

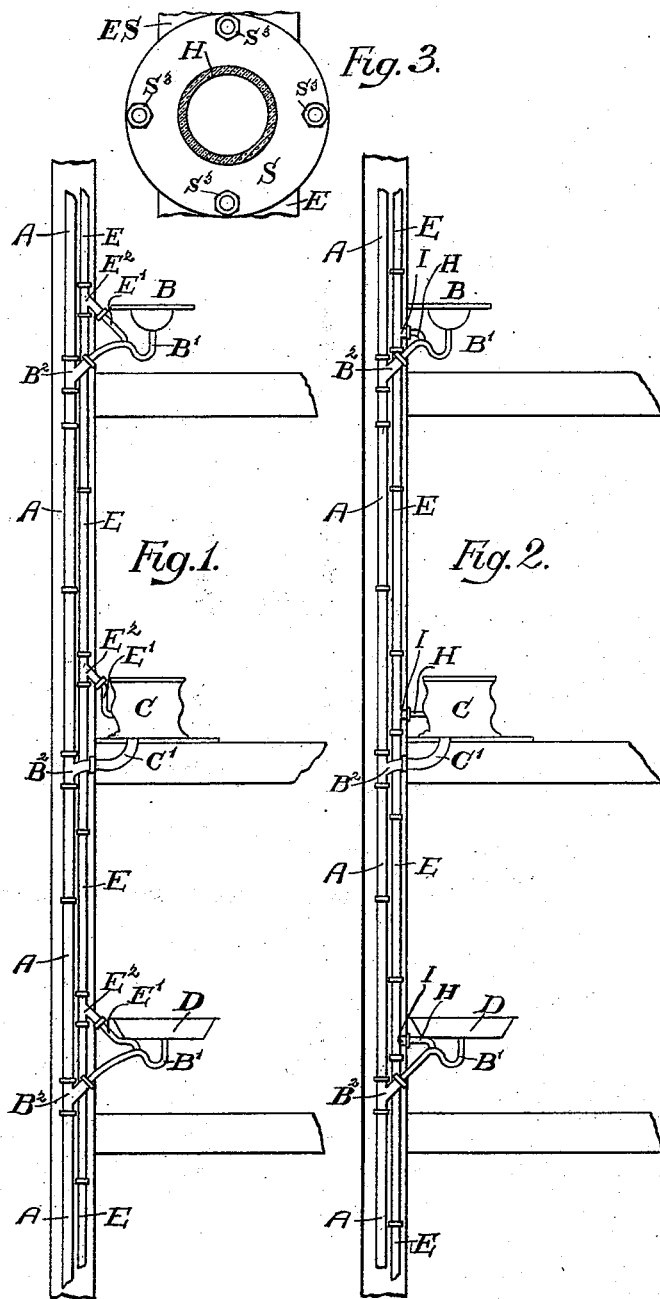
(No Model.)

2 Sheets—Sheet 1.

O. SCHLEMMER.  
FITTING FOR VENTS.

No. 526,912.

Patented Oct. 2, 1894.



Attest:  
H. Smith  
Henry Appleton

Inventor:  
Oliver Schlemmer  
per Wm. Hubbell Fisher,  
Attorney.

