L. M. COOPER.

STEAM TRAP.

APPLICATION FILED AUG. 13, 1909.

947,801. Patented Feb. 1, 1910.

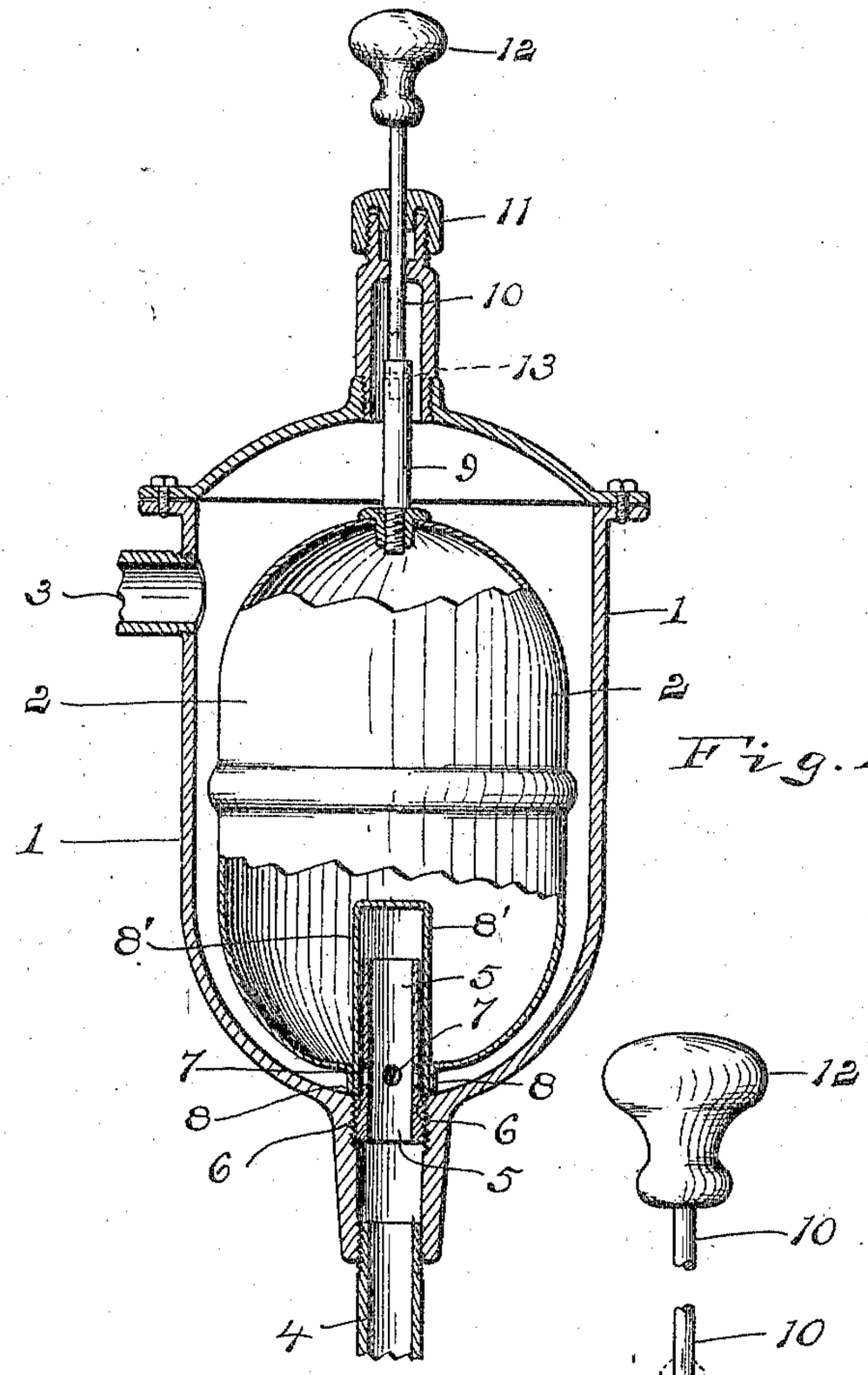

Fig. 1.

