

A. P. Tyler. Lamp.

N^o 72764

Patented Dec. 31, 1867

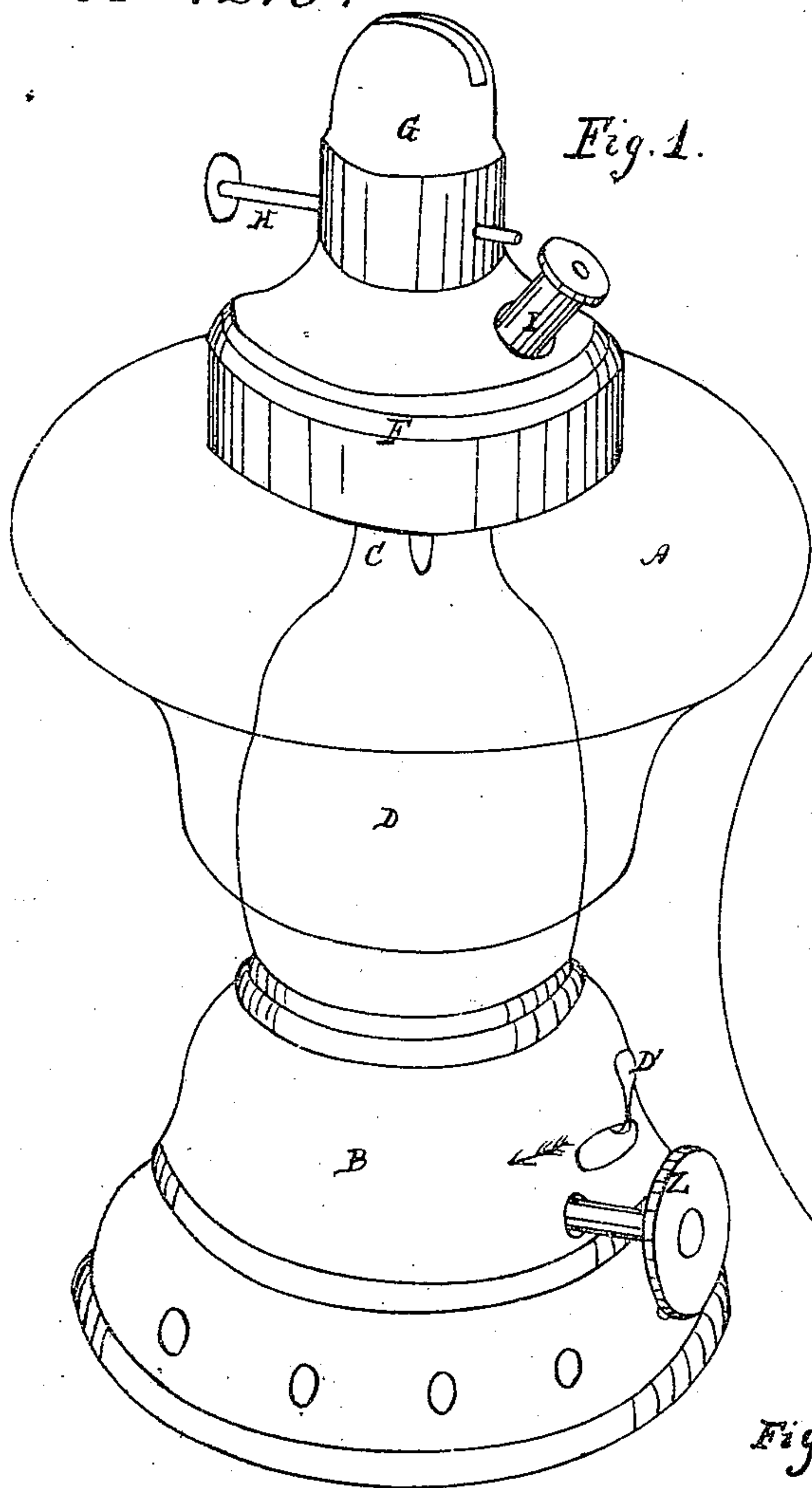


Fig. 1.

Fig. 3.

