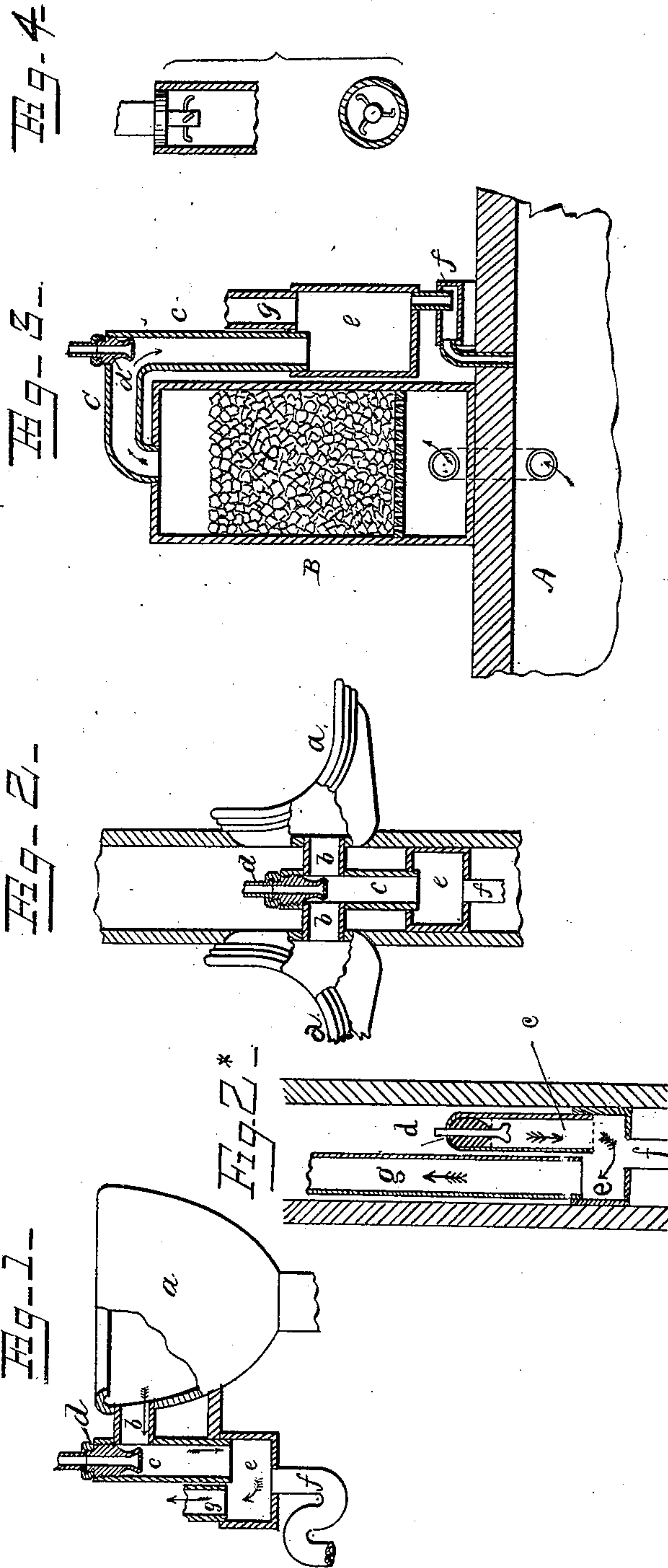


(No Model.)

T. ROWAN.
APPARATUS FOR VENTILATING WATER CLOSETS, URINALS, DRAINS,
SEWERS AND THE LIKE.

No. 297,296.

Patented Apr. 22, 1884.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

THOMAS ROWAN, OF LONDON, ENGLAND.

APPARATUS FOR VENTILATING WATER-CLOSETS, URINALS, DRAINS, SEWERS, AND THE LIKE.

SPECIFICATION forming part of Letters Patent No. 297,296, dated April 22, 1884.

Application filed November 3, 1882. (No model.) Patented in England January 19, 1882, No. 276, and in Canada January 24, 1883, No. 16,193.

To all whom it may concern:

Be it known that I, THOMAS ROWAN, a subject of the Queen of Great Britain, residing at London, England, have invented certain new and useful Improvements in Apparatus for Ventilating Water-Closets, Urinals, Drains, Sewers, and the like, (for which I have received Letters Patent in England, No. 276, dated January 19, 1882, and sealed April 11, 1882,) of which the following is a specification.

