

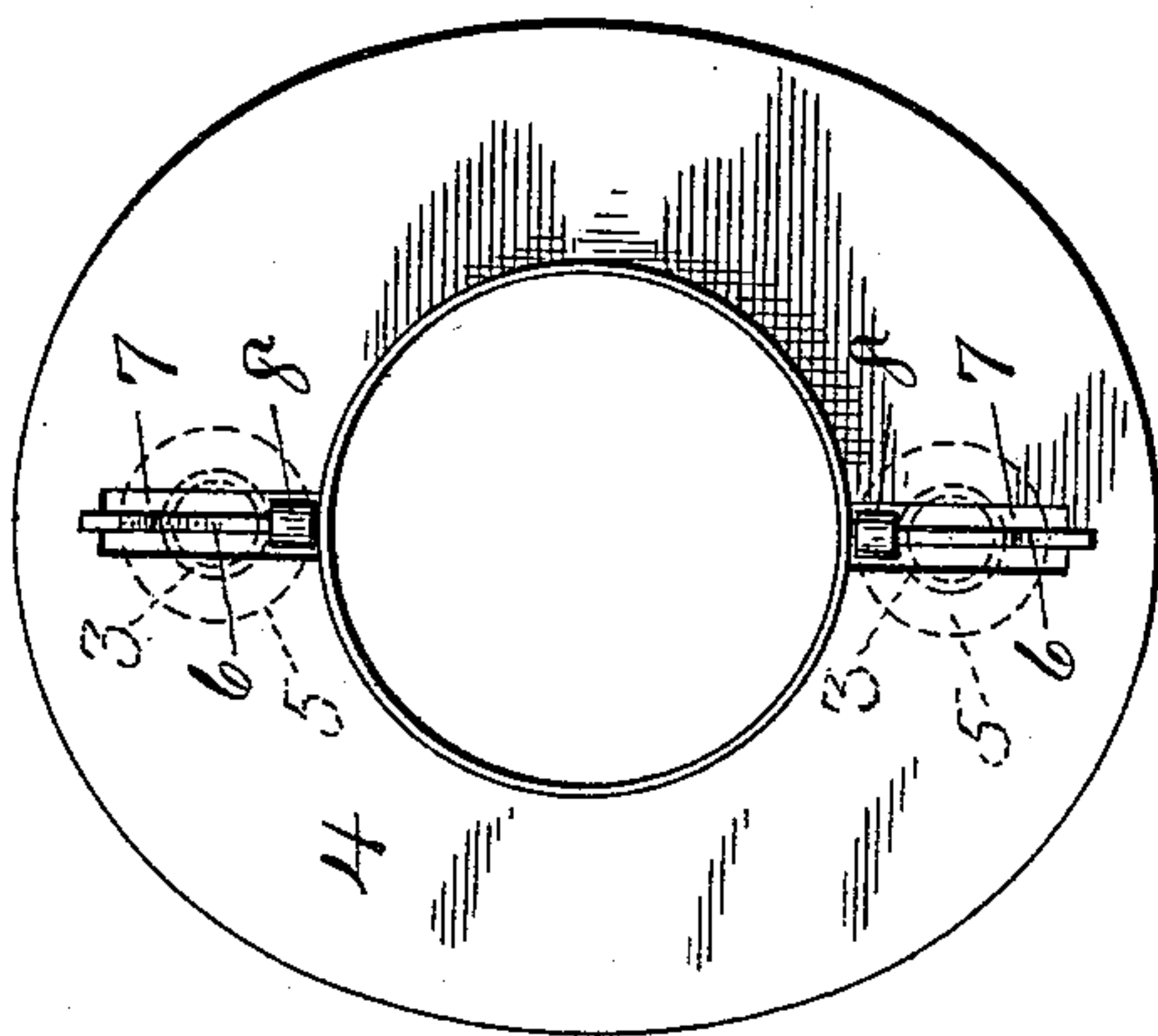
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