

964,048.

Patented July 12, 1910.

FIG. 1.

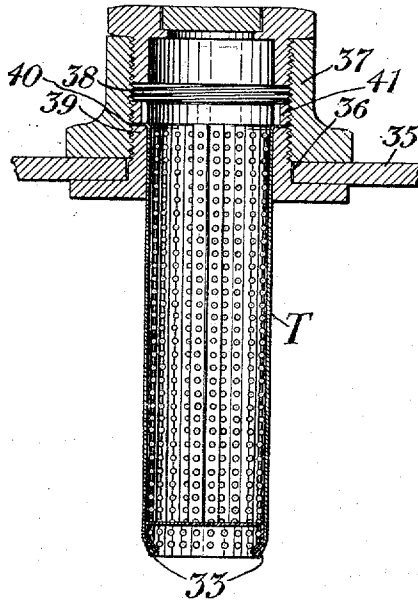


FIG. 2.

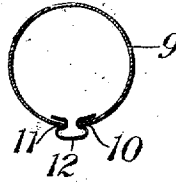


FIG. 3.

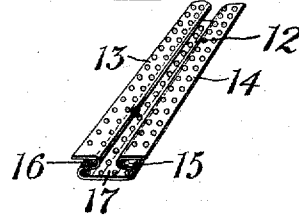


FIG. 4.

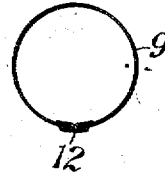


FIG. 5.

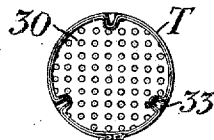


FIG. 7.

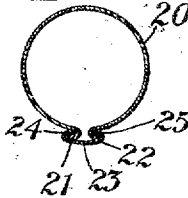


FIG. 8.

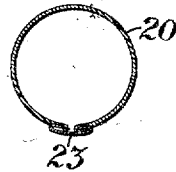
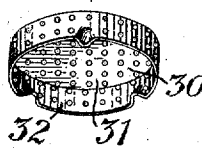


FIG. 6.



Witnesses
M. Levy.
H. D. Penney

Inventor
Wm. H. McNutt.
By his Attorney, F. N. Richards.

UNITED STATES PATENT OFFICE.

WILLIAM H. McNUTT, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO
THE McNUTT NON-EXPLOSIVE MFG. CO., OF NEW YORK, N. Y.

SEAM-LOCK FOR TUBES.

964,048.

Specification of Letters Patent. Patented July 12, 1910.

Application filed July 3, 1907. Serial No. 382,125.

To all whom it may concern:

Be it known that I, WILLIAM H. McNUTT, a citizen of the United States, residing in New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Seam-Locks for Tubes, of which the following is a specification.

This invention relates to seam locks for tubes, and is especially designed for use with the tubes of apertured material such as perforated sheet metal.

The tube is designed for use with non-explosive safety devices that are employed in connection with vessels of various kinds for containing gasoline, kerosene, and similar inflammable and explosive liquids.

One of the objects of the invention is to provide a form of seam lock for a perforated tube, that can be very economically and quickly manufactured, yet will be sufficiently strong and reliable, to hold the tube against rupture from internal pressure.

In the accompanying drawing representing embodiments of my invention Figure 1 is a vertical section through a portion of a vessel having the safety tube applied thereto. Fig. 2 shows in section the seam lock in the first stage of manufacture. Fig. 3 shows the locking strip. Fig. 4 is a cross section through the tube showing the finished seam lock. Fig. 5 is a view from the lower end. Fig. 6 shows the end closure; and Figs. 7 and 8 show a modified form of seam lock.

Where tubes are formed of perforated material they cannot be economically drawn and then perforated, but must be made of perforated sheet material and then bent to a tubular form and finished by using a seam lock of some kind. With safety devices for use with explosive fluids, the seam lock should not be soldered or brazed as the inflammable material would loosen such a seam. In the present invention a locking strip is used that is provided with channels into which the meeting edges of the tube are extended and thereupon the channels are closed under pressure to form a seam lock.

