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STEAM TRAP.
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915,780.

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Fig. 1.

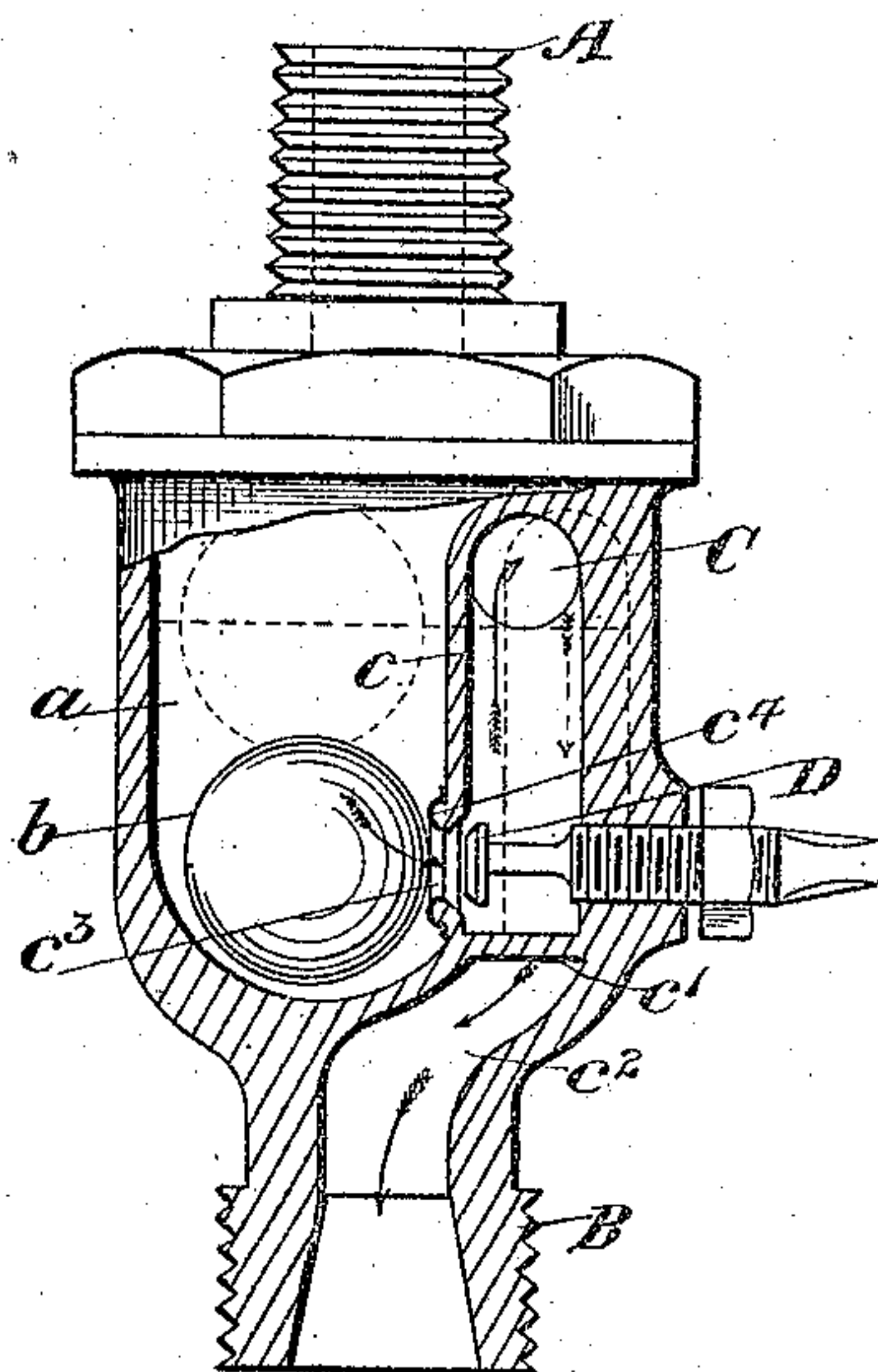
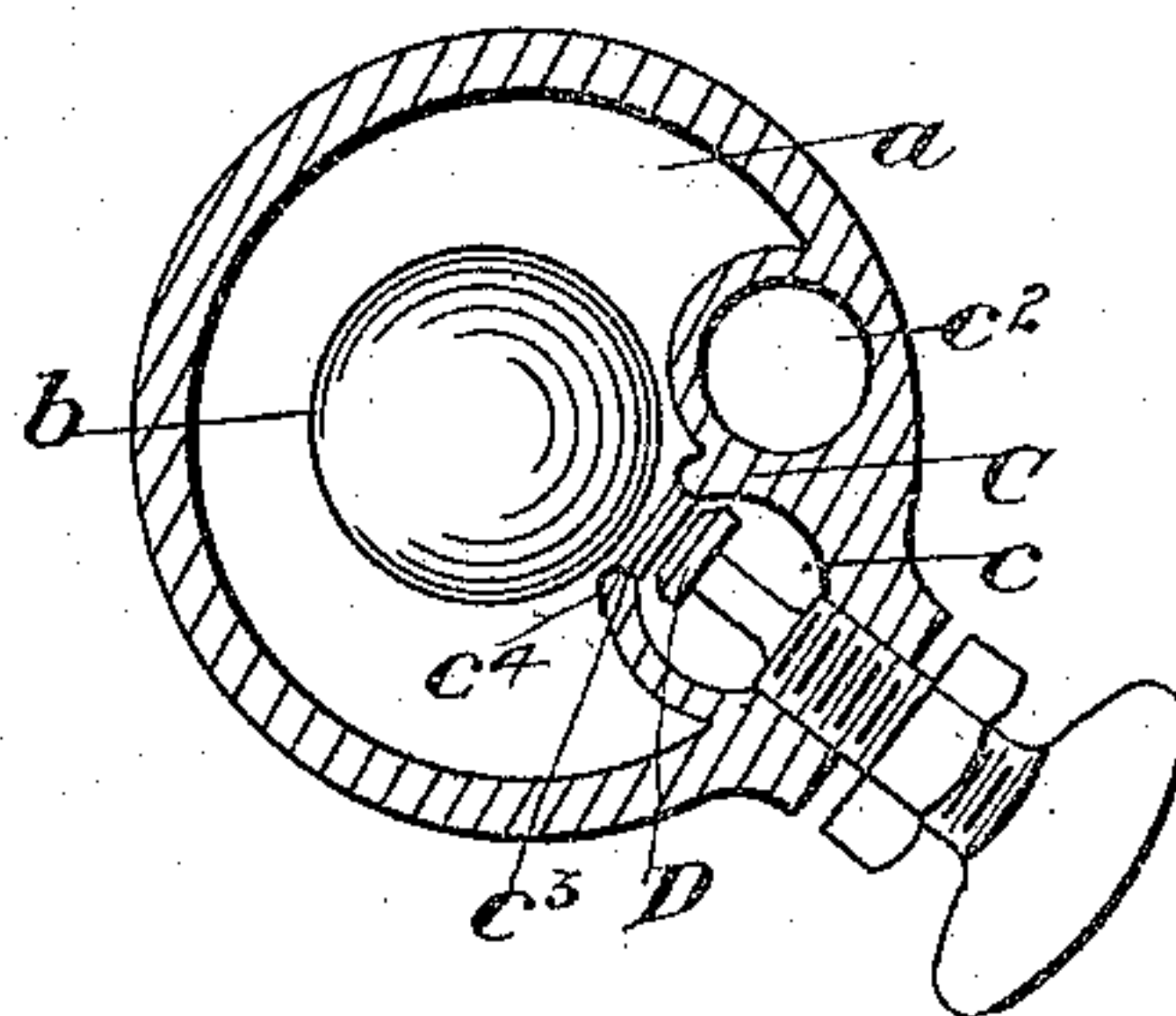


Fig. 2.