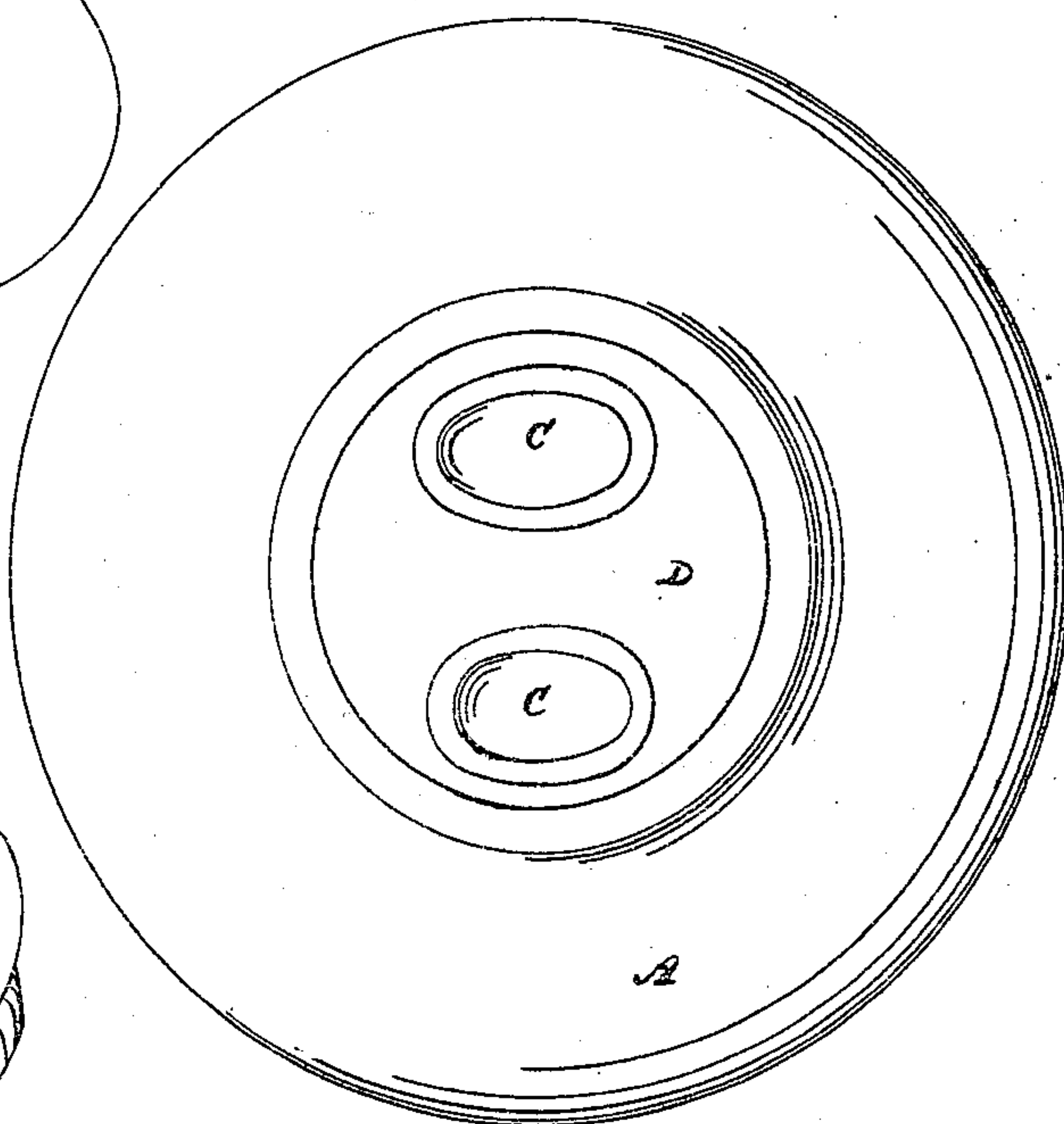
