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2,116,165

CONNECTER FOR DRAIN TILES

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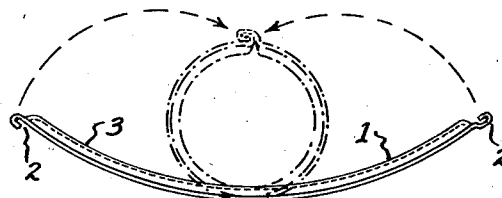
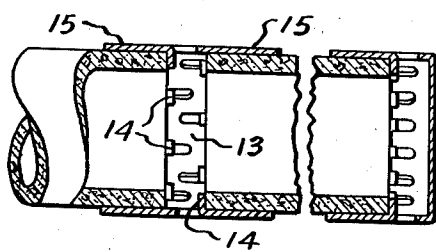
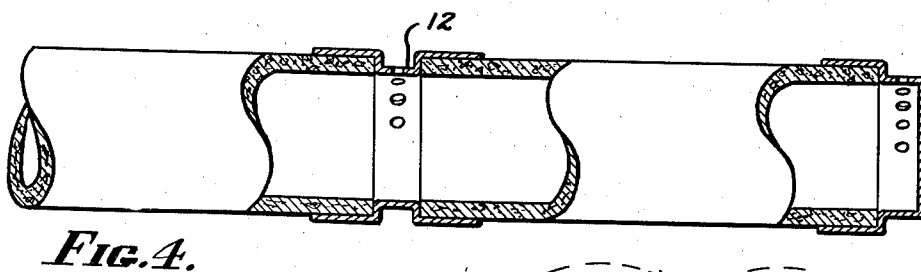
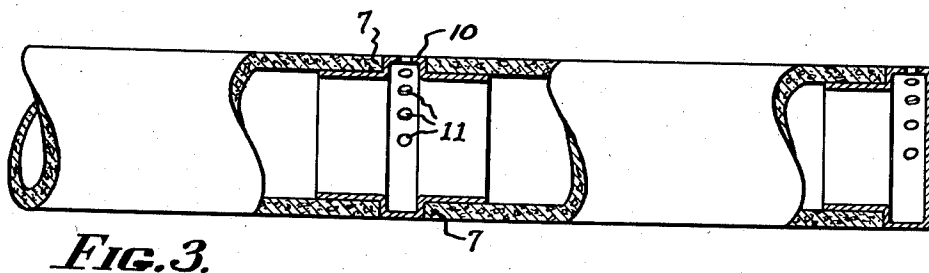
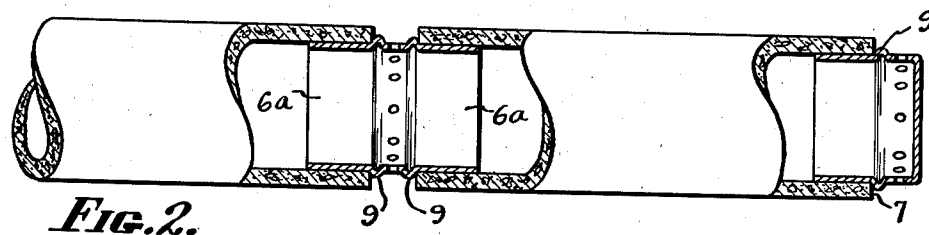
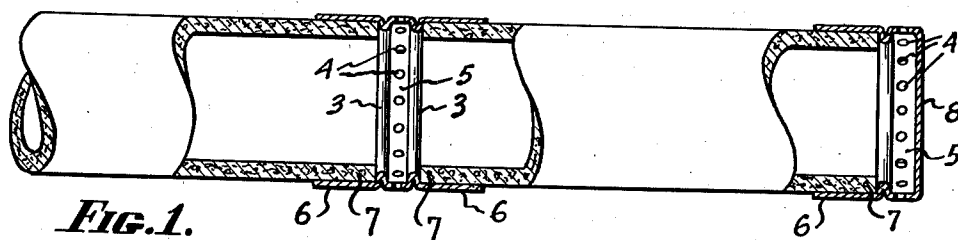


Fig. 6.

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CONNECTER FOR DRAIN TILES

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5 Claims. (Cl. 61-10)

My invention relates to devices for use in connecting and retaining in alignment of the usual ceramic drain tile, correctly spacing them from each other and allowing infiltration of water through the connecting devices.

The usual tubular drain tile, and also the bell and spigot type of drain tile is laid in a trench, with the ends of the tiles fairly loosely abutted against each other in order to permit infiltration of water through the ends of the tiles. The common experience with such tiling is that the tiles become fairly easily displaced so that they often get entirely out of communication with each other, and when that takes place the usefulness of the drain is impaired and rapidly gets worse because the misaligned tiles will become clogged with earth. The tiles are normally used in that portion of a field or area which is naturally wet and where the ground is particularly subject to supplying insecure foundation for tile, so that the very location of the tile calls for more security than would be the case of other pipe laid for the purposes of a conduit generally. Yet so far as I am advised, no one has suggested the desirability of spacing, and aligning field or drain tile by devices which will accomplish their functions in holding the tile in line and in operation and still permit ready infiltration of water, without clogging up the tile.

