No. 883,320. PATENTED MAR. 31, 1908.

E. LIENERT-MARKET.

PIPE UNION.

APPLICATION FILED AUG. 11, 1904.

Fig. 1.

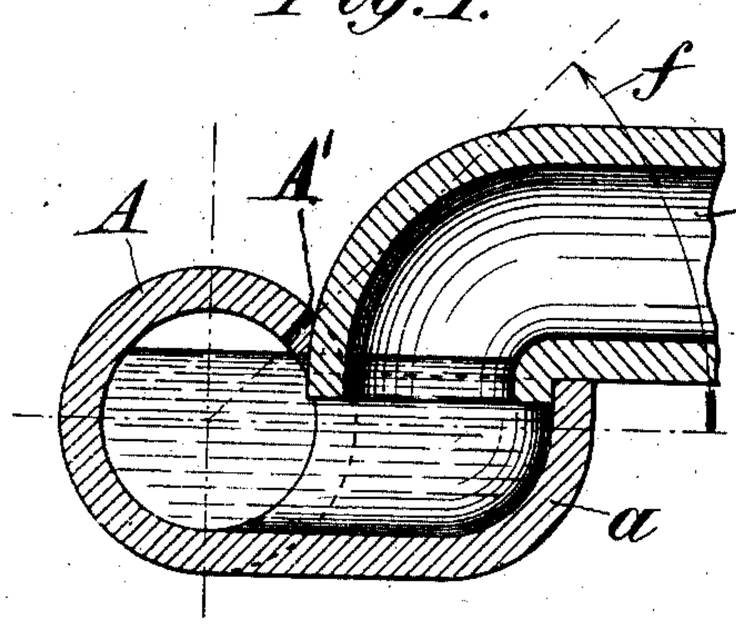


Fig. 2.

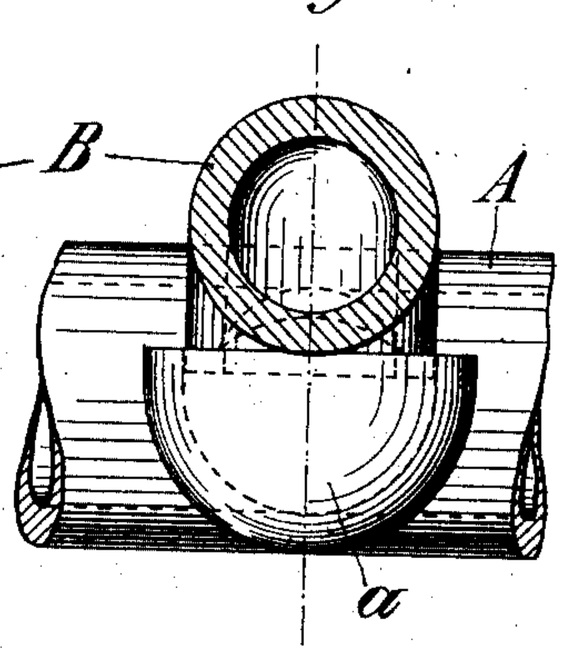


Fig. 3.

