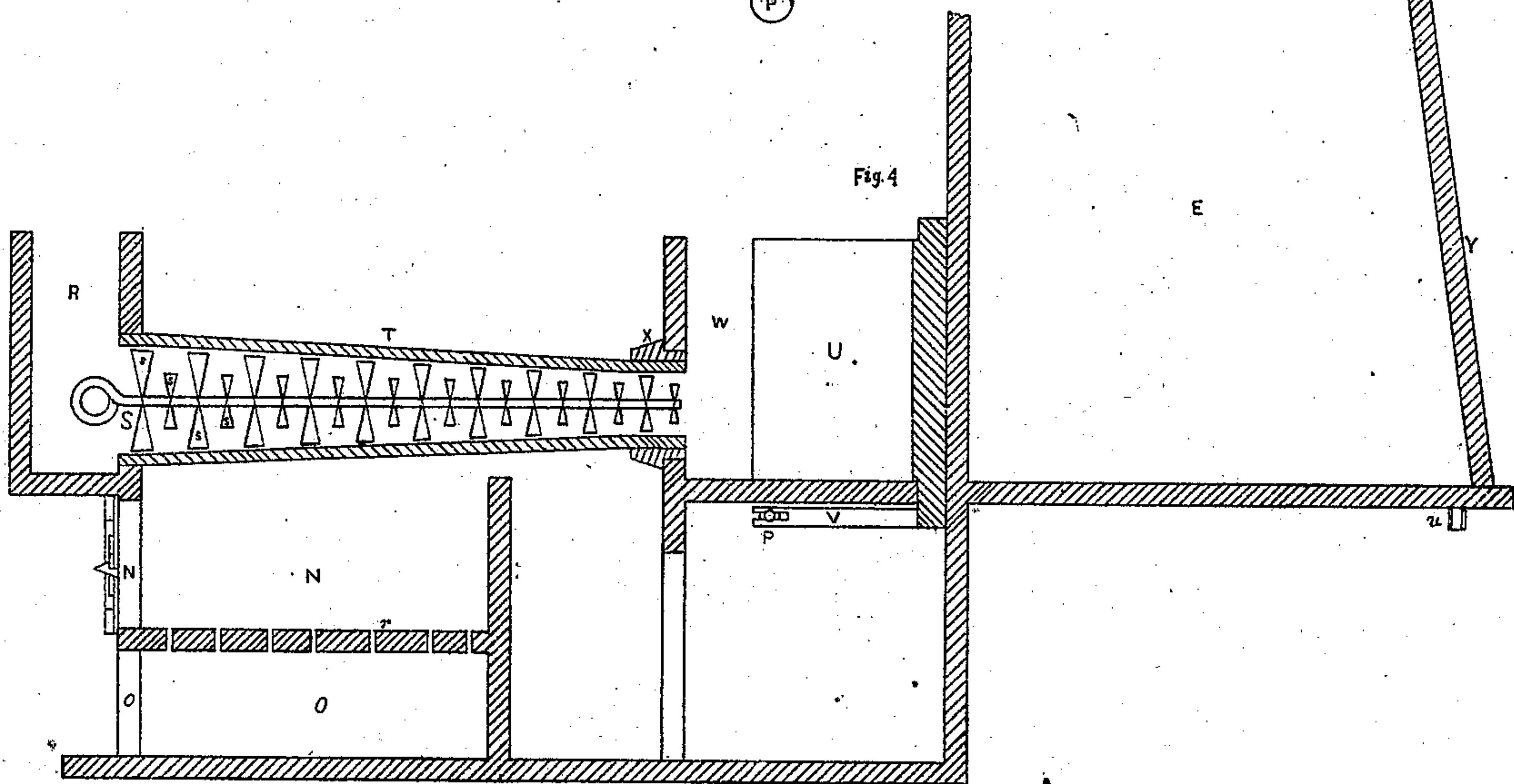
