No. 780,789. PATENTED JAN. 24, 1905.

C. T. BAUM GARDNER.

PIPE.

APPLICATION FILED MAY 26, 1904.

Fig: 1.

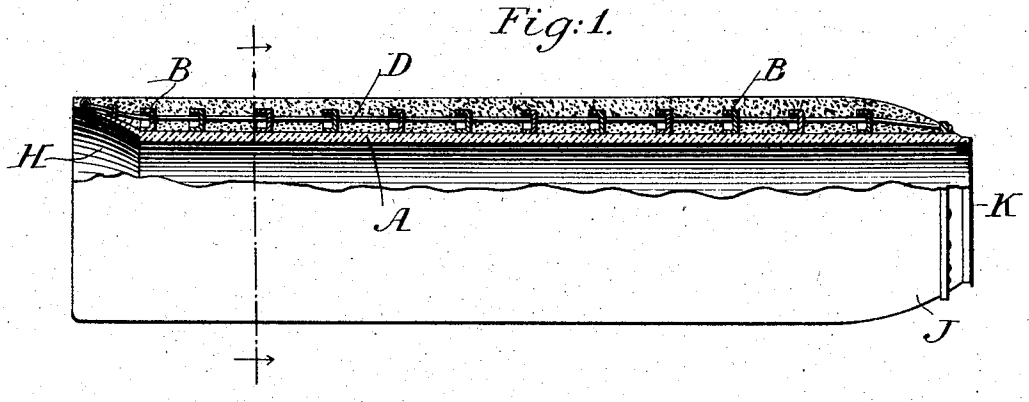


Fig: 2.

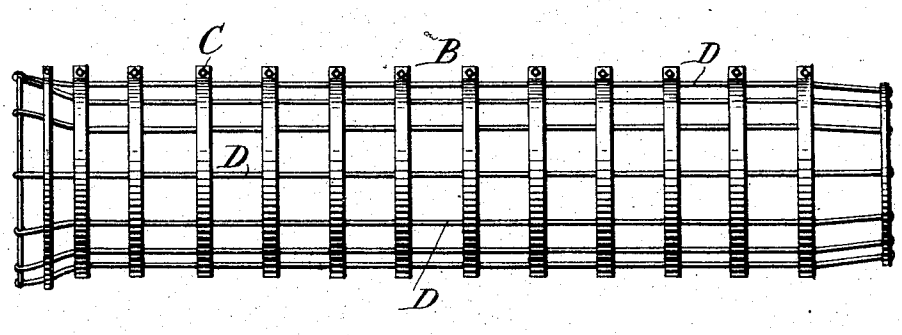


Fig: 3.

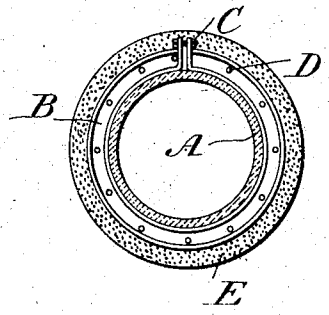
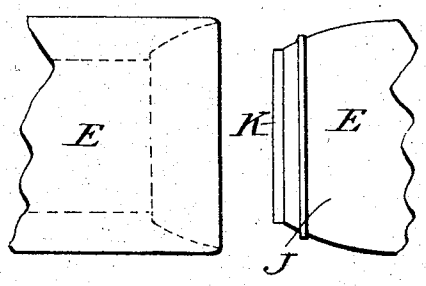


Fig: 4.



Witnesses:
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No. 780,789. Patented January 24, 1905.

UNITED STATES PATENT OFFICE.

CHARLES T. BAUM GARDNER, OF PITTSBURG, PENNSYLVANIA.

PIPE.

SPECIFICATION forming part of Letters Patent No. 780,789, dated January 24, 1905.

Application filed May 26, 1904. Serial No. 209,848.

To all whom it may concern:

Be it known that I, CHARLES T. BAUM GARDNER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Pipes, of which the following is a specification.