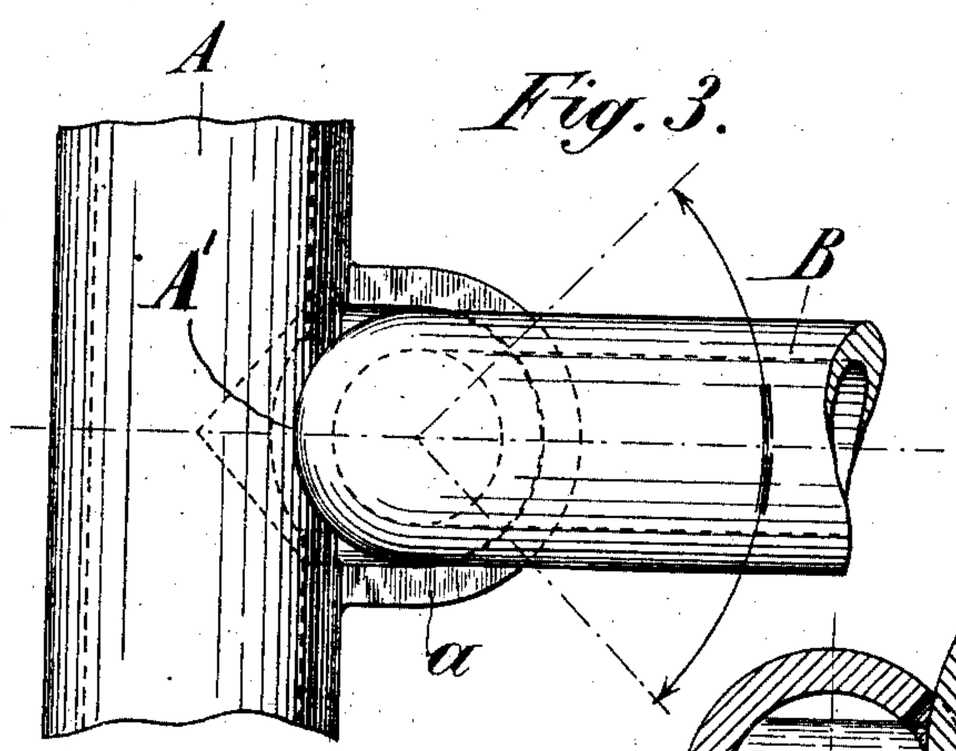


Fig. 4.

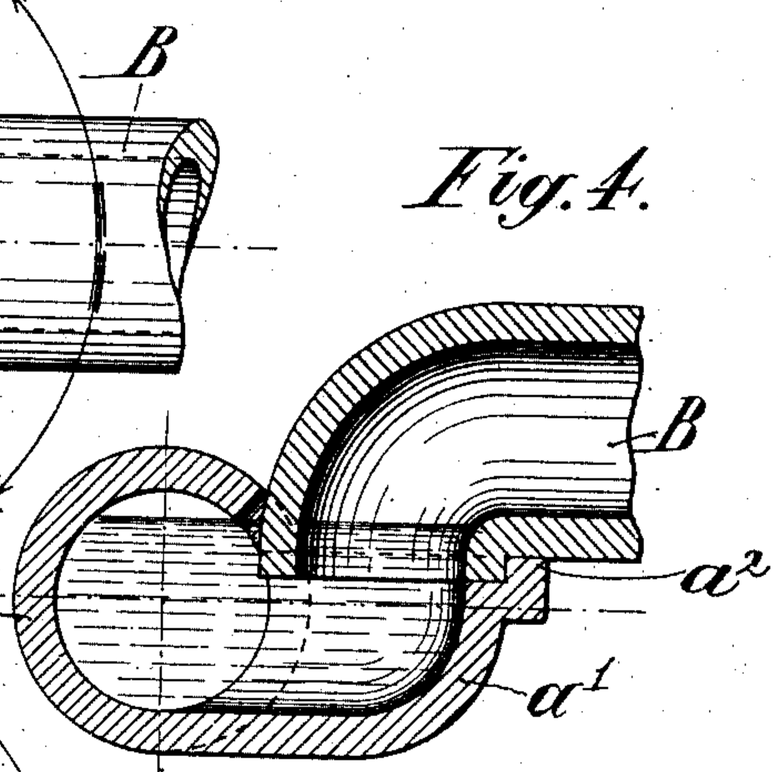
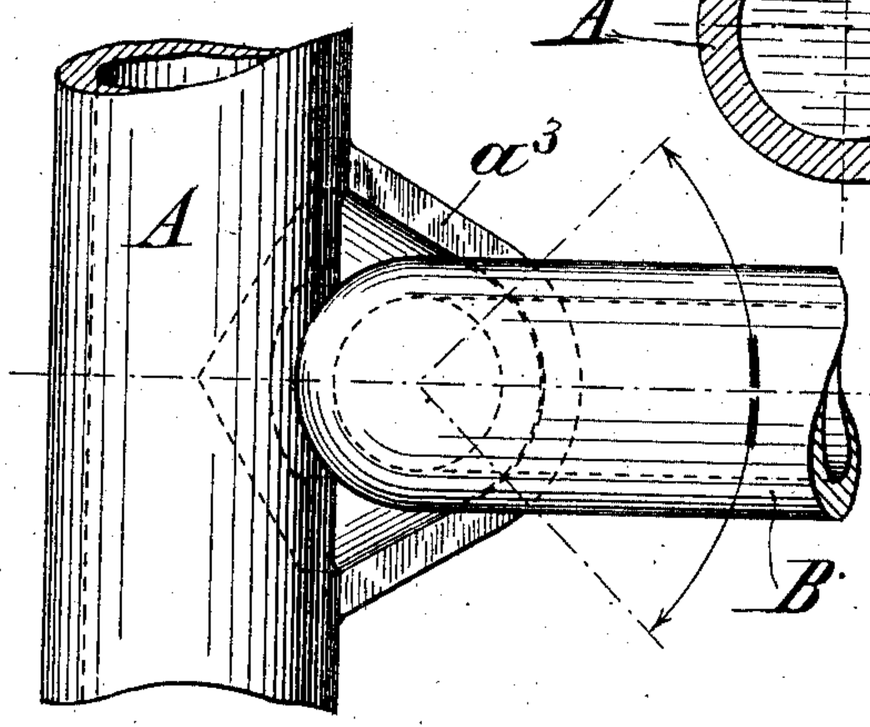


Fig. 5.