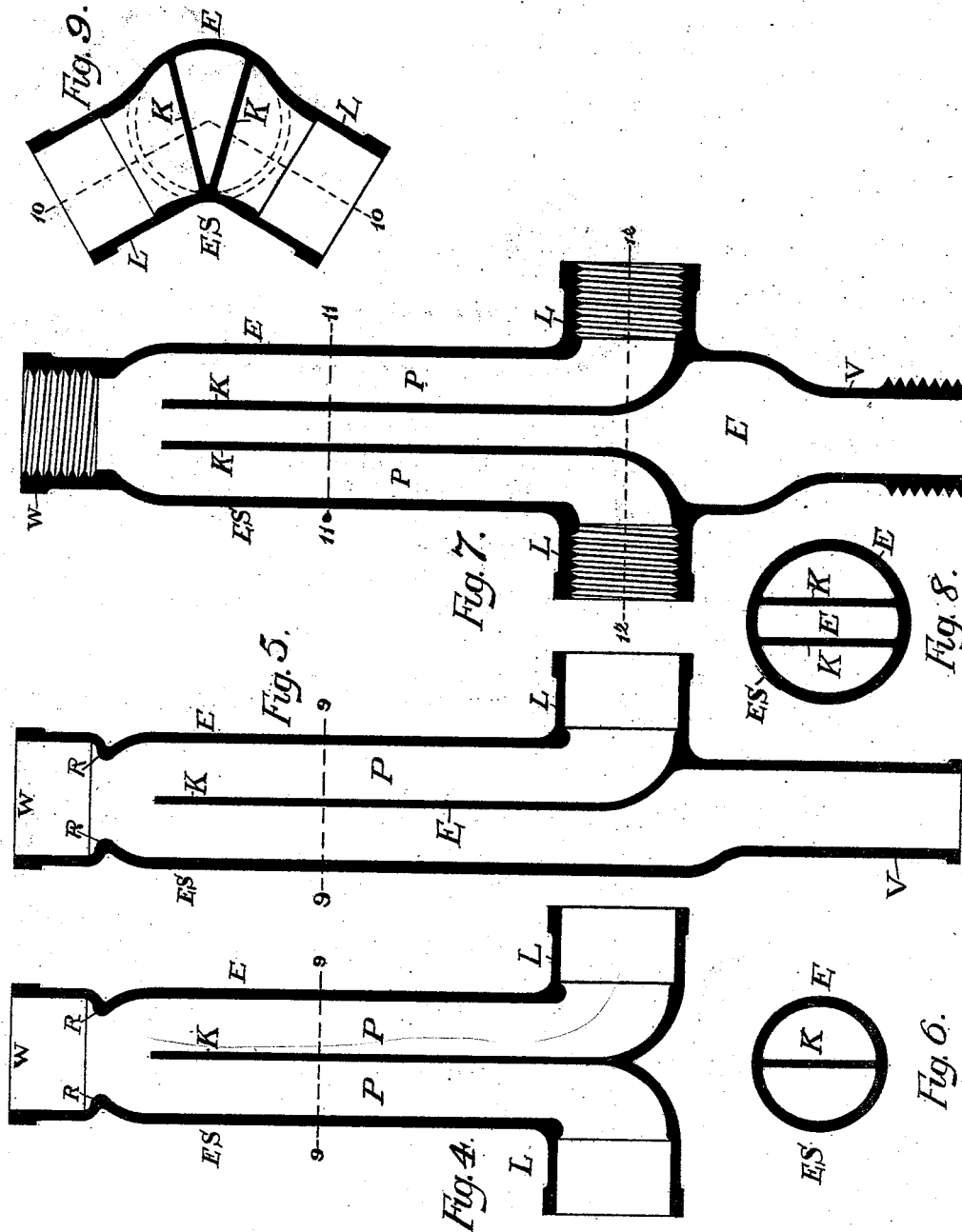
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# UNITED STATES PATENT OFFICE.

OLIVER SCHLEMMER, OF CINCINNATI, OHIO.

## FITTING FOR VENTS.

SPECIFICATION forming part of Letters Patent No. 526,912, dated October 2, 1894.

Application filed March 25, 1892. Serial No. 426,429. (No model.)

### *To all whom it may concern:*

Be it known that I, OLIVER SCHLEMMER, a citizen of the United States of America, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Fittings for Vents—Back Vents and Local Vents—and other Sanitary Purposes, of which the following is a specification.

The several features of my invention and the various advantages resulting from their use, conjointly or otherwise, will be apparent from the following description and claims.

In the accompanying drawings, making a part of this specification, and to which reference is hereby made,—Figure 1, Sheet 1, is an elevation of parts of three successive stories of a building, and of two vertical conduits or pipes, passing through these three stories, and connected in the lower story to a sink, and in the second story to a water closet, and in the third story to a wash-stand. The construction and arrangement of parts herein shown illustrate the most approved method now in use for enabling the contents of such receptacles to be discharged, and the latter to be properly vented, and all siphonage from the receptacle into the vent conduit to be prevented. Here and in the following portions of the specification, the word "venting" refers to the conveying away of the foul or impure air from a given receptacle. Fig. 2 is a side elevation of the same three stories and of the said receptacles, viz: the sink, water closet and wash stand, and of vertical conduit pipes, one for the conveyance away of the contents of said receptacles and one for the venting of the same, illustrating my invention. Fig. 3 is an elevation of that side of the flanged connection shown at the right hand in Fig. 1. Fig. 4 is a vertical central section of a double or twin L tube provided with a diaphragm and constructed according to my invention. Fig. 5 is a vertical central section of another form of L pipe, having a diaphragm and constructed according to my invention. Fig. 6 represents a transverse section of the devices shown in Fig. 4, and also those shown in Fig. 5, said section being taken at the dotted lines 9, 9, of said Figs. 4 and 5. Fig. 7 is a transverse vertical section of a tube of the twin L pattern, with dia-

phragms, and constructed according to my invention. Fig. 8 represents a transverse section of the device shown in Fig. 7; the section being taken at the dotted line 11, 11 of Fig. 7. Fig. 9 is a transverse section taken at the line 12, 12, of Fig. 7, when the latter is considered as illustrating branch conduits whose axes are at an angle to one another. It will be observed that from the branch pipes of Fig. 9, the screw threads shown in Fig. 7 are omitted.

