

Feb. 28, 1933.

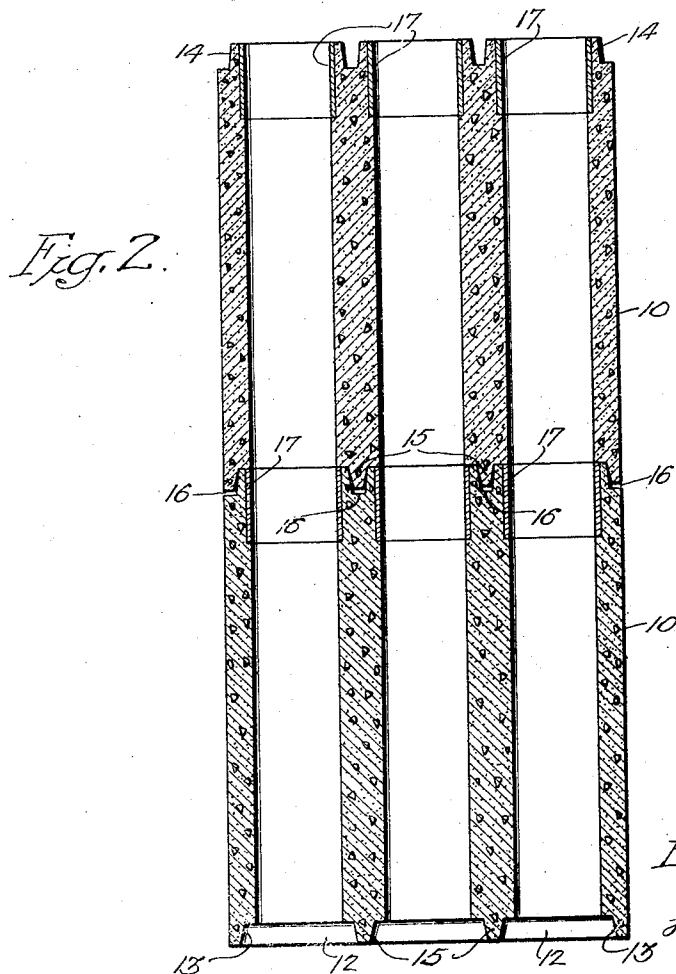
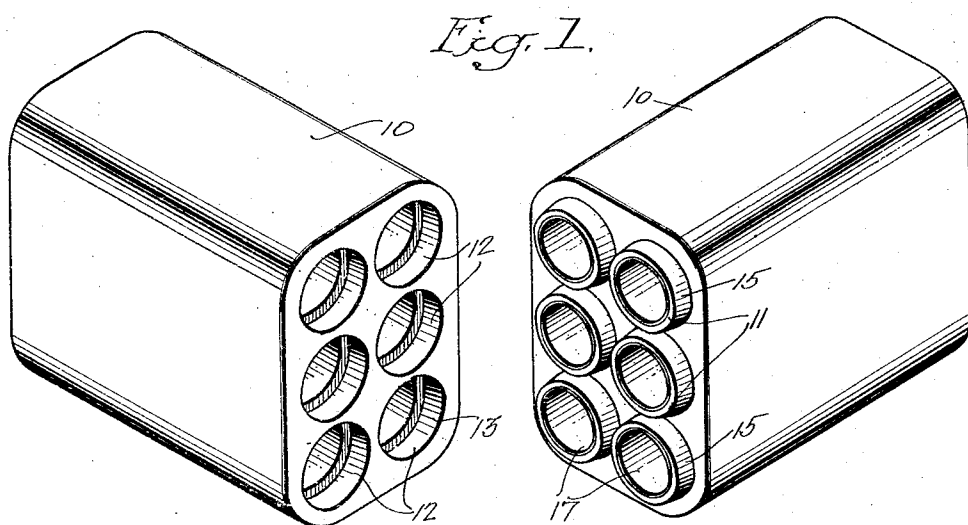
E. N. GACKENBACH

1,899,861

TILE

Original Filed March 20, 1930

2 Sheets-Sheet 1



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Fig. 4.

