

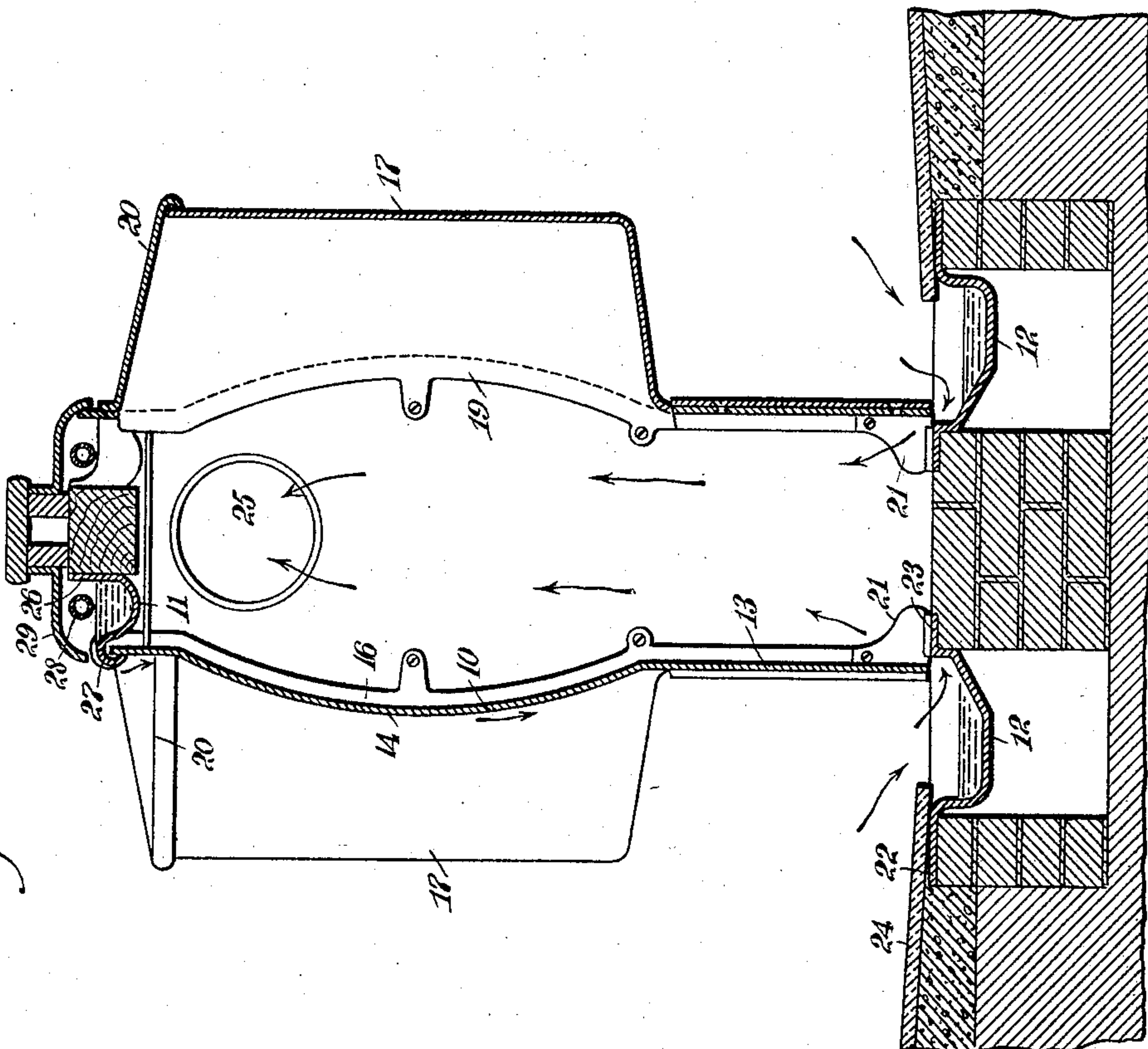
