

A. A. BURLINGAME
Making Extracts.

No. { 947, {
31,951. }

Patented Apr. 9, 1861.

Fig. 1.

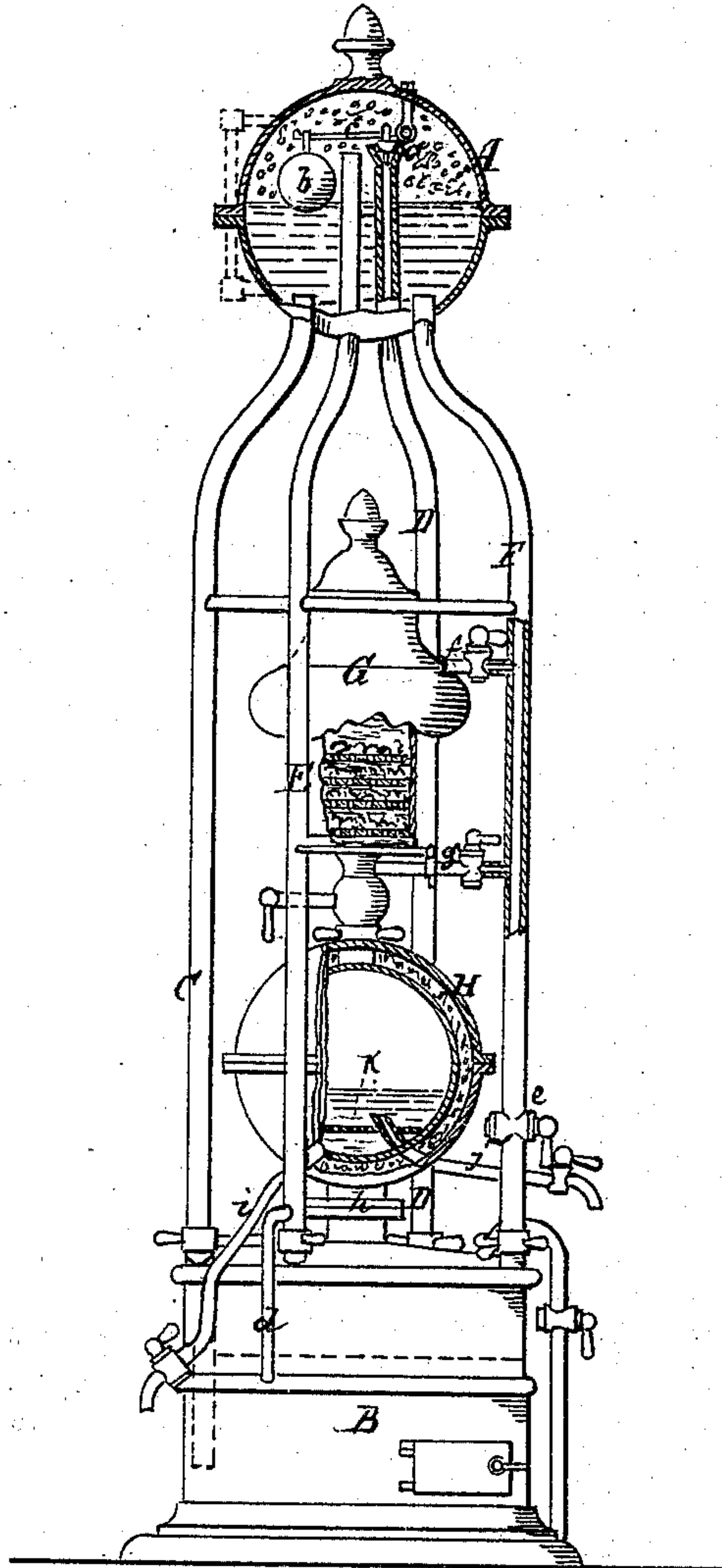
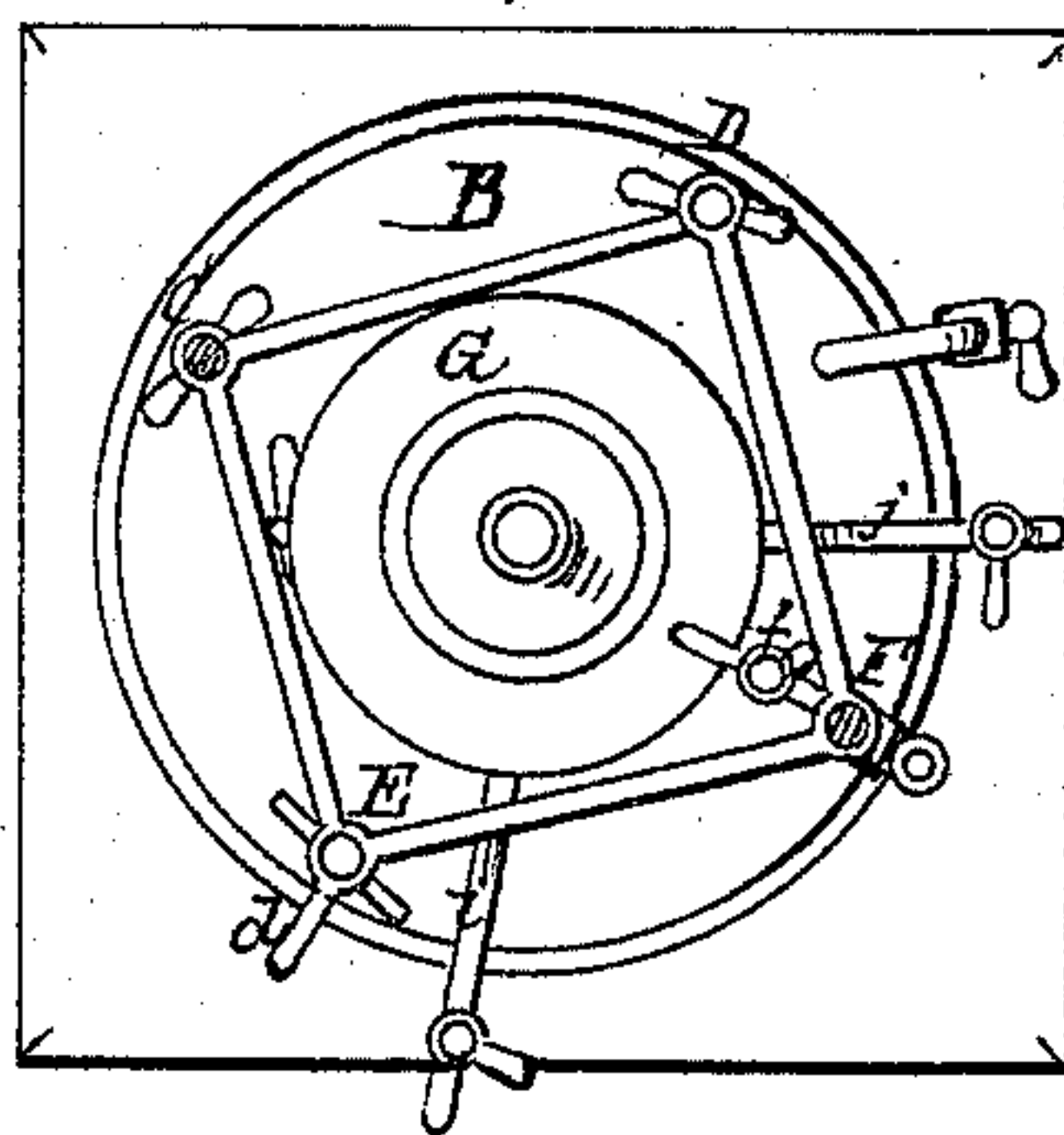


