

No. 894,517.

PATENTED JULY 28, 1908.

C. MERIWETHER.
CONCRETE PIPE.

APPLICATION FILED MAY 21, 1907.

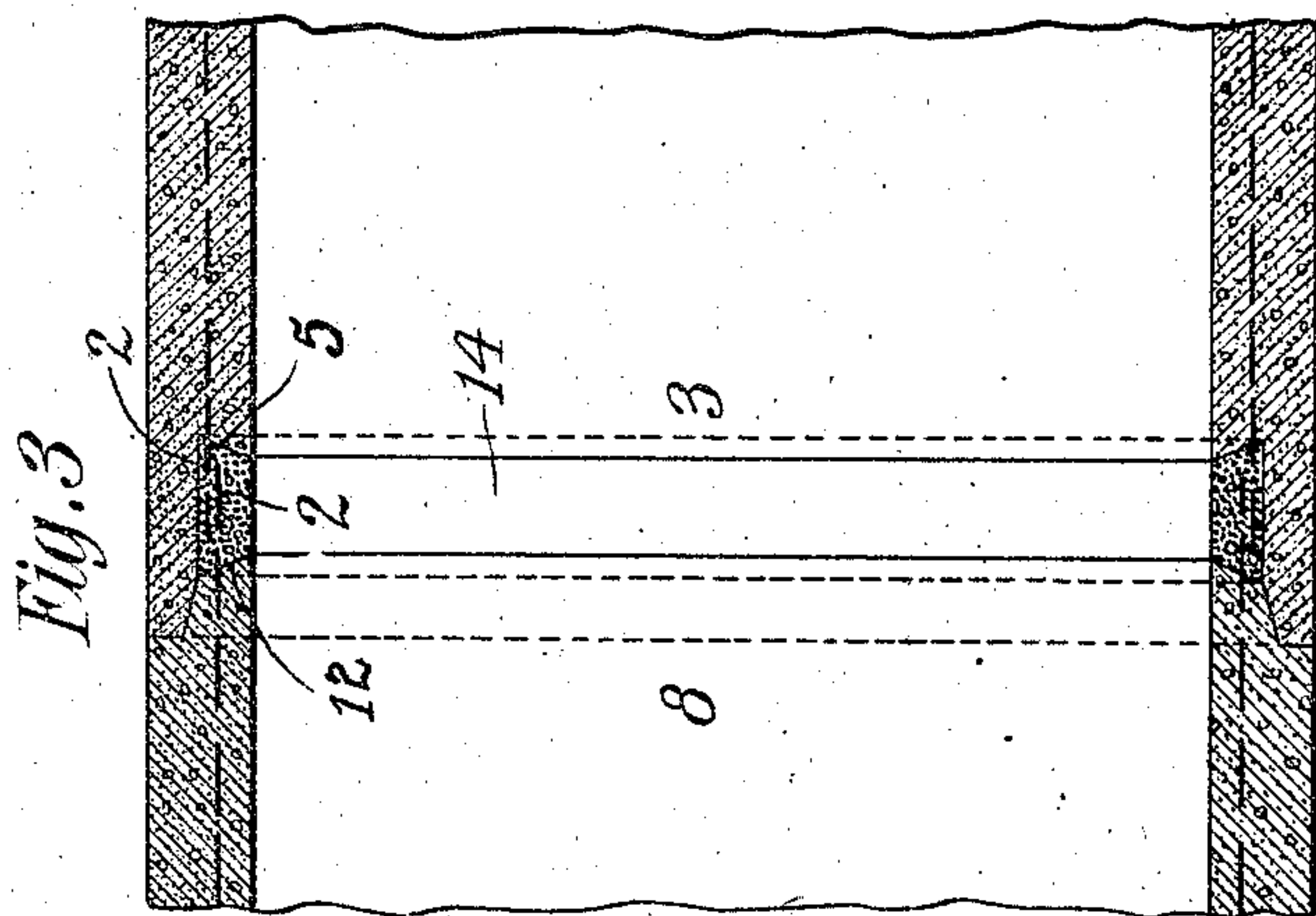
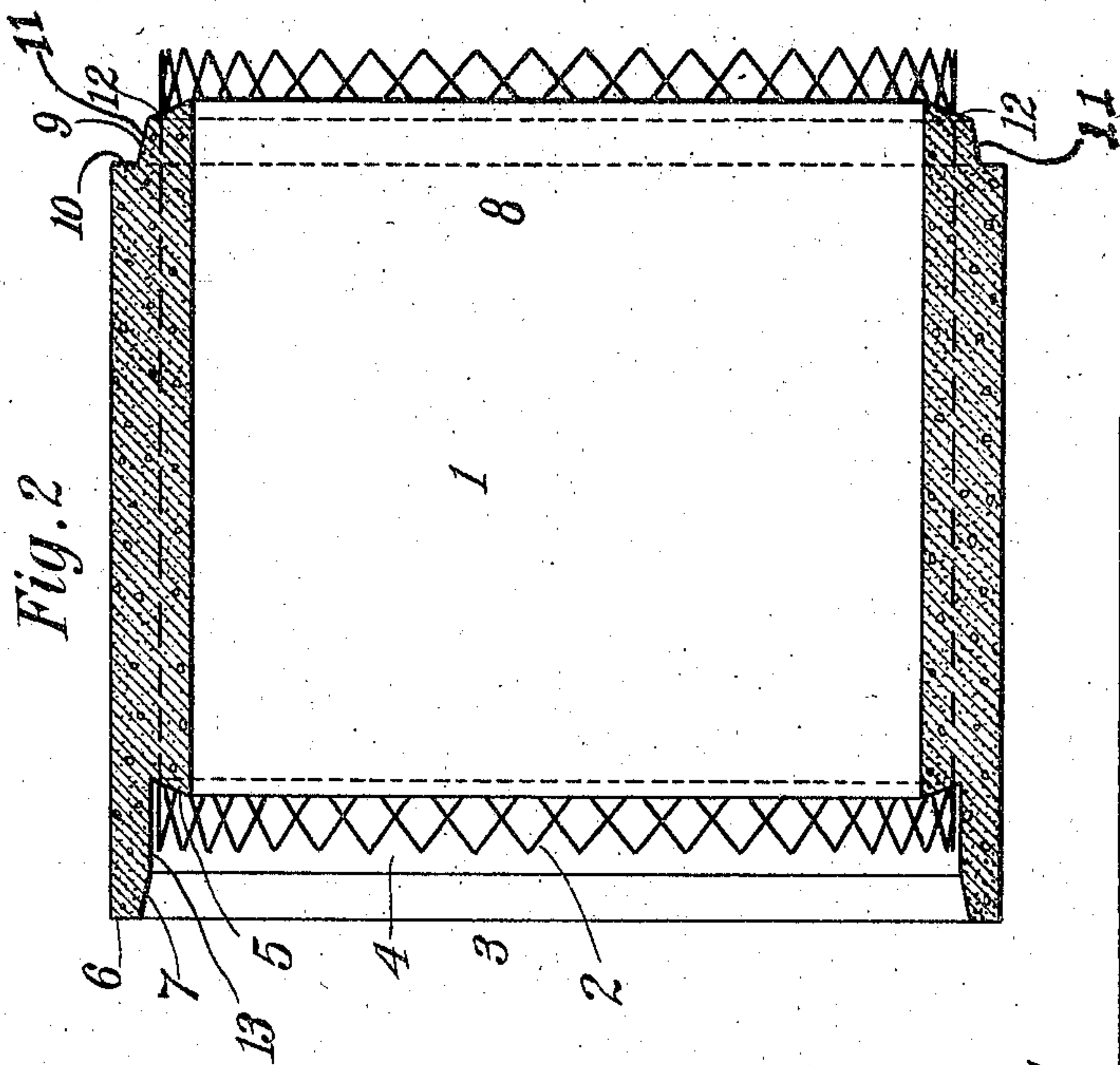
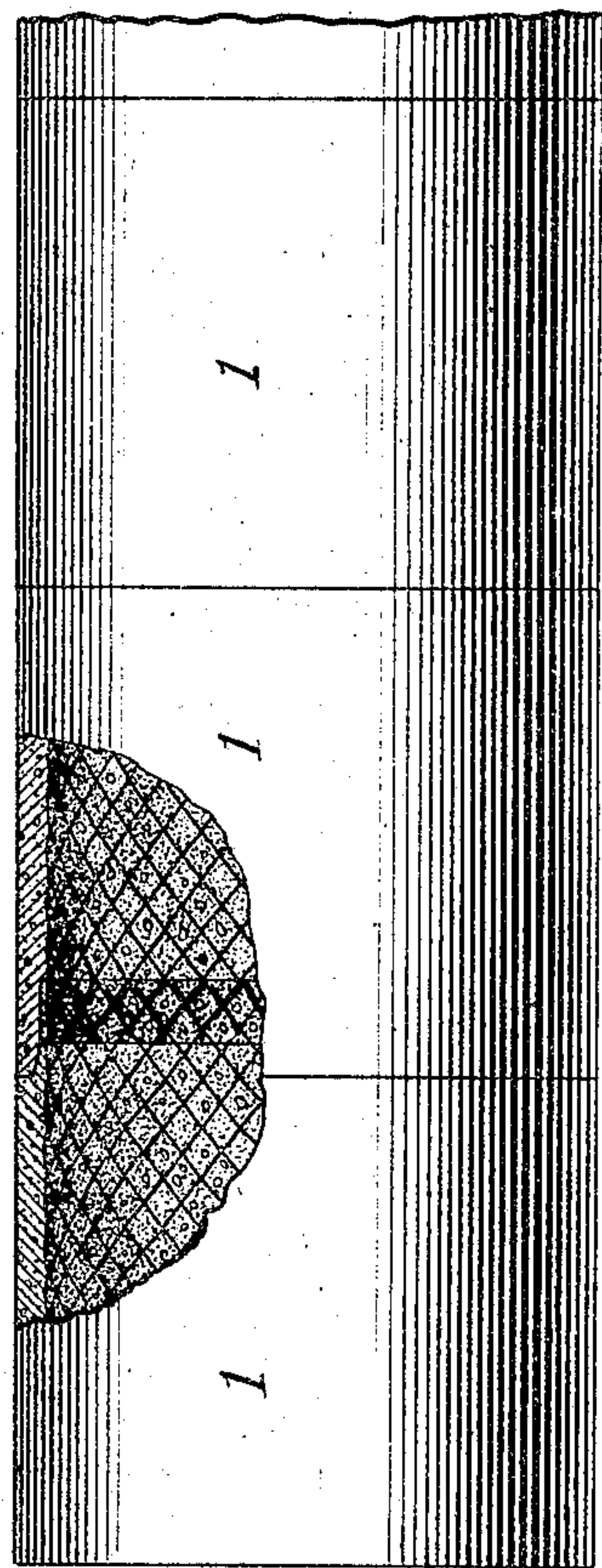


