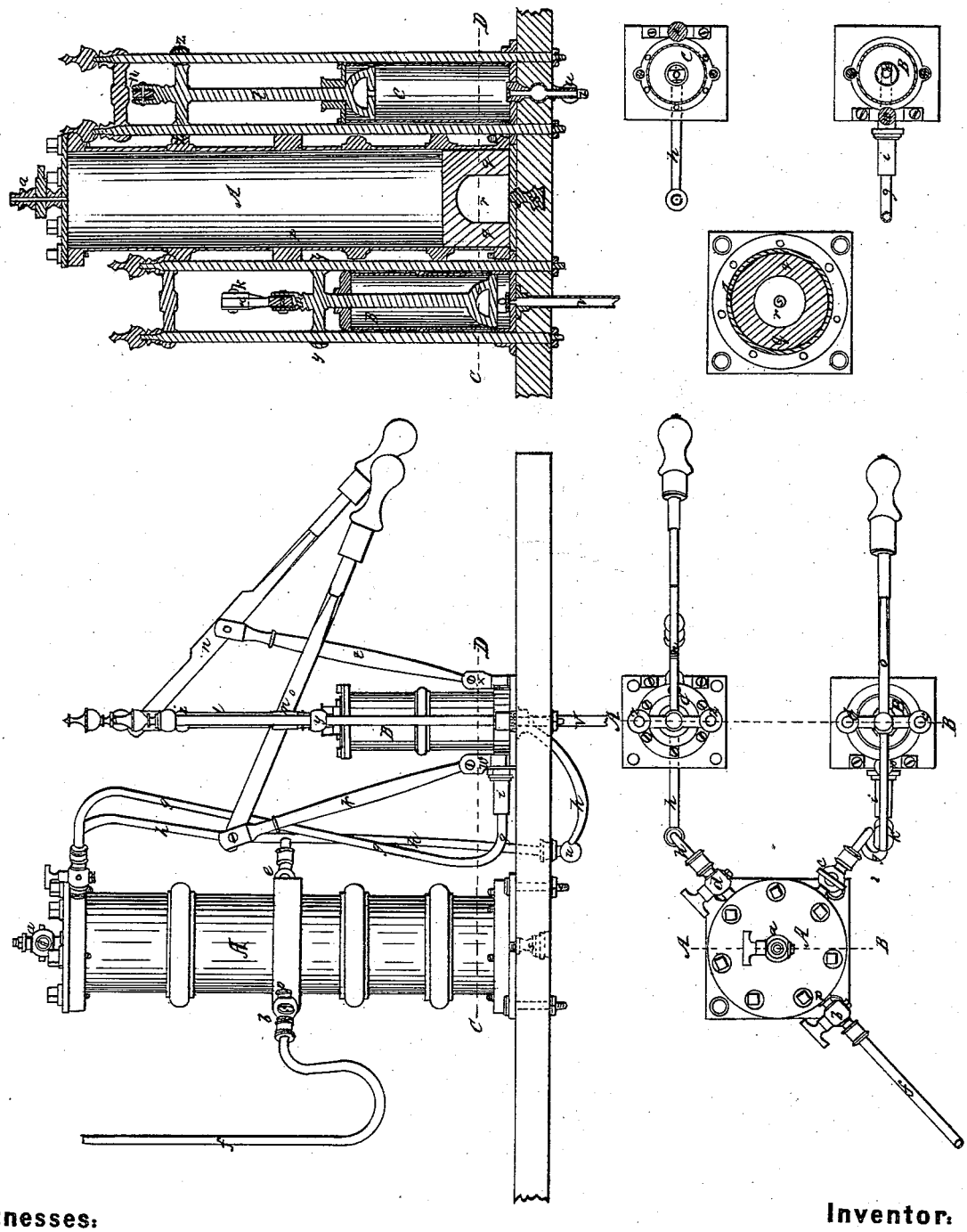
B. BRANDRETH.

Making Extracts.

No. 2,920. Patented Jan. 20, 1843.



Witnesses:

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UNITED STATES PATENT OFFICE.

BENJN. BRANDRETH, OF NEW YORK. N. Y.

MAKING VEGETABLE EXTRACTS.

Specification of Letters Patent No. 2,920, dated January 20, 1843.

To all whom it may concern:

Be it known that I, BENJAMIN BRANDRETH, of the city and State of New York, doctor of medicine, have discovered a new and useful Improvement in the Art of Making Vegetable Extracts for Medicinal and other Purposes; and that I have invented a new and useful machine for the application of such improvement.