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

A. A. BURLINGAME, OF NEW YORK, N. Y.

APPARATUS FOR MAKING EXTRACTS UNDER PRESSURE.

Specification of Letters Patent No. 31,951, dated April 9, 1861.

To all whom it may concern:

Be it known that I, A. A. BURLINGAME, of the city, county, and State of New York, have invented a new and Improved Apparatus for Making Extracts Under Hydrostatic Pressure; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1. represents a sectional elevation of my invention. Fig. 2. is a horizontal section of the same.

Similar letters of reference in both figures indicate corresponding parts.

This invention consists in the arrangement of a globe which communicates with the steam space and with the water space of a steam boiler by a series of pipes as will be hereinafter more fully explained, in combination with a vessel intended to receive the substance to be boiled or extracted, and with a receiver, in such a manner that the heated liquid from the steam boiler rises to the globe, from which it can be passed through the substance in the extracting vessel either from above or from below acting on said substance under a hydrostatic pressure determined by the height of the globe above the extracting vessel, and that the extract or infusion thus obtained, when passed into the receiver, is kept in a heated state by the action of the steam from the boiler, until it is drawn off by suitable faucets.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation with reference to the drawing.

The globe A. communicates with the steam boiler B. by means of four pipes C. D. E. F. The pipe C. extends down to the water space of the boiler and it terminates at or near the bottom of the globe. The water from the boiler is forced up through it into the globe by the pressure of the steam and a suitable check-valve in its top end prevents the water running back again.

The pipe D. communicates with the steam space of the boiler and it extends up nearly to the top of the globe as clearly shown in Fig. 1, of the drawing. Its upper end is closed by a valve *a*, which is, held down by the action of a ball *b*, suspended from a lever *a*. The ball *b*, is hollow and so arranged that if the water in the globe reaches a certain height the ball is raised and the

steam is now allowed to escape from the pipe D. into the globe. As soon as this takes place the pressure in the globe becomes equal to the pressure in the boiler and no more water rises up through the pipe C. The steam which passes up through the pipe D. is conducted down through the pipe E from which it escapes to the open atmosphere through the small tube *d*. The object of this arrangement is to keep up a continuous current of steam through the globe so that the temperature of the liquid contained therein is retained at the desired height.

In case the water in the globe should become cold however, it can be let back into the boiler through the pipe F. which is provided with a stop cock *e*, for this purpose. When the apparatus is in operation this cock is closed.

The pipe F. communicates with the extracting vessel G. by means of two pipes *f*, *g*, one of which passes into the top and the other into the bottom of said vessel. The substance to be extracted is spread in the interior of the vessel G. on a series of perforated shelves, which may be covered by flannel or other material suitable for filtering, and the hot liquid from the globe is let on, either from the top through the pipe *f*, or from the bottom through the pipe *g*, its action on the substance to be extracted being facilitated by the hydrostatic pressure of the column of liquid in the upper part of the pipe F. This hydrostatic pressure may, of course, be increased at pleasure by increasing the height of the globe above the vessel G.

When the extract is ready it is let down into the receiver H. which is provided with double walls, and the space between the two walls communicates through the tube *h*, with the steam space of the boiler, so that the inner vessel, which forms the receiver proper, is always surrounded by steam, as clearly shown in Fig. 1, of the drawing. This receiver is provided with a sieve or strainer *k*, near to its bottom and two tubes *i*, and *j*, serve to draw off the contents of the same.

The tube *i*, communicates with the space below, and the tube *j*, with the space above the strainer and this strainer serves to retain any impurities or sediment, which may be carried down into the receiver H. so that the pure extract flows from the pipe *i*.

Where this extra filtering is not required, the contents of the receiver may be drawn off by the pipe *j*.

5 This apparatus may be used with advantage for making extracts of all vegetable substances such as bark, malt, hops, medicinal herbs etc., and the extract obtained retains all the aroma and flavor, since the substance to be extracted is acted upon with-
10 out ever exposing the extract to the open atmosphere, and the menstruum used may be any liquid, and of any desired temperature from cold to boiling.

Having thus fully described my invention, what I claim as new and desire to 15 secure by Letters Patent; is,

The arrangement of the globe A. pipes C. D. E. F. and steam boiler B. in combination with the extracting vessel G. pipes *f*, *g*, and receiver H. constructed and operating 20 substantially in the manner and for the purpose specified.

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Witnesses:

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