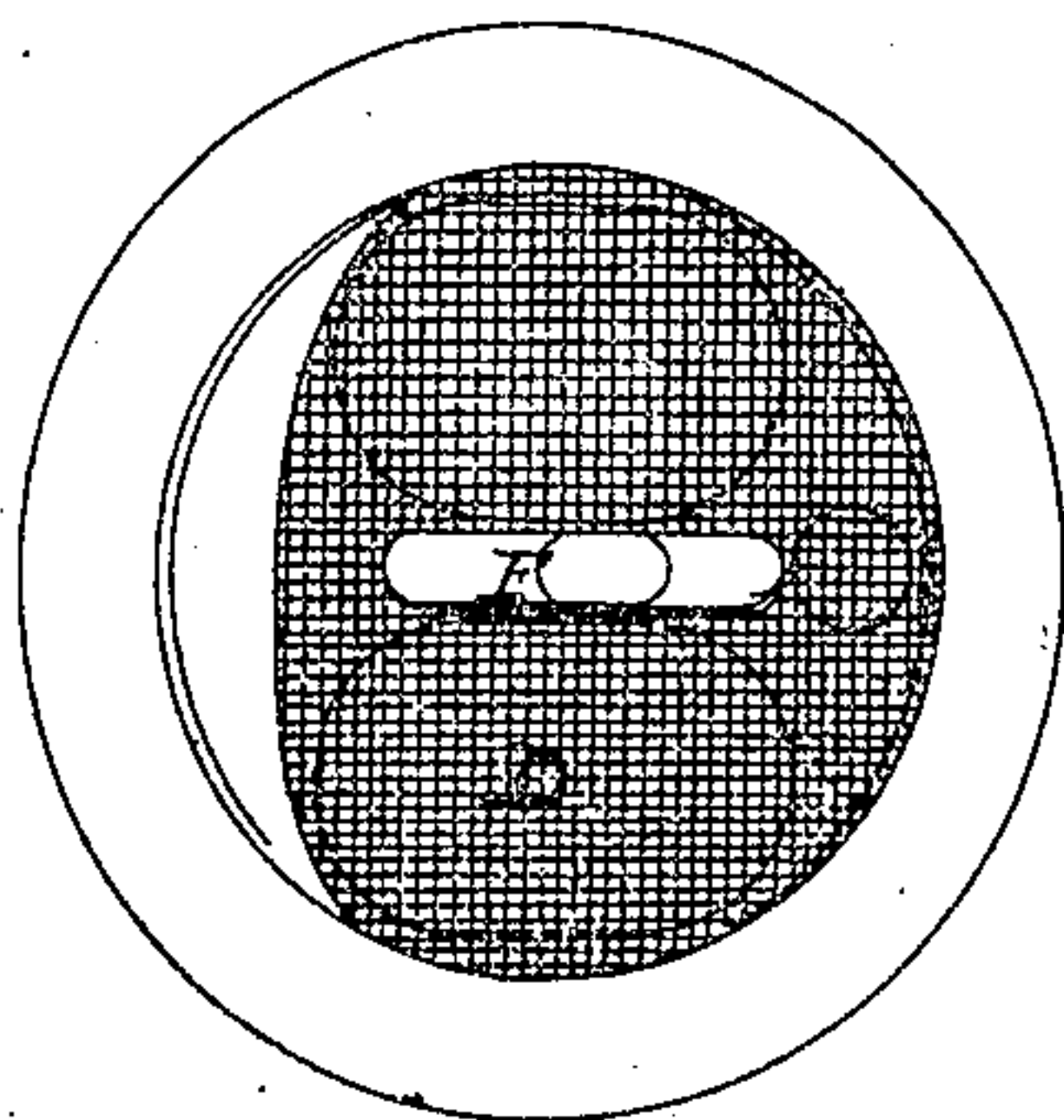


