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T. S. FRIEND.

SHEET METAL PIPE.

APPLICATION FILED FEB. 27, 1903.

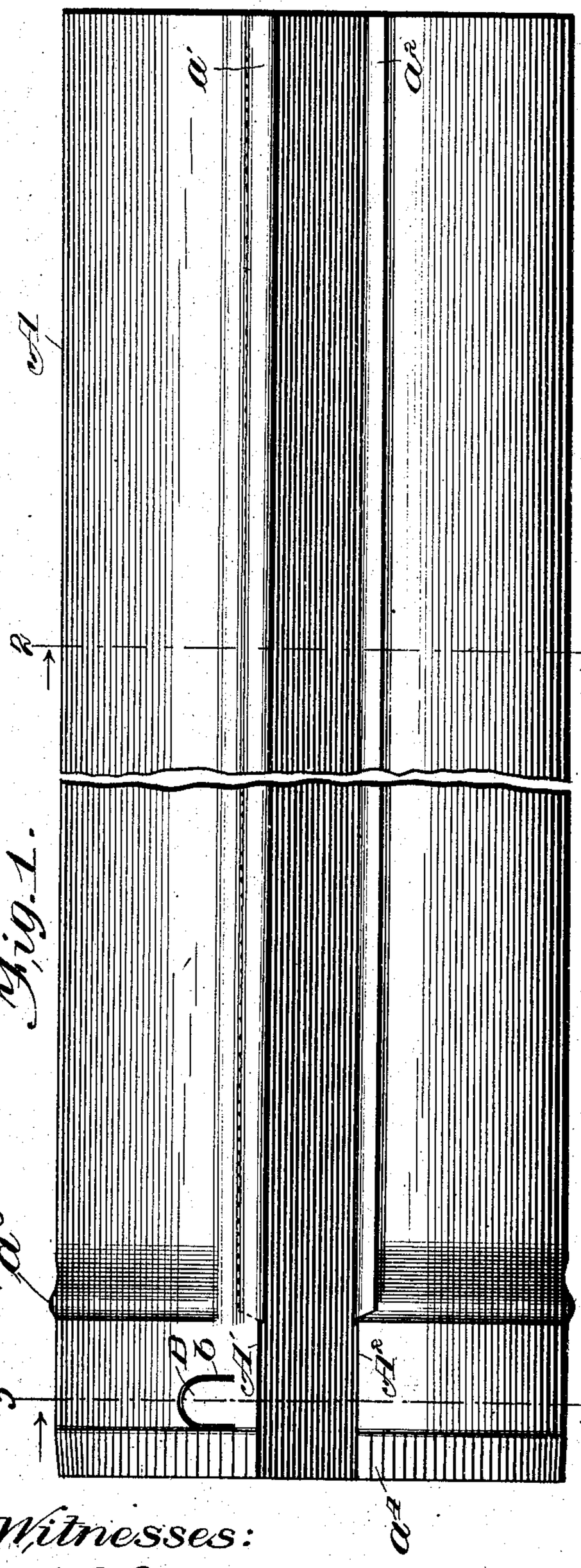

Fig. 1.