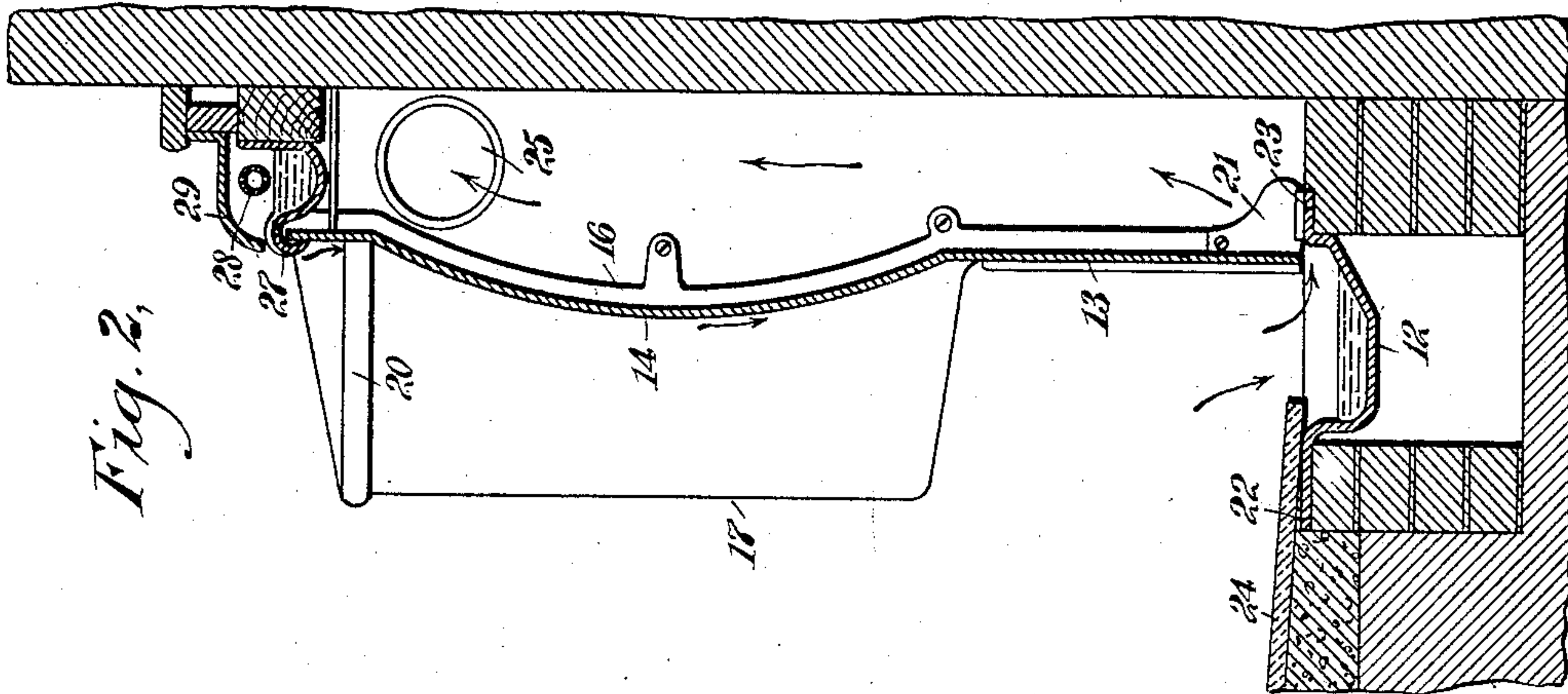
N. FROST.
URINAL.

