(No Model.)

G. ROME.

HOT AIR PIPE.

No. 583,819. Patented June 1, 1897.

Fig. 4.

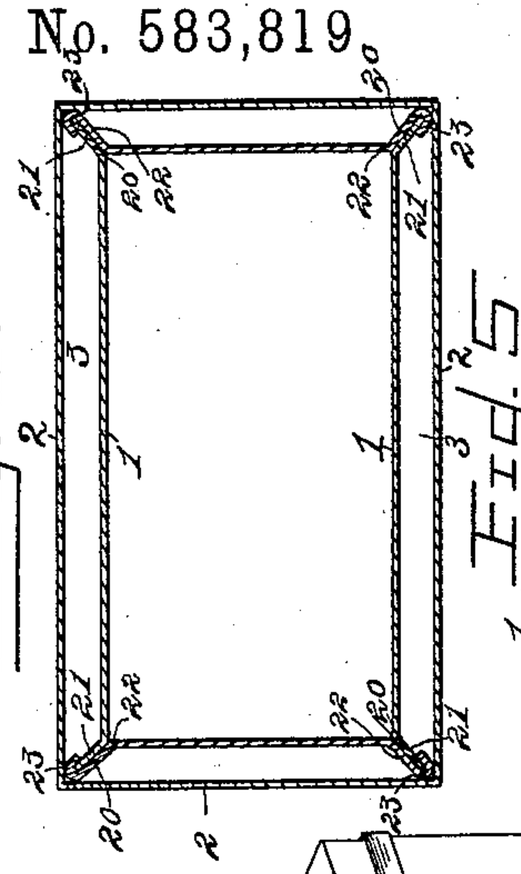


Fig. 1.

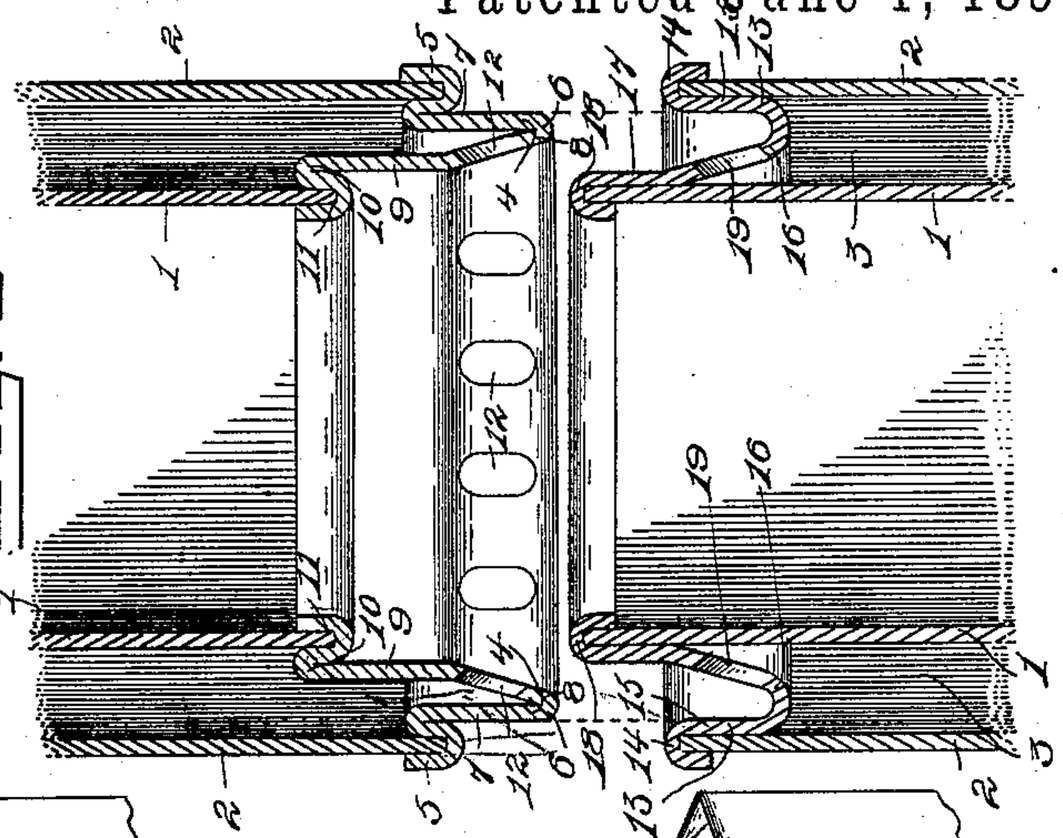


Fig. 2.