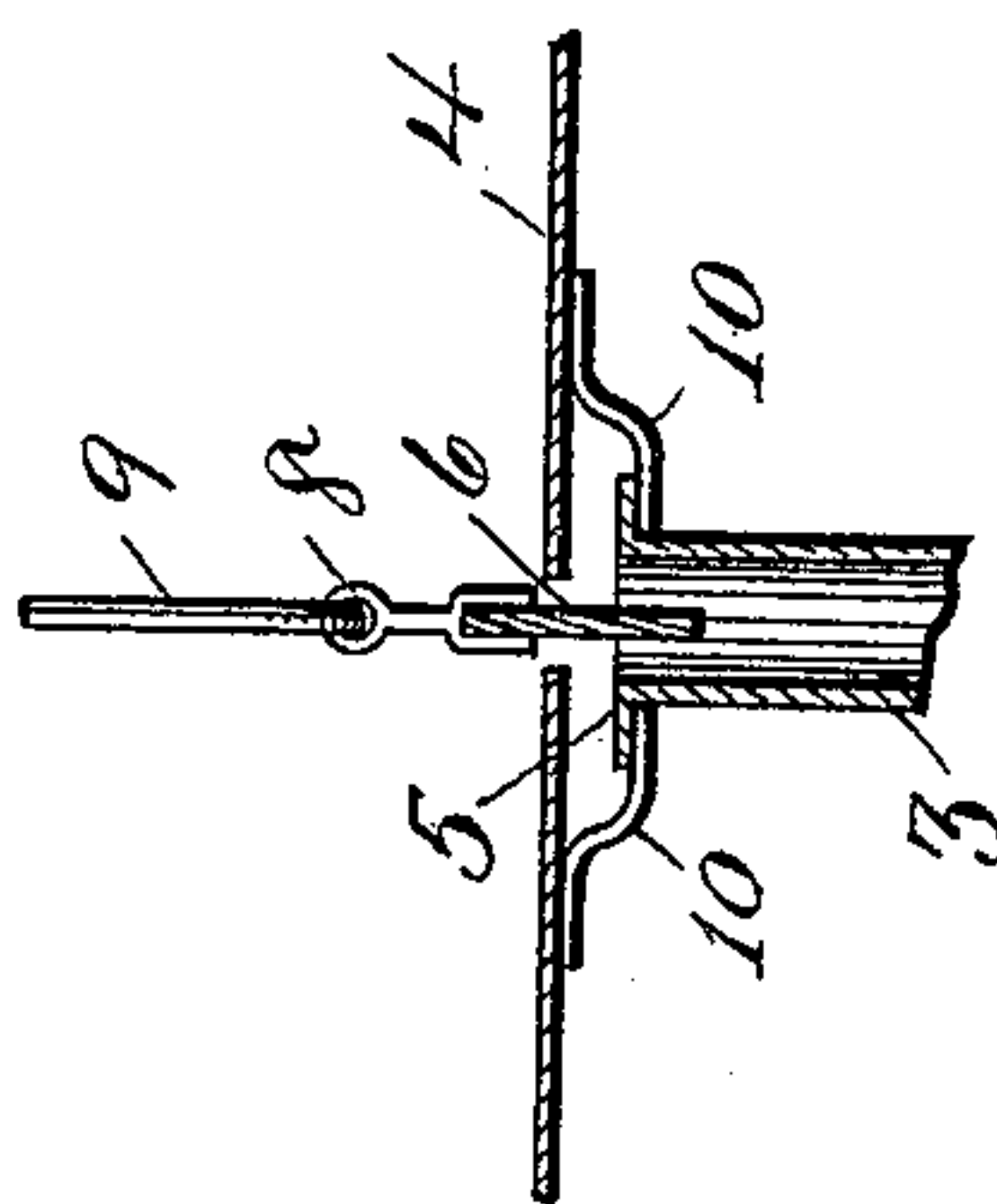
W. BALDWIN.  
TUBULAR LANTERN.

