(No Model.)

A. MILLER.

HOT AIR PIPE.

No. 490,579. Patented Jan. 24, 1893.

Fig. 1.

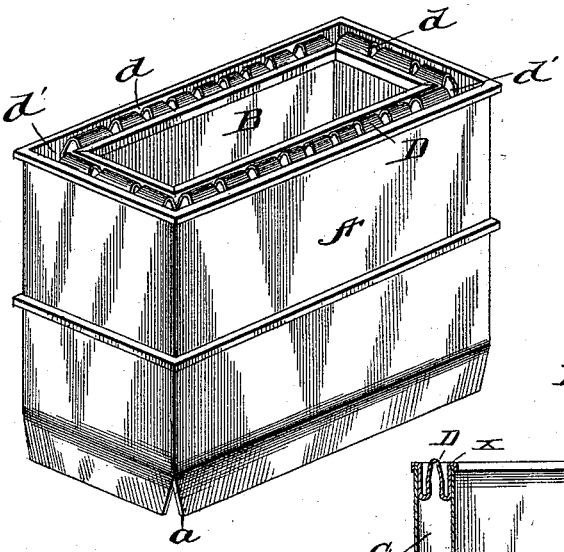


Fig. 5.

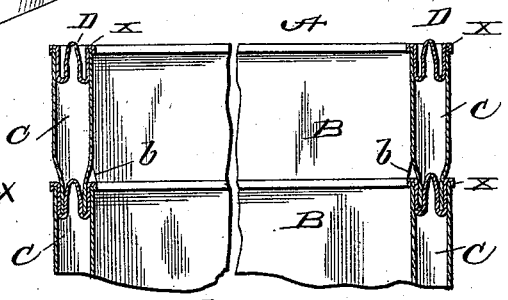


Fig. 2.

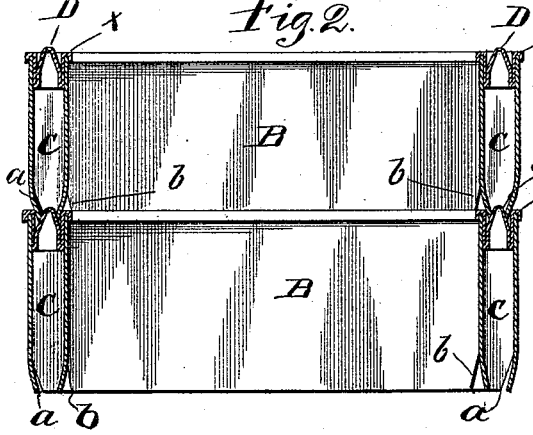


Fig. 3.

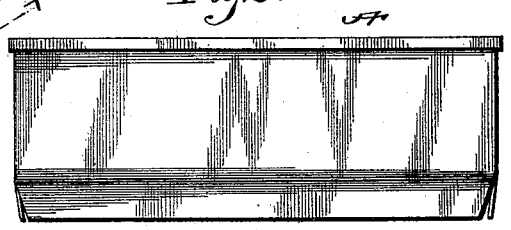


Fig. 4.

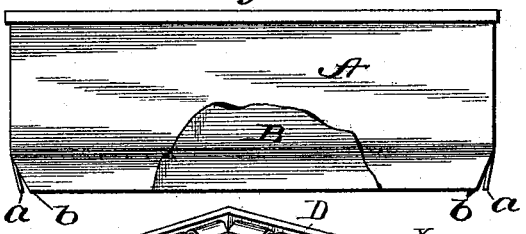
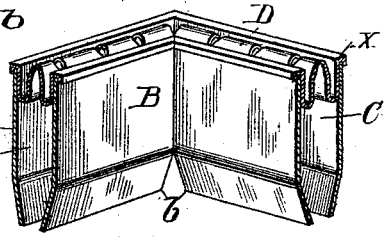


Fig. 6.



Witnesses
John Shaw.
W. W. Deane

Inventor
August Miller
By T. Deane
his Attorney

UNITED STATES PATENT OFFICE.

AUGUST MILLER, OF BURLINGTON, IOWA.

HOT-AIR PIPE.

SPECIFICATION forming part of Letters Patent No. 490,579, dated January 24, 1893.

Application filed June 15, 1892. Serial No. 436,844. (No model.)

To all whom it may concern:

Be it known that I, AUGUST MILLER, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Hot-Air Pipes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Figure 1, is a perspective view of this invention. Fig. 2, is a central vertical cross section of Fig. 1, the parts of the pipe in position one upon the other but not pressed together. Fig. 3, is a side elevation of outer wall of the pipe. Fig. 4, a side elevation of the inner wall of the pipe. Fig. 5, is a detail in section showing the two sections or parts pressed together as in Fig. 1. Fig. 6, is a detail showing more plainly the relative structure of the inner and outer pipes.

