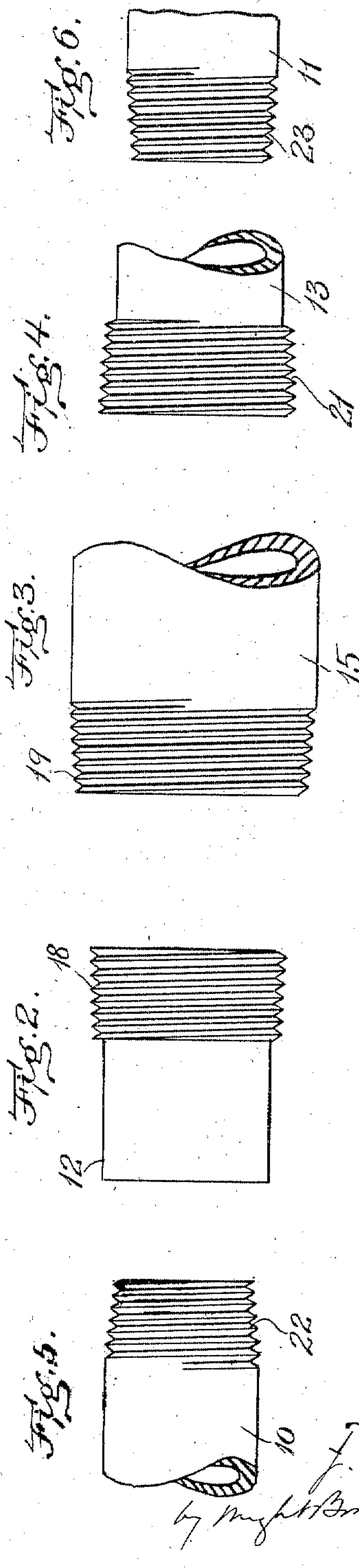
J. N. GOODALL.
PIPE COUPLING.
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980,245.

Patented Jan. 3, 1911



Witnesses
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UNITED STATES PATENT OFFICE.

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PIPE-COUPLING.

980,245.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed October 1, 1908. Serial No. 455,612.

To all whom it may concern:

Be it known that I, JOHN N. GOODALL, of Portsmouth, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Pipe-Couplings, of which the following is a specification.

This invention relates to pipes or conduits for various purposes and particularly for containing electric wires or conductors, and it has for its object to provide a construction whereby the continuity of the conduit may be interrupted at a given point to permit access to its interior for various purposes such as for splicing, soldering, removing or inserting wires, cleaning out the interior of the conduit, etc.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings forming a part of this specification,—Figure 1 represents a longitudinal section of a portion of a conduit embodying my invention. Figs. 2, 3, 4, 5, and 6 represent side elevations of parts shown in Fig. 1.

The same reference characters indicate the same parts in all the figures.

In the drawings, 10 and 11 represent adjacent pipe sections forming parts of a tubular conduit, the said sections being separated from each other by an intervening space.

12, 13, 14 and 15 represent tubular coupling members which are adapted to make the conduit continuous between the pipe sections 10 and 11, said members being of greater diameter than the sections 10 and 11 so that they are adapted to be moved backward or telescoped upon said sections, means being provided for detachably engaging the members 14 and 15 with each other and with the coupling members 12 and 13, means being also provided for detachably engaging the coupling members 12 and 13 with the pipe sections 10 and 11. Said sections 12 and 13 which may be termed tail pieces, are of smaller diameter than the members 14 and 15 which may be termed barrel pieces.

The barrel piece 14 is provided at its outer end with a tapered internal screw thread 16, and at its inner end with a tapered internal screw thread 17 which is of greater diameter than the thread 16 and has substantially the same taper and direction. The

tail piece 12 is provided with an external tapered screw thread 18 formed to engage the smaller internal screw thread 16. The inner end of the barrel piece 15 is provided with a tapered external screw thread 19 adapted to engage the larger internal screw thread 17 of the barrel piece 14. The two external threads 18 and 19 are of the same direction, the internal threads 16 and 17 being of corresponding direction, and the arrangement being such that, when the barrel piece 14 is rotated in one direction, its threads 16 and 17 will be brought into engagement with and come to a tight bearing on the external threads 18 and 19 simultaneously. It follows therefore that, when the barrel piece 14 is rotated in the opposite direction, its internal threads 16 and 17 will be simultaneously unscrewed from the external threads 18 and 19, so that the barrel piece 14 will be loosened and free to be moved back upon the tail piece 12, thus exposing the interior of the conduit.

The outer end of the barrel piece 15 is secured to the tail piece 13 by means of a tapered internal thread 20 in the outer end portion of the barrel piece 15, and a tapered external thread 21 on the corresponding end portion of the tail piece 13, the arrangement being such that when the barrel piece 15 is rotated in one direction, its internal thread 20 will be engaged with and brought to a tight bearing on the external thread 21, and when said barrel piece is rotated in the opposite direction, its internal thread 20 will be unscrewed from the external thread 21 so that the coupling member 15 may be moved backwardly upon the tail piece 13.

The ends of the pipe sections 10 and 11 are provided respectively with external tapered screw threads 22 and 23, which have the same direction and are oppositely tapered, as shown by Figs. 5 and 6, the direction of the threads 22 and 23 being the same as that of the threads 18, 19, and 21. In other words, all the external threads above referred to are of the same direction, each being a right hand thread, as here shown, the several internal threads being of corresponding direction.