I have illustrated several forms of device serving my purpose in the appended drawing, and will describe the various modifications, but refer to my claims that are set forth below, as stating the invention inherent in my new devices and do not wish to be construed as having shown and particularly described all possible modifications coming within my invention and suitable for my purpose.

In the drawing:

Figure 1 is an elevation showing portions of filed tile together with one form of my connector.

Fig. 2 is a like view showing a like connector except arranged for mounting internally.

Fig. 3 is a view showing a modification of my second illustrated form.

Fig. 4 is a view showing the form of Fig. 3 but modified for use externally.

Fig. 5 is a view showing an externally fitted connector according to my invention, having a different arrangement for making the infiltration holes and spacing abutments.

Fig. 6 is a view of the connector in Fig. 1, shown in the form as shipped, and ready to be set up into cylindrical form.

I preferably form my connectors of fairly thin galvanized sheet metal, and ship them flat or slightly curved and nested. Thus I have shown in Fig. 6 a plate of metal 1, which has its lateral edges formed each with a V groove 2, so that by slipping one groove into the other, the plate will form a cylindrical sleeve. The devices having beads 3, 3, formed at the median portion so as to leave a space 5 between the beads, and this space is provided with holes 4, 4, which can be arranged to suit conditions, and may be formed throughout the median space 5 or only partly across it or at selected portions thereof.

The cylindrical device when set up is shown in Fig. 1. The sleeve portions 6, are arranged to fit with sufficient snugness onto the ends of adjacent drain tile 7, 7, and the beads 3 form abutments to space the tile apart and leave the intermediate or median space 5 exposed between the tile. The holes permit infiltration of water. The sleeves hold the tile in line with each other and brace the drain tile structure very substantially.

I may provide a device for the end of the drain, i. e. to fit the first tile of the same, which instead of having two sleeves has one sleeve portion and a plate entirely across the open end as indicated at 8. Such a device caps the drain and still permits infiltration of water, and prevents soil from getting into the drain.

Instead of interlocking the seam in the connectors the seam could be closed by a pair of sliders, as will be evident without illustration.

It will be noted of this external construction that it presents no material extension of the cylindrical dimensions of the drain which would be an undesirable thing. The trench in which the tile is laid would have to be specially cut out to provide for an extension of such kind. Thus in bell and spigot tile this must be allowed for, and while my connector can and does serve a useful purpose in bell and spigot tile it is important in such tile that it fit snugly because otherwise the bell would interfere with placing of the connector.

It is also important that the connector not project noticeably into the interior of the tile where the internal type is employed because this would possibly act to impede the progress of water through the tile and lead to silting up of the drain.

Instead of forming the connector so as to fit the outside of the tiles it may be formed to fit the inside. This is shown in Fig. 2 and in this case the sleeve portions 6a, 6a are of the correct size to engage over the tile, and the beads 9, 9, are

formed to extend outwardly instead of inwardly.

In Fig. 3, I have shown a somewhat different connector in which instead of forming beads in the connector, the spacer portion 10 is formed outwardly as a circumferential projection in the set up connector, except at the V joint. The portion 10 thus acts as a spacer at its sides, and has holes 11 therein to permit infiltration. Instead of having the portion 10 formed outwardly, it can be formed inwardly as shown at 12, in Fig. 4, whereby the connector is formed to fit externally over the tile.

In Fig. 5 I have shown another form, which can be internal or external, and in which the sleeve portions 15, 15, are connected by an intermediate zone 13, in which tongues 14 are alternately punched and turned inwardly, at each side. The tongues then act as abutments to serve the spacer function of the device, and the holes made in striking down the tongues, act to permit infiltration.

The devices as illustrated are inexpensive, and will serve to facilitate laying of tile very greatly, as they line up the tile without much special work in the trench. They will greatly prolong the life of the drain.

Having thus described several examples of my invention, what I claim as new and desire to secure by Letters Patent is:

1. A device for connecting drain tile comprising sleeve portions to engage the ends of adjacent tile, and spacing means between the sleeve portions, said device having apertures in the space between the spacing devices for infiltration.

2. A sheet metal device for connecting drain tile comprising sleeve portions to engage the ends of adjacent tile, and spacing means between the sleeve portions, said device having apertures in the space between the spacing devices for water infiltration.

3. A sheet metal device for connecting drain tile comprising sleeve portions to engage the ends of adjacent tile, and spacing means between the sleeve portions, said device having apertures in the space between the spacing devices for water infiltration, said device formed of a single piece having end joints to unite the said piece into cylindrical form.

4. A device for connecting drain tile comprising sleeve portions to engage the ends of adjacent tile, abutment means projecting from the sleeve portions and arranged to leave a space between the abutments which is not engaged by the adjacent tile, and apertures formed in the said space to permit infiltration.

5. A device of the character described consisting of an annular band formed of a sheet metal piece having detachably connectable ends, and comprising a pair of sleeve portions to engage the lateral edges of adjacent tiles, an intermediate annular portion having interspaced apertures therein for water infiltration, and a pair of annular beads forming shoulders between the sleeve portions and the intermediate portion to serve as spacers between the said adjacent tile ends, the whole being in one integral piece.

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