

E. H. ASHCROFT.

Carbureter.

No. 28,549.

Patented June 5, 1860.

Fig. 3.

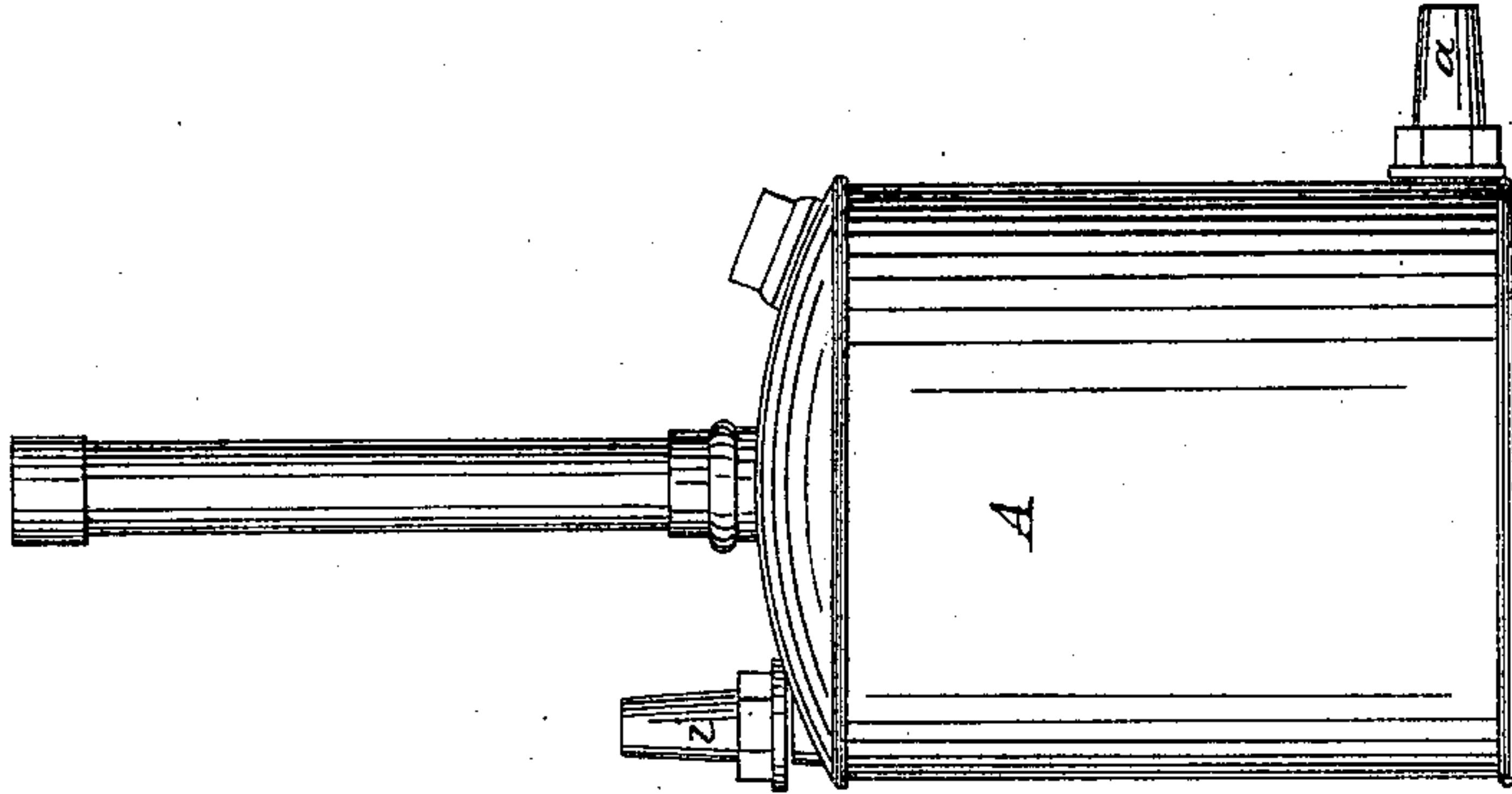


Fig. 1.

