

June 13, 1933.

B. J. UKROPINA

1,913,779

CONCRETE PIPE

Filed Jan. 17, 1931

FIG. 1

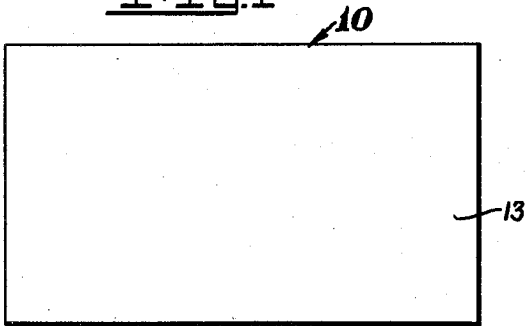


FIG. 2

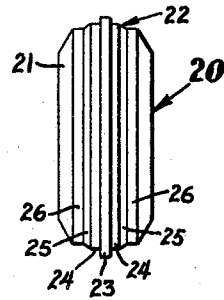


FIG. 3

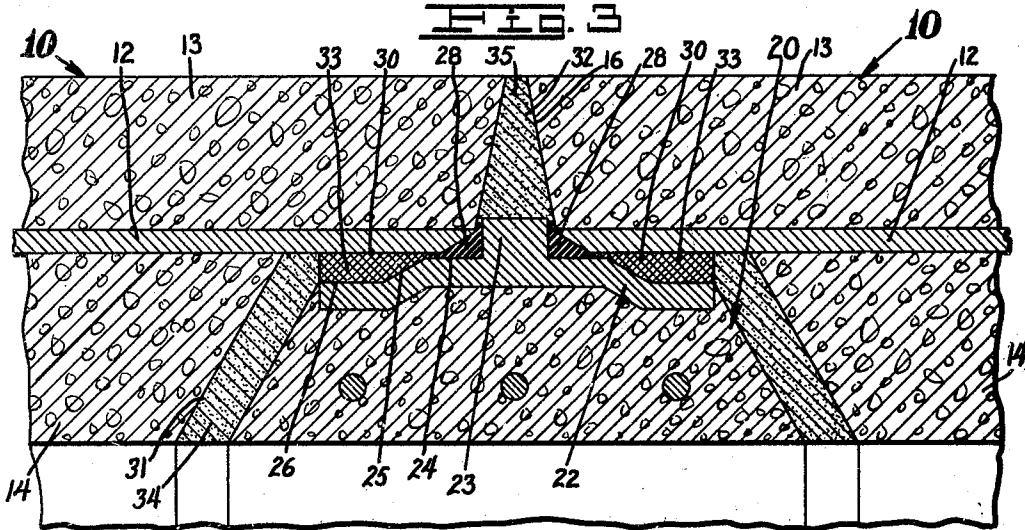


FIG. 4

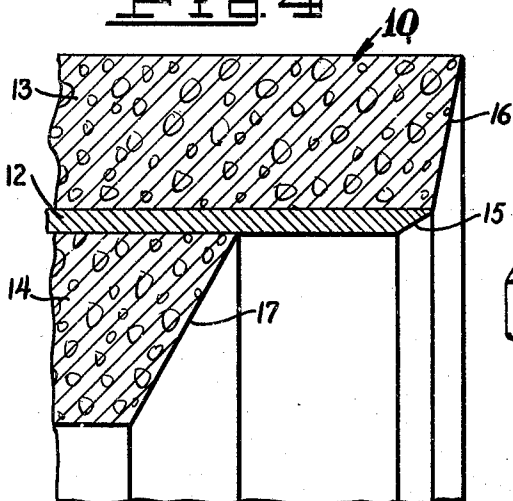
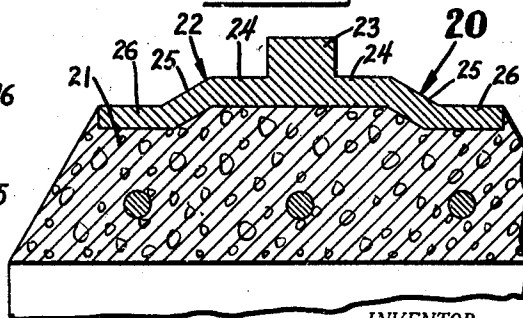


FIG. 5



INVENTOR.
B. J. UKROPINA.

BY

B. J. Craig
ATTORNEY.

UNITED STATES PATENT OFFICE

BOZIDAR J. UKROPINA, OF LOS ANGELES, CALIFORNIA

CONCRETE PIPE

Application filed January 17, 1931. Serial No. 509,374.

