W. BOURGUIGNON.

Flexible Gas Tubing.

No. 207,489. Patented Aug. 27, 1878.

Fig. 1.

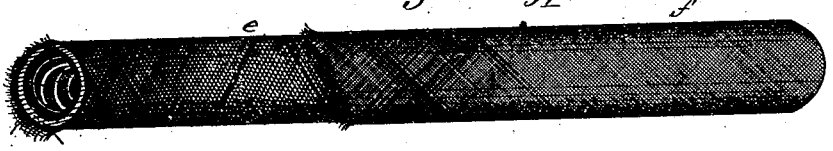
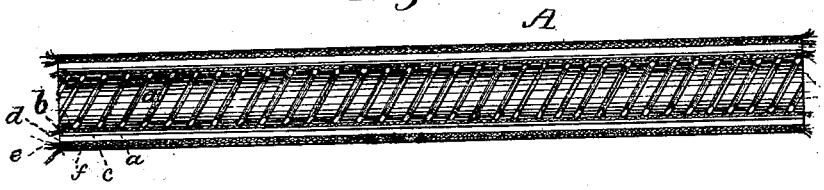


Fig. 2.

Fig. 3.



WITNESSES

S. H. Merrill

Leo Bacon.

INVENTOR,

Wendel Bourguignon,

per Chas. A. Fowler,

Attorney.

UNITED STATES PATENT OFFICE.

WENDEL BOURGUIGNON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO ROBERT GEMS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN FLEXIBLE GAS-TUBING.

Specification forming part of Letters Patent No. **207,489**, dated August 27, 1878; application filed May 14, 1878.

To all whom it may concern:

Be it known that I, WENDEL BOURGUIGNON, of Providence, in the county of Providence and State of Rhode Island, have invented a new and valuable Improvement in Flexible Gas-Tubing; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a perspective view of my invention with the outer covering partially removed. Fig. 2 is a similar view with the outer covering removed and a portion of each of the under coverings or layers partially broken away, and Fig. 3 is a vertical longitudinal section of the same.

This invention has relation to the manufacture of flexible tubing; and the object or purpose thereof is to provide a tubing that will be perfectly gas-tight or impervious to any of the aeriform fluids passing through it, and at the same time retaining its required flexibility.

The invention therefore consists in a covering of leaf or sheet lead interposed between a covering of fibrous material and a covering of elastic material, as will be hereinafter described.

In the accompanying drawings, A represents the tubing, consisting of a core composed of a spiral wire coil, *a*, which may have, if desired, a covering, *b*, of cotton braid or other suitable fibrous material. Over this is placed a covering of leaf or sheet lead, *c*, the purpose of which is to protect the covering of rubber or other elastic material *d*. Above it, and over the elastic covering *d*, is still another covering, *e*, of fibrous braid, and over this an outer covering of fibrous braid, or any other suitable material generally used to give the tubing an ornamental or neat appearance.

I do not wish to be understood, however, as confining myself to the number of coverings shown and described, or the material from which they are made, as the fibrous coverings may be knit, braided, or plain, and in place of the rubber a layer or sheet of an elastic varnish or cement may be used, as my invention consists, principally, in the sheet-lead covering as a material to protect the elastic substance from the gas or its deposits, and also in the inner covering of fibrous material to protect the lead from the action of the gas, and thus form a perfectly air-tight tubing.

It will be readily understood why a tubing used to conduct gas should be absolutely impervious thereto, as those familiar with the use of flexible tubing as a means of conducting gas to the burner are well aware that if the tubing is in the least incapable of holding the gas, or preventing it from penetrating the several coverings, a disagreeable smell of gas is the consequence, and becomes as offensive and objectionable as a gas-tubing which is in reality pervious and leaky.

The use of sheet-lead between the wire coil and the covering of elastic material renders the tubing perfectly gas-tight, and prevents the possibility of the escape of the gas.

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

A flexible tubing consisting of a spiral wire coil, a covering of fibrous material, and a covering of lead between said fibrous covering and a covering of elastic material, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WENDEL BOURGUIGNON.

Witnesses:

A. SHEFFIELD ARNOLD,

HENRY VALHOW.