Fig. 1



Witnesses:
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UNITED STATES PATENT OFFICE.

COLEMAN MERIWETHER, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO LOCK-JOINT PIPE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CONCRETE PIPE.

No. 894,517.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed May 21, 1907. Serial No. 374,833.

To all whom it may concern:

Be it known that I, COLEMAN MERIWETHER, a citizen of the United States, residing at Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Concrete Pipe, of which the following is a specification.

My invention relates to concrete pipes or conduits, particularly those of considerable size, constructed in sections or sectional units, as many and of such size as may be desirable or convenient, which are assembled and permanently secured together to make a conduit of any desired length.

The chief object of my invention is to provide an improved joint between the conduit sections of such character that the sections may be manufactured at low cost and at the same time be thoroughly effective for the purpose in hand.

Under my invention the sections are internally recessed at their meeting ends to form a groove on the inside of the conduit at the joint between contiguous sections; reticulated metal fabric interlinings, embedded in the sections, project from the ends of the same to form members which project, as continuous reticulated strips or webs, into said grooves and overlap one another therein; and a concrete filling in said grooves serves at once to seal the joint, and to lock or rivet the overlapping webs or members together. With this construction, the "back fill" of the trench in which the conduit is laid can take place as the building of the conduit progresses, and before the concrete filling is applied; the sections readily adapt themselves to changes in position due to settling of the "back fill", without disturbing the cooperative relation of their overlapping metal webs; and then, after the work has settled, the concrete filling can be applied on the inside of the conduit to seal the joints and form a system of concrete riveting between the overlapping metal webs at one operation. It is this feature which characterizes my invention, and which I believe to be new with me beyond the special form in which I have embodied it in the accompanying drawing, which I shall now proceed to describe in order that my invention may be more fully understood.

In the drawing, Figure 1 is a side elevation, with a portion broken away, of a pipe or conduit constructed according to my

invention. Fig. 2 is a longitudinal section of a pipe-section or unit, showing the bell and spigot ends thereof. Fig. 3 is a longitudinal section showing the manner of assembling the sections and securing them together.