It will be seen that my invention above described, provides a simple and effective means for readily opening a tubular conduit and restoring the same to its closed or continuous position. It will also be seen that

an opening in the conduit may be effected by the independent rotation of either of the members 12, 13, 14, and 15, each of said members being adapted when rotated in one direction to be unscrewed simultaneously at both ends from the complementary parts and left free to be moved endwise, and when rotated in the opposite direction to be seated simultaneously at both ends upon the said complementary parts.

As has been stated, the members 14, 15, constitute the barrel, while the members 12 and 13 constitute tail piece members. Each tail piece member is so formed that it may have either a sliding or a screw thread connection with its end of the barrel member, according to the location which the tail piece member occupies longitudinally of the barrel member. The tail piece members 12, 13 are alike, each having a smooth external portion and an internally tapered and threaded end to engage a pipe section 10 or 11, and also has an externally tapered and threaded end 18 or 21, the diameter of each of these threaded portions being the greatest at the end of the tail piece member. The ends of the barrel 14, 15 are alike, each end being internally threaded and tapering outwardly. By tapering outwardly I mean that the internally threaded portions decrease in diameter toward the extreme ends of the barrel. Of course the threaded portions of the tail piece members are tapered to correspond. Therefore, neither tail piece member can be removed from the barrel member by an outward movement, and the same outward direction of movement which will ultimately cause a tight joint between a tail piece member and the barrel, will simultaneously effect a tight joint with a pipe member 10 or 11, without disturbing or manipulating such pipe member in the least.

When the coupling device is used to connect pipe sections 10, 11 which are utilized as conduits for electric wiring, and when the parts are in the position shown in Fig. 1, and it is desired to gain access to the interior for any electrician's purpose, an opening can be effected to gain access to the wires without disturbing either pipe section 10 or 11. And to do this, it is not necessary to separate the two halves 14 and 15 of the barrel. Supposing it is desired to shift the entire barrel to the left, it is only necessary to first rotate the tail piece member 13 in a direction to cause it to enter the barrel, separating its connection with the pipe 11, it is then entirely feasible to rotate the entire barrel, and its contained tail piece 11, in a direction so as to slide the whole barrel to the left over the tail piece member 12. And of course the separation might equally as well take place in the other direction. During such manipulation all of the parts of the coupling are so held that they will not mate-

rially contact with wires which may be inside of the coupling and pipe sections.

If there are no wires leading directly from one pipe section to the other, and it is desired to open the entire space between the ends of the pipe sections, the whole coupling can easily be shortened or collapsed to a length that will permit it to be bodily removed laterally without disturbing the pipe sections 10, 11. To do this, it is only necessary to actuate one or both of the tail piece members to cause it, or both of them, to be first unscrewed from its connection with the barrel, and then slid inwardly. This leaves the parts in such relative positions that they cannot become separated from each other so that one may be lost during any repair work that is being done.

I claim:

1. A pipe coupling device comprising two tubular members having a separable connection, each member having its outer end internally threaded to fit corresponding externally threaded members, the internal diameters of the unthreaded portions of the tubular coupling members being of a size to permit said tubular members to be slid freely over the said externally threaded members when the threads are disengaged, whereby both members can be slipped either to the right or to the left, or one member slipped to the right and the other member to the left.

2. A pipe coupling device comprising two tubular members having a screw threaded connection, each member having its outer end internally threaded to fit corresponding externally threaded members, the internal diameters of the unthreaded portions of the tubular coupling members being of a size to permit said tubular members to be slid freely over the said externally threaded members when the threads are disengaged, the threads of the members having a direction to adapt each member to be simultaneously seated at both ends upon two complementary parts by a rotation in one direction, and simultaneously detached at both ends from said parts by a rotation in the opposite direction.

3. A pipe coupling device comprising two barrel pieces and two tail pieces, the whole constituting a coupling adapted to connect adjacent pipe sections and each of larger diameter than the said sections, one of said barrel pieces having a smaller tapered internal thread at its outer end portion adapted to engage a tapered external thread on one of said tail pieces, and a larger tapered internal thread at its inner end of the same taper and direction as the smaller thread, while the other barrel piece is engaged at its outer end with the other tail piece and has a larger tapered external thread at its inner end adapted to engage the said larger

internal thread, the tail pieces being adapted for detachable engagement with the pipe sections.

4. A pipe coupling device comprising two
5 barrel pieces and two tail pieces, the whole constituting a coupling adapted to connect adjacent pipe sections and each of larger diameter than the said sections, one of said barrel pieces having a smaller tapered in-
10 ternal thread at its outer end portion adapted to engage a tapered external thread on one of said tail pieces, and a larger tapered internal thread at its inner end of the same direction and taper as the smaller thread,
15 while the other coupling member has a tapered internal thread at its outer end adapted to engage a tapered external thread on the other tail piece, and a larger tapered internal thread at its inner end adapted to
20 engage the said larger internal thread, the

outer end portions of the tail pieces and the corresponding end portions of the pipe sections having screw threads of the same direction as the interengaging threads on the barrel and tail pieces, and of opposite taper. 25

5. A pipe coupling device comprising a barrel and two tail piece members, the internal diameter of the barrel being of a size to enable said barrel to be shifted over either
tail piece member, said parts having taper- 30 ing threaded end connections, the diameters of both threaded connections decreasing toward the ends of the barrel.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JOHN N. GOODALL.

Witnesses:

C. F. BROWN,
P. W. PEZZETTI.