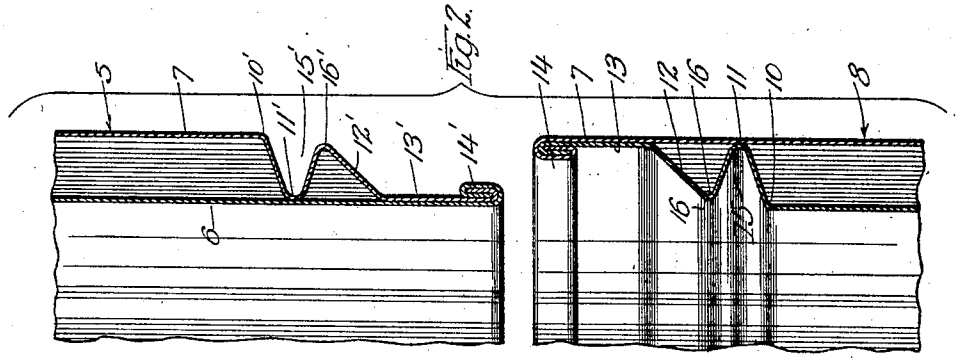
J. M. LORENZ.

HOT AIR SECTIONAL CONDUIT.

APPLICATION FILED APR. 5, 1919.

1,324,602.

Patented Dec. 9, 1919.



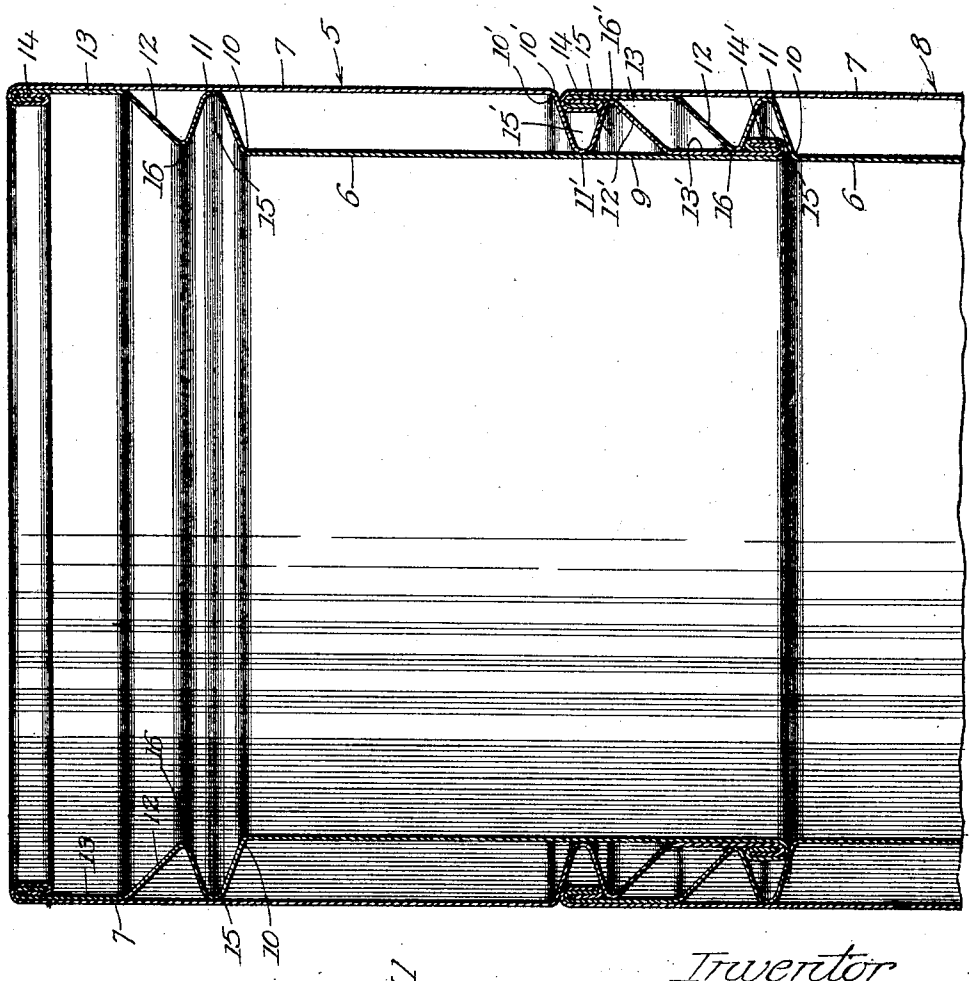


Fig. 1

Inventor
John M. Lorenz
Jonée Bain & Bean
Attys.

UNITED STATES PATENT OFFICE.

JOHN M. LORENZ, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO FURNACE SUPPLY CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

HOT-AIR SECTIONAL CONDUIT.

1,324,602. Specification of Letters Patent. **Patented Dec. 9, 1919.**

Application filed April 5, 1919. Serial No. 287,812.

To all whom it may concern:

Be it known that I, JOHN M. LORENZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hot-Air Sectional Conduits, of which the following is a specification.

The invention relates to improvements in double wall hot air, sectional conduits, or stacks.

One of the objects of the invention is to improve devices of this character whereby to increase their heat conducting efficiency; to provide a better joint at the point of connection between adjacent sections, thereby producing a double seal to prevent escape of the relatively hot air being conveyed by the conduit; to simplify and cheapen its construction, to the end that the formation of the inner wall at the joint, at one end of the section is substantially the same as the configuration of the outer wall, at the other end of the section, that the same forming dies may be used for bending both walls.

