

No. 640,430.

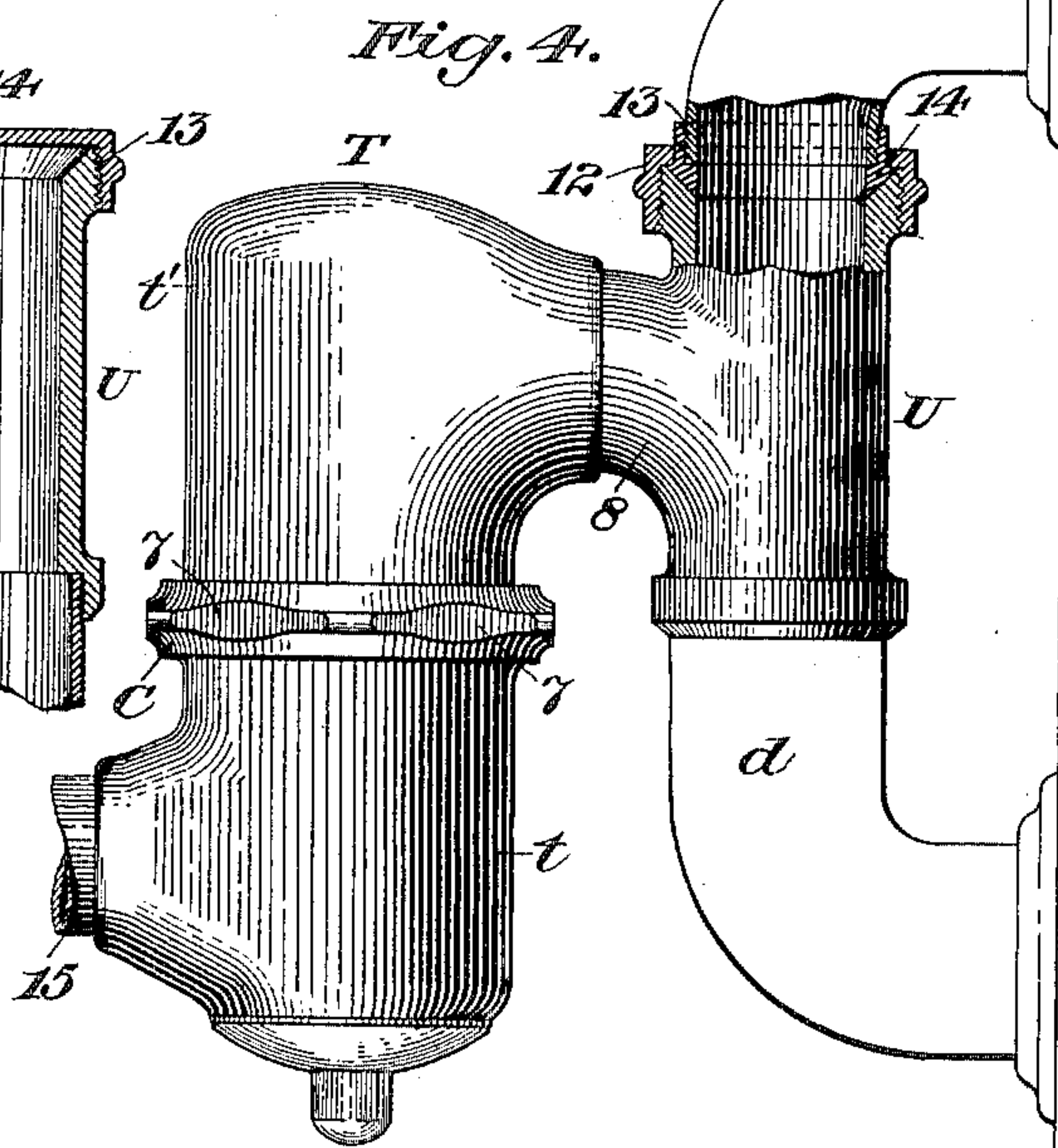