A indicates the vertical discharge tube or conduit. (See Figs. 1 and 2). To this conduit are attached those discharge pipes by which the waste water, foecal and other waste matter from the sink, basin, tub, urinal, closet or other receptacle are carried from said receptacle to the discharge conduit A, and thereby conveyed to the sewer, or other drain, or equivalent place. The mode in which these discharge pipes are connected to the vertical conduit is not new. Any of the well known joints and connecting pipes are to be used.

In Figs. 1 and 2, several of the well known kinds of pipes and joints and the modes of applying the same, are shown. Thus in connection with basin B is shown an ordinary trap B', connected at its vertical end to the bottom of the basin and at its other end to the T-joint B<sup>2</sup>, forming a part of the conduit A. The closet pan C is provided with a trap, in this instance formed within the body of the closet. The trap has an outlet pipe C', whose lower or outlet end is connected to the T-joint B<sup>2</sup> of the conduit A.

The discharge trap and pipe B' between the sink D, and the discharge conduit A is substantially the same as that which is present between basin B and said conduit A.

E indicates the vertical vent conduit.

Ordinarily, both the discharge conduit A and the vent conduit E will be located in the wall and behind the plastering.

In connecting the vent conduit with the receptacle to be vented, that is to say with the receptacle from which foul or impure air or other noxious gases are to be taken, the method now in use is substantially that indicated in Fig. 1. In all cases, it is necessary that the vent tube as E', E<sup>2</sup> shall at its point of junction with the conduit E, be higher than the point to which the liquids in basin

B, closet C, sink D, or other similar receptacle can rise. Otherwise in case the discharge pipe B', or C' were accidentally stopped or closed by matter sticking in it, the liquid in the receptacle when it rose to the fullest height possible in the receptacle as B, C or D and the like, would flow through the vent pipes E', E<sup>2</sup>, and thence down the vent conduit E, and flood the lower part of said conduit E with liquid usually of a disgusting character; and in case there are basins or bath tubs, &c., below the point of this overflow, the same will receive a part of this discharge, for the reason that the water and other liquids and soft matter running down conduit E will as they pass the mouths of the pipes E<sup>2</sup>, E', discharge a portion of the said liquids and matter into each of the said pipes E<sup>2</sup>, E'. On this account, the vent connecting pipes E', E<sup>2</sup>, must join the vent conduit E at a point higher than the level to which the liquid can rise in the receptacle to be vented. Such a fact necessitates the presence of a long pipe as E', or E<sup>2</sup>, and this pipe shows greatly in the room, especially above the receptacle to be vented. Another effect of this pipe is that on account of the difficulty of conveniently and cheaply uniting the vent pipes with the vent column, where the space is small, it is customary to set the receptacle some distance into the room, and thus allow a considerable space between the rear side of the receptacle and the wall to permit of convenient and cheap vent connection between the receptacle and the vent column. Furthermore, unless the wall is of great thickness, which is not usually the case, it is necessary to make a break or cut in the wall to admit the upper end of the vent pipe to join the vent column A. My invention enables me to overcome these disadvantages.

The junction of the vent pipe H, Fig. 2, as I employ it in connection with my invention need not, and ordinarily will not join the vent conduit E. On the contrary, it can and usually will join the vent conduit E below the top of the receptacle to be vented and in many instances it will join the vent conduit E below the bottom of the receptacle. Thus in case of a closet pan, as C, the vent pipe H is shown going directly from about the center of the rear of this pan, to the conduit E in a direction substantially horizontal. In this illustrative instance, the vent pipe H connects with the top of the trap in the pan C. This allows the pan to be brought quite close to the wall, and also permits the place where the pipe H joins the branch I of the conduit E to be hidden by the pan, and it furthermore enables the point where the branch I enters the wall on its way to the conduit E to be hidden.

It may be here remarked that the upper curve of the pipe of the trap is the point from which venting is usually done.