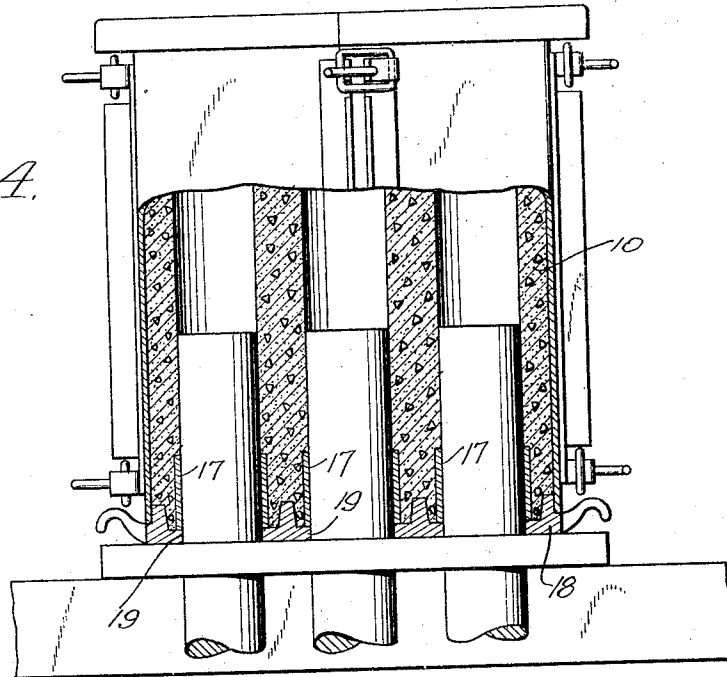
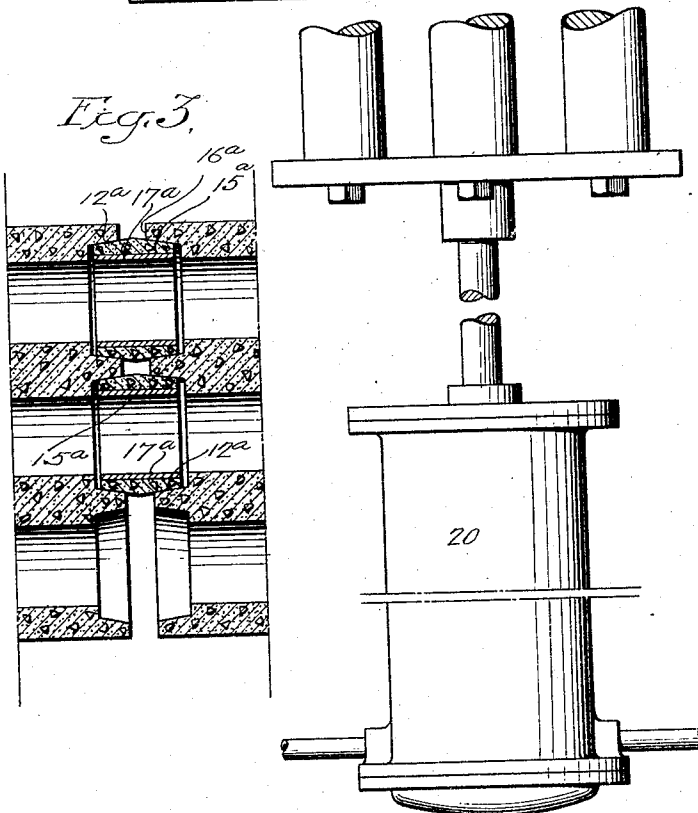


Fig. 3.



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UNITED STATES PATENT OFFICE

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TILE

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This invention relates to multi-duct tile, and more particularly to a tile of this character adapted for use as under-ground conduit for electric wires.

Multi-duct tile as ordinarily constructed has numerous disadvantages when employed as under-ground conduit. Difficulty is met in joining the ends of the tile and in maintaining the ducts thereof in alignment with one another. Difficulty is further met in preventing the occurrence of air spaces between adjacent ends of the tile which will permit passage of high tension currents from one duct to a cable in a second duct. A practical tile for this purpose must be made as light in weight as possible and reduction of the thickness of the walls of the individual ducts has hitherto rendered it impossible to provide the guiding bell spigot joint for the adjacent ends of the tile. Accordingly, an important object of the invention is the production of a multi-duct tile so constructed that a bell and spigot joint may be provided between the tile and about the individual ducts, the formation of air spaces between adjacent ends of the tile is eliminated and the above features are provided with the use of relatively thin walls between the ducts.