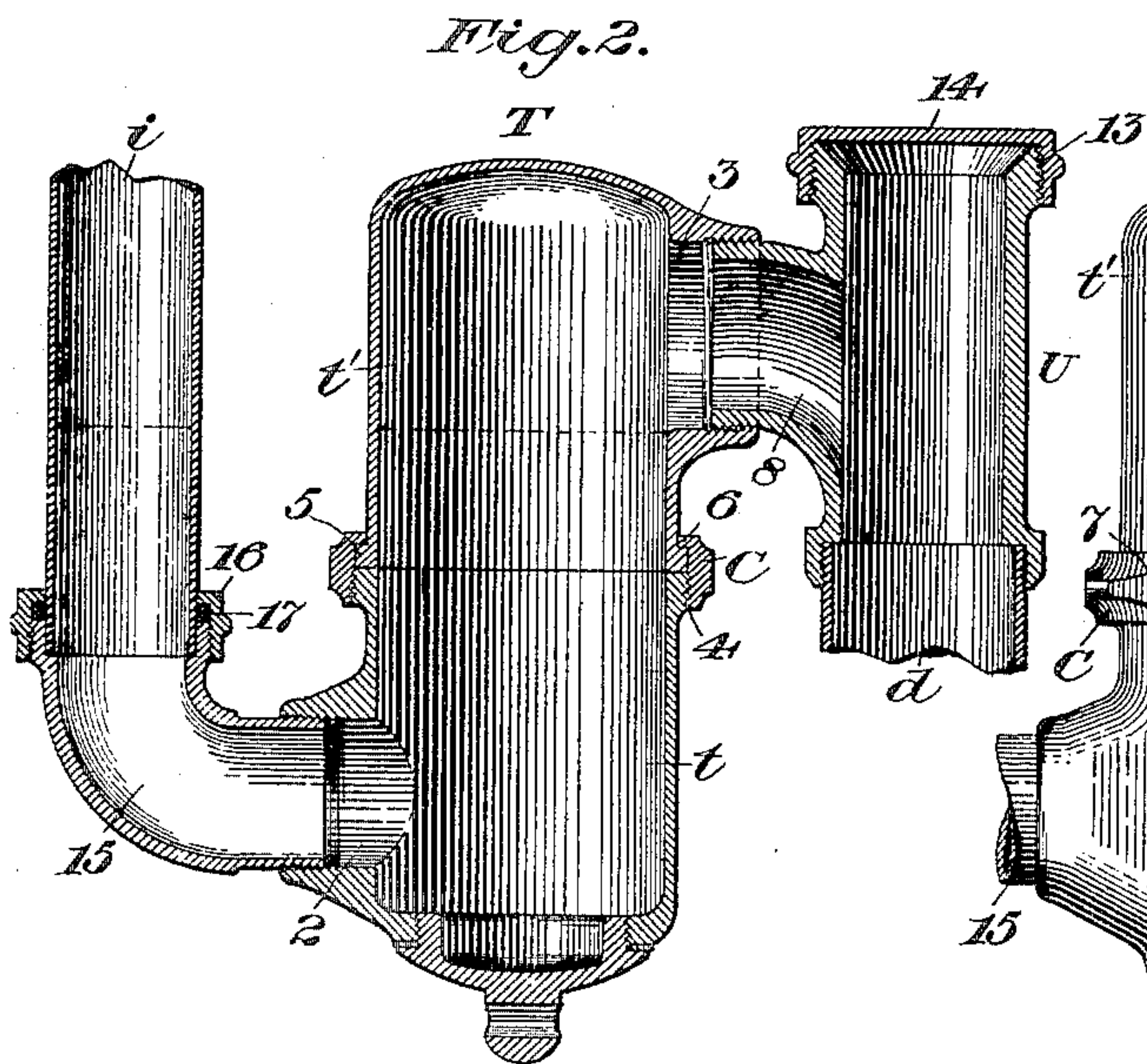
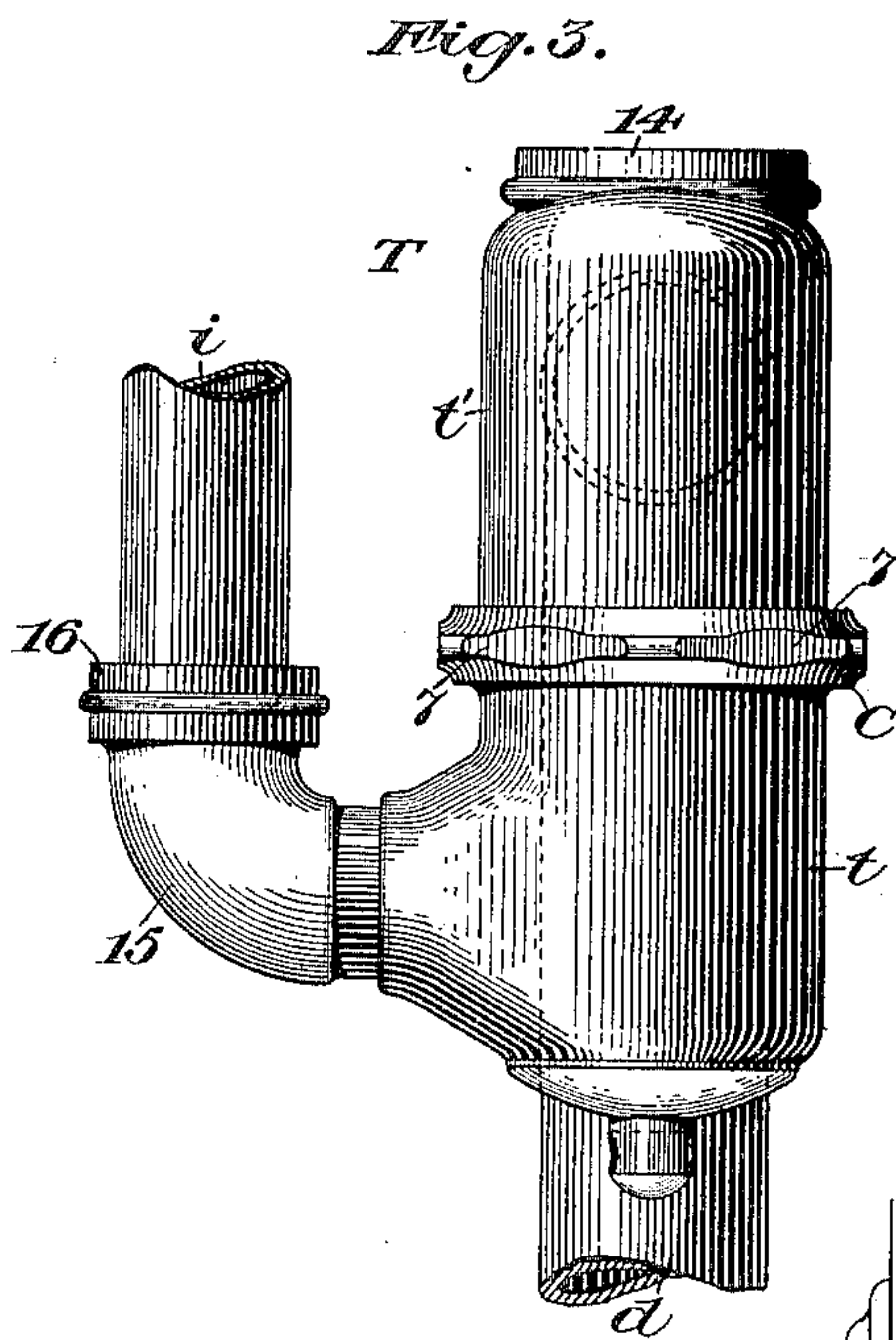