Fig. 2.



Witnesses.

E. E. Waite

Frank S. Alden.

Inventor.

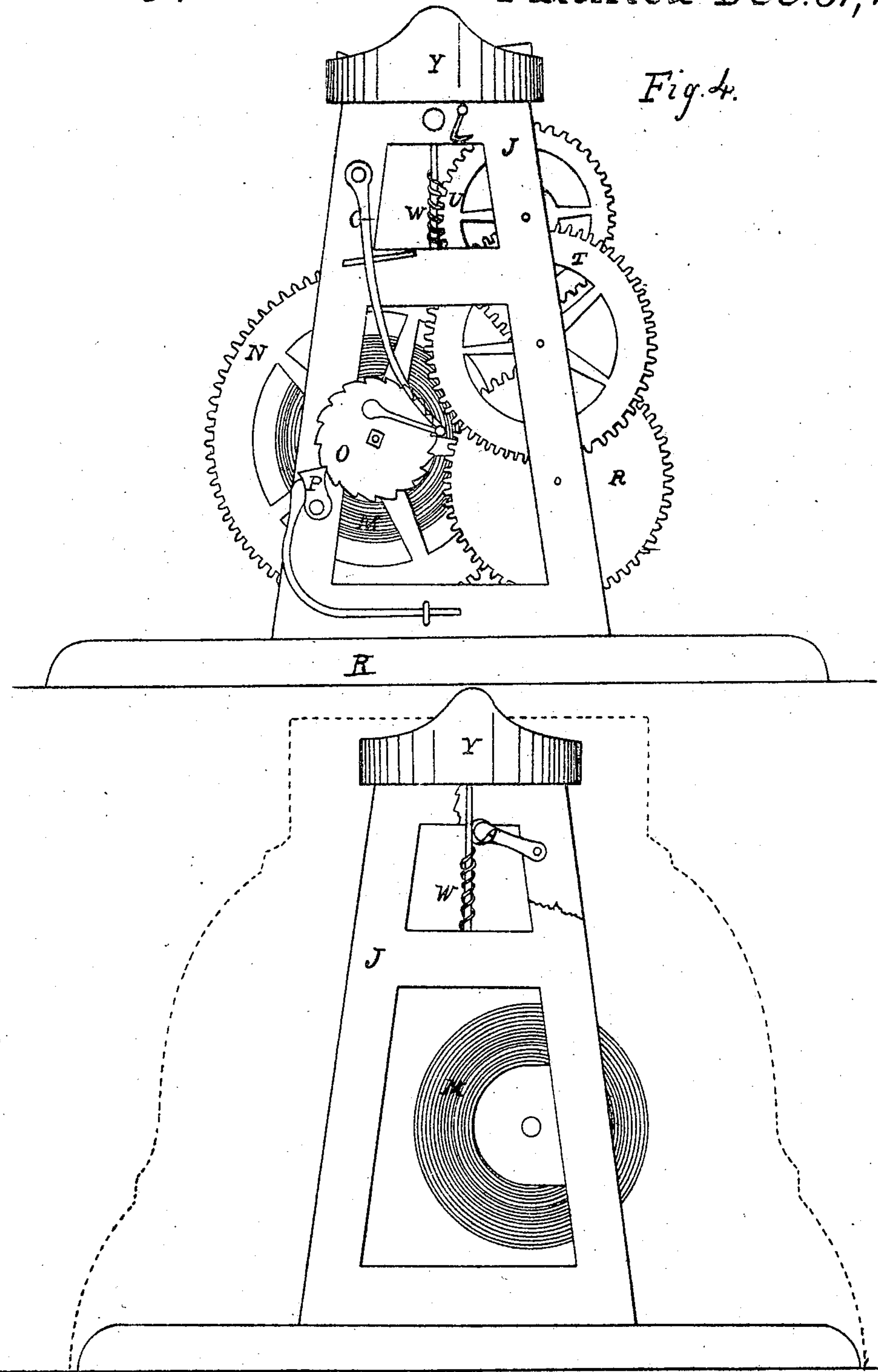
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Fig. 4.



Witnesses *E. E. Waite* Inventor *A. P. Tyler*
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Fig. 8.

