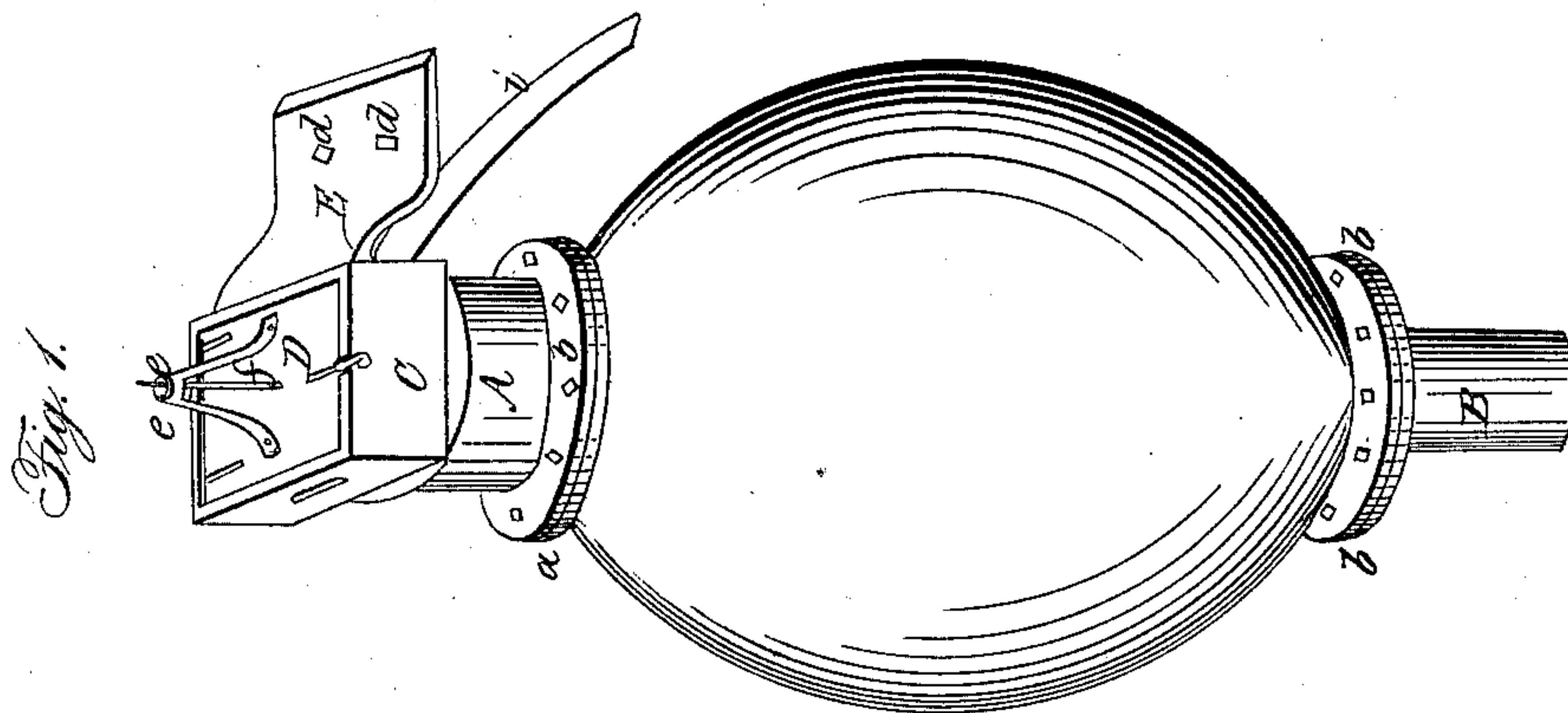
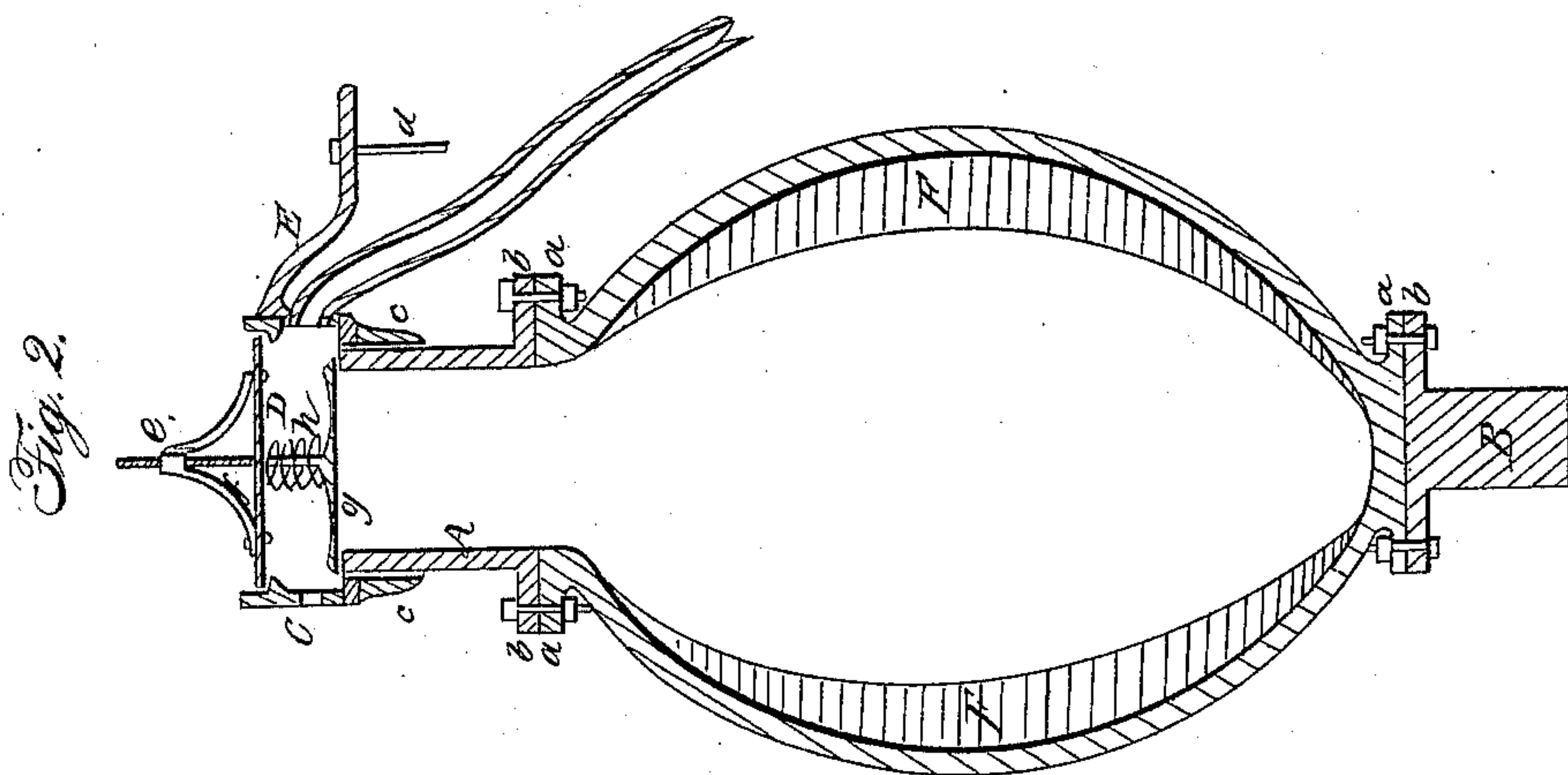