This invention has reference to further improvements on my former inventions for "improvements in the method of and apparatus for ventilating sewers and drains, and for treating the gases therefrom," "improvements in the method of and apparatus for ventilating buildings, water-closets, ships or vessels, and the like," and "improvements in and applicable to chimneys or flues, parts of such improvements being applicable to other purposes," respectively, for which I am applying for Letters Patent; and the present improvements consist, chiefly, in certain apparatus employing a jet or jets of water for producing an induced current for carrying off the foul air and gases from water-closets, urinals, drains, sewers, and the like, the said water also serving for washing or purifying the said foul air and gases before the same escape.

In carrying out my improvements I employ a jet or jets connected with a suitable supply of water, and so placed in a tube open to the receptacle or the like, from which the gases or other noxious products are to be drawn and treated, that an induced current will be produced either directly or spirally in such a manner that the said gases or other products will be abstracted and washed before being discharged.

In order to enable my invention to be better understood, I will proceed to describe the same by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation showing one arrangement for carrying out my invention as applied to a water-closet; Figs. 2 and 2*, sectional elevations showing a similar arrangement applied to a urinal. Fig. 3 is a sectional elevation showing the present improvements adapted to a receiver employed in venti-

lating sewers, drains, cess-pits, and the like; and Fig. 4, views of nozzles suitable for producing spiral jets.

Similar letters in all the figures represent similar or corresponding parts.

In the arrangement shown in Fig. 1, *a* is the water-closet pan, communicating by means of the connection *b* with the vertical tube *c*, provided with a nozzle, *d*, inserted therein, having its mouth directly opposite the foul-air connection and in communication with a supply of water. The lower end of the tube *c* opens into a box or receiver, *e*, having a trapped discharge-pipe, *f*. *g* is a connection for the outlet or discharge tube for the washed or purified air or gases. By this construction, if water under pressure be supplied to the nozzle *d* by any suitable means, it will be discharged in a series of jets or spray into the vertical tube *c*, directly opposite the entrance of the foul-air connection, and this incoming jet or spray will thereby come directly against and in forcible contact with the foul air and gases immediately upon their entering the vertical tube *c*, and will produce an induced current, which will draw or abstract the foul and other air and gases from the pan *a*, and the spray or jets will carry the said air and gases along into the box *e*, from which they will escape through *g*, after having been washed by the water during their passage. The water from the box *e* is discharged through the outlet *f*, carrying with it any matters condensed from the said air and gases.

In Figs. 2 and 2* the hereinbefore described arrangement is shown applied to urinals, *a a* being the basin. The operation, being substantially the same as that described by reference to Fig. 1, needs no further description.

In Fig. 3, which shows a method of ventilating a sewer or drain, *A* is an ordinary sewer; *B*, a receiver similar to that described in the said specification of my "improvements in the method of and apparatus for ventilating sewers and drains and for treating the gases therefrom."

C is a pipe leading from the top of the receiver into the vertical tube *c*, provided with a nozzle, *d*, as in Figs. 1 and 2. By this arrangement the air or gases will be drawn from

the receiver by the action of the jet of water into the tube *c*, and will be washed before being discharged through the outlet *g*.

In these several figures 1, 2, 2*, and 3 of the drawings I have shown and I have described the nozzle *d*, placed vertically in a vertical tube. I would, however, remark that the nozzle may be placed at any suitable angle, or that a simple jet or jets of water may be provided in any suitable position in the side of the tube, with the object of producing a spiral current or flow of water and of the air and gases to be treated; or I may employ a multiple nozzle such as that shown in Fig. 4 for producing a spiral current.

Having thus described the nature of my said

invention and suitable means of carrying the same into effect, I would have it understood that what I claim is—

The combination, with the structure to be ventilated, of the receiver B, supplied with a purifying material through which the foul air or gas passes, the water-nozzle *d*, having its mouth located as described with reference to the inlet of the tube through which the air or gas is driven and washed, chamber *e*, and pipes *g* and *f*, all as and for the purposes described.

THOMAS ROWAN.

Witnesses:

A. ALBUTT,
B. BRADY.