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STEAM-TRAP.

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To all whom it may concern:

Be it known that I, ALEXANDER MALCOLM, engineer, a subject of the King of the United Kingdom of Great Britain and Ireland, and resident of 19 Charlotte street, Grangemouth, Scotland, have invented new and useful Improvements in Automatic Siphon Steam-Traps, of which the following is a specification.

10 This invention relates to an automatic steam trap for draining water from steam pipes and cylinders, due to condensation and wet steam.

Figure 1 shows a sectional elevation of the improved automatic siphon steam trap. Fig. 2 is a sectional plan view of the same.

The upper end A of the steam trap, as shown, is designed to be screwed into the pipe or cylinder to be drained of water so as to depend approximately vertically therefrom, and the lower screwed end B may be open to the atmosphere or into another length of tubing for conducting the drainage water to any desired point. The steam trap is formed with a main chamber or catch basin *a* having a curved bottom wall for the purpose presently to be explained, and adjacent to the bottom wall is a lateral port or opening *c*³ through which the water of condensation may pass into the siphon discharge passage. Surrounding the port or opening *c*³ is a seat *c*⁴ of "woodite" or other like suitable composition to afford the proper seat for the ball valve.

35 *b* is a ball valve of any buoyant material, such as cork, or of hollow metal such as aluminum or brass. The ball *b* is free within the chamber *a* so as to rise in the chamber and float upon the water that collects therein. Normally the ball *b* rests against the valve seat *c*⁴ of the valve opening *c*³ to close the outlet from chamber *a* into the siphon passage way. The shape of the bottom wall of chamber *a* is such with relation to the seat of the port *c*³ that the ball will be held by its engagement with the bottom wall into closed engagement with the valve seat. In addition to this the chamber *a* being in open communication with the steam pipe or cylinder to which the trap is attached, it will be observed that the pressure of the steam in the pipe or cylinder will also tend to hold the ball *b* in closing contact with the seat of the outlet port.

55 Formed in the body of the steam trap at

one side of the main chamber *a* are the parallel vertically arranged legs *c* and *c*² of the siphon passage C. The inner siphon leg *c* is closed by the bottom wall *c*¹ just below the port *c*³ which leads into it from the chamber *a*; while the other siphon leg *c*² leads into the discharge or outlet end *b* of the trap.

A rotary valve D may be provided as shown with its stem threaded through the outer wall of the casing of the trap in alignment with the port *c*³, so as to regulate the size of the opening through port *c*³ or to engage the ball to force it away from its seat in said opening. This valve D may also prove useful in entirely closing up the opening *c*³ to prevent the escape of steam in the event of the float or ball *b* being out of order.

It will be observed that in operation the water of condensation collecting in the main chamber *a* will float the ball *b* away from the port *c*³ and allow water of condensation to pass through said opening into the leg *c* of the siphon passage, from which it is discharged into the leg *c*², the ball being again re-seated upon the port *c*³ after the water of condensation has passed from chamber *a*.

What I claim is:

1. A steam trap having a main chamber *a* and a siphon discharge passage *c*, *c*² in communication with said main chamber through a lateral port *c*³, and a float *b* in the chamber *a*, adapted to be seated upon said lateral port *c*³, substantially as set forth.

2. A steam trap having a main chamber *a* formed with a curved bottom wall and a lateral escape port *c*³, a float valve within the chamber *a* adapted to be seated against said escape port by its engagement with the bottom wall of said chamber *a*, and a siphon discharge passage into which said escape port leads.

3. A steam trap having a main chamber *a* and a siphon discharge passage *c*, *c*² communicating with said main chamber through an escape port *c*³, in combination with float valve *b* within casing *a* adapted to be seated in said escape port *c*³, and a valve D suitably mounted in the casing in position to control the discharge port *c*³ independently of the ball valve.

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Witnesses:

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