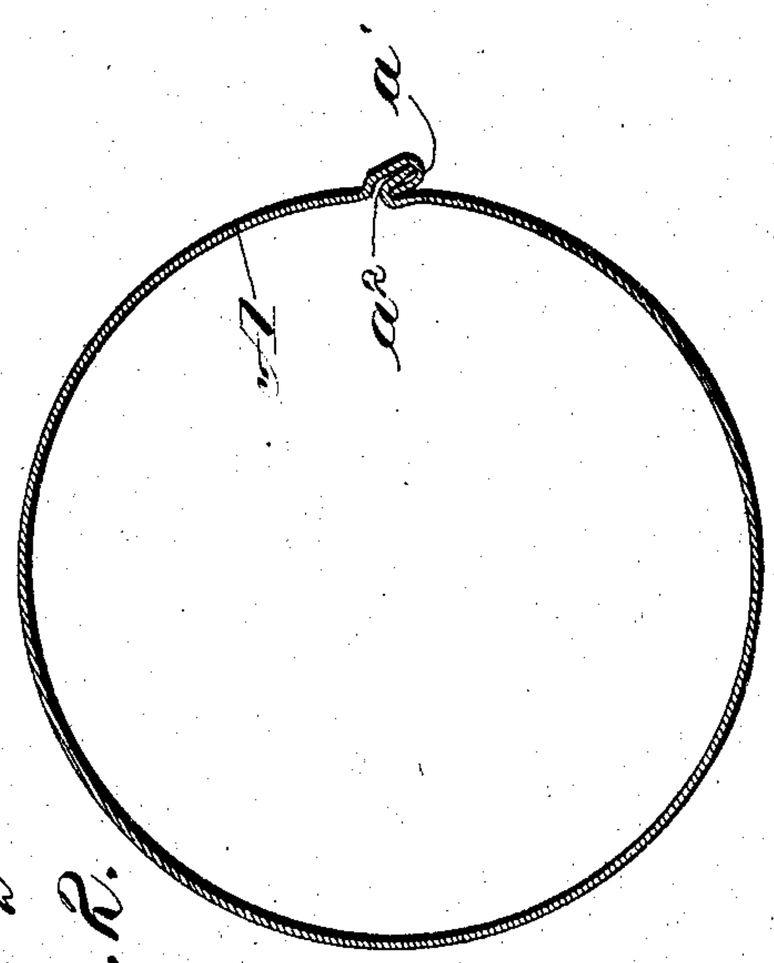

Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE.

THOMAS S. FRIEND, OF CHICAGO, ILLINOIS.

SHEET-METAL PIPE.

SPECIFICATION forming part of Letters Patent No. 791,143, dated May 30, 1905.

Application filed February 27, 1903. Serial No. 145,352.

To all whom it may concern:

Be it known that I, THOMAS S. FRIEND, a subject of the King of Great Britain, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Sheet-Metal Pipes; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates generally to sheet-metal pipes, and more particularly to collapsible stovepipes.

It is desirable in manufacturing sheet-metal stovepipes to leave the flanged edges which are to form the lock-seam disconnected, so that a number of sections of pipe may be compactly nested together for shipment, whereby less space is occupied than would be required if the sections of pipe were completed at the factory by uniting the flanged edges in a lock-seam and the cost of shipping economized. The delivery of pipes by the manufacturer without having them completed by securely locking together the flanged edges into the seam is, however, open to the objection that retail dealers are not generally provided with the necessary tools for bumping or flattening the lock-seams, and thereby forming the exterior diameter of one end of each section so that it may be inserted in the larger end of the adjoining section, and consequently the sections of pipe cannot be satisfactorily put together by the purchaser.

The primary object of my invention is to provide a sheet-metal pipe comprising sections which may be readily and securely united without the use of tools.

A further object of my invention is to provide sections of sheet-metal stovepipe the flanged edges of which may be joined and retained in a lock-seam without the use of tools and the diameters of the opposite ends of which when such a seam is formed will permit the section being readily telescoped with the ends of the adjoining sections.

A further object of my invention is to provide a collapsible sheet-metal stovepipe which will be simple in construction, inexpensive in manufacture, easily put together, and efficient in use.

My invention, generally described, consists in a section of sheet-metal stovepipe provided along its longitudinal edges with the usual lock-seam flanges extending only to the shoulder for limiting the extent to which the end of the section may be telescoped in the adjoining section, the portion of the section between the shoulder and the adjacent end being of a diameter to fit within the end of the adjoining section, and means for retaining the flanges in locked engagement.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated in a convenient and practical form, and in which—

Figure 1 is a plan view; Fig. 2, a sectional view on line 2 2, Fig. 1, showing the flanges engaged; and Fig. 3, a sectional view on line 3 3, Fig. 1, showing the lock-seam after being bumped or flattened.

The same reference characters are used to indicate the same parts in the several figures of the drawings.

Reference character A indicates a pipe, preferably formed of sheet metal—such, for instance, as a stovepipe.

A' and A^2 designate the longitudinal edges of the pipe, which are provided with flanges a' and a^2, adapted to engage each other to form a lock-seam for retaining the pipe in the form of a closed cylinder. The flange a' is turned inwardly, while the flange a^2 is turned outwardly, each of such flanges forming between the same and the adjacent portion of the sheet metal a groove to receive the other flange.

