

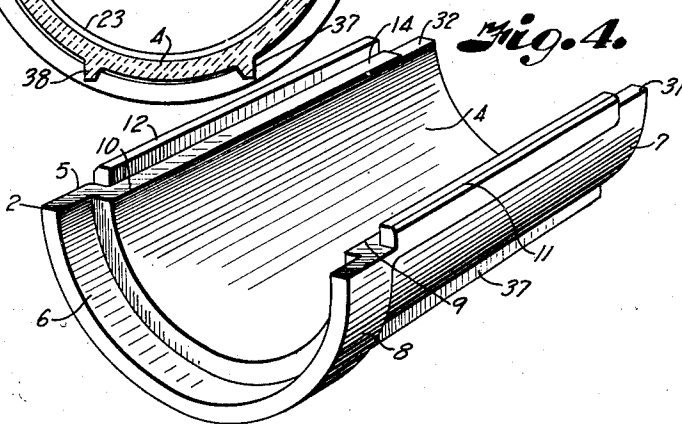
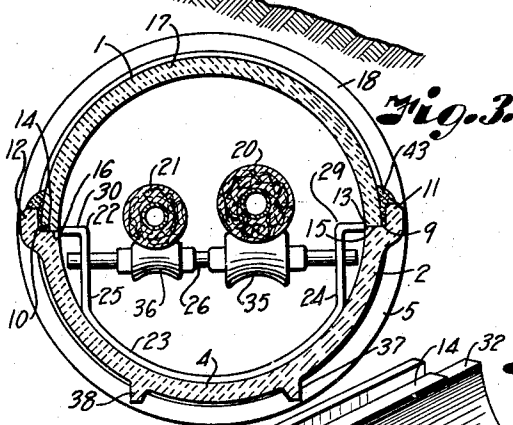
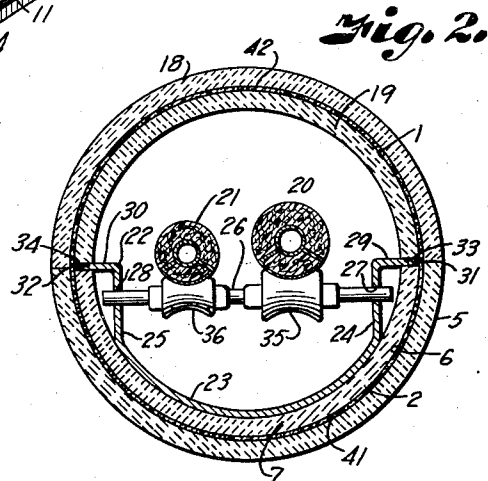
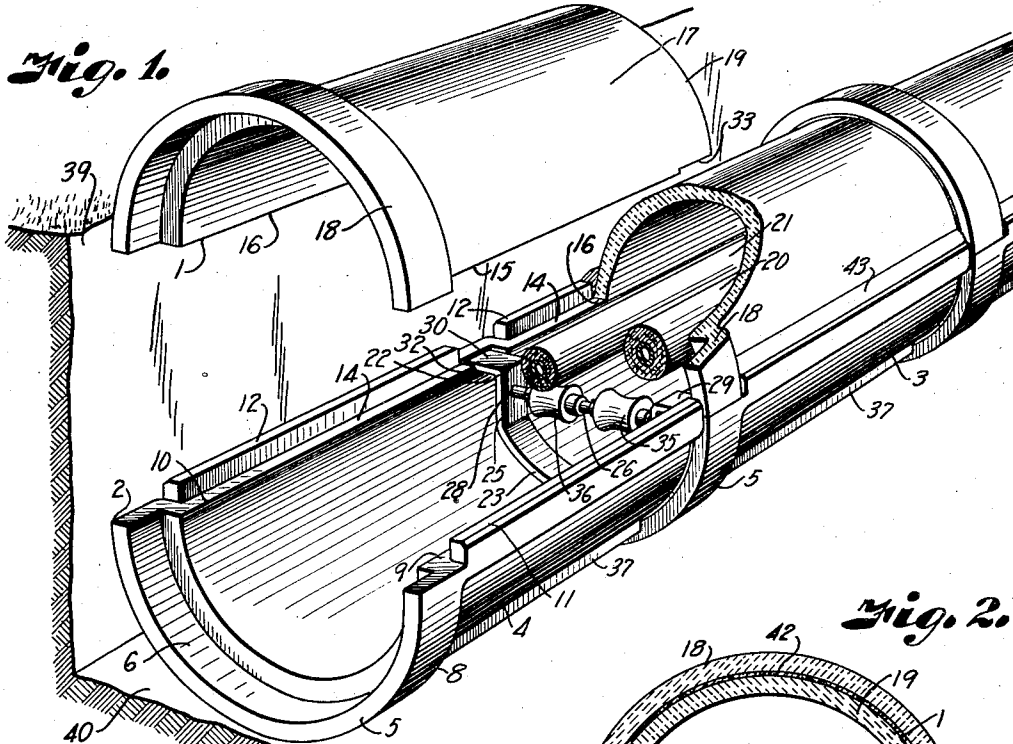
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CONDUIT