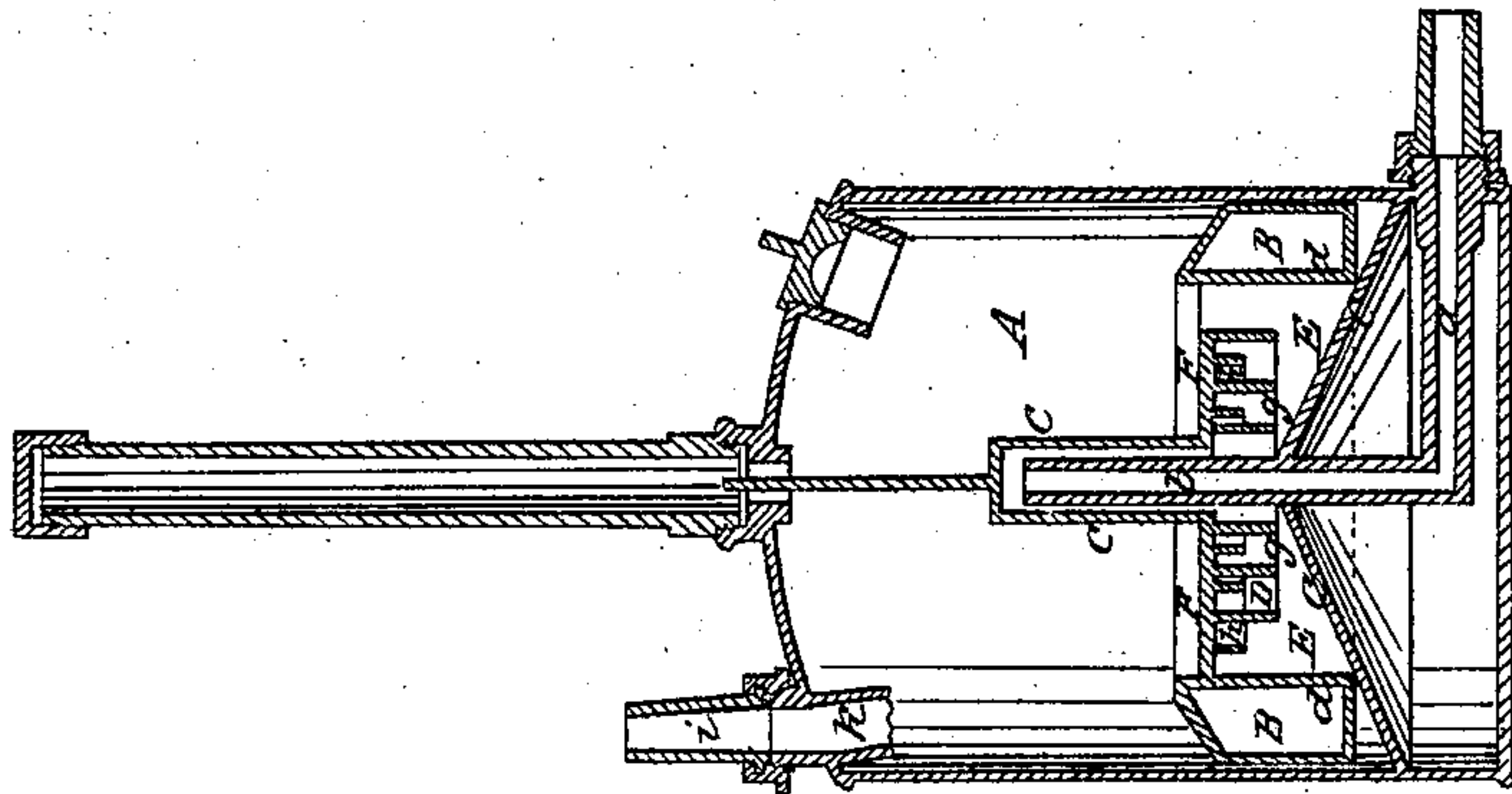