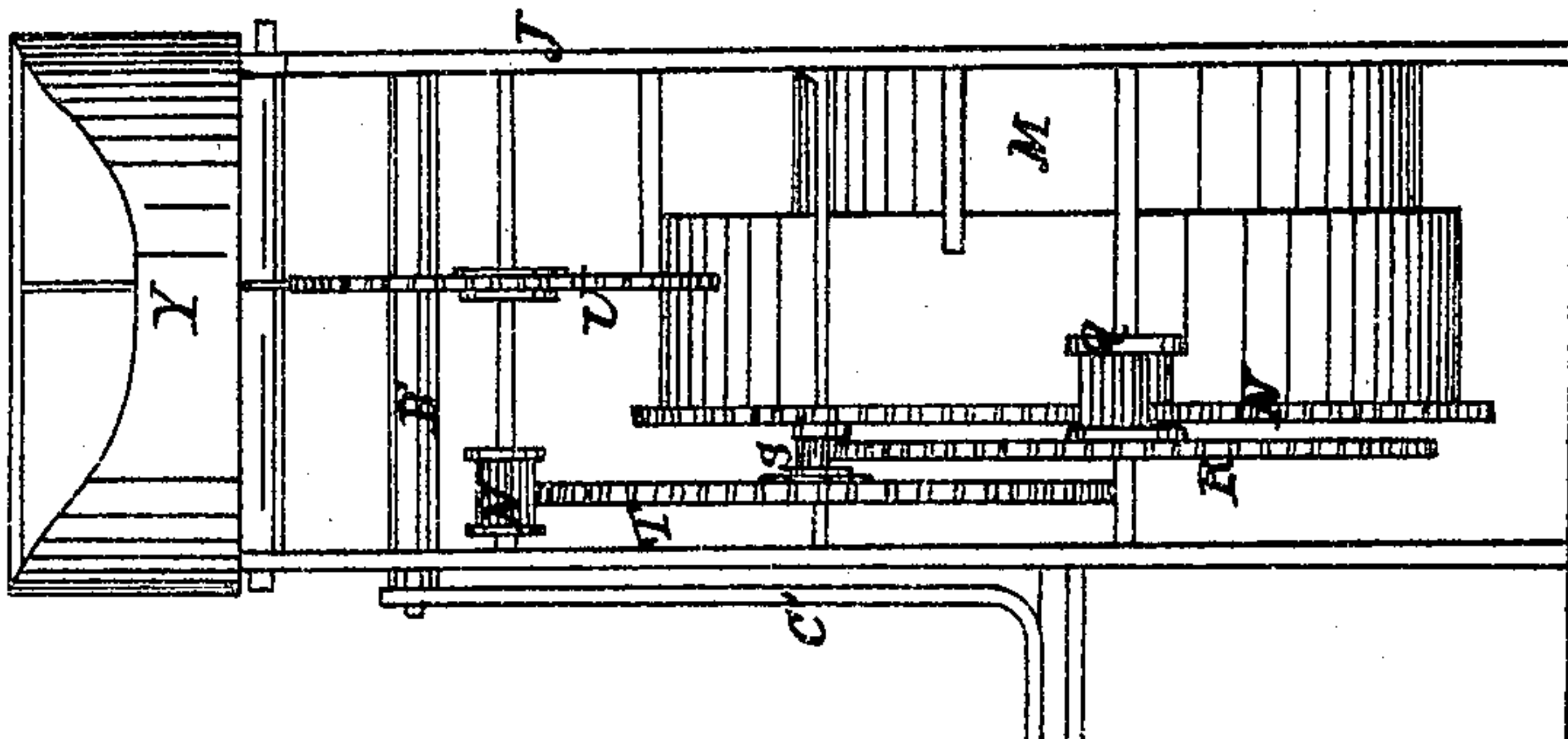