This invention relates to improvements in concrete pipes.

The general object of my invention is to provide an improved joint for concrete pipes.

A further object of my invention is to provide a joint for concrete pipes wherein a separate spigot ring is used.

Other objects and advantages of this invention will be apparent from the following description taken in connection with the accompanying drawing wherein:

Fig. 1 is a side elevation of a section of concrete pipe embodying the features of my invention.

Fig. 2 is a side elevation of the spigot ring.

Fig. 3 is an enlarged fragmentary section through two sections of pipe showing my improved joint construction.

Fig. 4 is an enlarged fragmentary section through my improved pipe showing the construction of the end thereof, and

Fig. 5 is an enlarged fragmentary section through the spigot ring.

Referring to the drawing by reference characters I have indicated a length of concrete pipe embodying the features of my invention generally at 10. As shown this pipe includes an annular metal reinforcing tube 12 which is preferably imperforate and is embedded between an outer layer of concrete 13 and an inner layer of concrete 14. Each end of the tube 12 is beveled as indicated at 15 and the ends of the outer layer of concrete 13 are beveled outward as indicated at 16 while the ends of the inner layer of concrete 14 are set back from the ends of the tube 12 and similarly beveled as indicated at 17.

To form a joint between two sections of the pipe 10 a separately formed spigot ring 20 is used. As shown this spigot ring includes an inner annular ring of concrete 21 having an annular metal ring 22 on its outer surface.

The metal ring 22 includes an annular flange 23 having a reduced portion 24 on each side thereof which terminates in a beveled shoulder 25 which in turn merges into further reduced portions 26. The outer periphery of the flange 23 is preferably

greater in diameter than the outer face of the pipe tube 12 and the outer faces of the portions 24 are of a diameter to fit within the tube 12 while the outer faces of the portions 26 are of a diameter to allow a space between them and the inner surfaces of the tube 12.

The ends of the concrete ring 21 extend beyond the ends of the metal ring 22 and are beveled inwardly to the upper outer edges of the reduced portions 26 of the metal ring 22.

When two sections of the pipe 10 are to be joined as shown in Fig. 3 resilient packing rings 28 are positioned on the portions 24 of the spigot ring 20 adjacent the sides of the flange 23. These packing rings may be made of rubber or any other desired resilient material and they each include an outer beveled face which is tapered to substantially correspond to the taper 15 at the ends of the pipe tube 12. The spigot ring 20 is positioned in the end of one of the pipe sections and then the end of the next pipe section is positioned over the bell ring and the pipe sections pressed together until the beveled ends of the tubes 12 engage the resilient packing rings 28 and tightly squeeze them against the sides of the spigot flange 23 and the outer face of the spigot portions 24 thereby forming a fluid tight seal between the ends of the pipe tubes 12 and the spigot ring.

When the spigot ring 20 is in this position a chamber 30 is formed between the inner surfaces of the pipe tubes 12 and the outer surfaces of the spigot portions 26 and chambers 31 are formed between the ends of the spigot ring and the ends of the inner layers of concrete 14 of the pipes while a chamber 32 is formed between the adjacent ends of the outer layers of concrete 13.

After the pipes 10 have been positioned on the spigot ring 20 suitable calking material 33 such as lead is driven in the chambers 30 and tightly packed therein and then the chambers 31 are filled with a plastic material 34 and the chamber 32 is filled with a plastic material 35. The plastic ma-

material may be cement mortar or other suitable substance.

Instead of the continuous imperforate tube 12, I may use annular end members at each end of the joint with the end members connected by suitable wire reinforcing members.

It will be noted that my improved pipe joint allows for expansion and contraction without liability of leakage so that concrete pipe embodying the features of my invention may be used for many purposes.

From the foregoing description it will be apparent that I have provided an improved concrete pipe and pipe joint which is simple in construction, highly efficient in use, and which can be economically manufactured.

Having thus described my invention, I claim:

1. In a fluid conduit comprising a plurality of lengths of pipes, a spigot ring positioned between the adjacent ends of each of said pipes, each of said pipes including a reinforcing tube, each of said spigot rings including a ring of moulded material having a reinforcing member on the outer face thereof, each of said reinforcing members including an annular flange of greater diameter than the outer surface of said pipe tube, reduced portions on each side of said flange, said reduced portions of said spigot rings being positioned in said pipe tubes adjacent the inner surface thereof, a resilient packing ring on said spigot rings adjacent each side of said flanges, said packing rings being engaged by the adjacent end of said tubes of adjacent pipe lengths and compressed between said tube ends and said reinforcing members of said spigot rings.