J. CLARK.  
Chemical Retort.

No. { 1,973, }  
      { 32,977. }

Patented Aug. 6, 1861.



Witnesses:

W. M. Gooding  
J. M. Pitts

Inventor:

James Clark

# UNITED STATES PATENT OFFICE.

JAMES CLARK, OF NEWARK, NEW JERSEY.

RETORT FOR THE MANUFACTURE OF PRUSSATE OF POTASH.

Specification of Letters Patent No. 32,977, dated August 6, 1861.

*To all whom it may concern:*

Be it known that I, JAMES CLARK, of the city of Newark, in the county of Essex and State of New Jersey, have invented 5 certain Improvements in Retorts Used in Manufacturing Prussiate of Potash; and I do hereby declare the following to be a full and exact description of the same, reference being herein had to the drawings 10 which accompany this specification and which make part of the same.

The nature of my improvement consists in an adaptation of form and construction to the intended use of the retort. Also 15 an improved manner of relieving the retort, of the gases which are generated within the retort, without the admission of air.

In the drawing Figure 1 is a view in perspective. Fig. 2 is a sectional view of the 20 retort.

The same letters refer to the same parts in each figure.

The body of my retort is of an egg form, and of any convenient size. On one end 25 the journal is large enough to admit supplying and withdrawing the charge of material through it to the interior of the retort as shown by A. and the journal at the other end is solid which journal is shown 30 by the letter B.

The advantages of the oval or egg form are, mixing and amalgamating the fluxed potash and the animal matter used in making prussiate of potash, with a speed and 35 efficiency hitherto unattained by the common hand manipulation, or by modern machinery. The heavier material which first fluxes with the heat is as the retort revolves lifted upon the shelves F and thrown upon the 40 lighter material such as leather, hides, horns, hoofs, &c., which naturally float upon the surface, thus making the agitation more speedily and effectually amalgamate the materials. The bellying of the retort also gathers the 45 mass more conveniently for removal at the end of the process.

To the outer end of the large hollow

journal A, a frame C. constructed of thin iron, is applied. The part *c'*. which is next 50 the retort is round and fits over the end of the journal A, the journal revolving therein, the other part of the frame C is square with a door closing its outer end, which door shown by D is held tight 55 to the frame by hinges and latch, the frame C being held in place by the bracket E through which are bolts *d*. for securing it to the brickwork of the furnace.

To the door D is attached a bearing, *e*, and a rod *f*. passes through it and through the 60 door, which forms the other bearing of the rod *f*. On the end of the rod *f*. inside the frame C is fastened a circular plate of iron *g*. large enough to close the end of the journal A. Between the door, D, and the 65 plate *g* is a spiral spring *h*. which when the door is closed presses the plate *g* against the end of the large journal A, both plate and spring coming away when the door 70 is opened to charge or discharge the retort. The plate and rod revolve with the retort being loose on the bearing *e*. and in the door. The object of this arrangement is to provide an escape for the gases which 75 accumulate in the retort from fluxion of the material used, and exclude fresh air, the pressure forcing back the plate *g*, egress is had through the pipe *i* into the fire under the retort.

F shows shelves or projections in the 80 retort.

What I claim and desire to secure is—

1. A retort for making prussiate of potash of an egg or oval form as herein above de- 85 scribed.

2. The frame C. door D. bearing. *e*. rod *f*. spring *h*. and plate *g*. when constructed combined and arranged in the manner and for the purpose hereinabove set forth.

JAMES CLARK.

Witnesses:

W. M. GOODING,  
J. M. STILES.