A further object of the invention is the production of a novel and improved means for reinforcing such tile.

A still further object is the provision of a method of producing such a tile which will enable convenient incorporation therewith of reinforcing element for the spigots.

These and other objects I attain by the construction shown in the accompanying drawings wherein, for the purpose of illustration, I have shown a preferred embodiment of my invention and wherein:

Fig. 1 is a perspective view showing opposite ends of two tile constructed in accordance with my invention;

Fig. 2 is an assembled section through two tile; and

Fig. 3 is a fragmentary section illustrating a second method of forming the spigots for the tile.

Fig. 4 is a view partially in section of a

portion of a machine illustrating the method of constructing the tile.

Referring now more particularly to the drawings, the tile consists of a concrete body 10 of the desired dimensions having extending therethrough a plurality of ducts 11. At one end of the tile each of the ducts 11 is enlarged as at 12 to produce a bell socket, the side walls 13 of which have a slight outward flare. At its opposite end, each duct is defined by an outstanding flange 14 the outer wall 15 of which has a taper slightly less than the angle of flare of the walls of the enlargement. The minimum dimension of this flange is the same as the minimum dimension of the enlargement so that when the flange is fully seated in the enlargement it fits closely therein. The flange is, however, of greater depth than the enlargement so that a space 16 is provided between adjacent ends of the tile when the flanges are fully seated. In this space dilute concrete may be poured to entirely fill the same so that a perfect seal between the ends of the tile is provided and the absence of air spaces is insured.

In some instances it is desirable to form the tile as illustrated in Fig. 3. In this figure the tile are formed with sockets 12—*a* at their adjacent ends which are concentric with the ducts and the walls of which are tapered as in the case of the sockets in the tile previously described. The connecting elements for the ducts are then provided, comprising doubly tapered bodies 15—*a* preferably of concrete, having a reinforcing sleeve 17—*a* extending therethrough and defining a duct section connecting the ducts of the tile proper. The length of the tapered ends of the body 15—*a* is preferably slightly greater than the depth of sockets 12—*a* so that the adjacent faces of the tile are spaced as at 16—*a* to permit the insertion of a bonding agent.

It having been found in practice that the spigots formed by flanges 14 are relatively weak when produced upon the ends of tile walls which are of suitable dimensions to render them practical in use, I reinforce these spigots by lining the ducts at the spigot ends thereof with a metallic or fibrous sleeve 17 having an inside diameter the same as the in-

side diameter of the duct, and incorporated in the tile structure in the process of making the same. The following method may be conveniently followed in producing such
5 tile.

A die plate 18 is provided for the spigot end of the tile, having openings 19 formed therein for the passage of cores for producing the ducts 11. The sleeves 17 are slipped over
10 the upper ends of these cores and allowed to slide downwardly thereon until they come to rest upon the die plate, after which the tile is formed upon the die plate and about the cores. The cores are then withdrawn through the
15 die plate by any suitable means, such as pressure cylinder 20, leaving the sleeves in position in the formed structure.

Since both the tile and the method of producing the same are capable of a certain range
20 of change and modification, I do not wish to be understood as limiting myself specifically thereto except as hereinafter claimed.

I claim:

1. A multi-duct tile, comprising a body
25 having a plurality of parallel ducts formed therethrough, an end of each duct having an enlargement forming a bell, the opposite end of each duct having a surrounding flange producing a projecting spigot, the spigots being
30 of greater length than the bells whereby in the assembled relation of the tile, spaces are provided between the ends of the tile for the reception of a liquid sealing element hardening when dry, the spigot ends of the ducts
35 having incorporated therein a reinforcing element forming portions of the inner wall of the duct and the inner wall of the spigot.

2. A multi-duct tile, at an end of which the ducts are defined by outstanding flanges
40 having incorporated therein, in process of production, reinforcing elements each forming a portion of the inner wall of the associated duct and the inner wall of the flange thereof.

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