2. In a fluid conduit comprising a plurality of lengths of pipes, a spigot ring positioned between the adjacent ends of each of said pipes, each of said pipes including a reinforcing tube exposed at both ends with the exposed ends of said tube beveled, said reinforcing tube being embedded between an outer layer of moulded material and an inner layer of moulded material, each of said spigot rings including an annular flange of greater diameter than the outer surface of said pipe tube, reduced portions on each side of said flanges terminating in beveled shoulders which merge into further reduced portions, said first reduced portions of said spigot ring being positioned in said pipe tubes adjacent the inner surfaces thereof and said second reduced portion adapted to be spaced from the inner surface of said pipe tubes to form chambers therebetween and a calking material in said chambers between the outer surface of said spigot rings and the inner surface of said pipe tubes.

3. In a fluid conduit comprising a plu-

rality of lengths of pipes, a spigot ring positioned between the adjacent ends of each of said pipes, each of said pipes including a reinforcing tube exposed at both ends with the exposed ends of said tube beveled, said reinforcing tube being embedded between an outer layer of moulded material and an inner layer of moulded material, each of said spigot rings including an annular flange of greater diameter than the outer surface of said pipe tube, reduced portions on each side of said flanges terminating in beveled shoulders which merge into further reduced portions, said first reduced portions of said spigot ring being positioned in said pipe tubes adjacent the inner surface of said pipe tubes to form chambers therebetween, resilient packing rings on said spigot ring adjacent the sides of said flanges, said packing rings having normally inclined faces engaged by the adjacent end of said tubes of adjacent pipe lengths and compressed between said tube ends and said spigot rings and a calking material in said chambers between the outer surface of said spigot rings and the inner surface of said pipe tubes.

4. In a fluid conduit comprising a plurality of lengths of pipes, a spigot ring positioned between the adjacent ends of each of said pipes, each of said pipes including a reinforcing tube exposed at both ends with the exposed ends of said tube beveled, said reinforcing tube being embedded between an outer layer of moulded material and an inner layer of moulded material, each of said spigot rings including a ring of moulded material having reinforcing rings on the outer face thereof, said reinforcing ring including annular flanges of greater diameter than the outer surface of said pipe tube, reduced portions on each side of said flanges terminating in beveled shoulders which merge into further reduced portions, said first reduced portions of said spigot rings being positioned in said pipe tubes adjacent the inner surface thereof and said second reduced portion adapted to be spaced from the inner surface of said pipe tubes to form chambers therebetween, resilient packing rings on said spigot ring adjacent each side of said flange, said packing rings having normally inclined faces engaged by the adjacent end of said tubes of adjacent pipe lengths and compressed between said tube ends and said flanges of said spigot rings, the adjacent ends of said inner layers of moulded material of adjacent pipe lengths forming chambers between the ends of said spigot rings, and the adjacent ends of said outer layers of moulded material forming a chamber at each joint, a calking material in said first chambers between the outer surface of said spigot ring and the inner surface of said pipe tubes and a plastic material in said other chambers.

5. In a fluid conduit comprising a plurality of lengths of pipes, a spigot ring positioned between the adjacent ends of each of said pipes, each of said pipes including
5 a reinforcing tube exposed at both ends, said reinforcing tubes being embedded between an outer layer of moulded material and an inner layer of moulded material, each of said spigot rings including an annular flange of greater diameter than the
10 outer surface of said pipe tube, said flanges being arranged between the ends of said tubes, reduced portions on each side of said flanges terminating in beveled shoulders
15 which merge into further reduced portions, said first reduced portions of said spigot rings being positioned in said pipe tubes adjacent the inner surfaces thereof and said second reduced portion being spaced from
20 the inner surfaces of said pipe tubes to form chambers therebetween and a calking material in said chambers between the outer surface of the ends of said spigot rings and the inner surface of said pipe tubes.

25 6. In a fluid conduit comprising a plurality of lengths of pipes, a spigot ring positioned between the adjacent ends of each of said pipes, each of said pipes including a reinforcing tube exposed at both ends, said
30 reinforcing tubes being embedded between an outer layer of moulded material and an inner layer of moulded material, each of said spigot rings including a central portion, and reduced portions on each side of
35 said central portion and connected to said central portion by beveled shoulders forming chambers, said central portions of said spigot rings being positioned in said pipe tubes adjacent the ends thereof and a calking
40 material in said chambers between the outer surface of the central portions of said spigot rings and the inner surfaces of said pipe tubes.

In testimony whereof, I hereunto affix my
45 signature.

BOZIDAR J. UKROPINA.

50

55

60

65