In the preferred form of the invention, illustrated in the drawings, the pipe sections are all exactly alike in every particular. As shown, each section consists of a short length of pipe, 1, composed preferably of concrete and of circular or other suitable cross section. Embedded in the wall of the section to serve as a reinforce therefor is a metallic interlining 2, preferably composed of a sheet of "expanded metal" extending completely around the section. This reinforcing material is of the nature of a reticulated fabric with an open mesh or in general is provided with many perforations, and this character is essential to effectuating my improvement. The metallic fabric which I in practice employ is made of No. 10 or No. 16 gage wire, according to size of concrete section, and has a three inch mesh.

One end of the section, such end being designated by 3, is formed with an inner recess 4, the base 5 of which is beveled inwardly as shown, producing an undercut inner rabbet. The inner surface of the lip is beveled or flared outwardly as shown at 7. The other end, designated by 8, is provided with an outer rabbet 9, the base 10 of which is of the same thickness and at the same angle to the axis of the pipe as the lip 6 of the other end. The side of the rabbet 9 is inwardly beveled or tapered, as shown at 11, the inclination and width of this beveled portion being exactly the same as the beveled surface 7 of the other end. It will now be seen that the ends 3 and 8 are of the bell and spigot type respectively, and that the former end of one section will exactly fit the latter end of another, as clearly shown in Figs. 1 and 3.

The lip or edge of the pipe-section at the end 8 is tapered or beveled inwardly, as shown at 12, oppositely to the beveled portion 5 of the end 3, but at the same angle to the axis of the pipe. Hence when the sections are fitted together the oppositely inclined surfaces or bevels 5 and 12, together with the outer surface 13 of the rabbet 4, form at each joint an undercut groove on the inside of the pipe, as clearly shown in Fig. 3.

In order to utilize this groove for the purpose of securing the sections together the tu-

bular perforated or reticulated fabric interlining 2 extends at opposite ends of each section beyond the bevels 5 and 12 as shown, so that when the two sections are put together the projecting reticulated tubular members 2 on the meeting ends of the two sections will extend into the groove and overlap or telescope one within the other. To admit of this telescoping action, the tubular interlining 2 is made of slightly greater diameter (say $\frac{1}{4}$ inch greater) at one end, for example the bell end 3, than at the other, thus permitting the two members to telescope together adjusting themselves and making a snug fit; one with the other, readily and easily. The groove is next tightly packed with concrete 14 (by which I intend any suitable plastic material capable of hardening or setting) which passes through the meshes of the telescoping members 2, filling the groove, sealing the joint and at the same time acting as a "concrete rivet" to bind together the two members 2 most tightly. The concrete filling 14 thus acts at once as a lock for the telescoping reinforces 2, and as a seal for the joint. The undercut sides 5, 12 of the groove assure the filling 14 in place.

The joint between the sections is flush with the surface of the pipe both inside and out. The interior of the pipe therefore offers no impediment to the flow of water and has no obstructions against which sediment may be deposited; while on the outside it has no ribs or other projections; and hence not only is less liable to be broken at the joints but also lies flat on the bottom of the trench and is therefore evenly supported at every point.

In laying a conduit the "back fill" can take place at once as the work proceeds and the sections are successively laid in the trench and fitted together, and the locking together of the members 2 can be deferred until after the "fill" has settled. The tubular telescoping reticulated members 2 will readily adapt themselves to slight changes of position in the sections due to settling with-

out disturbing their coöperative relation with each other. When the work has settled, workmen can then enter the conduit and apply the concrete filling to the grooves, thus locking together the members 2 and sealing the joint at one and the same operation.

While the advantages enumerated are described as belonging to the preferred embodiment of the invention it is clear that they may be present in other embodiments also, to a greater or less degree.

Having described my invention and the best way now known to me of carrying the same into practical effect, what I claim and desire to secure by Letters Patent is as follows:

1. A concrete pipe or conduit composed of sections fashioned at their meeting ends to form a groove on the inside of the conduit at the joint between contiguous sections; reticulated metal fabric interlinings embedded in the sections and projecting from the ends of the same to form members, which project as continuous reticulated strips, into said grooves and overlap one another therein, and a concrete filling in said grooves which serves at once to seal the joints and to lock the overlapping members together, substantially as set forth.

2. A concrete pipe or conduit composed of sections joined end to end by bell and spigot joints, and formed with grooves on the inside of the conduit at the joints, reticulated metal fabric interlinings embedded in the sections and projecting from the ends of the same to form tubular members which extend into the grooves and overlap or telescope together therein, and a concrete filling in said grooves sealing the joints and locking together the telescoping members, substantially as set forth.

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Witnesses:

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