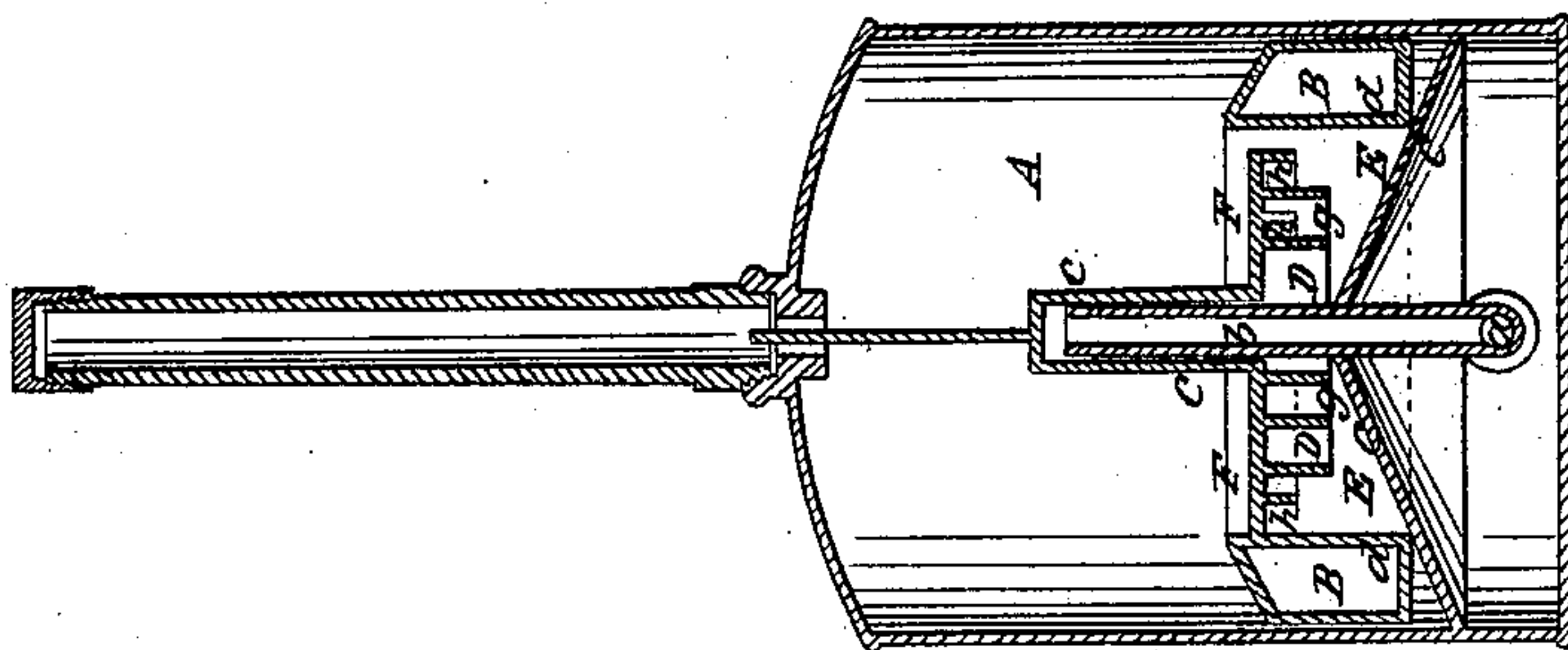