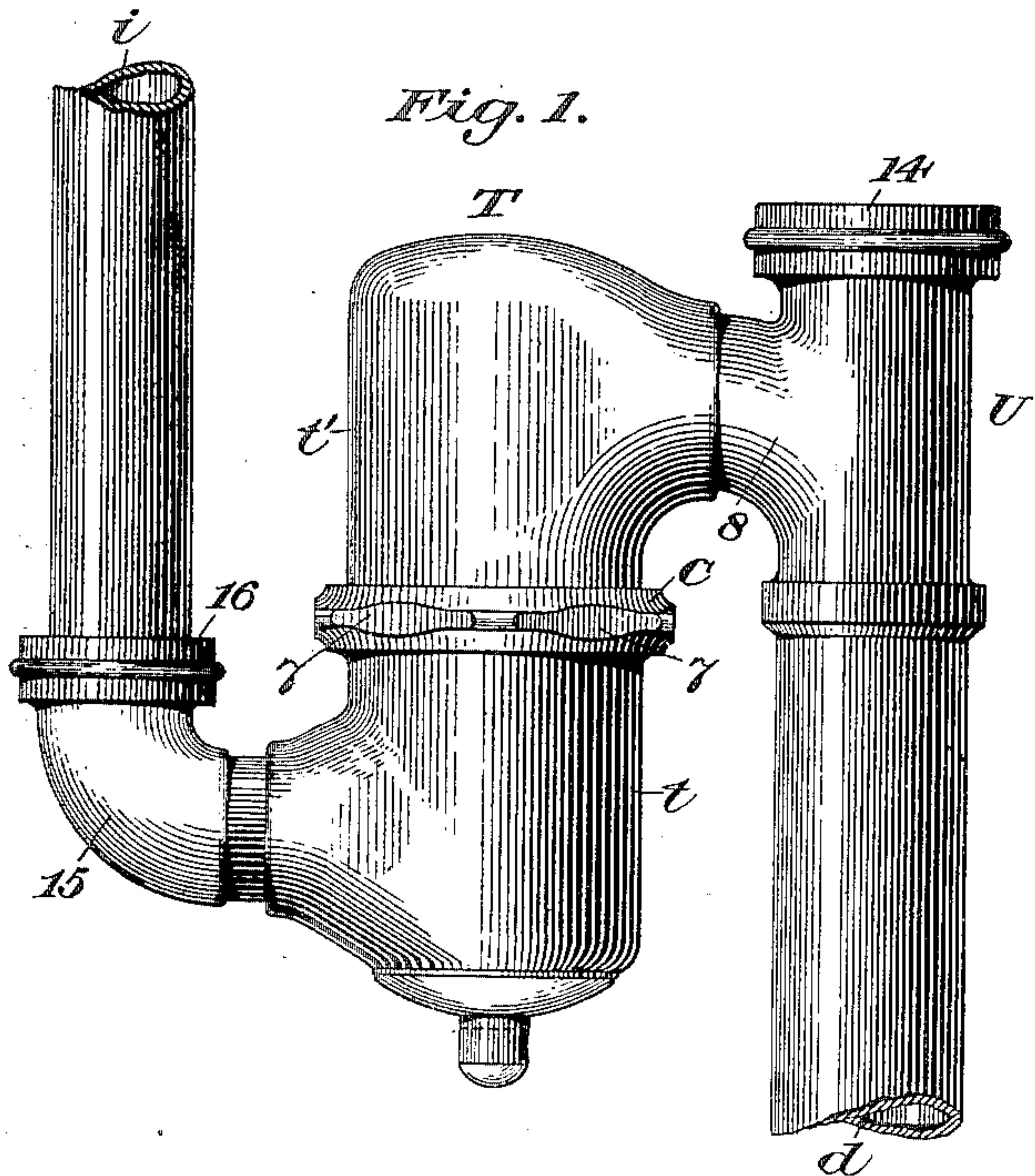
Patented Jan. 2, 1900.