APPLICATION FILED SEPT. 28, 1909.

Patented Aug. 2, 1910.

2 SHEETS—SHEET 1.

966,189.



WITNESSES

Edward Thorpe
C. W. Fairbank

INVENTOR

Nathaniel Frost

BY

Mum & Co.
ATTORNEYS

N. FROST.
URINAL.

APPLICATION FILED SEPT. 28, 1909.

Patented Aug. 2, 1910.

2 SHEETS—SHEET 2.

966,189.

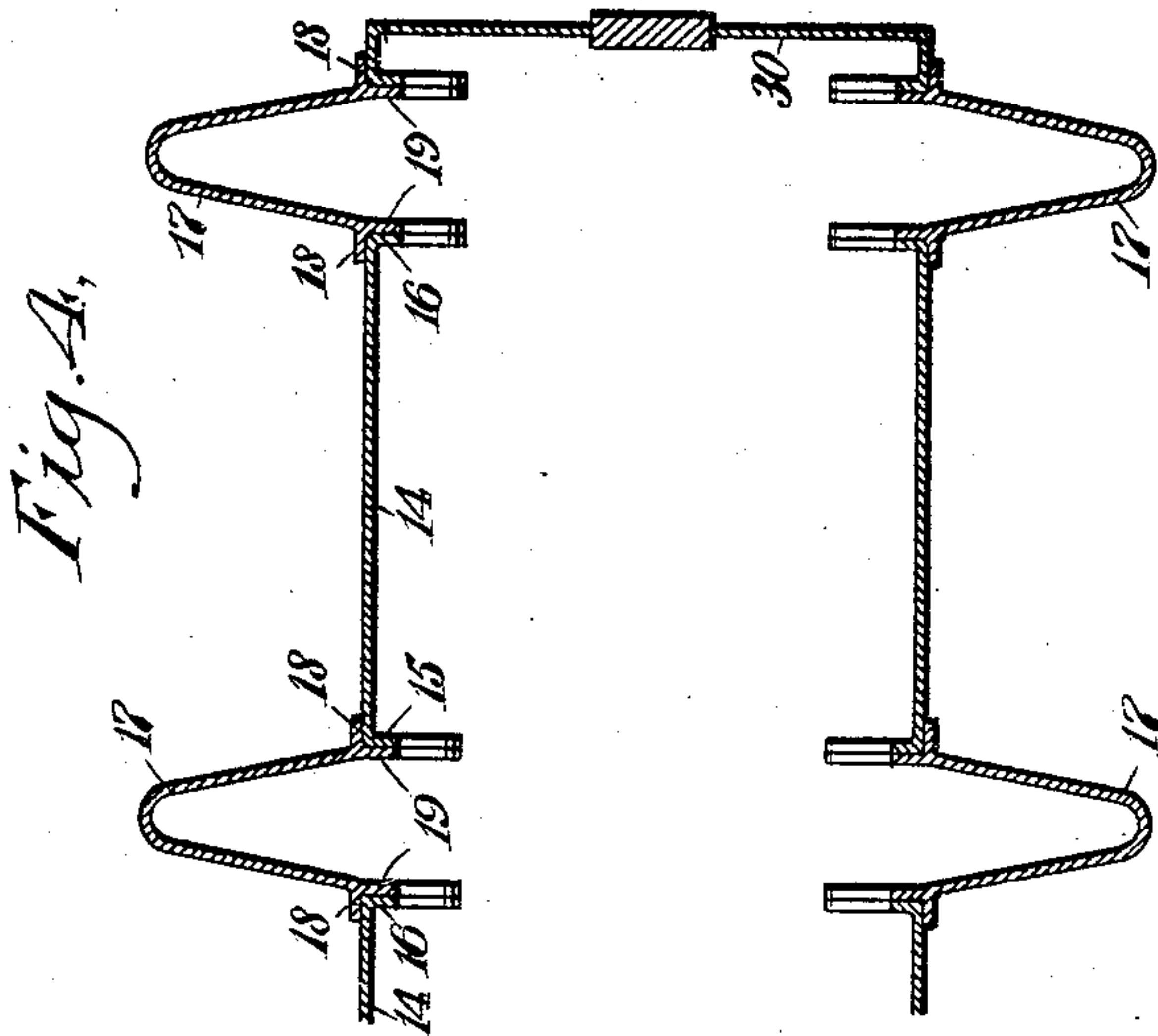


Fig. 5.

