M. ALLEN.

Cement and Asphaltum Pipe.

No. 203,869. Patented May 21, 1878.

Fig. 1.

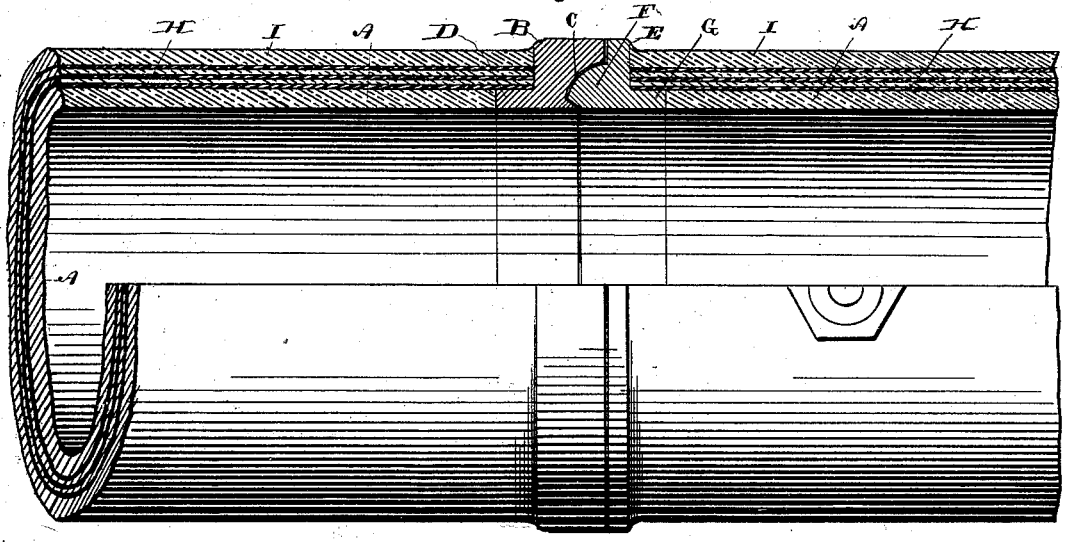


Fig. 2.

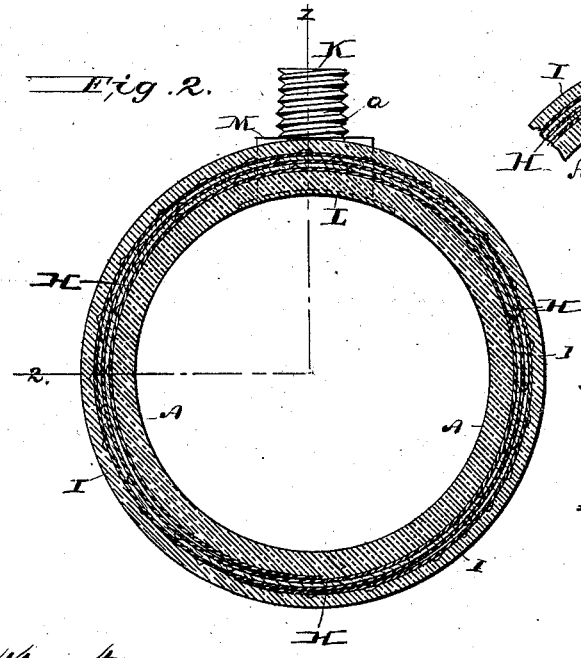


Fig. 4.

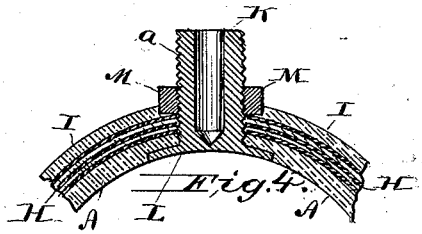
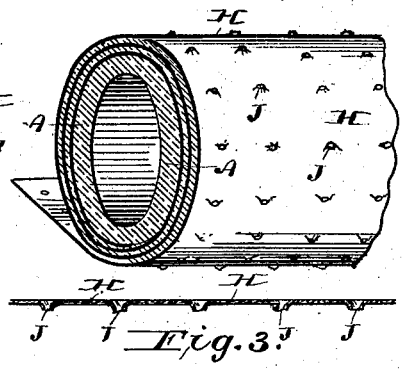


Fig. 3.



