

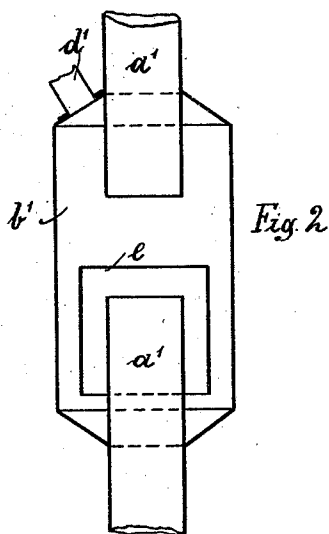
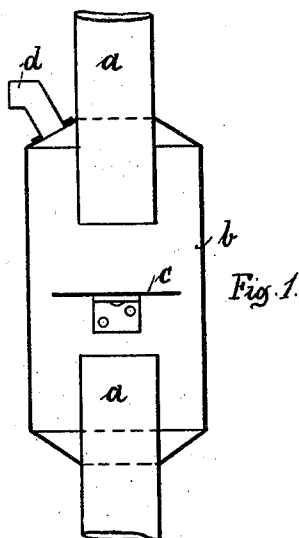
(No Model.)

R. HABERMANN.

APPARATUS FOR SEPARATING AIR FROM RAIN WATER FLOWING
FROM ROOFS OF HOUSES.

Nb. 513,429.

Patented Jan. 23, 1894.



Witnesses:

T. Hump
Hess

Inventor:

Rudolf Habermann.
per *Heinrich LaSe*
Attorney.

UNITED STATES PATENT OFFICE.

RUDOLF HABERMANN, OF BERLIN, GERMANY.

APPARATUS FOR SEPARATING AIR FROM RAIN-WATER FLOWING FROM ROOFS OF HOUSES.

SPECIFICATION forming part of Letters Patent No. 513,429, dated January 23, 1894.

Application filed July 5, 1892. Serial No. 438,939. (No model.) Patented in Germany October 11, 1891, No. 63,518.

To all whom it may concern:

Be it known that I, RUDOLF HABERMANN, a subject of the King of Prussia, German Empire, and a resident of the city of Berlin, in the German Empire, have invented a certain new and useful Apparatus for Separating Air from the Rain-Water Flowing from the Roofs of Houses, (for which I have obtained Letters Patent in the German Empire, No. 63,518, dated October 11, 1891;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an apparatus to be interposed in the pipes by which the rain water from the roofs of houses is discharged; and the object of the invention is to separate the air from the rain water flowing from the roofs of houses through the discharge pipes, before the water reaches the drains or sewers so as to render these capable of carrying off the water with sufficient rapidity to prevent overflow onto the streets, and grounds and basements of houses. I attain this object in the manner shown in the accompanying drawings, in which—

Figure 1 is a vertical section of the apparatus applied to a rain water discharge pipe and Fig. 2, a similar view with a somewhat modified apparatus.

a is the rain water discharge pipe leading downward from the roof of a house; *b* a receiver of any suitable form interposed in the discharge pipe and fixed thereto; *c* a body of suitable form fixed within the receiver so that the downflowing water will strike upon it; *d* an aperture at the top of the receiver serving as outlet for the air separated from the rain water.

The apparatus works as follows:—The rain water flowing down through the upper length of discharge pipe *a* strikes upon body *c* thereby changing the direction of the flow of the water and for a moment retarding its velocity when the accompanying air escapes from it. The water is distributed over body *c* from which it passes into the lower length of the discharge pipe free from air in which state it does not require such a large cross sectional area of pipe or drain as when the air has not been removed. In this way the efficiency of the pipe or drain for carrying off the water is increased.

When the apparatus is applied to the discharge pipe at a great height from the street level it may happen that air will again be taken up by the rain water after it has once been separated therefrom to obviate which a bell shaped receiver *e* (Fig. 2) is placed instead of the body *c* (Fig. 1) over the top end of the lower length of the discharge pipe so as to prevent access of air thereto.

What I claim as my invention, and desire to secure by Letters Patent, is—

An apparatus for separating air from the rain water flowing from the roofs of houses, consisting of a receiver *b* interposed in the discharge pipe, of a body *c* so located in said receiver that the water flowing down the discharge pipe will strike against it; and of an outlet *d* for the separated air, substantially as described.

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

RUDOLF HABERMANN.

Witnesses:
T. JESSEY,
W. HAUPT.