My present invention relates to improvements in pipes, and has special reference to a new and novel construction of pipe to be used for sewerage, drainage, water-supplying and gas-supplying, the said pipe being peculiarly formed, so as to withstand exterior and interior pressure, so as to not be easily burst, and also in which the parts are so arranged and constructed as to prevent any leakage therethrough or therein.

To attain these objects, the invention consists of a pipe of this character embodying novel features of construction and combination of parts, substantially as disclosed herein.

In the accompanying drawings, Figure 1 is a view of a pipe constructed according to my invention, the same being shown partly in longitudinal section. Fig. 2 represents a view of the strengthening provision. Fig. 3 represents a transverse section taken on the line 3 3 of Fig. 1. Fig. 4 represents a detailed view of the opposing ends of two pipe-sections.

Referring to the drawings, A designates an inner lining or composition of a non-corrosive nature, which has surrounding it a plurality of bands B, which are arranged at intervals along its length. These bands are in the nature of clamps and are preferably formed of channel-iron, the same being fastened together by means of bolts C, as shown. They are further provided with perforations at desired intervals to receive the longitudinal rods D, which extend the entire length of the section or pipe, where they are fastened in any desired manner. A concrete covering E surrounds the bands, rods, and inner lining to form the complete pipe.

In order to secure the sections together, I provide a novel form of joint in which one end of one of the sections of the pipe is provided with an interiorly-concaved rim H, which is adapted to receive the opposite end of an abutting section, which is provided, as shown, at the opposite end of this section with a rounded portion J, terminating in the straight end K. By this means the rounded end fits within the concaved portion of the pipe and provides in a fashion a ball-and-socket joint. This enables the sections of the pipe to be deflected at any desired angle, thus dispensing with the elbows generally used. When it is desired to turn corners with the pipes, shorter sections are used.

From the foregoing description, taken in connection with the drawings, it is evident that I provide a pipe of this character which is the embodiment of simplicity and durability by reason of the strengthening longitudinal rods and the transverse or surrounding bands, as they form a framework to properly support and strengthen the pipe-section, while the non-corrodible lining forms a means whereby the interior of the pipe is impervious to moisture or, in fact, leakage of gas, while the outside lining forms a hard mass to assist in protecting the pipe and also to withstand pressure either exteriorly or interiorly. Thus the three main elements—the interior lining, the strengthening provision, and the exterior lining—form means whereby a thoroughly efficient and practical pipe for drainage, sewerage, water-supplying, and gas-supplying purposes is produced.

What I claim as new, and desire to secure by Letters Patent, is—

1. A pipe of the character described consisting of an inner lining of a non-corrodible nature, a series of bands surrounding the same, a series of longitudinal strengthening-rods mounted within the bands and extending from one end of the section to the other, and a concrete covering surrounding the lining and entirely covering the bands and rods.

2. A pipe of the character described, consisting of a series of circular clamping-bands, means for clamping the same together, a series of strengthening-rods passing through the bands and forming a cage, and a composite material covering the bands and rods interiorly and exteriorly to form a completed section.

3. A pipe of the character described, consisting of a series of circular clamping-bands, means for clamping the same together, a series

of strengthening-rods passing through the bands and forming a cage, a composite material covering the bands and rods interiorly and exteriorly to form a completed section, and a non-corrodible material coating the interior surface of the composite material.

4. A pipe of the character described, consisting of an inner lining of a non-corrodible nature, a series of bands surrounding the same, a series of longitudinal strengthening-rods mounted within the band, and a concrete covering surrounding the lining and entirely covering the bands and rods.

5. A pipe of the character described, consisting of a series of circular bands, a series of longitudinal rods passing through the bands and supported thereby, and a composite material covering the bands and rods exteriorly and interiorly to form a completed section.

6. A pipe of the character described, consisting of a series of circular bands, a series of longitudinal rods passing through the bands and supported thereby, a concrete forming the entire mass into a cylinder or tube, and a non-corrodible lining coating the interior surface of the concrete.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES T. BAUM GARDNER.

Witnesses:

J. A. RENNIE,

SARA M. RUSSELL.