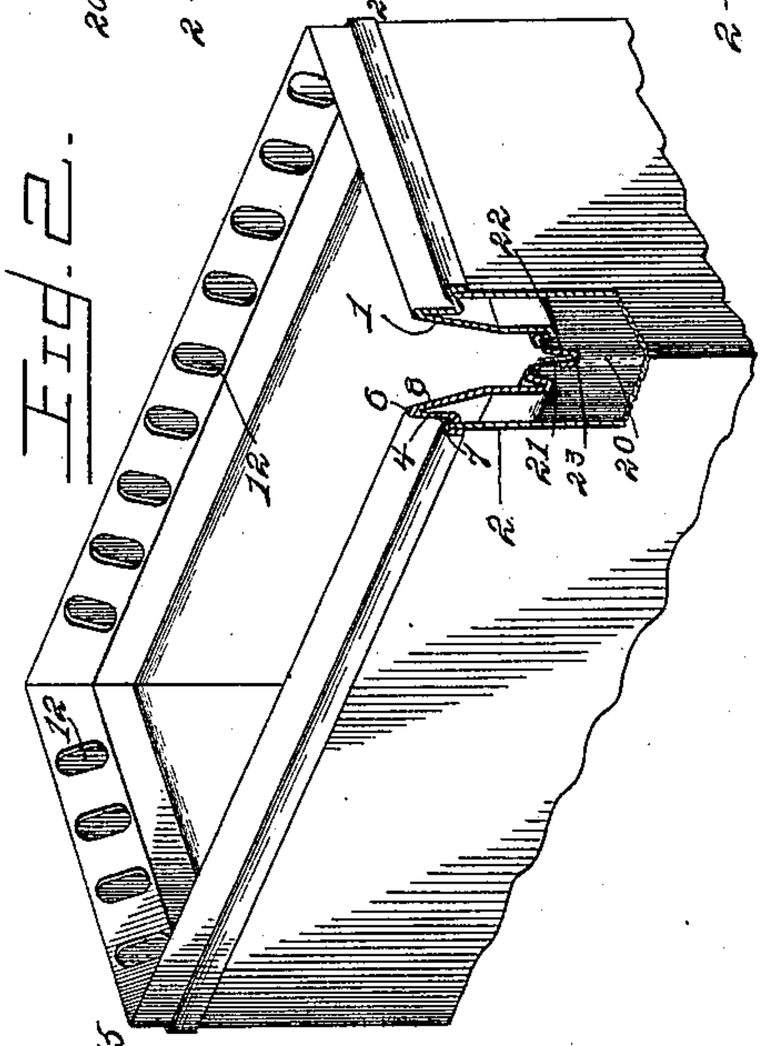


Fig. 3.