Fig. 7

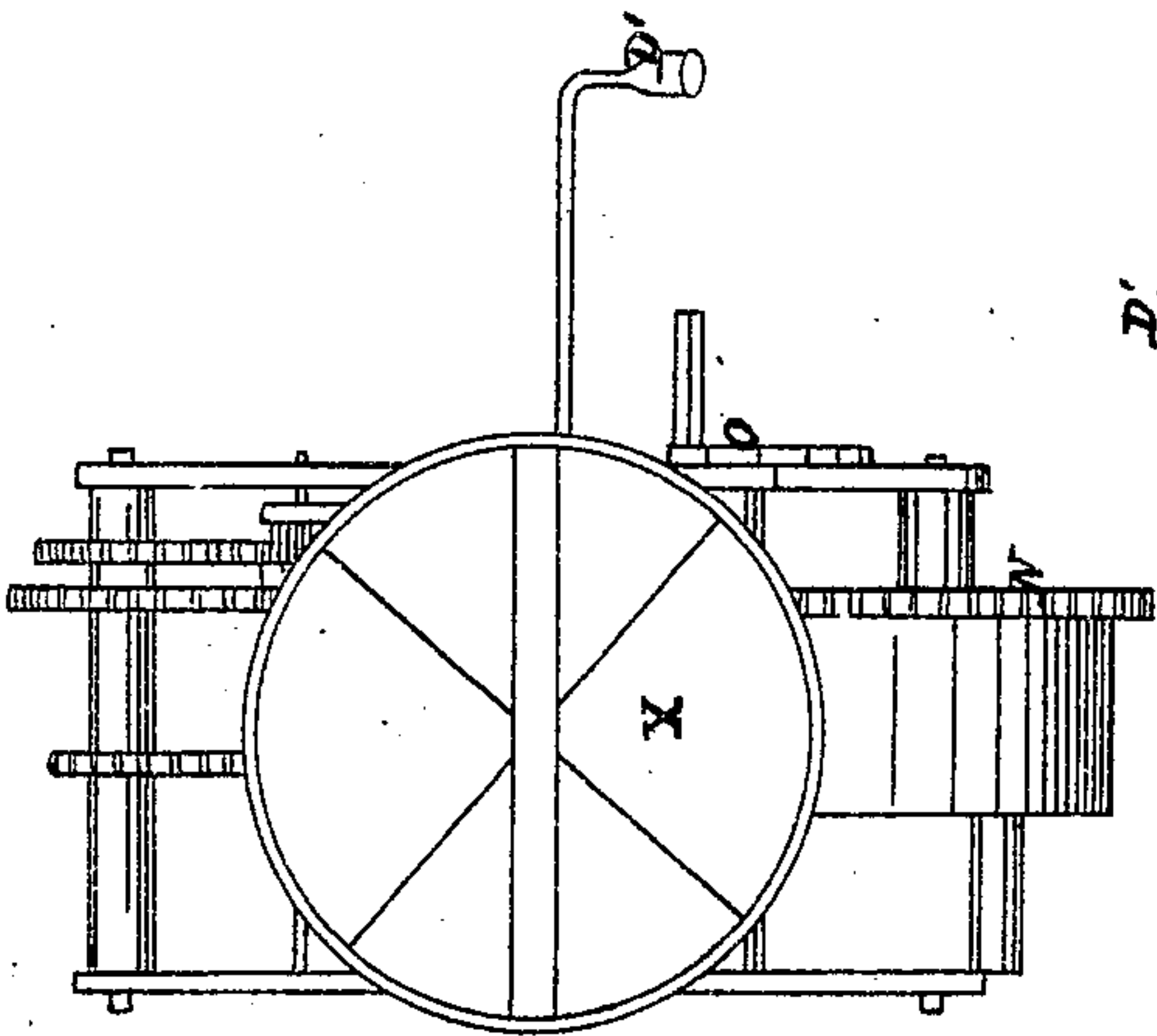
