(No Model.)

E. A. EVERSMAN & D. WAGNER.

HOT AIR PIPE.

No. 425,601. Patented Apr. 15, 1890.

Fig. 1.

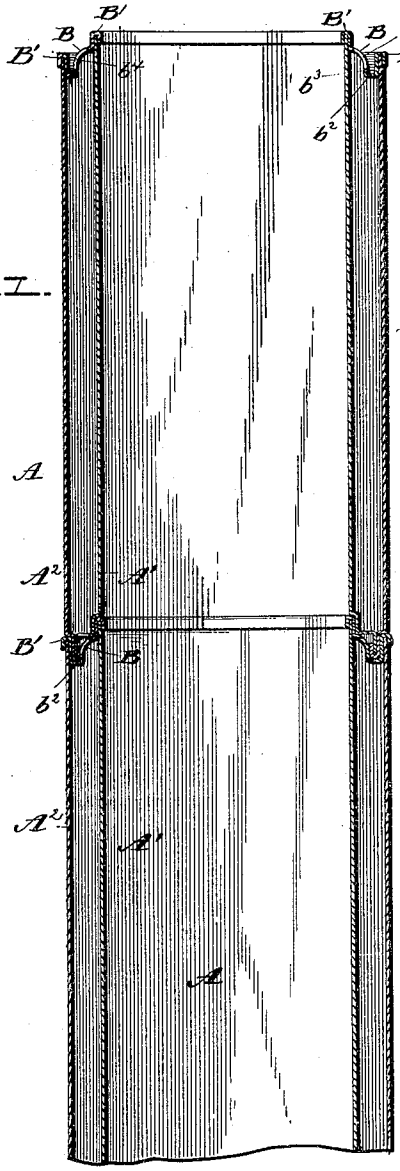


Fig. 2.

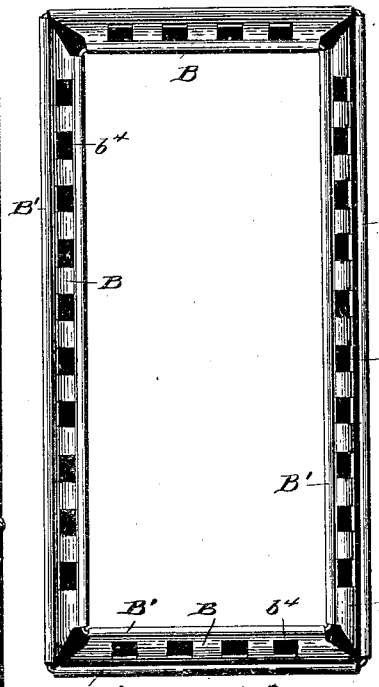
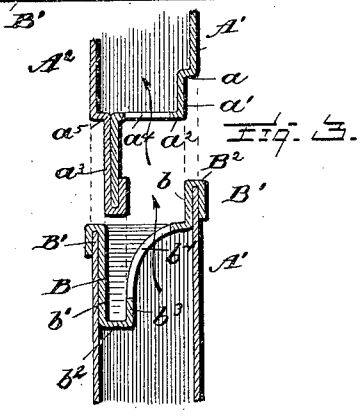


Fig. 3.



Witnesses
L. C. Hills.
E. A. Bond.

Inventors.
Ernst A. Eversman
and Daniel Wagner,
E. B. Stocking
Atty.

UNITED STATES PATENT OFFICE.

ERNST A. EVERSMAN AND DANIEL WAGNER, OF TOLEDO, OHIO.

HOT-AIR PIPE.

SPECIFICATION forming part of Letters Patent No. 425,601, dated April 15, 1890.

Application filed December 10, 1889. Serial No. 333,186. (No model.)

To all whom it may concern:

Be it known that we, ERNST A. EVERSMAN and DANIEL WAGNER, citizens of the United States, residing at Toledo, in the county of Lucas, State of Ohio, have invented certain new and useful Improvements in Hot-Air Pipes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to certain new and useful improvements in hot-air pipes of that class composed of inner and outer walls with a passage-way between the same, and is designed more especially as an improvement upon the pipe shown in Patent No. 411,652, dated September 24, 1889, granted to us; and it has for its object to provide an improved pipe of this character, which, when several sections are united, constitutes a very solid shaft without rivets and without solder, being an absolute protection to the wood-work and laths in a partition. We aim at ease and cheapness of manufacture. The inner wall of one section is bent at right angles to the length of the section and thence parallel with the outer wall, which is bent over the lower end of said inner wall. The adjacent section, and consequently the other end of the aforementioned section, has a separate piece passed over the top and embracing the inner and outer wall, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a vertical section through two sections of pipe constructed in accordance with our invention, united to form a continuous shaft. Fig. 2 is an end view of one of the sections, and Fig. 2 is an enlarged vertical sectional detail of the adjacent end of two sections.