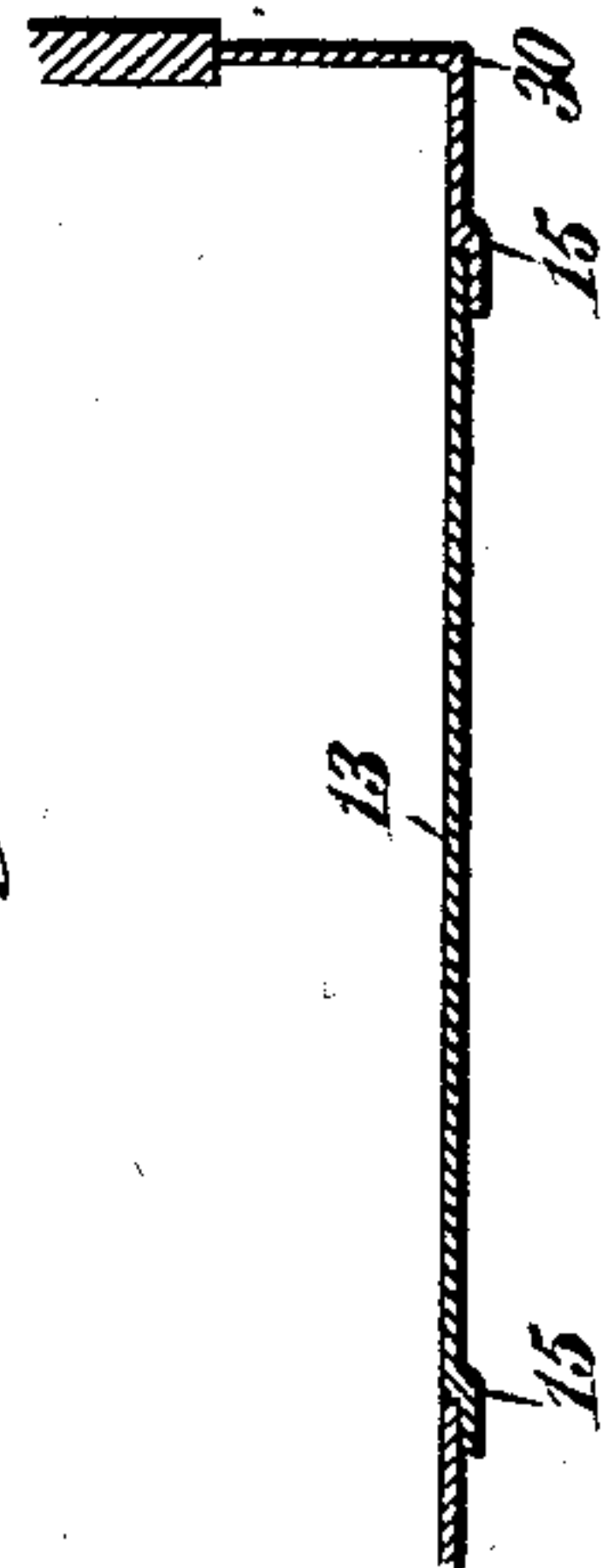
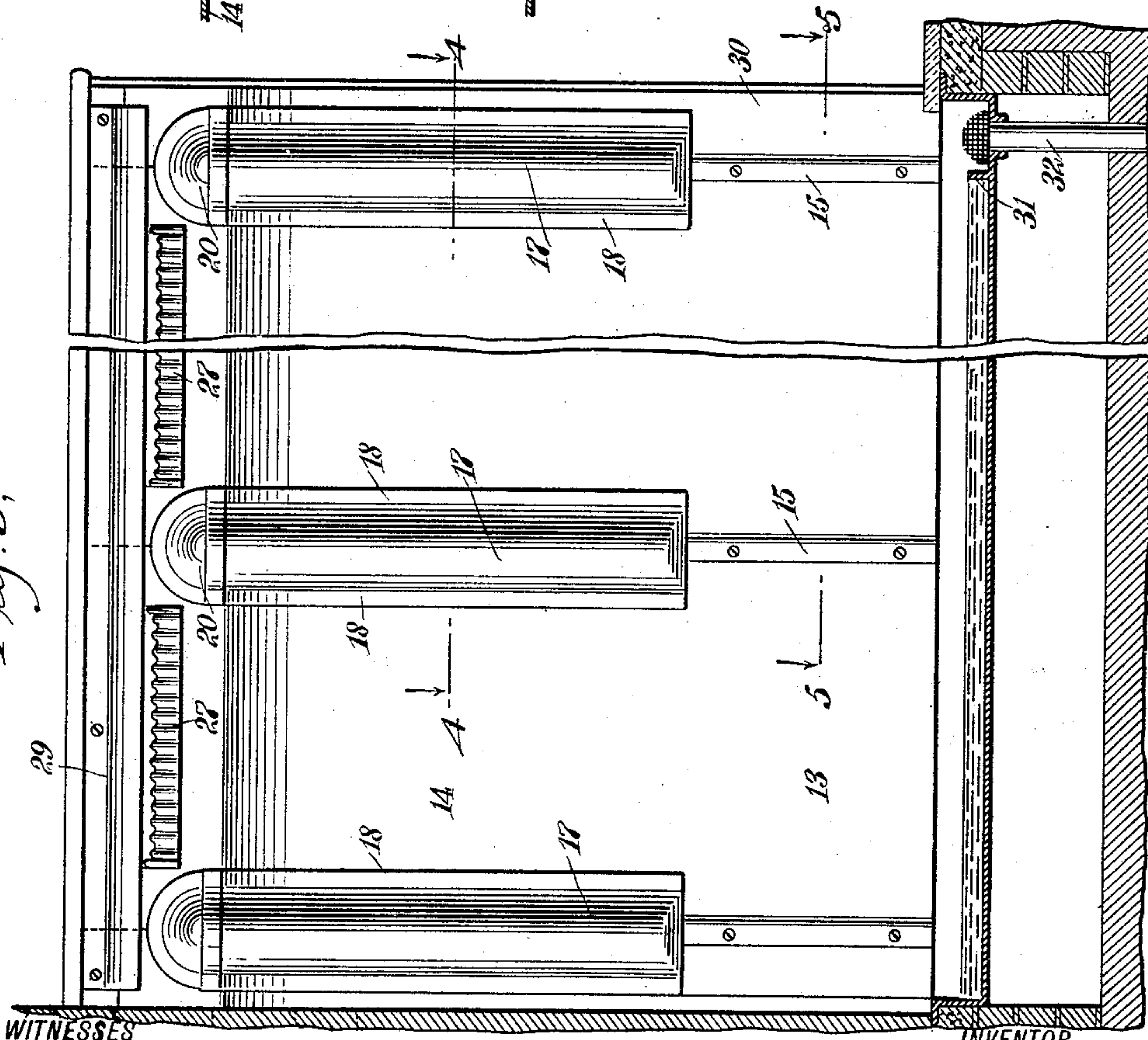