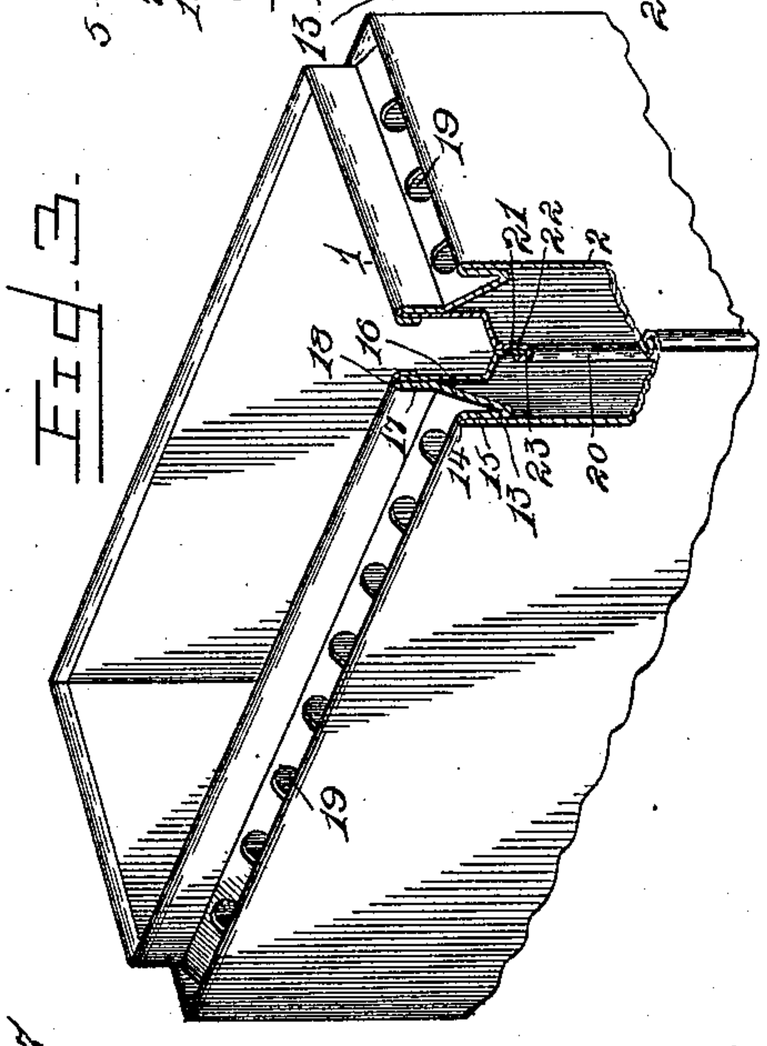
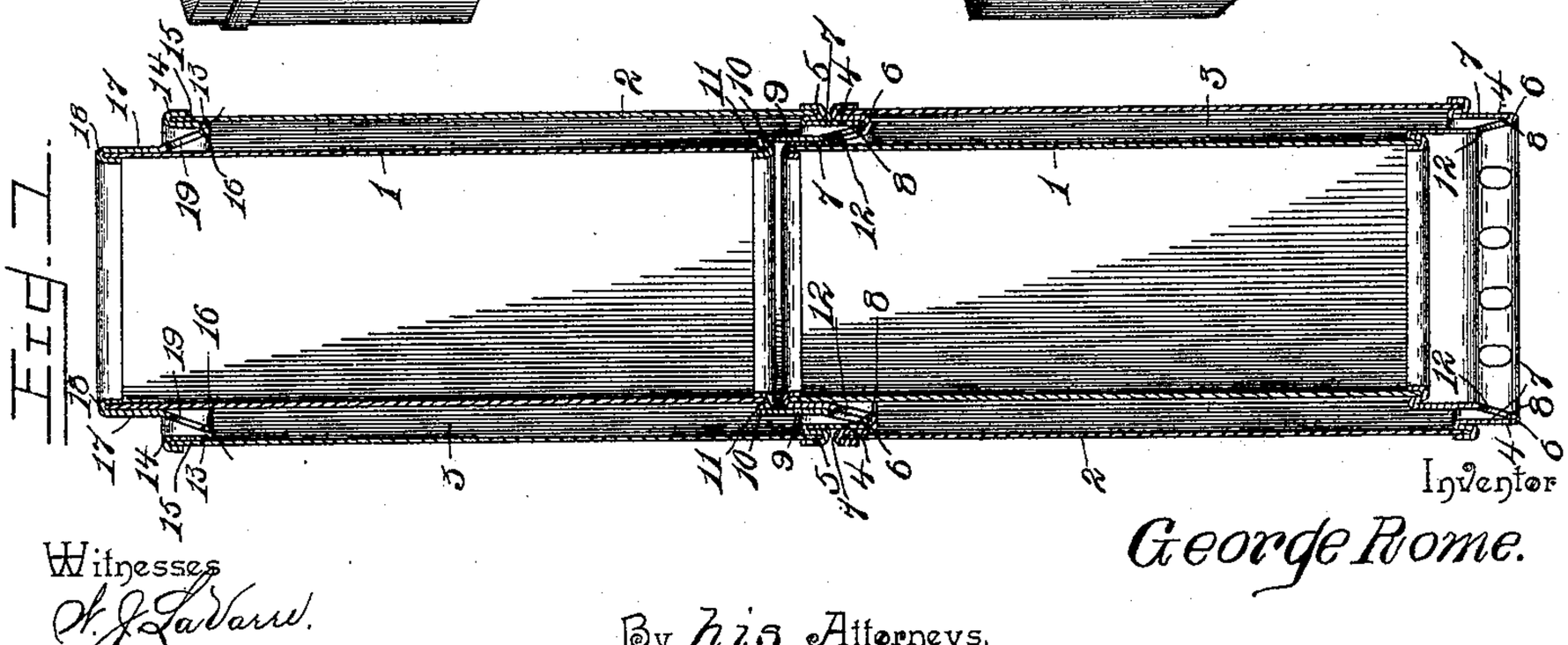