In sheet-metal pipes as ordinarily constructed after the flanges are engaged with each other the seam is bumped to form a tightly-closed joint. In order that the sections of pipe may be engaged with each other, it is necessary to reduce the exterior diameter of one end so as to fit within the interior diameter of the larger end of the adjoining section. A rib or shoulder a^3 is ordinarily provided on the exterior of the section of pipe a short distance from the reduced end thereof to serve

as a stop to limit the extent to which the reduced end may be inserted in the larger end of the adjoining section. In my improvement the flanges a' and a^2 terminate at a point adjacent to the shoulder a^3, so that a portion of each section between the shoulder and the adjacent end may have an external diameter small enough to fit within the interior diameter of the end of the adjoining pipe-section. In order, however, that the flanges may be retained in locked engagement without bumping them, it is necessary to provide locking means, which I have shown as embodied in a tongue B, formed adjacent to the edge A′ of the pipe-section and adapted to be bent around the edge A^2 when the flanges are interlocked. The tongue when bent, as shown in Fig. 3, prevents the edges A′ and A^2 moving past each other to the extent necessary to disengage the interlocked flanges, and hence the pipe-section is retained in cylindrical form. The reduced end of the adjoining section serves to retain the larger end of the pipe-section in its expanded condition, and thereby prevents the flanges a' and a^2 from becoming disengaged.

The tongue B may be readily struck from the metal of the pipe-section by the use of a die, and an open space b is preferably at the same time formed so as to facilitate the bending of the tongue downwardly and backwardly around the edge A^2, which may be readily done by the finger.

a^4 indicates flutings or crimps for so reducing the end of the pipe-section as to enable it to be easily inserted in the large end of the adjoining pipe-section.

From the foregoing description it will be observed that I have invented an improved form of collapsible sheet-metal pipe-section the flanges on the longitudinal edges of which may be readily and securely interlocked without the use of tools and which may be easily engaged with an adjoining pipe-section. It is therefore evident that by the use of my invention sheet-metal pipes may be shipped from the factory with the flanges disconnected, thereby enabling a number of sections to be nested together, so as to economize in the space required for their packing and in the cost of transportation.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit of my invention.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A sheet-metal section of pipe having lock-seam flanges on its longitudinal overlapped edges, one end of said section having an exterior diameter slightly less than the interior diameter of the opposite end, and a tongue at the smaller end of the section struck from the metal adjacent to one of the longitudinal edges and extending away from said edge, said tongue adapted to be bent around the other longitudinal edge.

2. A collapsible sheet-metal section of pipe having lock-seam flanges on its longitudinal edges terminating a comparatively short distance from one end thereof, and a tongue struck from the metal of the pipe adjacent to one of the longitudinal edges and extending in a direction away from the edge, said tongue adapted after the flanged edges of the pipe have been interlocked to be bent backwardly around the other edge.

3. A collapsible sheet-metal section of pipe having overlapped longitudinal edges, an inturned flange formed on the outer longitudinal edge, an outwardly-turned flange formed on the inner longitudinal edge and adapted to interlock with said inturned flange, said outwardly-turned flange terminating a comparatively short distance from one end of the section whereby said end of the section is adapted to be inserted in the opposite end of a similar section of pipe, and a tongue struck from the exterior of the section of pipe adjacent to its outer longitudinal edge and adapted to be bent backwardly around the inner longitudinal edge.

4. A sheet-metal pipe-section provided with a shoulder on the exterior surface thereof near one end and lock-seam flanges on its longitudinal edges extending to said shoulder from the farther end of the section, the exterior diameter of said pipe between said shoulder and the adjacent end being slightly less than the interior diameter of the opposite end, and a tongue struck from the metal of the pipe between the shoulder and the adjacent end and extending in a direction away from the longitudinal edge, said tongue adapted to be bent around the other edge for retaining said flanges in locked engagement.

5. A collapsible sheet-metal section of pipe having overlapped longitudinal edges, an inturned flange formed on the outer longitudinal edge, an outwardly-turned flange formed on the inner longitudinal edge and adapted to interlock with said inturned flange, said outwardly-turned flange terminating a comparatively short distance from the adjacent end of the section whereby said end of the section is adapted to be inserted in the opposite end of a similar section of pipe, and a tongue struck from the metal adjacent to the outer longitudinal edge of the pipe-section and extending in a direction away from said edge, said tongue adapted to be bent around the inner longitudinal edge thereby retaining the flanges in locked engagement.

6. A sheet-metal pipe-section provided with a shoulder on the exterior surface thereof near one end and lock-seam flanges on its lon-

gitudinal overlapped edges extending to said shoulder from the farther end of the pipe, the exterior diameter of said pipe-section between said shoulder and the adjacent end being slightly less than the interior diameter of the opposite end, and a tongue struck from the metal of the pipe adjacent to the outer longitudinal edge of said pipe-section and adapted to be bent backwardly around the inner longitudinal edge thereof thereby retaining said flanges in locked engagement.

In testimony whereof I sign this specification in the presence of two witnesses.

THOMAS S. FRIEND.

Witnesses:
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