Like letters of reference indicate like parts throughout the several views.

Referring to the details of the drawings by letter, A designates sections of the pipe, each composed of an inner wall A′ and an outer wall A^2. At one end the inner wall is bent inward, as at a, to form a horizontal portion or shoulder to rest against the upper end of the next lower section of pipe, and thence bent downwardly, as at a', parallel with the main portion of the inner wall, the said portion a' being adapted to fit within the upper end of the next lower section. The inner wall is then bent horizontally, as shown at a^2, and thence again downwardly, as at a^3, the horizontal portion being provided with a plurality of openings a^4. The outer wall A^2 of this section at this end is bent inwardly, as at a^5, forming a horizontal portion and shoulder, and thence in the direction of the length of the section and under and upon the inner side of the portion a^3 of the inner wall, tightly embracing the same at the end and upon two sides, as clearly shown in Fig. 3. The opposite end of this section has its inner wall extended a short distance beyond the end of its outer wall, and a separate piece of metal B is passed over the ends of the inner and outer walls, being bent to embrace the ends of both said inner and outer walls, as shown at B′ in Fig. 3, being bent upon the inside of the inner wall, as at b, to correspond with and of substantially the same length as the portion a' of the opposite end, and upon the inner side of the outer wall bent in close contact with said outer wall, thence at right angles to its length, as at b^2, and thence upwardly upon a curved line, as indicated in said Fig. 3, the diaphragm or partition b^3 being perforated, as at b^4, all as clearly shown in Fig. 3.

In practice a plurality of sections are united to form a shaft or pipe of the desired length, the sections being fitted one within another, as indicated clearly in Fig. 3, the shoulders a a^5 finding bearings against the upper end of the piece B, which is bent over the end of the inner and outer walls of the section, as indicated in Fig. 1.

The strip B forms a spacing-collar, leaving an interior projecting piece B^2, which serves as central and entering guide in uniting the sections.

What we claim as new is—

1. A hot-air pipe formed with inner and outer walls, the inner wall being bent at right angles, as at a, thence in line with the pipe, as at a', thence at right angles to the bent part of the pipe, as at a^2, and perforated and

then in line with the pipe, as at a^3, and the outer wall bent at right angles, as at a^5, upon the same plane as the right-angled portion a^2, and thence parallel with and embracing the end and two sides of the portion a^3, and the other end of the pipe provided with spacing-collar having perforations in line with the perforations in the right-angled portion a^2, substantially as and for the purpose specified.

2. A hot-air pipe formed of an inner and outer wall, one of which is extended beyond the other, and a piece of metal, as B, arranged between the inner and outer wall, with its ends bent over and embracing the ends of said inner and outer walls, with one portion b' extending parallel and in contact with the outer wall and thence bent at right angles, as at b^2, forming a recess for the reception of the rib upon the adjacent end of and entering section of pipe, the diaphragm thus formed being perforated, substantially as shown and described.

3. A hot-air pipe formed at one end with a perforated right-angled portion and having the inner and outer walls extended in line with the pipe and united and the other end provided with a perforated spacing-collar arranged between the inner and outer walls of the pipe, with its ends embracing the ends of said inner and outer walls, as set forth.

4. The combination, with a hot-air pipe having inner and outer walls united and bent at one end to form a transverse wall, which is perforated, and a rib extending in line with the pipe beyond said transverse portion within the line of the outer wall, of an adjoining section provided at the adjacent end with a spacing-collar embracing the inner and outer walls and formed with a perforated diaphragm and an interior recess to receive and hold the rib on the end of the first-mentioned section of pipe.

In testimony whereof we affix our signatures in presence of two witnesses.

ERNST A. EVERSMAN.
DANIEL WAGNER.

Witnesses:
G. W. KINNEY,
ALICE SULLIVAN.