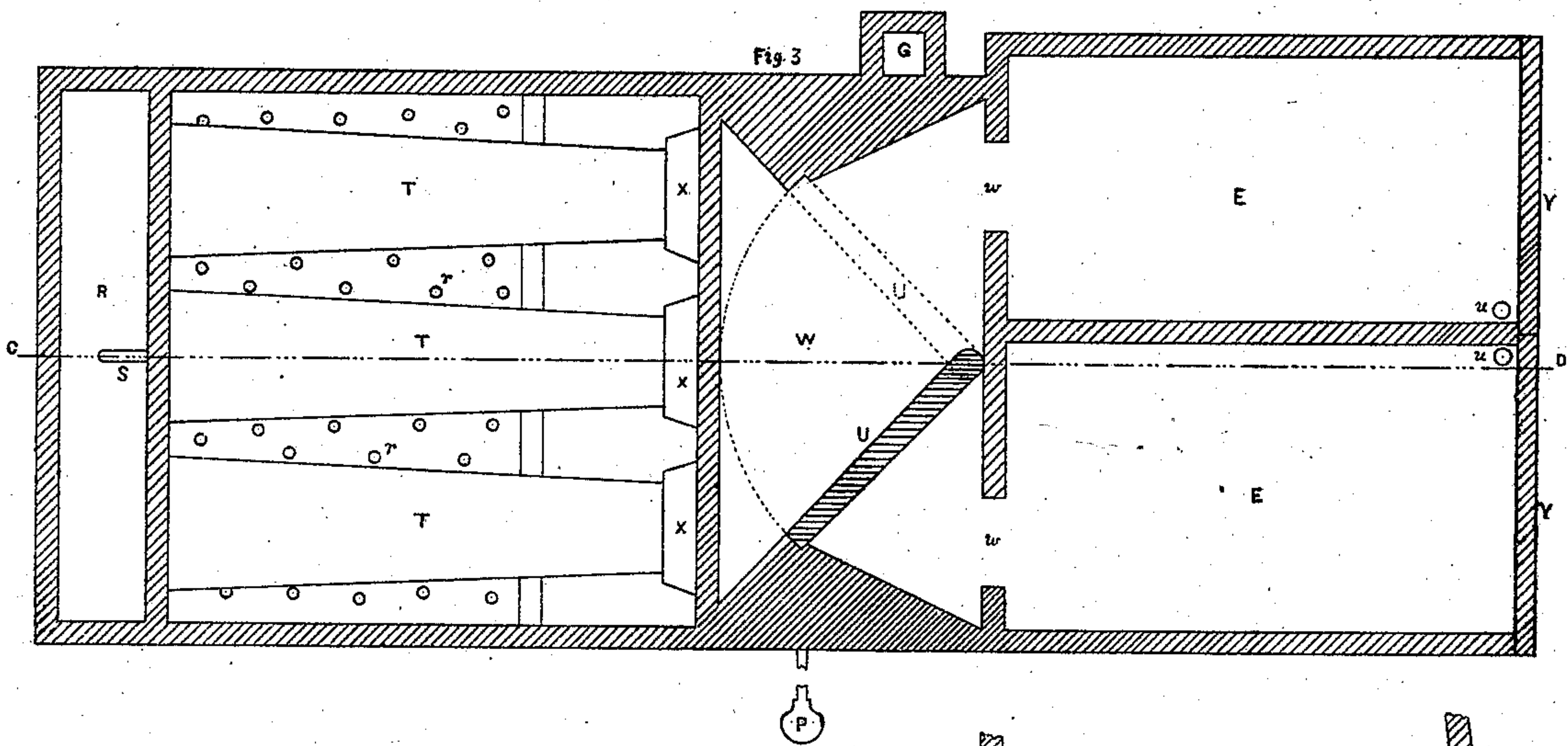