No. 448,002.

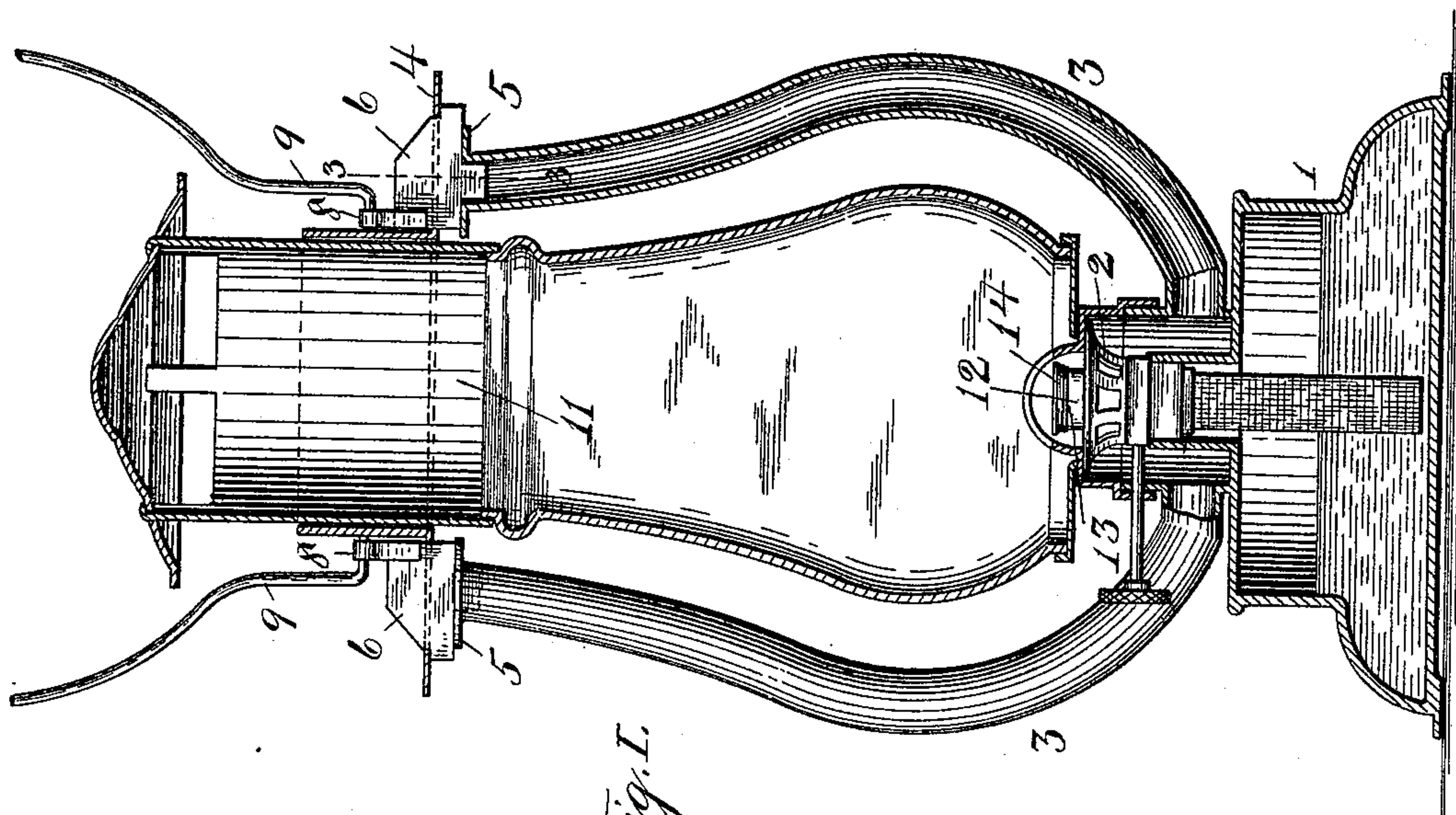
Patented Mar. 10, 1891.