B. O. TILDEN.
LAVATORY TRAP.

(Application filed Nov. 5, 1896.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. 5.

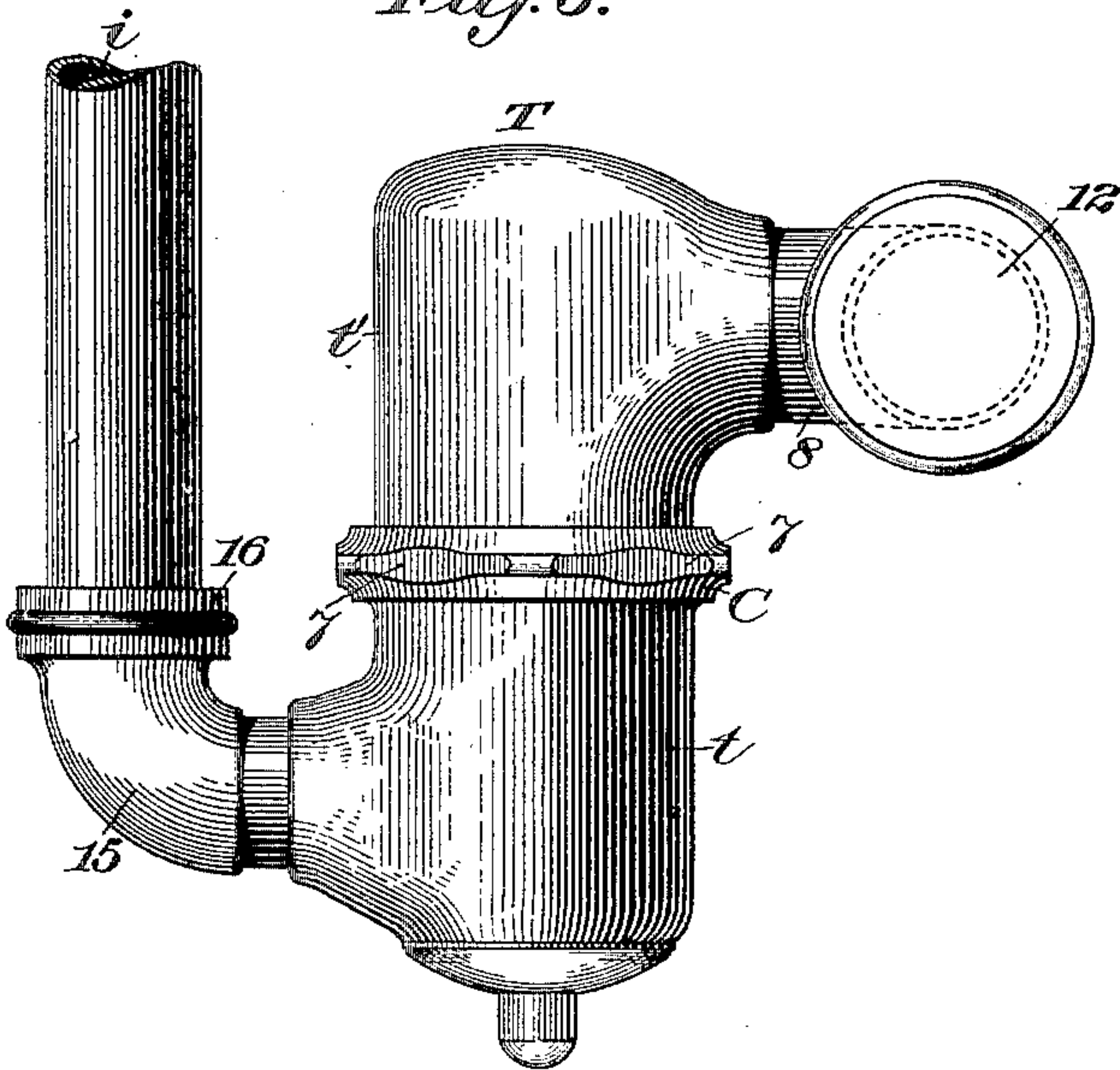


Fig. 6.