Fig. 2.



Witnesses:

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Inventor:

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR NAPHTHALIZING GASES.

Specification forming part of Letters Patent No. 28,549, dated June 5, 1860; Reissued August 14, 1860, No. 1,024.

*To all whom it may concern:*

Be it known that I, EDWARD H. ASHCROFT, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Apparatus for Naphthalizing Illuminating-Gas; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 is a longitudinal section, and Fig. 2, a transverse section of such apparatus. Fig. 3 is an external elevation of it.

On March 6th, 1855, Letters Patent No. 12498 were granted for an apparatus for purifying illuminating gas. My improvements have reference to this invention, the patent on which is now held by me, in part by assignment. My improved apparatus, although designed for impregnating gas with the vapors of naphtha or any other liquid is capable of being employed for nearly if not all the purposes for which the said patented apparatus was designed and can be used.

In the drawings A, exhibits the cistern or outer case or vessel for containing the naphthalizing liquid and a rotary float B, a disk C, and a scroll or spiral passage D. In this respect, the apparatus does not differ from that described in such Patent No. 12498. Below the said cistern, I arrange a gas reservoir or expanding chamber, E, which when the apparatus is in use receives its gas by an induction pipe, *a*. Out of the middle of the top of the said gas reservoir, an exit tube *b*, rises, passes through the scroll D, and enters a surrounding tube *c*, that projects above the disk F, of the said scroll as shown in Fig. 1. This tube *c*, extends above the tube, *b*, and is closed at its upper, while at its lower end it opens directly into the middle of the scroll D. The scroll passage, at its external terminus opens through the disk and directly into the cistern A. The said disk and the scroll are surrounded by the float B, which should be constructed in the form of a hollow annulus, having its inner sides or surface *d*, *d*, cylindrical and of a diameter to correspond with the external diameter of the disk F, the two being so made that the disk with its scroll may be moved vertically within the float and hold to its inner surface by friction. The object of this mode of arranging and applying the float, scroll and disk is to enable the disk

and scroll to be properly adjusted with reference to the plane of flotation of the float and so that while the float may support the disk and scroll, the lower edge of the boundary plate *g*, by which the scroll passage is made, may dip into the liquid within which the float may be merged. After the proper positions of the float, the scroll and the disk may have been attained, the circumference of the disk may be soldered or otherwise fastened to the float.

Great difficulty is often experienced in adapting a wooden dished float (such as is described in the said Patent No. 12498,) to the disk and scroll so as to properly buoy them within the liquid of the cistern. It is to avoid this difficulty that I have made the improved arrangement and application of the float, scroll and disk as described. Furthermore, in order to facilitate the rotation of the float and the scroll so that they may perform to good advantage, the duty of agitating the liquid that may be within the cistern, I combine with the scroll and arrange within it as shown in Fig. 2, one or more wings *h*, *h*, *h*. The gas, in its course through the scroll will strike against the said wing or wings and afterward be deflected from them and be caused to pass by their outer ends, each wing extending but partially across the scroll passage. The impingement of the gas against the wings will operate to effect or facilitate the rotary movement of the float and the scroll.

The eduction pipe of the cistern is shown at *i*, as projected down a short distance into the cistern and furnished with a foraminous diaphragm *k*, extended across its mouth.

Instead of so combining with the cistern and its exit pipe, a foraminous diaphragm, it may extend across the cistern, the object being to cause the naphthalized gas which may escape from the vessel to pass through such diaphragm before entering the pipes for conducting it to the burner or burners.

In practice, it is found that by the employment of such a diaphragm a great saving of the naphtha is effected. While the gas retains a sufficiency of the naphtha vapor for the purposes of combustion, there is little or no condensation of naphtha in the conduit pipes and thus the naphtha which would so condense in the pipes is retained by the foraminous diaphragm until properly vaporized. By means of the receiving res-



ervoir, the gas will be supplied to the rotary scroll and be delivered by it with greater steadiness than if the induction pipe led directly into the central pipe *b*.

5 In the operation of the apparatus, the gas passes into the said reservoir thence up through the pipe *b*, thence into and down the pipe *c*; thence into and through the scroll passage; thence into the cistern or space over  
10 the surface of the liquid or naphtha; thence through the foraminous diaphragm and into the eduction pipe, the rotation of the float and scroll being produced in the machine by such gas.

15 In the above described apparatus, I claim—

1. The combination of the gas receiving and expanding chamber, *E*, with the naphthalizing cistern, scroll and float as specified.  
20 2. The above described arrangement and

application of the float, scroll and disk, whereby they are rendered capable of easy and proper adjustment as explained.

3. The combination of one or more propelling wings or the equivalent thereof with  
25 the scroll and float when applied and used within a cistern substantially in manner and for the purpose as described, such propelling devices being to facilitate or effect the rotation of the said float and scroll while  
30 buoyed within the liquid as described.

4. The application and arrangement of the foraminous diaphragm with respect to the cistern and eduction pipe of the apparatus, as described.

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Witnesses:

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F. D. HALE, Jr.