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UNITED STATES PATENT OFFICE.

MICHAEL ALLEN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO THADDEUS H. WALSH, OF SAME PLACE.

IMPROVEMENT IN CEMENT AND ASPHALTUM PIPES.

Specification forming part of Letters Patent No. **203,869**, dated May 21, 1878; application filed May 1, 1878.

To all whom it may concern:

Be it known that I, MICHAEL ALLEN, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cement and Asphaltum Pipes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a longitudinal view with a section, taken on line *z* 2 of Fig. 2, removed. Fig. 2 is a transverse section. Fig. 3 is a view showing the perforations in the sheet metal, and Fig. 4 is a transverse section through the pipe and tap.

The nature of my invention consists in forming a cylinder of asphaltum or cement, in which is embedded one end of a sheet of iron or other metal, which is then wound around the cylinder and then upon itself, a layer of asphaltum or other suitable cement being interposed between the layers of metal, the layers of metal and cement, in cross-section, presenting a volute. Any desired number of layers of metal and asphaltum or cement may be made, as experience or the necessities of the case may require, and the whole covered with a layer of asphaltum or cement. The object is to produce a pipe for water-mains and other like uses that shall possess the requisite amount of strength and resistance to the destroying effects of water through a long series of years.

Pipes made of asphaltum and layers of wood have been used; but those in use have been found very objectionable for various reasons, among which appear; when an opening is made to tap a water-main the wood is exposed to the action of water, and cannot be effectually covered. The wood, being well seasoned, quickly absorbs the water, swells and breaks the layers and covering, and destroys the pipe. A like difficulty must be guarded against in forming the ends of the pipes.

Pipes made of layers of asphaltum or cement and cloth have also been attempted; but it has been found impossible to get the cloth of sufficient evenness to prevent the stretching of the pipe and breaking of the layers and covering.

Pipes formed of layers of wood, cement, and cloth have been used; but the aggregate of the above difficulties attends the use of both materials.

In the drawing, A represents a suitable asphaltum or cement cylinder, formed in any desired manner, and in sections of the required length.

A suitable ring, B, constructed on the inner side with a groove or recess, C, also with a flange, D, is arranged at one end of the cylinder A, and a like ring, E, constructed with a suitable tongue, F, and a flange, G, arranged at the other.

In the outer surface of the cylinder A is embedded one end of a sheet of iron or other metal, H, which is then wound around the cylinder A and flanges D and G, and then upon itself, a layer of asphaltum or other cement being interposed between each two layers as the sheet of metal is wound around, the layers of metal and cement, in a cross-section, presenting a volute, as shown in Fig. 2 of drawing.

Upon the sheet metal, after making any desired number of layers thereof, is formed an outer layer or cylinder, I, of asphaltum or cement.

The sheet metal, before being wound around the cylinder A, is provided with perforations made with a round conical punch, the burr J being thrown outward, as shown in Fig. 3 of drawing. The object of these burrs is to make an embedded fastening in the interposed layer of asphaltum or cement, and thus prevent the slipping and expansion of the metal when the pipe is submitted to a heavy pressure.

Any desired section of pipe, or each of them, if desired, may be provided with a tap, K, constructed with a solid bottom or disk, L, which is placed inside the cylinder and embedded in it, and is provided with a screw-threaded tube, *a*, passing through the pipe, and having the nut M driven down upon the metal, so as to make a firm clamp. This nut is then embedded in asphaltum.

When the tap is needed for use the solid bottom can be drilled out through the tube *a*, and an attachment made to the screw-threaded tube.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In cement or other pipe, embedded coils of sheet metal wound around a cylinder and then upon itself, having intervening layers of cement or asphaltum, as set forth.

2. A pipe having an inner cylinder, A, between which and an outer cylinder, I, are arranged coils of sheet metal H, provided with burrs J, a layer of asphaltum or cement being interposed between each two coils of metal, as set forth.

3. A section of pipe formed of cement or asphaltum and provided with embedded coils of sheet metal, as set forth, having one end provided with a ring, B, formed with a recess, C, and flange D, and the other end provided with a ring, E, formed with a flange, G, and tongue F, as shown and described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

MICHAEL ALLEN.

Witnesses:
H. B. BROWN,
ALBIN M. LONG.