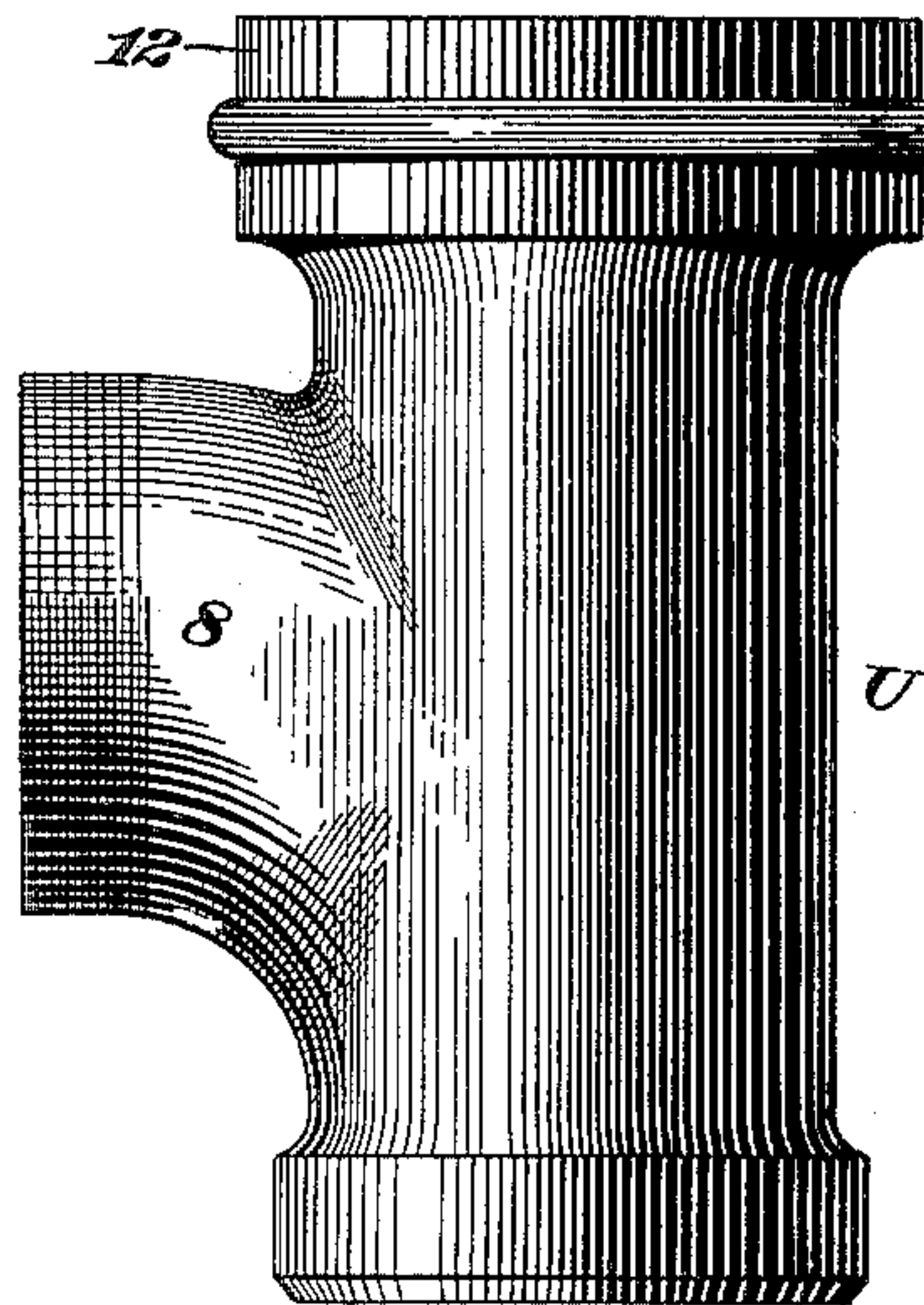
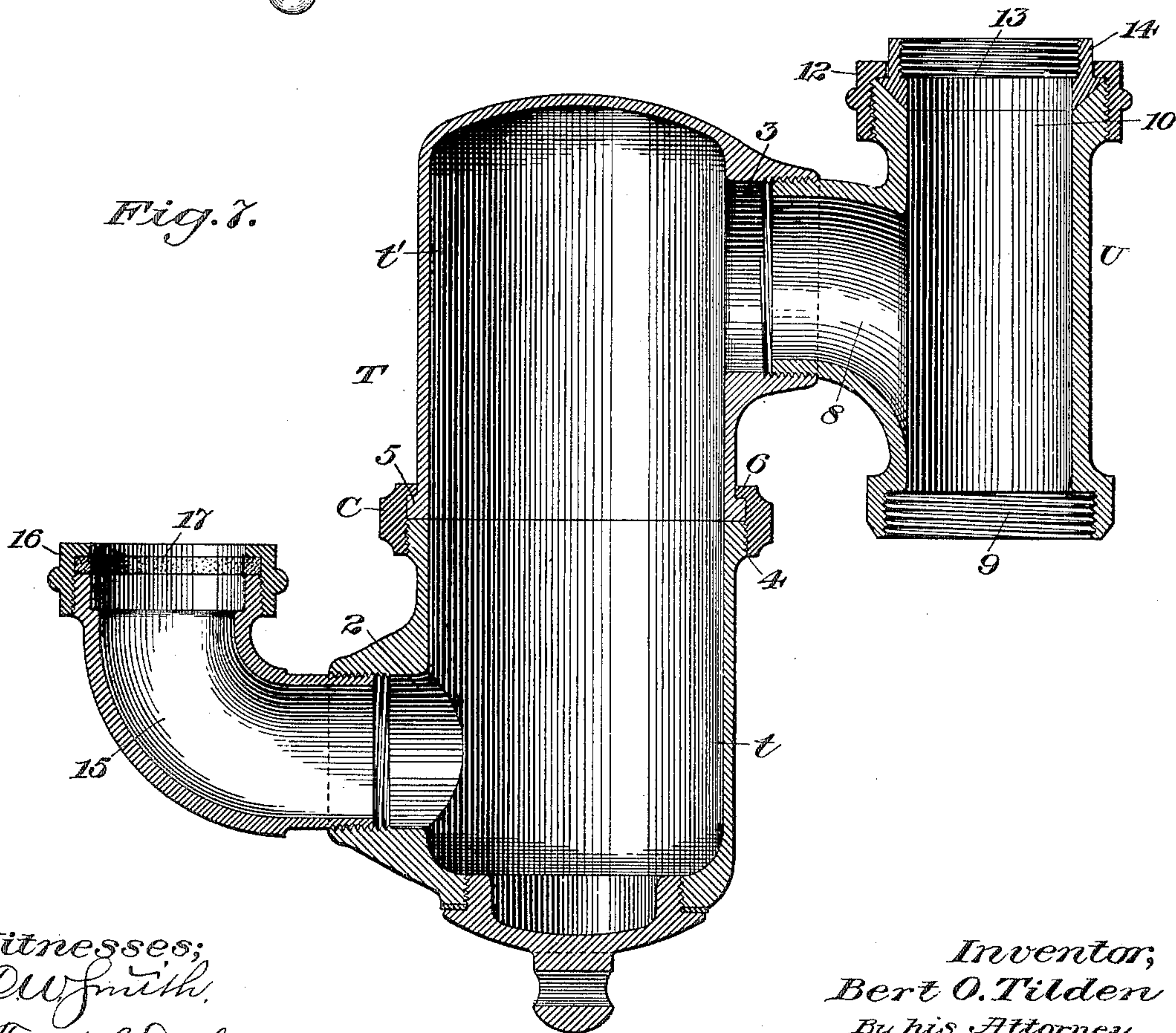