Fig. 7.



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UNITED STATES PATENT OFFICE.

GEORGE ROME, OF CARNEGIE, PENNSYLVANIA.

HOT-AIR PIPE.

SPECIFICATION forming part of Letters Patent No. 583,819, dated June 1, 1897.

Application filed March 18, 1896. Serial No. 583,776. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ROME, a citizen of the United States, residing at Carnegie, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Hot-Air Pipe, of which the following is a specification.

This invention aims to provide a ventilating wall-pipe which is practically proof against fire and which may be used in wooden partitions and other places where it is dangerous to employ a single smoke or hot-air pipe of ordinary construction.

One of the purposes of the improvement is to devise a pipe of the character aforesaid having the air-space between the inner and outer walls interrupted by vertical ribs which prevent cross and counter currents in the air-passage and at the same time serve to stiffen the pipe and brace the two walls, thereby resulting in the provision of a durable and substantially constructed pipe.

Other objects are contemplated and will appear as the nature of the invention is unfolded and better understood from the following description and the drawings, in which similar and corresponding parts are designated by the same reference-characters.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a vertical section of a length of ventilating-pipe embodying the principles of this invention. Fig. 2 is a detail perspective view of one end of a pipe-section, parts being broken away. Fig. 3 is a view similar to Fig. 2 of the opposite end of the said pipe-section. Fig. 4 is a horizontal section thereof. Fig. 5 is a sectional detail of the matching ends of adjacent pipe-sections, the parts being separated and shown on a larger scale.

The pipe or flue comprises a plurality of sections, each section being similarly constructed and composed of an inner wall 1 and an outer wall 2 and having an air-space 3 between the two walls. The ends of the walls 1 and 2 are in different relative planes and are connected together in the manner presently to be described. The air-space 3 and the upper ends of the walls 1 and 2 are spanned by a closure 4 in the shape of a metal strip, having its outer edge folded to embrace the upper end of the wall 2, as shown at 5, and bent upon itself at 6 and extending in the line of the wall 2, as shown at 7, thence extending inwardly and downwardly, forming an inclined portion, as shown at 8, and again bent in the line of the wall 1, as shown at 9, and bent back upon itself, as shown at 10, and folded over the end of the wall 1, as shown at 11. The inclined portion 8 is supplied with a series of openings 12, which are closely related and elongated vertically, so that their upper and lower ends approach closely to the parts 7 and 9, which are in line with the respective walls 2 and 1. The folds 5 and 11 are caused to embrace the sides of the walls to which they are attached, so as to provide a substantial joint and prevent the accidental separation of the parts.

The air-space 3 and the inner and outer walls are spanned at their lower ends by a closure 13, which is a metal strip having its outer edge portion folded at 14 to embrace the lower end of the wall 2 and extending for a short distance along the inner side of the wall 2, as shown at 15, and bent, forming the inclined part 16, which extends across the space 3, and again bent, forming the part 17, which lies against the inner side of the wall 1, and having its inner edge folded at 18 to receive the lower end of the wall 1. The inclined part 16 is provided with openings 19, corresponing in position and number with the openings 12, so that after the matching ends of adjacent pipe-sections are fitted together the openings 12 and 19 will aline and establish communication between the air-spaces 3 of the adjacent pipe-sections. The parts 8 and 16 are of similar pitch or inclination, so that they will come closely together when assembling or connecting the pipe-sections. By having the openings 12 and 19 elongated vertically a considerable area is had for the passage of the air from one pipe-section to the other without unnecessarily weakening the parts 8 and 16, which would result by having the openings of circular form or elongated in any other direction. The inclined portion 16 comes directly opposite the straight portion

15 and forms therewith a tapering space to receive the correspondingly-tapered projecting end portion of the closure provided at the extremity of the matching-section. The inclined portion 8 and the straight part 7 form the tapering projecting portion which enters the said tapering space, whereby a snug fit is insured when the matching ends of contiguous sections are brought together.