*Fig. II.*



*Fig. III.*



*Fig. I.*

Witnesses:  
*J. G. Lepper.*  
*Walter Allen*

Inventor:  
*William Baldwin.*  
By his Attorneys: *Knight Bros.*

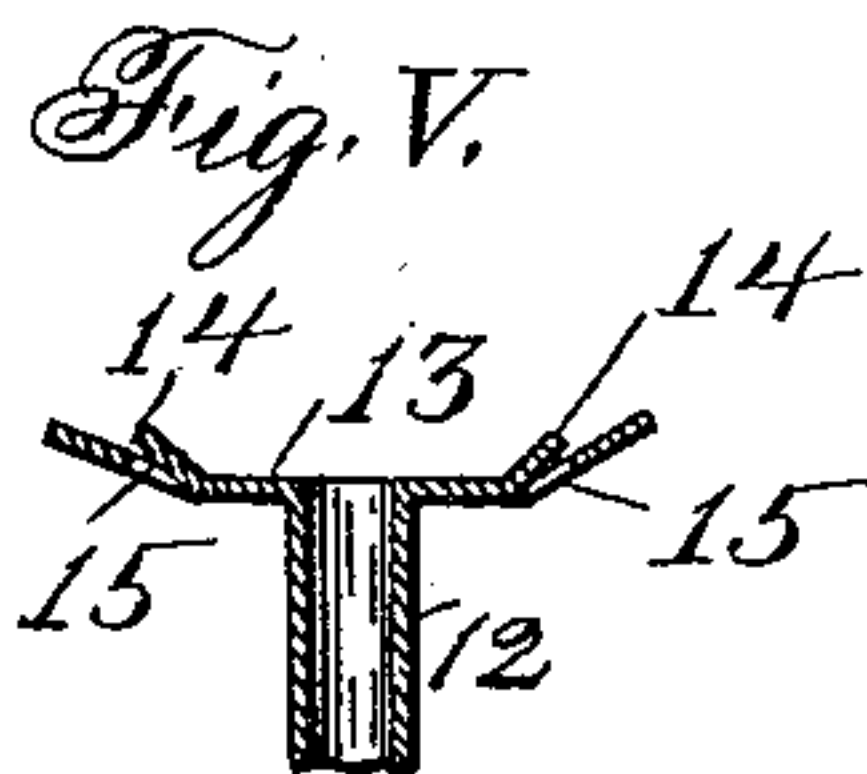
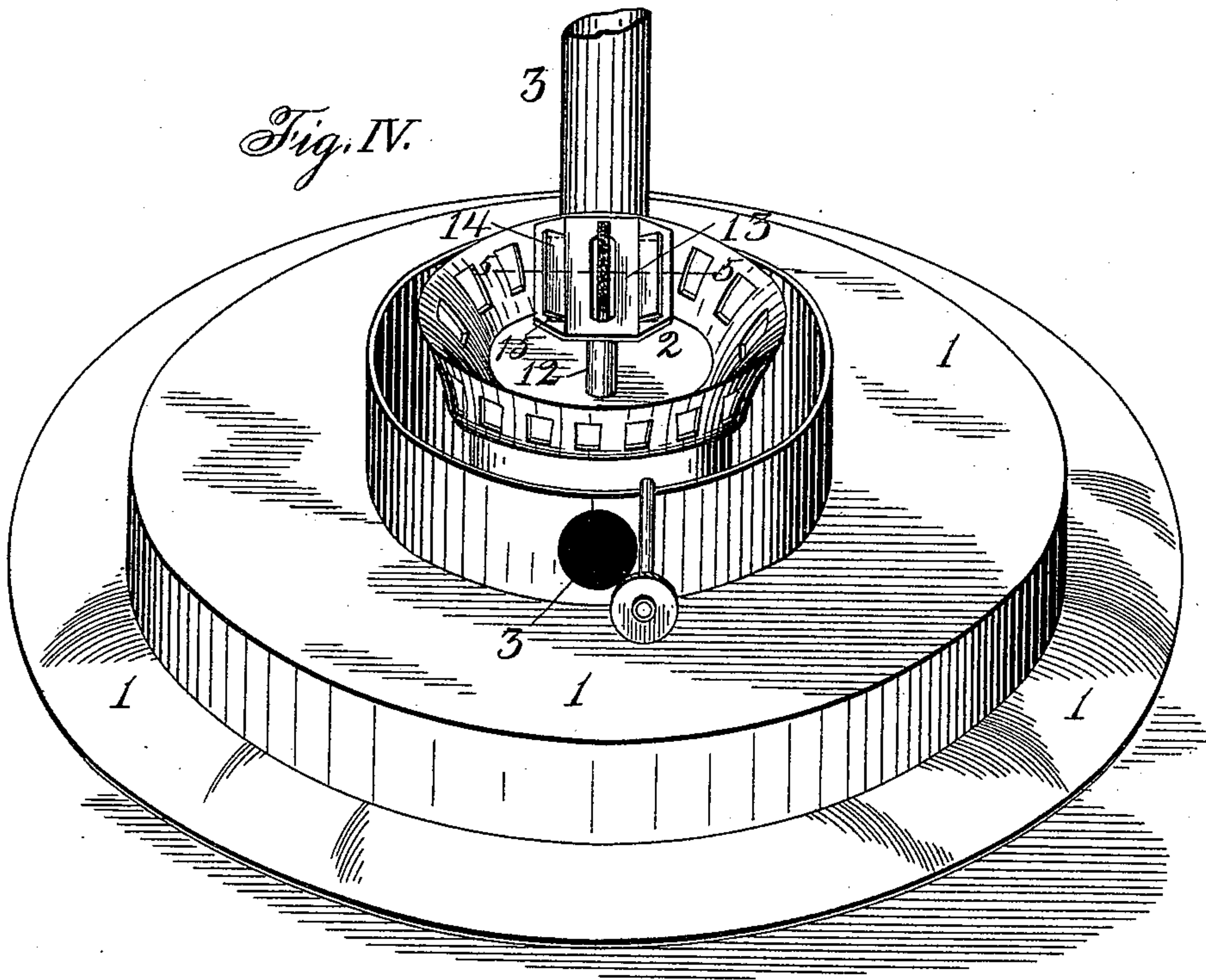
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# UNITED STATES PATENT OFFICE.