Fig. 7.



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UNITED STATES PATENT OFFICE.

BERT O. TILDEN, OF HARTFORD, CONNECTICUT.

LAVATORY-TRAP.

SPECIFICATION forming part of Letters Patent No. 640,430, dated January 2, 1900.

Application filed November 5, 1896. Serial No. 611,166. (No model.)

To all whom it may concern:

Be it known that I, BERT O. TILDEN, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Lavatory-Traps, of which the following is a specification.

This invention relates to lavatory-traps; and it has for its main object the provision of an improved sanitary device of this character which, while possessing all of the good qualities of the best lavatory-traps now employed for drainage purposes, will have a much wider range of usefulness than similar devices now known in the art.

As is well known, many different styles of lavatory-trap of the same general construction are now manufactured in order to adapt each individual type of this device to the different conditions present in dissimilar drainage systems and also for the purpose of obtaining different effects in lavatory apparatus employed with similar drainage systems. In one class of such systems the traps are ventilated in a manner that is well understood for the purpose of preventing siphoning and positively balancing the pressure in advance of the water seals, which would otherwise tend to create a vacuum there. In another class it is customary to dispense with a ventilating-pipe to balance this pressure in advance of the water seal and to rely upon the construction of the chamber containing the water seal for preventing siphoning of the contents of the trap. Moreover, several classes of trap are also in general use, of which some are found to be more suitable under some conditions and others under other conditions met with in practical work. Among these different types may be mentioned the full-S trap and the half-S.