In order to strengthen and brace the walls of the pipe or flue, ribs 20 are interposed between the inner and outer walls, and these ribs extend vertically or lengthwise of the pipe and the ribs in one section correspond in position with the ribs of the other pipe-sections, so that when the pipe-sections are fitted together corresponding ribs will aline vertically, thereby dividing the air-space 3 into vertical shafts, through which the air has a direct passage. These ribs may be located at any desired point and, as shown, come opposite and join the angles between the inner and outer walls. The edge portions of the inner walls are bent outwardly at an inclination corresponding to the slant of a plane passing through the adjacent angles of the inner and outer walls, so that when assembling the parts of the pipe the bent edge portions will extend from the angles of the inner walls to the corresponding angles of the outer walls. A portion of the bent edges is bent or folded to embrace the edge portion of the adjacent bent part, thereby serving to connect the contiguous parts of a rib at their outer edges. As shown, the side members of the inner wall 1 are bent outward at 21 and the end members are bent in a corresponding direction at 22, and the edge portions of the bent parts 22 are folded at 23 to embrace the outer edges of the bent parts 21. The bent parts 21 and 22 form the members of a rib which extends from an angle of the inner wall to a corresponding and adjacent angle of the outer wall, and since the pipe or flue is shown rectangular in cross-section four ribs are provided, one being located at each of the four corners or angles, but it will be understood that the number and disposition of the ribs are not essential and that the ribs may be disposed so as to attain the best results, as demonstrated by experiment. It will be seen that the closure 13 at one end of a pipe-section is depressed, so as to form a socket, and that the closure 4 correspondingly projects, forming a male part which is adapted to enter the socket or female part provided by the closure 13, thereby securing the pipe-sections against accidental displacement laterally after being properly fitted together.

As previously described, the ribs 20 are formed by outwardly-bent edge portions of the sections comprising the inner wall or flue 1, but an obvious construction is to form the flue 2 of sections whose edge portions are bent inward and touch the wall 1, and these ribs may be located at the angles or in any convenient position, according to the number of shafts into which it may be required to subdivide the space between the adjacent sides of the flues. Of course if the wall be a single sheet only one rib will be provided, but as many may be had as desired by forming either wall or flue of sections which are joined at the prescribed points of the ribs, as will be readily appreciated.

Having thus described the invention, what is claimed as new is—

1. A hot-air pipe or flue composed of sections comprising inner and outer walls between which an air-space is formed, the extremities of the walls being in different relative planes, a closure consisting of a strip secured at its edges to the adjacent extremities of the walls of a section and having edge portions extending parallel with and touching the said walls a short distance from their ends, and having an intermediate portion inclining across the space formed between the walls and provided with openings, said intermediate portion coming opposite the outer straight edge portion and forming therewith a tapering space, and a closure or strip secured at its edges to the extremities of the walls of the matching-section and having its edge portions parallel with prolongations of the said walls and extending from the extremities thereof, and having an intermediate portion inclining and forming with the outer straight portion a tapering projection to enter the aforesaid tapering space of the first-mentioned section to secure a snug fit therewith, and having the inclined portion formed with openings corresponding with the openings in the inclined portion of the first section, substantially as set forth.

2. A hot-air pipe or flue comprising an inner and an outer part formed of a like number of walls arranged parallel with one another and inclosing between them an air-space, the edge portions of the inner walls being bent outward at an inclination and extending diagonally across the space between adjacent angles, and a terminal portion of one of the bent edges being folded and embracing the terminal edge portion of the contiguous bent edge, whereby the said bent edge portions are secured together and unitedly form ribs for subdividing the said air-space into a number of flues, and serving to mutually brace and strengthen the inner and outer walls, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE ROME.

Witnesses:
CHARLES A. WILLIS,
FRANK. MCNULTY.