Fig. 3.



WITNESSES

Edward Thorpe
C. W. Fairbank

INVENTOR

Nathaniel Frost

BY

Mum & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

NATHANIEL FROST, OF BLOOMINGTON, ILLINOIS, ASSIGNOR TO AMERICAN FOUNDRY
& FURNACE CO., OF BLOOMINGTON, ILLINOIS.

URINAL.

966,189.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed September 28, 1909. Serial No. 519,976.

To all whom it may concern:

Be it known that I, NATHANIEL FROST, a citizen of the United States, and a resident of Bloomington, in the county of McLean and State of Illinois, have invented a new and Improved Urinal, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in urinals, and more particularly to that type in which there is a substantially vertical back plate, to the upper edge of which water is delivered, and extending outwardly from which there are a plurality of partitions, divisions or screens, to separate the device into separate or individual stalls. The construction of these partitions or screens constitutes an important feature of my invention. In my improved device each partition is substantially V-shaped in cross section and has its opposite edges connected to the spaced edges of separate back plates. Thus, the space within the hollow partition is in free and open communication with the space in the rear of the back plates, and the partition being hollow may be formed of cast metal and may have its outer sides enameled. The partitions terminate at a considerable distance above the floor or water-receiving trough, so that the latter may be readily cleaned, and each of the back plates has substantially the upper half curved or bowed outwardly to present a convex surface, while the lower portion is substantially flat and is in the rear of the more advanced upper portion. The lower edge of the back plate is supported from the rear edge of the receiving trough but is spaced above the trough intermediate the edges of the latter. Thus, all water flowing down the front face of the back plate will be received directly in the trough, and air may be drawn over the trough and through the space beneath the lower edge of the plate to the ventilating chamber in the rear of the back plate. Thus, all odors arising from the trough are immediately carried away to the ventilating chamber in the rear of the plate and to the outside atmosphere, and the entire apparatus is kept in a sanitary condition. The water-delivering trough is spaced in the rear of the back plate and has a forwardly and downwardly-curved lip extending over the plate so that the trough is substantially concealed from view, yet de-

livers water only to the front face of the plate.