WILLIAM BALDWIN, OF GREAT BEND, PENNSYLVANIA.

## TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 448,002, dated March 10, 1891.

Application filed April 7, 1890. Serial No. 346,949. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM BALDWIN, a citizen of the United States, residing at Great Bend, in the county of Susquehanna and State of Pennsylvania, have invented certain new and useful Improvements in Tubular Lanterns, of which the following, together with the accompanying drawings, is a specification.

10 In the drawings, Figure I is an elevation of my lantern, showing one guard and the burner in section. Fig. II is a plan of the upper portion of the lantern, the cap being removed. Fig. III is a section of the guard on the line 3 3, Fig. I. Fig. IV is a perspective view of the base, showing the improvements in the burner. Fig. V is a vertical sectional view of the burner-deflector on the line 5 5, Fig. IV.

20 1 represents the base, 2 the burner, and 3 the air-supply tubes, which may be in the main similar to corresponding parts of any approved tubular lantern which takes its air from the outside.

25 4 represents the reflector, a short distance below which the tubes 3 terminate and the disks 5 surrounding the ends of said tubes are located. The said disks are substantially parallel with the reflector.

30 6 represents the vertical deflectors, of which there is but one in each guard. These deflectors are located in the vertical plane of the two tubes and preferably bisect the ends of the tubes, their lower ends being secured within the mouths of the tubes and their upper ends extending at least through apertures 7 in the reflector 4. These vertical deflectors may be provided with perforated ears 8 for receiving the bent ends of handle 9, which are held in place by the elasticity of the handle. The width of slots 7 is less than the diameter of the tubes and their length at least as great.