Witnesses:

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EMIL LIENERT-MARKET, OF EINSIEDELN, SWITZERLAND.

PIPE-UNION.

No. 883,320. Specification of Letters Patent. Patented March 31, 1908.

Application filed August 11, 1904. Serial No. 220,389.

To all whom it may concern:

Be it known that I, EMIL LIENERT-MARKET, a citizen of the Swiss Republic, residing at Einsiedeln, Switzerland, have invented certain new and useful Improvements in Pipe-Unions, of which the following is a specification.

This invention relates to improvements in drain pipe unions of the class intended to permit of the junction of branch and main pipes at various angles. Such unions for connecting branch-pipes to mains usually comprise two pieces of piping, one of which is inserted into the main and has a circular opening at its upper part, the other being connected to the branch pipe and having a similar opening at its lowest part. These unions are objectionable in that their use entails a considerable loss of fall or "head", which is a serious drawback in the case of drain pipes, which in most cases have very slight fall.

The object of the present invention is to remove this objection by providing a union, which comprises a length of piping inserted into and forming part of the length of the main and provided with a branch receiving socket in the form of an inlet basin or trough situated outside the cross-section of the pipe, the aperture of said basin or trough being adapted to receive the bent nozzle of the branch pipe, and lying in a plane considerably below the summit of the main, the construction being such that loss of head is reduced to a minimum.

In the accompanying drawing two forms of the invention are illustrated by way of example, in which

Figures 1, 2 and 3 are respectively a vertical section, side view and plan view illustrating one form of construction, Fig. 4, is a vertical section illustrating another form of construction, and Fig. 5, is a plan showing a further modification.

The main A is provided, outside the cross section of the pipe with a trough or basin *a* the circular aperture of which is in a plane parallel to the axis of the main and intersecting the main below the summit thereof, and consequently the unit A of the main has its wall cut away at A′ a point between 90° and a horizontal in an arc to permit the downwardly turned end of the branch pipe B to seat therein and terminate above the horizontal plane of the unit A of the main and within the thickness of the wall of the main so that the downwardly turned end of the branch does not appreciably project within the main itself and obstruct the flow therethrough and at the same time discharges as directly into the main as possible with such a structure. The body of the branch pipe B rests on the upwardly turned end of the trough *a*. The circle of this aperture intersects the exterior face of the wall of the main as illustrated, whereby the branch receiving socket is of minimum projection. Into this aperture which extends from slightly below the top of the main to the bottom is inserted the end of the branch pipe B said end being curved through a right angle and its end surface is circular and parallel to the longitudinal axis of the branch pipe. The diameter of the end is smaller than the diameter of the circular aperture of the trough *a* so as to engage therein, the side of the branch pipe resting on the edge of the said aperture. The construction described allows of connecting to the main a branch pipe leading to the latter at any angle in the plane of connection, the pipe A being rotated in the direction of the arrow *f* from the position shown in the drawing through whatever angle is required by the line of direction of the branch pipe.

In the form of construction shown in Fig. 4, the branch receiving socket *a′* is provided with a flange a^2 for the better support of the branch pipe B.

Instead of being at right angles to the axis of the main, as shown in Figs. 2 and 3, the lateral walls of the branch receiving socket a^3 can be at obtuse angles to the said axis, as shown in Fig. 5, so that the trough is flared towards the main.

With the union described the loss of fall is very small and one union can be used without alteration for different rates of fall by revolving the section of the main. The union can, of course, be made of any suitable material such as for instance, earthenware, cement or iron.

I claim:—

The combination with a branch pipe having its end curved through a right angle, of a main pipe unit having a lateral branch inlet

trough turned upwardly from the bottom of the unit and terminating at a level between the summit of the unit and its center, the wall of the unit having a cut away portion within the trough extending from a point between ninety degrees and a horizontal to the bottom of the unit, said cut away portion forming a seat for the curved end of the branch pipe in the trough and the body of the branch pipe resting on the upwardly presented end of the trough.

In witness whereof I have signed this specification in the presence of two witnesses.

EMIL LIENERT-MARKET.

Witnesses:
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