All of the features of my invention may be embodied in a single construction and this may be made only of a length equivalent to a single stall, or certain features may be omitted in the forming of individual stalls or ranges or batteries of them.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a vertical transverse section through a device constructed in accordance with my invention, presenting opposed rows of stalls; Fig. 2 is a section somewhat similar to Fig. 1, but showing the use of only a single row of stalls; Fig. 3 is a face view of the device shown in Fig. 1, the receiving trough being shown in section; and Figs. 4 and 5 are horizontal sections on the lines 4—4 and 5—5, respectively, of Fig. 3.

In the preferred form of my improved device, I employ a plurality or series of back plates 10, over which water may flow from a delivery trough 11 to a receiving trough 12. Each plate has the lower portion 13 thereof substantially flat and preferably extending substantially vertical. The upper portion 14 of the plate is bowed or curved forwardly so as to present a convex wall and to bring the upper edge of the plate substantially in the plane of the flat lower portion 13 and to bring the entire curved portion in advance or forward of the plate portion 13. The curved portion is of somewhat greater length than the lower flat portion, so that the plate substantially midway between the upper and the lower edges, extends rearwardly to intersect the flat portion at an obtuse angle. The plates have their adjacent edges overlapped to form seams 15 along the lower or flat portions, or they may be secured together in any other suitable manner. The upper or curved portions of the plates are spaced apart to leave elongated openings therebetween, and the opposed edges of the plates are provided with rearwardly or inwardly-extending flanges 16. The plates support a plurality of partitions 17, each of which is substantially V-shaped in cross section and is formed of metal with its outer surface enameled. Each partition

has its front edge substantially straight and vertical and has its rear edge curved to conform to the curvature of the portion 14 of the back plate. Along its rear edge, each partition has base flanges 18, 18 for engagement with the front surface of the plates, and has inwardly-extending flanges 19, 19 adapted to extend between the plates closely adjacent to the flanges 16, 16 of the latter and to be bolted or secured thereto in any suitable manner. The partitions do not extend down over the flat portion of the plates to any material extent, and thus terminate at a considerable distance above the lower or receiving trough 12. The trough may thus be readily cleaned without any obstruction or interference from the partitions. Each partition is hollow and its interior freely communicates with the space in the rear of the back plates. The bottom of each partition is closed by a portion integral with the sides, while the top is preferably closed by a cap 20 substantially triangular in form and having a rounded top and depending flanges extending over the upper edges of the sides of its corresponding partition.

At the lower edges of the back plates and adjacent the seams 15 are a plurality of rearwardly-extending brackets or feet 21, by means of which the plates are supported. The receiving trough 12 is provided with outwardly-extending flanges 22 and 23 resting upon suitable foundations, and the brackets or feet 21 rest upon the rear flange 23 and space the lower edge of the plate over the trough and in advance of the rear edge of the latter, so that all water flowing down the plate will be delivered directly into the trough. Even in case water should leak through the plate to the rear surface thereof, it will still flow down this surface and reach the trough. The front supporting flange 22 of the trough is preferably covered by a tile or other flooring 24, which inclines downwardly and terminates over the trough and delivers directly thereinto. The space in the rear of the plates is provided with an outlet conduit or ventilating duct 25, through which air is continuously drawn by a fan or by any suitable suction-creating means. The air enters the space in the rear of the plate by flowing directly across the trough and beneath the under edge of the plate, so that all odors arising from the trough will be carried directly into the rear of the plate rather than ascend into the room. Furthermore, the circulation of air in the space in the rear of the plates keeps the rear surfaces of said plates thoroughly dry and in a sanitary condition, and prevents moisture from collecting should the water-delivering means leak or should the joints between the plates become loosened.