In the construction shown in Figs. 1 to 4, the tube T is formed of a piece of sheet material bent into the form of a tube 9 with the edges 10 and 11 slightly separated. The piece 9 is of perforated material that is per-

forated when in the sheet or flat form and is preferably of a hardened metal, such as hard brass.

The seam lock shown in Fig. 3 is preferably of comparatively soft material such as soft brass and is also formed of perforated sheet material. This strip 12 has its longitudinal edges 13 and 14 doubled twice upon themselves by a substantially S-shaped bend as illustrated, forming channels 15 and 16 opening in opposite directions. This locking strip is slipped on the open tube 9 in the manner shown in Fig. 2 with the edges 10 and 11 projecting into the channels 15 and 16 respectively. Thereupon by suitable pressing means the channels, and in fact the whole locking strip is compressed to the form illustrated in Fig. 4, whereby the channels 15 and 16 are tightly closed on the margins 10 and 11 of the tube, and the other bends adjacent the straight intermediate portion 17 of the locking strip are also bent upon themselves. The locking strip being of soft material will readily permit of such compression or bending, and the material of the strip will extend to the openings in the hardened sheet of material 9, thereby forming a tight engagement of the tube edges by the locking strip. The locking strip being also of perforated material, will act as a safety device on the principle of the Davy safety lamp, permitting passage of vapor or gas therethrough but preventing back fire of flame or ignited gas in the well known manner.

A modified form of seam lock is shown in Figs. 7 and 8 in which the tube 20 has its edges 21 and 22 bent upon themselves. The locking strip 23 has its edges 24 and 25 bent upon themselves to form channels opening toward each other, into which channels the bent edges 21 and 22 of the tube 20 extend, by sliding the strip on the tube. Thereupon the meeting edges are all compressed and the tube will assume the form shown in Fig. 8. Both the tubing and strip being of perforated material, the parts will be very securely united, and the perforations in the strip will act in the described manner.

One end of the tube, the end projecting into the vessel is provided with a suitable closure. In the construction illustrated, a closure member 30 is formed by a disk 31 having a tubular flange 32 that fits snugly inside of the tube T, and is inserted with

the flange projecting outward, so that the edges of the tube and flange are brought adjacent. Thereupon the said meeting edges are given bends extending inwardly in the form of interfitting indentations 33 at the lower edges.

The top 35 of the vessel has an aperture 36 in which is secured a suitable closure member denoted generally by 37, and which has a threaded bore 38. This bore is also provided with a shoulder portion 39 below which the bore is of reduced diameter, snugly fitting the tube T. This end of the tube is provided with an external flange 40 resting on said shoulder. A ring nut 41 is screwed into the threaded bore 38 onto said flange, locking it securely against said shoulder. By this means the tube will have its seam tightly locked at the upper portion and securely prevented from being distended, and the locking strip will be secured also by the ring nut.

Having thus described my invention, I claim:

1. In combination a safety tube formed of apertured sheet material of cylindrical shape with the longitudinal edges separated, and a locking strip of apertured material formed with its longitudinal edges bent to form

channel portions opening in opposite directions, the channel portions having the meeting edges of the tubular part extending therein and secured by the opposite sides of the channel portions being compressed thereon, an end member for said tube comprising a disk having a tubular flange portion engaging the inner wall of the tube, said tubular walls of the members having inwardly extending interfitting indentations at the lower edges.

2. In combination a safety tube of apertured sheet material of cylindrical shape with the edges separated, and a locking strip having its longitudinal edges each bent to form a longitudinal channel, the longitudinal edges of the tube at the seam being embedded in said channels respectively and secured therein by the compression of the opposite walls of the channel, and an end member for said tube comprising a disk having a tubular flange portion engaging the inner wall of the tube, said tubular walls of the members having inwardly extending interfitting indentations at the lower edges.

WILLIAM H. McNUTT

Witnesses:

FRED. J. DOLE,

HENRY E. GREENWOOD.