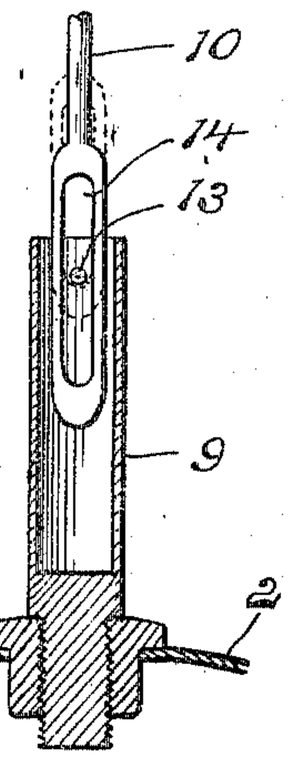

Fig 2

Witnesses
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LYMAN M. COOPER, OF FLINT, MICHIGAN, ASSIGNOR OF ONE-THIRD TO ARTHUR E. STEVER, OF FLINT, MICHIGAN.

STEAM-TRAP.

947,801. Specification of Letters Patent. Patented Feb. 1, 1910.

Application filed August 13, 1909. Serial No. 512,644.

To all whom it may concern:

Be it known that I, LYMAN M. COOPER, a citizen of the United States of America, residing at Flint, in the county of Genesee and State of Michigan, have invented certain new and useful Improvements in Steam-Traps, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that kind of relief valve designed to remove the water of condensation from radiators, steam coils or other parts of a steam heating system in which a low pressure or partial vacuum is maintained in the return end in which a float is used to automatically control the discharge of water without wasting any steam. Such relief valves, more specifically called steam traps, become frequently inoperative mostly from no other cause than from an accumulation of scale or rust in the system which when it happens with the steam traps in present use necessitates the taking off of the cover and changing the parts by hand.

The object of my invention is to provide simple and efficient means for cleaning out the valve without the necessity of dismounting any part thereof all as more fully hereinafter described and shown in the accompanying drawings, in which—

Figure 1 is a vertical central section through a relief valve embodying my invention and showing the parts in operative position. Fig. 2 is a detached and enlarged vertical section through the valve stem.

Reference being had to the drawings by numerals, 1 indicates the casing inclosing the float 2, 3 is the steam inlet and 4 the outlet for the water of condensation. The float is vertically guided in the casing by means of an open ended hollow guide stem 5 secured in the outlet opening and forming at 6 a shoulder on which the float is adapted to seat and having openings 7 through which the interior of the casing communicates with the outlet under the control of the float. The float is provided with a seat 8 and with a guide bearing 8′ adapted to guide the float upon the stem 5.

The parts above described form a relief valve of known construction and operation and serve merely to illustrate the use of my invention which consists in providing the float with a two-part lifting rod 9 and 10 the part 9 of which is rigidly secured to the top of the float and the other part 10 of which slidingly passes through a stuffing box 11 on top of the casing and terminating outside in a handle 12. The two parts 9 and 10 are connected inside the casing by a sliding joint formed in any suitable manner to accomplish the desired object. As shown in the drawing the part 9 is tubular and is connected to the top part 10 by a pin 13 which freely passes through a slot 14 of limited length formed in the part 10.

The parts being arranged as shown and described it will readily be seen that by means of the lifting rod the float can be variously manipulated by hand from the outside without dismounting any part, thus by pulling it up the openings 7 can be fully uncovered and the steam given full chance to blow out any obstruction and by repeatedly jigging it up and down and turning it upon its seat, the guide stem and valve seat can be freed of any sediment interfering with the operation of the float. If the rod is pushed down as far as it will go the float can be firmly seated upon the shoulder 6 and the friction of the rod in the stuffing box will firmly hold it down, it thus acts as a very convenient shut off in cases of repair or changes in the system of for the purpose of accumulating a greater amount of water in the system for blowing out purposes. To permit the float to seat itself freely upon the shoulder 6, the connection between the parts 9 and 10 is made as shown to afford some freedom for lateral play.

What I claim as my invention is:—

In a steam trap, the combination with the casing and float inclosed therein, of a two-part lifting rod having its lower portion secured to the float and extending within the casing and an upper portion slidingly supported in the casing and extending without the same, the two parts being connected together within the casing by a lost motion connection.

In testimony whereof I affix my signature in presence of two witnesses.

LYMAN M. COOPER.

Witnesses:
A. ADAIR,
CLARE M. GUNDRY.