It is the special object of my present invention to furnish a device which may be readily adapted to the two systems of drainage herebefore referred to and to the various modifications of the two classes of trap just mentioned, besides being capable of use in many different ways in which it is not possible to use the several styles of these types of trap now made.

In the drawings accompanying and forming part of this specification, Figure 1 is a side

elevation illustrating a portion of an unventilated drainage system containing a lavatory-trap constructed in accordance with my present invention and showing one position of the trap. Fig. 2 is a central vertical section of the same. Fig. 3 is a similar view showing another position of the trap. Fig. 4 is a sectional side elevation corresponding to Fig. 1, illustrating a portion of a ventilated drainage system embodying my improved trap. Fig. 5 is a view corresponding to Fig. 1 and illustrating another position of the parts. Fig. 6 is an enlarged detail side elevation of a branch or T employed in connection with my improved trap, and Fig. 7 is an enlarged central vertical section of the trap and its accessories.

Similar characters designate like parts in all the figures of the drawings.

It is one of the main objects of my present invention to provide a lavatory-trap in which the positions of the inlet and outlet openings or pipe-entrance openings relatively to each other may be altered at will in order to adapt the trap for use under different conditions, and this invention is in the nature of a universal combined pipe-coupling and trap embodying as its essential elements two trap members coupled together, so as to be capable of rotation the one on the other, and each having a pipe-entrance opening which is transverse to such axis of rotation of the trap members on each other, the pipe-entrances being so constructed and fitted as to be capable of receiving each a pipe adjustable by rotation in such opening.

In the drawings of my present application *t* and *t'* designate, respectively, the inlet and outlet members or sections of a trap T, constructed in accordance with my present invention. In the present case these parts constitute two substantially similar halves of the whole trap. The trap-section *t* is provided in the usual manner with an inlet-opening 2 and the section *t'* with an outlet-opening 3, the walls of these openings being preferably screw-threaded each for a portion of its length in order to receive the corresponding externally-screw-threaded end of a pipe section or union for conducting water into or away from the trap, as the case may be. The section *t* may be screw-threaded externally, as shown at 4,

for the purpose of receiving an internally-threaded clamping-collar C, which forms a convenient means for coupling the two parts of the trap; but I do not, of course, limit myself to the use of this or any other special form of connecting means for maintaining the separate members of my improved trap in their proper positions. The adjacent end of the trap-section *t'* may carry an outwardly-projecting annular flange 5, forming a suitable ring, against which a corresponding inwardly-projecting annular flange 6 of the collar C will engage when this clamping-collar is turned to clamp the meeting faces of the trap-sections tightly together. It will be apparent that by slightly turning this clamping-collar in one direction the two parts of the trap may be adjusted in any desired positions relatively to each other and that when so adjusted by the rotation of one of the parts on the other the clamping-collar should be turned in the opposite direction to clamp the parts together.

In order to facilitate the operation of unclamping and adjusting the trap-sections and subsequently reclamping them, I prefer to form the clamping-collar C as a collar-nut, having flat edges 7, adapted to be engaged by the jaws of a suitable wrench, by means of which a tight joint may be obtained.

The water-line of the water seal is indicated by the dotted line in Fig. 2, and as it is above the joint connecting the trap-sections it will be seen that if the joint is not quite tight the water will leak out of the joint slightly, but that the sewer-gas will not escape.

The trap which I have just described is, as will be evident, in the nature of a separable pot-trap having a large water seal, the separate parts of which trap are rotatable relatively to each other in a plane transverse to the longitudinal axis of the device, this construction permitting movement of the parts for locating the inlet and outlet openings in any desired manner relatively to each other, and thereby adapting the trap to the particular organization of the outlet and inlet pipes of the drainage system. A further advantage of this construction resides in the fact that by dividing the trap in the manner shown the sections thereof can be readily made smooth by tooling, whereby when said sections are united a smooth-bore cylinder is produced, and the tendency of foreign bodies entering the trap with the liquid to catch on the walls thereof, and thereby cause obstruction, is eliminated. This is especially advantageous in a trap of the character specified, as practical use of the same has developed.

In order that my improved trap may have the widest range of usefulness, it will be obvious that it should be capable of combination with either the full-S type of trap or the half-S trap, both of which are in common use, and that it should also be so constructed

that it may be applied to unventilated as well as ventilated systems of drainage.

Hence it is another object of my invention to provide, in connection with the outlet member of the trap, a coupling member or union rotatable relatively to the trap, so as to bring the coupling into position to form either an S-trap or a half-S trap, as may be desired, this coupling device being preferably in the form of a branch, one of the openings of which communicates with the drainage-pipe of the system and the other with the ventilating-pipe for balancing the pressure at the water seal and preventing the siphoning of the trap. This union or branch may be in the form of a T, (designated in a general way by U,) the main pipe 8 of which is externally screw-threaded at its end and is adapted to enter the correspondingly-screw-threaded outlet portion 3 of the trap-section *t'*. The drainage branch of the T may be screw-threaded internally, as shown at 9, and connected to the usual drainage-pipe *d* of the system, while the other branch 10 of the T is preferably screw-threaded externally to receive a clamping-collar 12 or an internally-threaded cap 13, the former of which is intended to be used in connection with a ventilating-pipe, while the latter will be employed when the drainage system is an unventilated one, thus adapting the T for use with either system.