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CONDUIT

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My invention relates to conduits for enclosing underground steam, air, refrigeration and similar pipe lines to prevent their corrosion by contact with soils and other materials through which the lines may extend, and more particularly to a conduit of this character formed of bell and spigoted tile sections.

It is the principal object of the present invention to provide a tile construction which is easily assembled and wherein the joints are readily sealed to exclude moisture and to prevent heat transfer therethrough.

It is also an important object of the present invention to provide a simple hanger installation and whereby they are anchored against shifting movement upon expansion or contraction of the pipe line.

In accomplishing these and other objects of the invention, I have provided improved details of structure, the preferred form of which is illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view of a pipe conduit constructed of tiles embodying the features of the present invention.

Fig. 2 is a cross sectional view through the bell and spigot portion of adjoining tiles, particularly illustrating the method of installing and anchoring the pipe hangers.

Fig. 3 is a similar cross sectional view through the barrel portions of the tile sections particularly illustrating the longitudinal joints forming water seals between the upper and lower sections.

Fig. 4 is a detail perspective view of the lower tile section.

Referring more in detail to the drawing:

1 and 2 designate upper and lower tile sections, which when assembled, form a joint of the pipe conduit indicated at 3, Fig. 1.

Each tile section is preferably constructed of vitrified, salt-glazed clay, as such material is unaffected by soil acids and has ample strength to carry the load of fill earth above the pipe line. The lower section 2 preferably comprises a semi-cylindrical barrel portion 4 having an outwardly extending bell 5 forming an internal annular seat 6 at one end and having a spigot 7 at the opposite end which is adapted to engage in the seat 6 of the adjacent joint of the conduit, the bell 5 being of sufficient diameter to support the spigot of the adjoining section so that its inner face lies flush with the inner face of the barrel portion 4.

Extending along each of the upper longitudi-

nal side edges 9 and 10 of the section from the outer shoulder portion 8 of the bell 5 to the spigot end 7 are outset upwardly projecting flanges 11 and 12 to form longitudinal seats 13 and 14 for supporting the edges 15 and 16 of the upper section, as later described.

The upper section 1 also includes a semi-cylindrical barrel portion 17 of the same diameter and shape as the barrel portion 4 of the lower sections so that the longitudinal side edges 15 and 16 thereof co-incide with and are supported on the side edges 9 and 10 of the lower section.

The barrel portion 17 is also provided with a bell portion 18 which corresponds in size and shape to the bell portion 5 of the lower section and a spigot 19 corresponding in diameter to the spigot end 7, so that when the sections are assembled, as shown in Fig. 1, the bell and spigot portions will align to form a cylindrical tile split through its horizontal center.

In order to provide support for the pipe lines 20 and 21 that are housed within the completed conduit, I provide metal brackets 22 having an arcuate shaped intermediate portion 23 conforming in curvature to the inner face of a lower section and which terminates in upwardly extending vertical arm portions 24 and 25 which are spaced from the side edges 9 and 10 of the tile section to accommodate the ends of a supporting shaft 26 that is rotatably mounted in bearing openings 27 and 28 in the vertical portions 24 and 25 of the hanger, as clearly illustrated in Fig. 2.

The upper ends of the vertical portions 24 and 25 of the hanger terminate in laterally and outwardly extending arms 29 and 30 which are adapted to engage in notched seats 31 and 32 formed in the spigot portion of the lower tile section.

If desired, the upper tile section may also be provided with complementary notched seats 33 and 34 whereby the arms 29 and 30 are locked against longitudinal movement relatively to both tile sections.

Mounted on the supporting shafts 26 are suitable spools 35 and 36 forming rolling supports for the pipe lines 20 and 21 to allow for expansion and contraction thereof independently of the conduit sections.