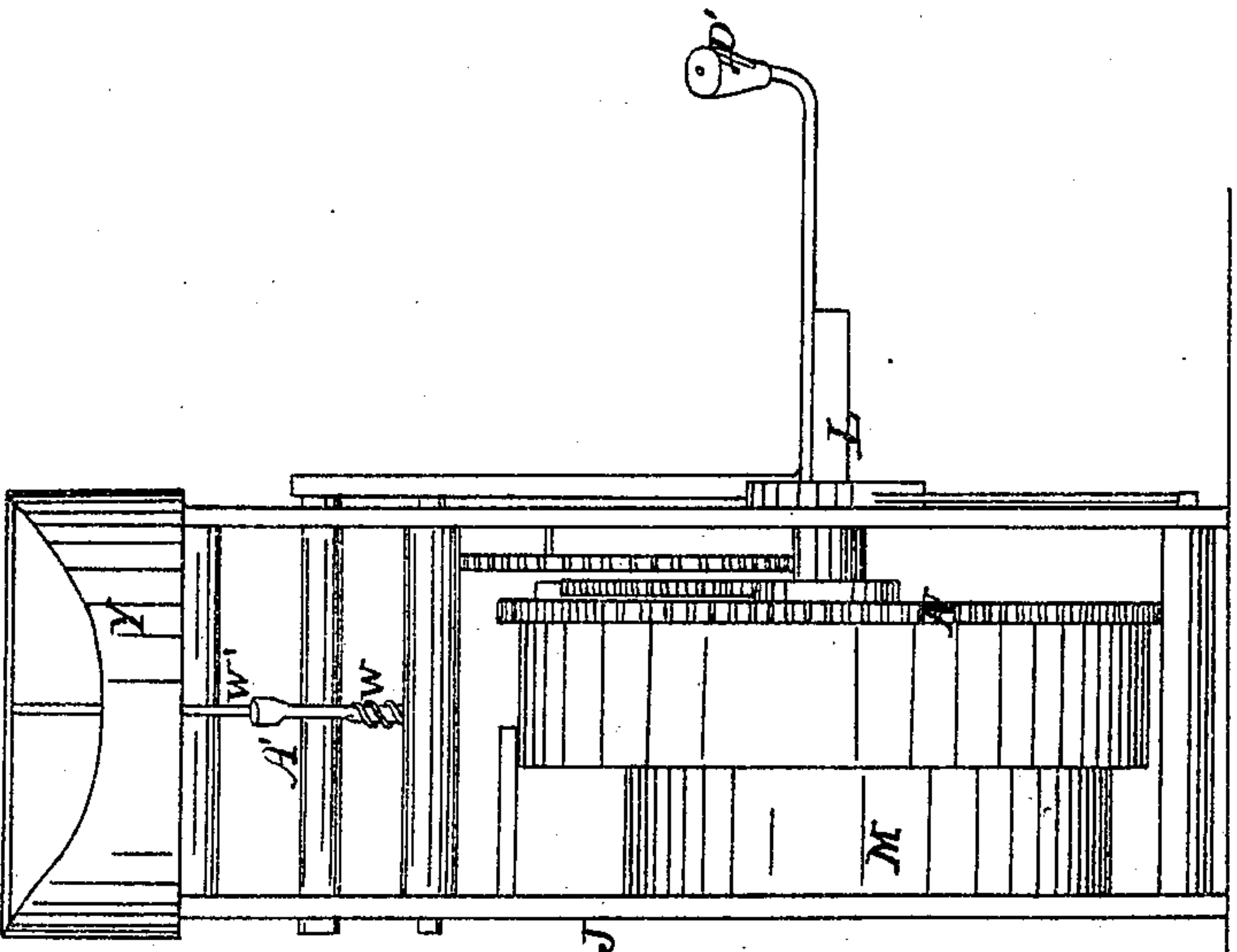