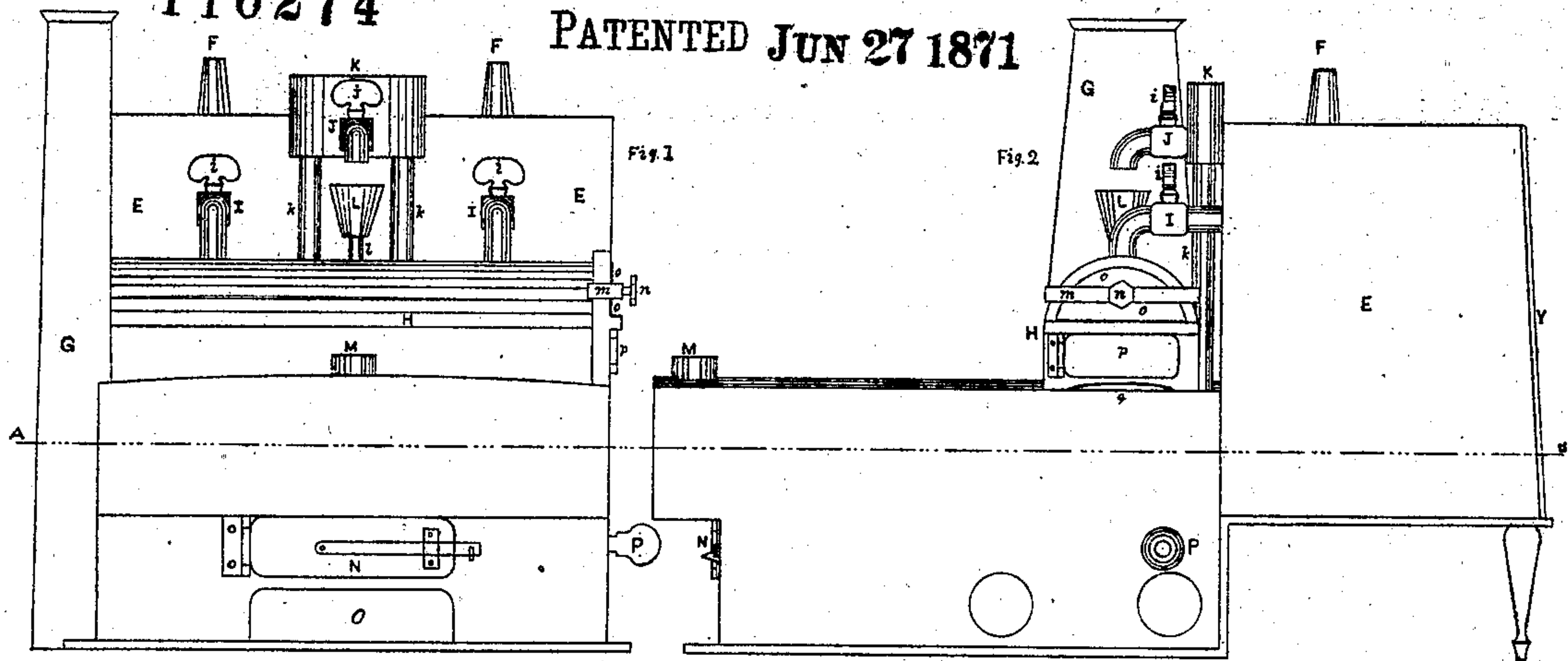