In case of the basin B, or sink D, or of other receptacles where the trap lies below the recep-

tacle, the vent pipe is connected to the upper curve of the trap below the said receptacle and runs back in a direction substantially horizontal to the conduit. Thus the sink D or basin B or similar receptacle can be brought very close to the wall, and at the same time hide the vent pipe H and its connection with the conduit E, and in case a branch I receives the end of the pipe H at a point outside of the wall, this point and the location where the branch enters the wall will be concealed.

The location of the receptacle close to the wall allows the latter to the better hide from view the discharge pipe B', particularly its rear end and its entrance into the wall or its connection to a branch of the discharge column A, and the place where such branch passes into the wall, in cases where the branch projects from the wall.

The great feature of my invention consists in introducing a diaphragm into the conduit E and so combining it therewith that the vent conduit is utilized not only as a vertical vent column for all of the receptacles on different stories which it vents, but also serves as an individual vent tube for a given receptacle. To this end, a partition K is thrown into the conduit E, and this partition extends down below the branch pipe or elbow or opening L, and shuts this opening off from immediate communication with the rest of the space in the conduit E. The partition K is continued high enough to be higher than the highest level to which the liquid, &c., will rise in the receptacle which this branch is to vent.

I will now proceed to describe more particularly some of the particular illustrative embodiments of my invention.

It may be here remarked that almost all vent conduit pipes as E of any length are made in sections. Where a branch connection is to be made from the said conduit to a specified receptacle, a section having an opening or branch end as L is introduced as a section of the conduit and forms a part thereof. It is therefore convenient and economical to combine my invention with a section E S of tubing provided with an opening or branch L. The ends of this section E S are adapted to be suitably connected to any other section of the conduit in any suitable manner, and by any desired means.

The upper ends of the tube section E S of Figs. 4 and 5 are formed upon the same plan as the branch L is formed, and consequently each has the annular shoulder R. The lower end of the pipe section next above is of a size for being inserted in the said upper end of the section, substantially as shown in Fig. 5, the lower ends of these pipes being indicated by the letter V. Obviously, an end, such as V, can be easily inserted in that description of the upper end of the section which is shown in Figs. 4 and 5. The upper end W requires the lower end of the section next above to be

of larger diameter than the end V of said Figs. 4 and 5, and said ends may be of the same shape as shown in said figures. Such construction of the upper and lower ends of the sections enables one section to be conveniently set in another, and the joint between the said interfitting ends to be corked or soldered tight. At the same time, each section below supports the section above it.

When desired, the mouths of the branch pipes and the upper end W of the section may be provided with an interiorly formed screw thread, and in such event, the end of the interfitting pipe will be exteriorly provided with a screw thread, and the two interfitting ends be screwed together. Such descriptions of jointure are shown in Fig. 7.

When twin or double branches are to be employed in connection with the vent tube, the diaphragm is centrally located substantially as shown in Fig. 4. Such description of tube is usually employed where this particular vent tube E is not continued below the branches L. Where the vent tube E comes up from below and is to be continued upward and a single branch is to be connected therewith, a description of section such as shown in Fig. 5 may be employed.

In Fig. 5 the diaphragmatic partition extends across the tube on a diameter thereof, forming two passage ways, one of which connects below directly with the main conduit E and the other passage way P connects with the vent branch L, both passage ways uniting as one above the diaphragm K.

Fig. 7 illustrates an approved construction where two adjacent twin branches are present and where a portion of the main vent tube E is located below the said branch tubes. In such event, the tube partitions K, K, are present, extending across the conduit E. One of the said partitions K cuts off at bottom of connection with the main conduit E and forms a vent passage way P for the right hand branch L. The other partition K extends across the main vent conduit E and at bottom cuts off communication with the main conduit E and forms a vent passage way P for the left hand branch L. Between these two partitions the gases coming up through the main conduit, and passing above the partitions K, the passage ways P and the central passage way of the conduit, unite.

In place of the straight partitions K, K, a suitable tube might be inserted.

The branches L, L, of Figs. 4 and 7 may be diametrically opposite to one another or at an angle to each other. One description of such angular relation of the branches L, L and the main passage between the partitions K, K, is illustrated in Fig. 9, which may be considered for the purposes of these remarks, as a horizontal section taken in the plane of the dotted line 12, 12 of Fig. 7. In case that the shape of the passage way of the main conduit between the partitions K were of a triangular shape as shown in section 12, 12, this

shape might be continued up through the pipe.