When the system is ventilated, the vent-pipe *v* (see Fig. 4) may be screw-threaded into a coupling-section 14, which is clamped firmly in place by the collar 12.

The inlet 2 may be connected in any suitable manner with the inlet-pipe *i*, leading from a washbowl or other fixture—as, for instance, by means of an elbow 15, adapted to receive the lower end of said pipe—a collar 16 being provided in the present case for holding a packing-ring 17 firmly in contact with the pipe *i*, and thereby forming a tight joint.

From the foregoing description of my invention it will be readily understood that my improved trap is capable of a great variety of uses, a few of which are illustrated in Figs. 1 to 5 of the drawings. In the first two of these figures the usual form of a combined S-trap and pot-trap is shown in connection with an unventilated drainage system.

It will be noticed by reference to Figs. 2 and 7 that the inner walls of the trap are straight and that the end walls, and therefore the corners of the trap, on the inside thereof, are rounded, especially at the bottom of the pot-trap, so that no obstruction is presented to the flow of the water by the straight, smooth, and rounded walls of the trap, and hence fouling of the trap by the accumulation of grease, &c., is prevented. In Fig. 3 the same construction is illustrated; but the organization of the parts is varied by giving the outlet trap-section a quarter-turn to the rear with respect to the inlet trap-section, thus carrying the outlet-pipe *d* to the rear and

changing the appearance of the assembled parts as viewed from the front.

In Fig. 4 the combined full-S and pot trap is illustrated in connection with a ventilated drainage system in which the vent-pipe and the drainage-pipe extend back straight to the wall, through which they pass.

In Fig. 5 the organization of the parts is substantially similar to that illustrated in Fig. 1, except that the T U is turned so as to bring its branches into a horizontal plane and form a combined pot-trap and half-S trap for use with an unventilated drainage system.

It will be apparent by reference to these views and to Fig. 7 that my improved trap is so constructed as to have a universal adjustment by reason of the adjustment of the sections of the trap upon each other and the auxiliary adjustment by means of the coupling or branch U, so that the same trap may be employed either with a ventilated or an unventilated system of drainage and with either the full-S or half-S type of trap, and that the positions of all the parts of the device may be adjusted relatively to each other, and hence relatively to the adjacent coöperative portions of the piping, within wide limits, thus adapting the trap for use under a great variety of conditions, to provide for which it has been necessary heretofore to employ a special style of lavatory-trap for each type thereof and for each variation of that type for different systems.

Having described my invention, I claim—

1. The herein-described trap, it comprising two rotatively-united trap-sections having straight inner walls and rounded inner ends, each of said sections having a pipe-entrance opening transverse to the axis of rotation of one section on the other, said entrance-opening being located in one member at one side of the coupling uniting the sections, and in the other member at the other side of said coupling; and inlet and outlet pipes located in said respective openings and rotatably adjustable therein.

2. A trap having two sections united to form the trap-body by a coupling which will permit of the rotative adjustment of the one section

upon the other section; an inlet-pipe entering one of said sections transversely to the longitudinal axis of the trap-body and at one side of the coupling uniting said sections; and an outlet-pipe entering the other of said sections transversely to the longitudinal axis of the trap-body, both of said pipes being adjustably connected with said sections substantially as described, and the outlet-pipe consisting of a T having at one end an adjustable connection for the ventilating-pipe of the system and at the other end a connection adapted to receive the usual drainage-pipe.

3. A trap having two sections united to form the trap-body by a coupling which will permit of the rotative adjustment of one section upon the other and each of said sections having straight inner walls and a rounded inner end; an inlet-pipe entering one of said sections transversely to the longitudinal axis of the trap-body and at one side of the coupling uniting said sections; and an outlet-pipe entering the other of said sections transversely to the longitudinal axis of the trap-body, both the inlet and outlet pipes being adjustably connected with their respective trap-sections, substantially as described.

4. The combination, with a pot-trap embodying a pair of sections each having a closed end and a smooth and straight inner wall, of a coupling for uniting said sections in such a manner that they may be rotatably adjusted one with reference to the other; an inlet-pipe adjustably connected to one trap-section adjacent to the lower end thereof; and an outlet-pipe adjustably connected to the other trap-section adjacent to the upper end thereof.

5. In a combination with transversely-arranged inlet and outlet pipes, a trap having one horizontal and two vertical swivel-joints, the horizontal joint being in the main body of the trap and the vertical joints in said transversely-arranged inlet and outlet pipes, substantially as set forth.

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