The said improvement which I have discovered consists in the application of the liquid menstruum or solvent to the vegetable matter from which the extract is to be prepared, while such vegetable matter is in a vacuum and without the application of heat whereby the soluble principles of the vegetable matter are more readily extracted without sustaining any change or deterioration.

The said machine is described as follows reference being had to the drawings hereunto annexed and which are to be taken as part of this specification.

The drawing contains several views of the machine and its parts, and the lettering of the parts of the machine correspond in the several drawings.

(A) represents an air tight metal hollow cylinder with a cap at the top fitting air tight and capable of being either removed or fastened by means of screws as represented in the drawings. The bottom of the cylinder is perforated with a hole which may be stopped with the screw represented in the drawing marked (*s*). In the cylinder a movable piston head is to be fitted air tight which is represented in the drawing and marked (*q*, *q*). With the cylinder an air pump is connected marked (C) in the drawing, by means of the tube marked (*k*), which tube communicates with the cylinder by stop cocks at (*e*) and (*d*) of which (*d*) opens into the cylinder near the cap and (*e*) near the middle. A forcing pump of ordinary construction (marked (B) in the drawing) is also connected with the cylinder by means of the tube (*g*) which communicates with the cylinder by the stop cock (*c*) near the top of the cylinder. The tube (V) supplies either air or water to the force pump. The tube (*f*) and the stop cock (*b*) communicate with the cylinder. This tube is constructed at its junction with the stop cock in such manner that it may be reversed so as to bring the aperture of the tube into a vessel of liquid for the purpose after mentioned. These are the material parts of the machine which for use in a large way should be conducted upon the scale stated in the drawing.

To work this machine the cap of the cylinder should be taken off and the piston head (*q*, *q*) removed and the interior space of the cylinder filled with the vegetable matter from which the extract is to be made. The piston head is then to be placed upon the top of the vegetable matter in the cylinder and the cap to be replaced and fastened tight by means of the screws. The screw (*s*) at the bottom of the cylinder is also to be made fast, and the stop cocks at (*b*) and (*a*) and (*c*) are to be shut off. By these arrangements the cylinder is left, having no connection except with the air pump by means of the tube (*h*) and the two stop cocks (*e*) and (*d*). The air in the cylinder both above the piston head and also below the same is then to be exhausted by the air pump as nearly as may be. This being done the stop cocks (*e*) and (*d*) are to be shut off, the tube (*f*) is to be inverted into a vessel containing the liquid solvent or menstruum, and the stop cocks (*b*) being opened, the liquid will pass by force of the atmospheric pressure into the cylinder upon the vegetable matter and must be allowed to remain in contact with the vegetable matter for such time as is necessary to effect a solution of the soluble principles of the vegetable matter which must vary according to the substances from which the extract is to be prepared and the liquid solvent or menstruum used for making the extract and concerning which time no rule can be specified. However a much shorter time will suffice to effect the solution than would be requisite were the same not effected after the exhaustion of the air. After the solution shall be thus effected the stop cock (*b*) is to be closed, the screw (*s*) is to be loosened and taken out and the stop cock (*c*) opened and by applying pressure upon the piston head by means of the force pump which may be used either with air or water, the extract dissolved in the solvent or menstruum will be forced out in a pure condition, leaving the vegetable residuum deprived of all its soluble principles in the cylinder. The extract is then to be evaporated in the usual manner.

The advantage of this improved process consists in the very speedy solution of all

the soluble principles in the vegetable matter. The air being entirely exhausted from the pores of the vegetable matter, and the liquid solvent or menstruum being put upon it in that condition, the solvent or menstruum is brought into very intimate contact with the soluble principles of the vegetable matter, and extracts them effectually, and no heat being used in the process the soluble principles are not deteriorated or changed.

What I claim as my invention is—

The process of dissolving the extracted matter in vegetables by the application of a liquid solvent or menstruum in vacuum without heat, and also the mode of effecting the said operation by the apparatus hereinbefore described.

Of course I do not claim the air pump or force pump as my invention, but only the combination of the cylinder air pump and force pump for the purpose stated and in the manner stated.

Dated and signed January 7, 1843.

B. BRANDRETH.

In presence of—

ALEXANDER S. JOHNSON,
CHS. F. SOUTHMAYD.