And still another object is to provide a stack with an even and uniform contour of the inner wall surfaces and in which the composite wall is of substantially uniform thickness throughout, whereby to avoid projections and recesses in the inner wall that impede the draft by obstructing it and by the production of whirls and eddy currents, due to lateral recesses and uneven diameter of the stack.

Other, further and more particular objects of my invention will become readily apparent, to persons skilled in the art, from a consideration of the following description when taken in conjunction with the drawings, wherein:—

Figure 1 is a longitudinal section of a portion of a rectangular stack, taken through its largest diameter, showing two adjacent sections locked together.

Fig. 2 is a similar view of fragments of two adjacent sections, separated.

In all the views the same reference characters are employed to indicate similar parts.

The stacks, as it is well understood, are usually made in relatively short sections, the sections being produced at the point of manufacture, in the shop by the aid of installed machinery and sent to the point of installation, whereupon a stack is composed of a plurality of sections by placing one section upon another until the proper length of conduit has been produced.

In the drawings, a complete section is indicated by 5, which shows an inner wall 6 and an outer wall 7. The inner wall, at the place of its joinder with another adjacent section 8, is substantially straight, as at 9, and at its other end, it is deflected or bent inwardly, as at 10, and bent again, as at 11, after the bent portion makes contact, or substantial contact, with the inner surface of the outer wall 7. It is then returned in the opposite direction, into a vertical plane substantially the same as that in which the straight part 9 is contained, whereupon it is deflected again toward the outer wall 7, as at 12, then it is caused to follow the line of the outer wall, and is parallel therewith, as at 13, the terminal ends of the two walls being then bent over each other, as at 14, to form a locking bead 15.

The outer wall 7, at its other end, has substantially the same conformation as the inner wall described, the respective parts are, therefore, indicated by the same reference characters with the addition of the exponent prime (′). The walls, when bent as described, provide a transversely extending locking groove 15, which extends in a lineal direction, with reference to the axis of the section, from the point 10 to the point 16. At one end of a given section the groove 15 is made in the outside wall, while at the other end it is made in the inside wall, as clearly shown in the drawings.

The drawings clearly show that the upper end of one section telescopically engages the lower end of the adjacent section, and that the bead 14′ of one section is within the groove 15 of the adjacent section, while the bead 14 of the other section is within the groove 15′ of the adjacent section, and thus the sections are telescopically assembled and locked together. When the sections are placed in positions to be locked together, they are pushed toward each other, whereupon their ends spring apart sufficiently to admit the beads 14—14′ into the respective grooves 15 and the walls, bounding the grooves, are tapered somewhat, so that while the beads and the grooves lock the sections together, yet they may be separated by energetically pulling them apart.

It will be observed, from a consideration of the drawings, that the joint thus made is within the compass of the inner and outer walls of the joined sections, so that the joint does not produce a greater or less width of separation between the walls, and therefore the thickness of the composite walls is substantially uniform throughout the length of the compiled sections, or stack. It will furthermore be observed that the joints produce a tortuous path for the air and that the beads, being placed in contact with the walls bounding the grooves in which they are located, when the parts are locked together, thus provide a substantially non-leakable joint. The walls of the extreme ends of each section are bent about themselves so as to form the bead and as these walls are more or less elastic, where they are brought into contact with each other near the beads, there is sufficient resiliency of the respective walls, outwardly and inwardly, to cause the beads to pass over the points 16 and 16′, in entering the grooves 15, 15′, and as this wall bounding the groove is tapering, to some extent, the separation between the sections may be forcibly effected when the walls are again yieldingly displaced by the strain imposed upon the sections, in an effort to separate them.

While I have herein shown a single embodiment for the purpose of clear disclosure, it will be manifest, to persons skilled in the art, that the configuration and arrangement of the parts may be varied within the scope of the appended claims.

Having described my invention, what I claim is:—

1. A stack section having in combinative association an inner and an outer wall, the opposite ends of said sections being formed to telescopically engage coöperating ends of similar sections, the inner wall at one end of a section and the outer wall at the other end of the section being bent toward the confronting wall and into contact therewith to provide a wall-spacing member to hold the walls apart and to form a transversely extending locking groove and a transversely extending bead, formed by bending the terminal ends of both walls at each end of the section about each other to provide the coöperating locking member for the groove.

2. A stack section having in combinative relation, an inner and an outer wall, the opposite ends of said sections being formed to telescopically engage the opposite ends of similar sections, the walls of said sections being bent into contact with confronting walls whereby to provide transversely extending grooves in the inner wall of one section and the outer confronting wall of the adjacent section, to serve as wall spacing members and as locking members and transversely extending beads on the terminal ends of each section to provide coöperating locking members for engaging said grooves.

3. A stack section having in combinative relation an outer and an inner wall, the outer wall at one end and the inner wall at the other end of the section crimped inwardly into contact with its opposite wall and returned into substantially its former longitudinal plane, to space the walls apart and to form a transversely extending locking groove within which to receive the terminal end of the adjacent section and then bent again toward the opposite wall and extended longitudinally in substantial contact therewith, the terminal end of one of said walls being turned about the end of the other, to form a bead for insertion in the groove of an adjacent section.

4. A stack section having in combinative relation spaced apart parallel walls, the inner wall at one end and the outer wall at the other end bent toward its opposite wall, and into substantial contact therewith, to hold the walls apart, and returned to substantially its former vertical plane to form a locking groove, then bent again toward its opposite wall to form therewith a coöperating locking bead for locking coöperation with the groove of an adjacent section.

In testimony whereof I hereunto subscribe my name.

JOHN M. LORENZ.