For delivering water to the upper edge

of the plate, I provide the water-delivering troughs 11, each of which has a rear wall 26 for supporting the trough and a front wall lower than said rear wall and curved forwardly and downwardly to constitute a delivery lip 27 in front of the front edge of the upper portion of the plate. This curved edge is preferably provided with transverse corrugations or grooves, so that the water will be delivered evenly along the width of the plate. The lip may be spaced a very short distance from the top of the plate, so that a small amount of air may pass beneath the lip to the ventilating chamber and keep the upper portion of the latter dry and sanitary. The troughs are so supported that they may be readily adjusted to a horizontal position, and a separate trough is preferably provided for each individual plate. The troughs terminate adjacent the edges of the partitions and the plates extend upwardly above the troughs at each end of the latter. Thus, the lip of the trough extends through a transverse opening or recess in the upper edge of the plate. Water is delivered to the troughs in any suitable manner, for instance, by a delivery conduit 28 parallel to the troughs and above the same and extending the full length of the device. The conduit may have one or more delivery apertures for each individual trough. A cover plate 29 is preferably mounted above the delivery conduit and serves to conceal the latter and most of the trough from view. The plate is supported at its rear edge and has its front edge curved downwardly and terminating in engagement with the front sides of the several plates 10 at the edges of the latter and adjacent the curved delivery lip 27 of the troughs but spaced from the latter, so as not to interfere with the free delivery of the water.

At the end of a range or battery of stalls, end plates 30 may be provided, the shape of which will depend upon whether the series is to extend against a wall or within a room. The plates may be ranged in parallel, so that a single ventilating space will draw water over two separate receiving troughs, as indicated in Fig. 1, or a single row of plates may be provided and spaced a short distance from the wall of the room, as indicated in Fig. 2. The water is kept at a predetermined level in the receiving trough by any suitable form of trap or other level-controlling means. In Fig. 3 I have illustrated a very simple form of trap including a small partition wall 31, over which the water must flow to the screened outlet conduit 32.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A urinal having a plurality of back plates in alinement, each two adjacent plates being spaced apart along approximately

their upper halves at their adjacent edges and having their adjacent edges secured together along approximately their lower halves, and substantially V-shaped partitions extending outwardly and closing the space between the upper portions of the plates.

2. A urinal, comprising a plurality of back plates in alinement with each other, each of said plates having its upper portion curved or bowed outwardly and having its lower half substantially flat, the marginal edges of each plate being curved inwardly to space the plates apart along their upper halves, the adjacent edges of the lower halves of the plates being rigidly secured together, and substantially V-shaped outwardly-extending partitions, each closing the space between the curved edges of the upper portions of the plates.

3. A urinal having a plurality of back plates in horizontal alinement, each two adjacent plates being spaced apart along approximately their upper halves at their adjacent edges, and having their adjacent edges in engagement with each other along approximately their lower halves, rearwardly-extending flanges on said plates at said edges, and hollow substantially V-shaped partitions extending outwardly from said plates, the rear sides of said V-shaped partitions extending through the openings between the plates and secured to said flanges in the rear of said plates, and the angle of intersection of the sides of said partitions extending substantially vertically and in front of said plates.

4. A urinal having a back plate, substan-

tially the upper half of which is curved outwardly and the remaining portion of which is substantially flat, and a plurality of vertical partitions, each having its inner edge curved in conformity to the curvature of the back plate and each terminating adjacent the intersection of said curved and flat portions.

5. A urinal having a back plate, substantially the upper half of which is curved outwardly and the remaining portion of which is substantially flat, and a plurality of vertical partitions, each having its inner edge curved in conformity to the curvature of the back plate and each terminating adjacent the intersection of said curved and flat portions, each of said partitions being substantially V-shaped in cross section and having its interior communicating with the space in the rear of the back plate.

6. A urinal having a plurality of back plates in alinement with each other, each two adjacent plates being spaced apart along approximately their upper halves at their adjacent edges and having their adjacent edges secured together along approximately their lower halves, and partitions extending outwardly from said back plates and secured in position between the spaced upper portions of the edges of the back plates.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NATHANIEL FROST.

Witnesses:

G. W. HALEY,
L. K. HEALY.