In order to prevent twisting movement of the tile sections, and to retain the side edges thereof in horizontal alignment, the lower faces of the sections 2 are provided with spaced longitudinal ribs 37 and 38 which extend from the rear edge of the bell portions to the spigot portions and form

supports engaging the bottom of the ditch at opposite sides of the vertical center line of the sections, as clearly illustrated in Figs. 3 and 4.

In building a conduit from tile sections, as above described, the lower sections are placed in the ditch 39 with the ribs 37 and 38 resting on the floor 40 of the ditch and with the spigot of one section telescoping within the bell portion of the adjacent section to form a continuous open top trough into which the pipe links may be laid.

With the lower sections thus assembled, the ends of the flanges 11 and 12 on one section are spaced from the corresponding flanges of the adjacent sections to accommodate the bells of the upper sections.

The spigots of the sections may be locked in the bell of the adjacent sections by a cementitious material, as indicated at 41, Fig. 2.

The hangers 22 may then be inserted in selected seats 31 and 32, for example in the seats of every second or third section as the case may require. The pipe lines 20 and 21 are covered with suitable insulating material and laid on the rollers 35 and 36 of the hangers.

The upper sections are then mounted with the side edges 15 and 16 thereof resting on the side edges 9 and 10 of the lower sections and the bells 18 aligning with the bell portions 5 so that the upper bell portions are received within the spaces between the flanges 11 and 12 of the adjacent sections.

The upper sections may be secured by a similar cement material, as indicated at 42, Fig. 2, to secure the joints together for forming a continuous conduit.

The spacing formed between the inner vertical face of the flanges 11 and 12 and the curved outer face of the upper sections is then filled with a suitable plastic sealing material, such as a plastic asphalt, to prevent the entrance of moisture through the joint into the sections.

The cementing material is preferably built up on the upper faces of the longitudinal flanges to form water sheds 43 to divert the water draining from the side of the barrel portions of the upper sections around the joint of the lower sections.

After the upper sections are in place and the joints cemented, the ditch is back filled to complete the installation.

From the foregoing, it is obvious that I have provided an improved tile construction, particularly adaptable for conduits such as are used in producing pipe lines of the character specified, and that the joints may be effectively sealed to exclude moisture and other elements from the interior of the conduits.

It is also obvious that the notched seats provide a simple efficient support for the hangers and that when the tile sections are assembled they are securely anchored against displacement during expansion or contraction of the pipe lines.

It is also apparent that the hangers require

only a small space within the conduit, so that, if desired, the entire conduit may be filled with insulating material.

What I claim and desire to secure by Letters Patent is:

1. A tile of the character described including upper and lower sections provided with bell and spigot ends, and having longitudinal side edges whereby one section is supported on the other section, said side edges of one section having notches at the spigot end to form seats for supporting a pipe hanger and arranged so that the bell end of an adjoining tile engaging said spigot end closes said notches and reinforces the tile at the point of the hanger.

2. A tile of the character described including upper and lower sections provided with bell and spigot ends and having longitudinal side edges whereby one section is supported on the other section, and flanges extending along the side edges of one section between the bell and spigot ends thereof and spaced from side edges of the other section to provide grooves for sealing material to seal the joints between the sections, said side edges of one section having notches at the spigot end to form seats for cooperating with the overlying edges of the other section to support a pipe hanger and whereby the bell end of an adjoining tile engaging said spigot end closes said notches and reinforces the tile at the point of the hanger.

3. A tile of the character described including upper and lower sections provided with bell and spigot ends and having longitudinal side edges whereby one section is supported on the other section, flanges extending along the side edges of one section between the bell and spigot ends thereof and spaced from the other section to provide grooves for sealing material to seal the joints between the sections, and seats formed in the side edges of the spigot end of one section to cooperate with the overlying edge of the other section for supporting and retaining a pipe hanger so that the bell end of an adjoining tile engaging said spigot end reinforces the tile at the point of said seats.

4. In a conduit of the character described including upper and lower tile sections provided with bell and spigot ends and having longitudinal side edges whereby one section is supported on the other, flanges extending along the side edges between the bell and spigot ends of one section and spaced from the corresponding edge of the other section to provide grooves for sealing material to seal the joints in the sections, a sealing material in said grooves and between the bell and spigot ends of adjacent tile sections, a pipe hanger having laterally extending arms, and seats inset in the side edges of one section for seating said lateral arms to support said hanger independently of said sealing material.

JAMES ALFRED MILLSOM.