This invention is an improvement in that class which relates to double pipes to be located in partitions for the transmission of hot air, in which the several sections consist of an internal and external shell having a space between them for cold air circulation to prevent hot air from coming into contact with wood or other ignitible substance through which the pipe passes. These double pipes are made in sections and connected together by slipping the end of one section into the end of the next section, and then tacking or soldering them together. By my invention each section of the hollow pipe is so made as to be adapted easily to the next one, while at the same time the walls are so braced as to hold their shape, and yet not interfere with the transmission of cold air current between the walls.

In the drawings A, denotes the external wall or pipe, and B, the internal wall or pipe and C, the cold air space between them. At the top each of the double walls has a bead or turned over edge *x*.

At the bottom or lower end each pipe A and B, is entirely open and unobstructed. At each corner the pipes are cut out or slit as at *a*, and *b*, respectively to allow easy expansion or contraction; thus the ends of the pipes have a beveled edge, the beveling being toward each other so that the opening between the pipes is larger than the opening at the bottoms. It is preferable to have each joint or section of each pipe of the same length. At the top of each section is inserted at the sides and ends between the double wall a connection D. This is shaped like an inverted **V**, and is secured in position in any desirable way. Along its ridge or apex are suitable slots or openings *d*, for the free upward circulation of cold air, while at the ends of each, is left quite a large opening *d'*, of which there will be one at each corner of the double pipe. The apex of the bent connection D, may extend slightly above the top of the section of the double pipe, but whether so placed, or placed on a level with the top, or just below the same it will constitute also a guide for each of the lower open ends of the next section when it is applied, as in building up or forming an entire pipe; also acts as a division strengthening piece. Having now two sections of pipe, one is placed upon and into the other, the beveled edges *a*, and *b*, of the one section striking upon the sloping part of the connection D, between the two walls of the pipe, thus insuring an easy joining of the two sections. As now the two sections are put together, the end of one is pushed down into the other, and this causes the beveled edges of the inner and outer pipes to separate and slide down upon the slanting portion of the connection between the two pipes and into the lower part of that connection where it fits very tightly, and thus the joint is made complete; if desired it may also be tacked or soldered. Another joint is laid upon the upper of the two already put together and suitably secured thereto, and so the process is continued until as many joints as desired are added.

It should be further stated that by beveling the lower ends *a*, and *b*, as above described neither will strike the outer edges of the section upon which, when two parts or sections of the pipe are being brought together, they impinge but will certainly strike upon the sloping sides of the **V**-shaped connection. Thus when these beveled ends strike the inclined surfaces of the said connection they can easily be forced down into

the socket formed by bends of said connection as shown in Figs. 5 and 6. When these beveled ends are thus shoved or pressed down to the bottom of said socket or cavity they will fit very tightly in place, chiefly by reason of friction and thus the two sections of pipe will be held tight and close together.

One very considerable advantage of this pipe is that in case a part of one section or joint only is desired, the lower part can be cut off, the edges then can be readily beveled, and at once it is ready to be put upon the corresponding section of another pipe. Thus the section may be as long or as short as desired. The sections may be built of uniform length in a shop, and then when put into a building cut to any desired length. This is a decided advantage over anything I know of now in use, as by the old method a special joint must be built where a short portion only is desired.

In the detail of manufacturing this pipe I do not propose to limit myself to a square shape of the external or internal pipe; and in the structure and arrangement of the perforated division and guide strips, it is not necessary to confine myself to the exact representation now given.

While I have used the descriptive words of top and bottom for each section, it is evident that the inversion of each section would make no essential difference in the structure or operation of this invention.

Having now described my invention what I claim is:

1. A double-walled pipe for the transmission of hot air, made in sections, each having at one end a perforated connection between the two walls, and each of said walls at the lower end being open, and also slitted or cut out at the corners, as and for the purpose set forth.

2. In combination with the doubled walled hot air pipe made in sections, each section having beveled edges, as described, the V-shaped and perforated strips in each section adapted to receive the said beveled edges of the adjacent section, said beveled edges acting by friction chiefly to hold the two sections together.

3. A double walled hot air pipe each section of which has its lower ends slitted or cut out, and at its upper ends is provided between the walls with perforated guide pieces, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

AUGUST MILLER.

Witnesses:
CHR. REICHERT,
CHAS. C. CLARK.