116274

PATENTED JUN 27 1871



Witnesses.

Thos. L. Moore  
Jas. Smith

Inventors.  
Silas Constant  
John Smith



# UNITED STATES PATENT OFFICE.

SILAS CONSTANT, OF PEEKSKILL, AND JOHN SMITH, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN PRESERVING AND SEASONING WOOD.

Specification forming part of Letters Patent No. 116,274, dated June 27, 1871.

*To all whom it may concern:*

Be it known that we, SILAS CONSTANT, of Peekskill, in the county of Westchester and State of New York, and JOHN SMITH, of the city of Brooklyn and State aforesaid, have invented certain Improvements in Seasoning and Preserving Wood; and we hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and letters of reference marked thereon; this invention being designed as an improvement upon the apparatus and method for which Letters Patent were granted to us by the United States on the 11th day of June, 1867; and consists, mainly, in certain changes in the construction of the apparatus and addition thereto.

Figure 1 is a front elevation. Fig. 2 is a side elevation. Fig. 3 is a horizontal section on A B of Figs. 1 and 2, and projections of parts shown below. Fig. 4 is a vertical section on C D of Fig. 3 and projection of gate U, its lever V, and the diffusers S.

E E are chambers in which the wood is to be treated. They may be constructed of iron or other suitable materials. For large stationary works we prefer to build them of brick, and to make the walls as nearly non-conducting to heat as practicable. They are each provided with doors Y of sufficient capacity to readily admit of their being supplied with the wood to be treated, and, when in operation, the doors must be securely fastened so as to stand the necessary pressure in the chambers and prevent the escape of the air or vapors. These chambers are provided with escape-pipes F, so constructed and arranged that the moisture from the wood may readily escape and a full circulation of air be maintained. The whole amount of outlet, however, should not exceed two-thirds of the inlet of heated air, so that a constant pressure may be maintained in the chamber. *u u* are outlets at the bottom of the chambers to draw off any condensed matter. W is a hot-air chamber, into which the hot air is received from the radiators. From this to the wood-chamber are openings *w w*, through which the heated air is driven into the wood-chambers. It is provided with a gate, U, operated by a lever, V, and its handle P, and is designed to alternate the direction of heated air to either chamber, so that when the process of seasoning is complete in one it can be made readily to operate in the

other while the preserving process is going on in the first; or, where seasoning only is desired, the treated wood is being removed and the chamber charged anew. G is a chimney, which may be placed in any convenient position in reference to the necessary connections with the other parts. M is the wind-supply pipe to the hot-air-radiator furnace; N, the fire-box; O, the ash-pit; R, the wind-chest; T T T, the radiators. These are cylindrical pipes running through the hot-air furnace from the wind-chest R to the chamber W. They are slightly conical in form, and are constructed so as to have the openings about one-quarter larger at their connection with the wind-chest R than at their connection with the hot-air chamber W. The larger ends are securely fastened in the inside of the wind-chest, and the smaller ends are connected with the hot-air chamber in sockets or slip-joints X X X so as to allow for expansion and contraction. S is a diffuser, and S S S vanes. The object of its introduction is to provide a greater amount of heated surface and more effectually heat all portions of the air. H is the retort or generator of the smoky vapor or antiseptic agent; D, the door; *m*, the clamp which holds the door in place; and *n*, the screw to the clamp. P is the fire-box, and *q* the ash-pan. K is a tank or receptacle to contain the materials to be converted into smoky vapor or other antiseptics, and K K standards to support it. J is a stop-cock to the tank through which the materials are discharged into funnels L, through which it enters by means of a siphon, not shown in the drawing, into the retort or generator; and I the pipe through which the smoky vapor or other vaporized antiseptics are driven into the wood-chamber E.

The operation is as follows: The wood-chamber E is supplied with the desired quantity of wood to be treated, the different tiers or layers to be separated by strips or otherwise, so as to allow the free circulation of the heated air and antiseptic agents; the door Y closed and gate U set so as to permit the heated air to enter the wood-chamber. The air, which is forced into the air-chambers through pipe *m* by means of bellows or other suitable means, is heated in its passage to the hot-air chamber W and wood-chamber E, through the radiators T T T, by means of furnace N. The heat, as it enters the wood-chamber, should begin at a low tempera-



ture and be gradually increased until it attains a temperature from 225° to 250° Fahrenheit's scale, and is kept up to that as nearly as practicable. When it is desired to apply the preserving process the gate U is now closed and the escape-pipes F closed by plugs or valves. The tar or other antiseptic agent, having been placed in reservoir K and the retort or generator H heated so as to convert the same into a smoky or other vapor, is let into the retort through the siphon, and, when so converted, escapes into the chamber holding the seasoned wood in sufficient quantities and force, and for a sufficient length of time, to impregnate the fiber of the wood as far as practicable with the antiseptic agents. As different kinds of wood will require different lengths of time of treatment, the seasoning process should continue until the moisture ceases to escape through the pipes F, and the preserving

process until the antiseptics have fully permeated the fibers.

What we claim as the invention of SILAS CONSTANT and JOHN SMITH is—

1. The movable gate U, in combination with the radiators T T T, the hot-air chamber W, and wood-chambers E E, arranged as and for the purpose specified.

2. The combination of the diffuser S with the radiators T T T, arranged and operating as described.

3. The combination of the radiating-pipes, of the form described, with the other elements of the apparatus, substantially as and for the purpose specified.

SILAS CONSTANT.

Witnesses:

JOHN SMITH.

THOS. C. MOORE,

J. A. SMITH.