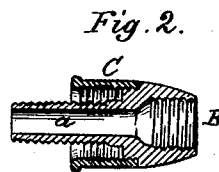
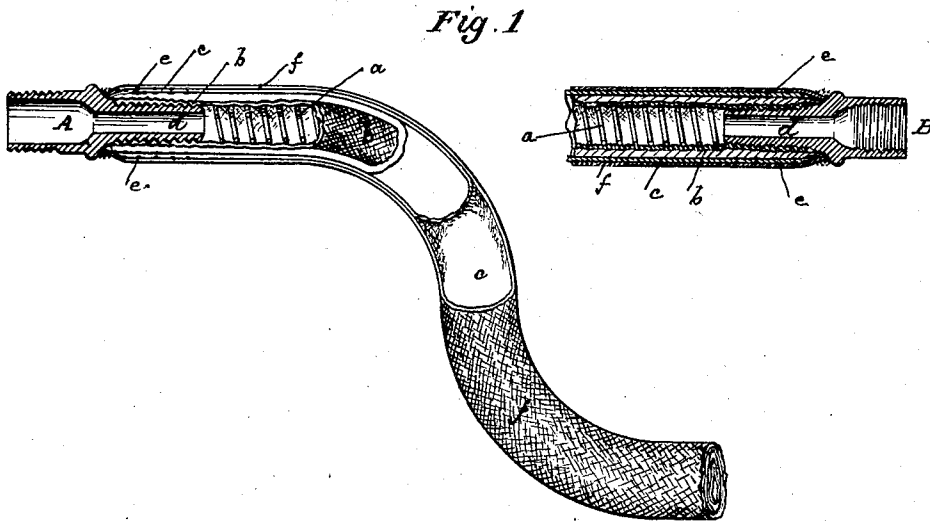


W. B. S. TAYLOR.

Connections for Flexible Gas-Pipes.

No. 128.336.

Patented June 25, 1872.



Witnesses.

Harry Coleman.
Thos. Jewell

Inventor.

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UNITED STATES PATENT OFFICE.

WILLIAM B. S. TAYLOR, OF NEW YORK N. Y.

IMPROVEMENT IN CONNECTIONS FOR FLEXIBLE GAS-PIPES.

Specification forming part of Letters Patent No. 128,336, dated June 25, 1872.

To whom it may concern:

Be it known that I, WILLIAM B. S. TAYLOR, of the city, county, and State of New York, have invented certain new and useful Improvements in Connections for Flexible Gas-Tubing, of which the following is a specification.

My invention relates to flexible wire-lined gas-tubing, of which the tubing patented to me February 21, 1865, is a type. Tubing of this kind, composed of a body of glue and gelatine or similar substances, and woven material built up on a core consisting of spirally-coiled wire, is especially adapted for conducting gas, and is not fitted and would not be likely to be used to convey liquids. It is provided at each end with a tip, the one to connect it with the portable gas-light stand, the other to connect it with the metallic gooseneck usually employed to fit over the gas-burner from which the supply of gas is received. These tips have heretofore invariably, to my knowledge, been connected with the tubing by means of cylindrical sockets on their ends, in which the ends of the tubing were jammed and cemented or otherwise fastened. But this mode of connection has always proven unsatisfactory, unreliable, and defective. While it might answer for stiff and unshrinking tubing yet for the very flexible tubing above named, which is also liable to shrink considerably, it is entirely unfitted, as has been demonstrated by the frequent occurrence of leakage, which is, of course, a fatal obstacle to the use of the tubing. It has been my object to remedy this difficulty, and to this end I make use of a tip provided with a tubular shank, which is inserted into the end of the tubing, and upon which, after it has been so inserted, the tubing is tightly and permanently bound, this taking place, preferably, during the process of manufacture of the tubing. The tips thus form part of the tubing. Both are permanently united together, and are put into the market as one article. To further prevent a loose joint between the tip and tubing I extract from the end of the tubing the internal coiled-wire core for the distance the shank of the tip enters the tubing, so that the shank may come in direct contact with the soft and flexible or pliable material composing the body of the tubing.

In the accompanying drawing, Figure 1 represents a central longitudinal section of a piece

of tubing provided with tips in accordance with my invention. Fig. 2 is a modification of the connection.

In Fig. 1 is shown the mode of connection which I prefer to employ, as thereby the tip and tubing are solidly and permanently united, and a neat finish is given to the article.

I build up the tubing in the usual way, by weaving on the internal spiral-wire core *a* a sheath, *b*, of cotton or other fibrous material. The tubing is then dipped as often as required in the glue and gelatine or other gas-proofing composition, after which another sheathing, *c*, of cotton or other material is woven on the tube, which is coated with paint or other suitable substance for the purpose. At this point of manufacture I prefer to unite with the tubing the metal tips, which is effected by first extracting from the ends of the tubing the internal wire-core for the distance to which the shanks of the tips will extend. I then insert in the ends of the tubing the shanks *d* of the tips *A B*, and unite them with the tubing by binding the latter tightly on the shanks by means of cords, wires, or other suitable binding devices *e*. After this is done the exterior sheath *f* of ornamental fabric is woven on the tubing, covering the binding devices, and the tubing is then complete. The ends of the external sheath are bound with silk or other cord to prevent them from unraveling. By this method the tips become essentially a part of the tubing, and there is no point where they are liable to become loose and allow leakage. No shrinkage of the tubing can affect injuriously the connection, and the joint is always tight. Again, with the ordinary socket-coupling the tubing cannot be inserted in the socket for a distance much exceeding its external diameter owing to the great friction after the tubing has been jammed or screwed in a certain distance. But under my invention, as will be seen by reference to the drawing, the shank can be of greatly increased length—two or three times the internal diameter of the tubing in which it is located. This is of great advantage, and materially assists in making the connection secure and permanent, and in preserving the ends of the tubing unimpaired and in good condition.

It will be understood that the binding-cord or wire may be applied to any one of the sev-

eral sheaths which enter the composition of the tubing. When applied to the sheath *f* it might be composed of silk of the same shade of color as the sheath, wrapped closely and tightly upon the same for the proper distance from the end of the tubing, and then varnished. I, however, much prefer the arrangement first described.

A ferrule, *C*, may also be employed, as represented in Fig. 2, on the exterior of the tubing and screwing onto the tip to conceal the joint and to aid in holding the tip in place, if desired.

In the drawing, the shanks of the tip are represented as screw-threaded, but they may be otherwise made, if desired. The object of the screw-threads is to afford a means of holding, in conjunction with the external binding devices, the tubing to the shanks. Any other formation of the shanks which will serve this purpose may be substituted.

In conclusion, I would again repeat that my invention relates to gas-tubing of the kind hereinbefore mentioned, and not to rubber tubing or hose for conveying liquids. And it will be observed that it is my aim to effect a permanent connection of the tip hereinbefore de-

scribed with the tubing, so that it shall, in effect, become part of said tubing.

The extracting of the wire from the tubing for the distance that the shanks of the tip is inserted is essential to the formation of this permanent and tight connection.

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

1. Internally wire-supported gas-tubing, provided with shank-tips, applied to and permanently united with the same, substantially in the manner and by the means herein shown and described.

2. The mode of uniting the tubing with its shank-tips by inserting the tips in the tubing and binding the latter on the shanks during the process of manufacture of said tubing and before the application of its external sheath or covering, substantially as shown and set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

WILLIAM B. S. TAYLOR.

Witnesses:

M. BAILEY,

C. B. NOTTINGHAM.