It may be here remarked that Fig. 7 is intended primarily to illustrate a combination of two branches which are diametrically opposite to one another, and the shape of the main passage way of conduit E between the partitions K, K, will therefore, primarily be that shown in Fig. 8. It is however, evident that a vertical central section taken in the plane of the dotted line 10, 10, of Fig. 9, would give substantially the figure shown in Fig. 7. Fig. 7 also fairly represents a vertical central section of the combination of the two branches with the main conduit where the said branches are diametrically opposite to one another.

In Fig. 9, screws are omitted from the mouths of the branches L, L, and the latter are formed similarly to the mouths of the branches shown in Figs. 4 and 5.

It may be here remarked that the bent pipe H instead of being connected to the trap of discharge pipe B' will, in certain instances, be connected directly to the receptacle for holding the liquids.

Sight should not be lost of the fact, that in connection with the upper end of the main vent conduit, a fan, or hot air draft, or other exhaust may be connected, so as to draw the impure gases more rapidly and effectually from the receptacle or the liquid discharge pipe thereof.

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

1. The main vent conduit E having two branch openings L, L, near each other, respectively venting receptacles for liquid and provided with diaphragms K, K, each diaphragm forming a vent passage way P for its respective vent branch L, each passage way being everywhere separated from the main vent passage of the conduit E except at the upper end of the said partitions, the partitions being respectively higher than the point at which the liquids in the respective receptacles they vent can rise, substantially as and for the purposes specified.

2. A discharge conduit A, having a connecting discharge pipe C', connected to the lower portion of the receptacle for holding liquids, and having a trap B' therein, and a main vent conduit E having a partition K, whereby a vent passage P is formed for the passage of the foul gases from said receptacle, the upper end of said partition being above the highest point that the liquids can rise in said receptacle, a vent pipe as H connecting the upper bend or part of the trap B' with a vent passage P at a point below the plane of the top of the said receptacle, the partition forming a cross diaphragm upheld by the sides of the main conduit, substantially as and for the purposes specified.

3. The combination of the receptacle for holding liquids, discharge pipe or trap B', main discharge conduit A, main vent conduit

E having diaphragmatic partition K, and vent passage P, formed thereby, and vent opening inlet L, located in said main conduit above the base of said partition K, which latter extends to the side of the main conduit beneath the said inlet opening, and vent pipe H united to the trap B' and to said vent passage at a point below the top of the said receptacle for liquids, the upper end of the partition K being higher than the level to which the liquids can rise in said receptacle for liquids, the partition and vent inlet being cast with the main conduit, the pipe H being a separate one, and the inlet opening L being provided with means for the attachment thereto of said pipe, substantially as and for the purposes specified.

4. In a ventilating system, the two main conduits, one A, for the discharge of the waste fluid and solid products, and the other E for the discharge of the foul gases, and a receptacle for receiving the liquids, the main conduit being composed of sections, one of the sections having opening L, and diaphragmatic partition P, located in the latter section and beginning below the opening L and at the side of the main conduit, and connected to the side of the conduit, forming a separate vent passage way for the ventage of foul gas from the liquid receptacle, as far as the top of partition P, the latter being higher than the point in the liquid receptacle above which the liquids cannot rise, a liquid discharge pipe, connecting the liquid receptacle with the main discharge conduit A, and provided with trap B', and vent passage H, connected at one end to the trap at the upper bend there-

of, and at the other end connected to opening L, below the top of the receptacle for holding liquids and forming a continuous vent passage, substantially as and for the purposes specified.

5. In a ventilating system, the two main conduits, one A, for the discharge of the waste fluid and solid products, and the other E for the discharge of the foul gases, and a receptacle for receiving the liquids, the main conduit being composed of sections, one of the sections having opening L, and diaphragmatic partition P, located in the latter section and beginning below the opening L and at the side of the main conduit, and connected to the side of the conduit, forming a separate vent passage way for the ventage of foul gas from the liquid receptacle, as far as the top of partition P, the latter being higher than the point in the liquid receptacle above which the liquids cannot rise, a liquid discharge pipe, connecting the liquid receptacle with the main discharge conduit, and provided with trap B', and vent passage H, connected at one end to the trap at the upper bend thereof, and at the other end connected to opening L, below the top of the receptacle for holding liquids and forming a continuous vent passage, the diaphragmatic partition P being cast in one piece to its section L, substantially as and for the purposes specified.

OLIVER SCHLEMMER.

Attest:

A. S. LUDLOW,  
HENRY APPLETON.