45 10 represents stays or braces for securing the reflector and lower disk.

11 represents the globe-collar, and the vertical deflector 6 and horizontal disk 5 terminate on the inside in close proximity to the adjacent wall of this collar 11.

50 The cause of smoking in a lantern is usually the temporary shutting off of the air-supply. The wind causes smoking in a tubu-

lar lantern by blowing upward or past the supply-tube and counteracting the downward air-current in the tubes, which is necessary for proper combustion, whereupon, for well-known reasons, the flame immediately shoots upward. My invention obviates the liability of smoking by a construction which makes it impossible for the wind to shoot upward past the mouth of the supply-tube. This construction consists in the reflector, beneath which the tubes terminate and having the restricted opening over the tube, the vertical deflectors, and the guard-flanges surrounding the end of the tube. The function of the reflector is to prevent excessive down-currents, while the vertical deflectors prevent strong cross-currents. The guard-flanges are extremely important, because they prevent the currents of air from moving upward at any angle which can be of any disadvantage, for any currents which pass between the reflector and tube-flanges will strike the deflector at such an angle that the force of the current will be broken.

12 represents the burner-tube, to which is attached a deflector 13, having the upwardly-inclined outer portions, the apertures 15, and the upwardly-inclined deflecting-lips 14, said apertures and lips taking the place of the usual rows of perforations. When a strong current blows below the cone, the light is frequently extinguished. My improved burner-deflector permits the air to reach the flame very readily when it moves gently; but as soon as a strong current enters the upwardly and outwardly extending lips throw the draft outward and away from the flame.

I am aware that it is not new to provide the upper ends of draft-tubes with caps and vertical deflectors; but these are not the equivalents of my invention, in which the flange or deflector around the top of each tube forms an essential part. I have found serious disadvantages in most of the tubular lanterns which take the air-supply for the inside of the cone from the outer air, in that they smoke or blow out in a wind. Those which obviate this difficulty do so by complicated means.

My invention, which has the open-ended tubes, parallel disks, and single vertical deflector, I find in practice to produce a steady light in a wind or in an eddy—that is to say,



when the wind blows around the person and strikes the lantern on opposite sides with somewhat of a vortical movement. I have also found that my construction is adapted  
5 to prevent a strong current being deflected down the tubes.

I find by actual experiment that my improved lantern, which takes its air from outside, accomplishes what others fail to accomplish, excepting the original Dietz lantern,  
10 which takes its air from within—that is to say, my construction prevents all back currents and smoking in any winds. I find that the supply taken from the inside is insufficient.  
15

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a tubular lantern, the combination of  
20 the reflector 4, the tube 3, terminating beneath the reflector, the vertical deflector, and the guard-flange surrounding the upper end of the tube, substantially as and for the purpose set forth.

25 2. In a tubular lantern, the guard for the end of the tube, consisting of the parallel disks, the lower one of which surrounds the mouth of the tube and the upper one of which

is above the end of the tube and has an aperture over the tube-opening, and the deflector  
30 extending from the tube through the aperture in the upper disk, substantially as set forth.

3. The combination of the wall 11, vertical tubes 3, guard-disks 5, surrounding the ends  
35 of the tubes, reflector 4, having slots 7 above the ends of the tubes, and vertical deflectors 6, radiating from the wall 11, secured within the mouths of the tubes and extending upward through the deflector, as and for the purpose set forth.  
40

4. The combination, with the wick-tube, of the deflector 13, having the slots 15, provided with the lips 14, extending upward and outward over the said slots, as and for the purpose set forth.  
45

5. The combination, with the wick-tube, of the deflector 13, having the elongated slots 15 parallel with the wick-tube, and the lips 14, extending upwardly and outwardly over the said slots for deflecting the air which  
50 passes through the slots outward, as explained.

WILLIAM BALDWIN.

Witnesses:

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