Fig. 6



Witnesses.

E. C. Waito
Frank S. Alden

Inventor.

A. P. Tyler

United States Patent Office.

A. P. TYLER, OF CLEVELAND, OHIO.

Letters Patent No. 72,764, dated December 31, 1867.

IMPROVEMENT IN LAMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. P. TYLER, of Cleveland, in the county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Lamps; and I do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, plate 1, is a perspective view of the lamp.

Figure 2, a detached section.

Figure 3 is a top view of the globe.

Figure 4 is a side view of the apparatus.

Figure 5, a view of the opposite side of fig. 4.

Figure 6, plate 2, a front view of the apparatus.

Figure 7, a top view of the same.

Figure 8, a rear side view.

Like letters of reference refer to like parts in the several views.

My improvement relates to a non-explosive air-lamp, in which to burn coal-oil and all other illuminating-oils and fluids without a chimney. I do not claim broadly the construction of a non-explosive air-lamp for burning coal-oil or other oils, and that without a chimney, but a lamp constructed as hereinafter described.

A, fig. 1, plate 1, is the globe of the lamp, and which is made of glass, and of any convenient size and shape desirable, and which is mounted upon a metallic or glass base or pedestal, B, which encloses the air-machinery hereafter described. This globe is constructed with a pair of tubes, C, terminating the conical chamber D, formed by injecting upward into the globe the bottom, and around which the oil flows on filling the lamp. By this, it will be evident that the tubes are open through the bottom of the globe, and through which air is supplied to the burner, as will hereafter be shown. E, fig. 1, is the lamp-cup, within which is the wick-tube F, fig. 2, projected upward into the cone. H is the finger-screw by which the wick is adjusted, and I the oil-tube for filling the lamp. This tube is fitted with a long tapering plug, by means of which the oil is prevented from slopping by any motion in carrying or swinging the lamp.

The apparatus referred to for producing a current of air is constructed as follows:

J, fig. 1, is a frame fixed to the base K, the bottom of the pedestal. In this frame is hung on the spindle L, fig. 6, plate 2, a coiled spring, M, fig. 5. On the spindle are also a cog-wheel, N, and a ratchet-wheel and pawl, O P. The cog-wheel N is made to engage in a pinion, Q, attached to the cog-wheel R, which, in turn, engages in the pinion S, attached to the cog-wheel T, which gives motion to the wheel U by means of the pinion V, thereby operating the worm W, with which it engages, as shown in fig. 4, plate 1. On the upper end of the spindle, around which the worm is coiled, is a fan-wheel, X, fig. 7, surrounded by the case Y, and which fan-wheel, in operation, produces a gentle, steady current of air, and thereby supplies the flame with the necessary quantity of oxygen for a full and complete combustion of the carbonaceous oils, or other illuminating-fluid, contained in the lamp. The lamp and air-apparatus, on being properly arranged, the latter is then wound up by the key Z, fig. 1, from the outside, and the machinery thereby put in motion, which may be stopped at any time by the brake A', fig. 5, fixed to the shaft B', and operated by the lever C', by means of the ball-end D', projecting from the side of the pedestal, by pushing it backward and forward in the slotted hole through which it projects. Thus, on pulling the ball in the direction indicated by the arrow, the arm or brake A' is made to press against the revolving spindle on which the worm is seen, which, by the friction thereby induced, stops the movements. The end of the arm in contact with the spindle is provided with a rubber packing, which, by its elasticity, holds the spindle secure without great pressure being exerted for that purpose.

It is a well-known fact that most of the oils and burning-fluids in use are so highly charged with carbon that, in order to consume all the oils, it is necessary to supply the flame with a proportionate amount of oxygen. To accomplish this, chimneys are introduced, which, by surrounding the wick and flame, and by their draught, and by other special devices, an induced current of air is produced, but which, however, is not in sufficient quantity to consume all the carbon in the oil. Hence there is, of necessity, a great waste of fluid, as a large percentage goes off unconsumed in the form of smoke, and, at the same time, the fullest and clearest light

is not obtained, as would be the case if a just proportion of air were allowed to the flame. Also, the chimneys, being made of glass, are easily and frequently broken in consequence of the heat to which they are subjected causing an unequal expansion and contraction of the material. So, also, they are often broken by accidents, to which they are at all times liable, which makes the use of chimneys not only expensive, but dangerous to those using the lamp.

To avoid this expense, danger, and the use of chimneys, and also to obtain the greatest possible degree of light from a given quantity of oil, by a total consumption of its carbon, a current of air is forced or impelled by the machinery and fan above described, from below, upward through the interior of the globe, thence from the chambers D along the tubes into the globe-cap F, from which it is diffused by the wire netting D', in passing to the flame, thus supplying it with a current of fresh air at all times, which furnishes the required oxygen for the combustion of the entire excess of carbon, &c., in the oil, and thereby obtain the largest possible amount of light without the use of chimneys, saving by this means largely in the expense of oil and chimneys.

I do not claim a lamp constructed like that of F. B. De Keravenan, but

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. The globe A, as constructed with the conical chamber D, tubes C, one or more, in the manner as and for the purpose substantially described.
2. The herein-described mechanical power or apparatus for producing a current of air, when arranged and constructed as shown and described, in combination with the tubes C, chamber D, and globe A, all arranged in the manner and for the purpose set forth.

A. P. TYLER.

Witnesses:

W. H. BURRIDGE,
J. HOLMES.