

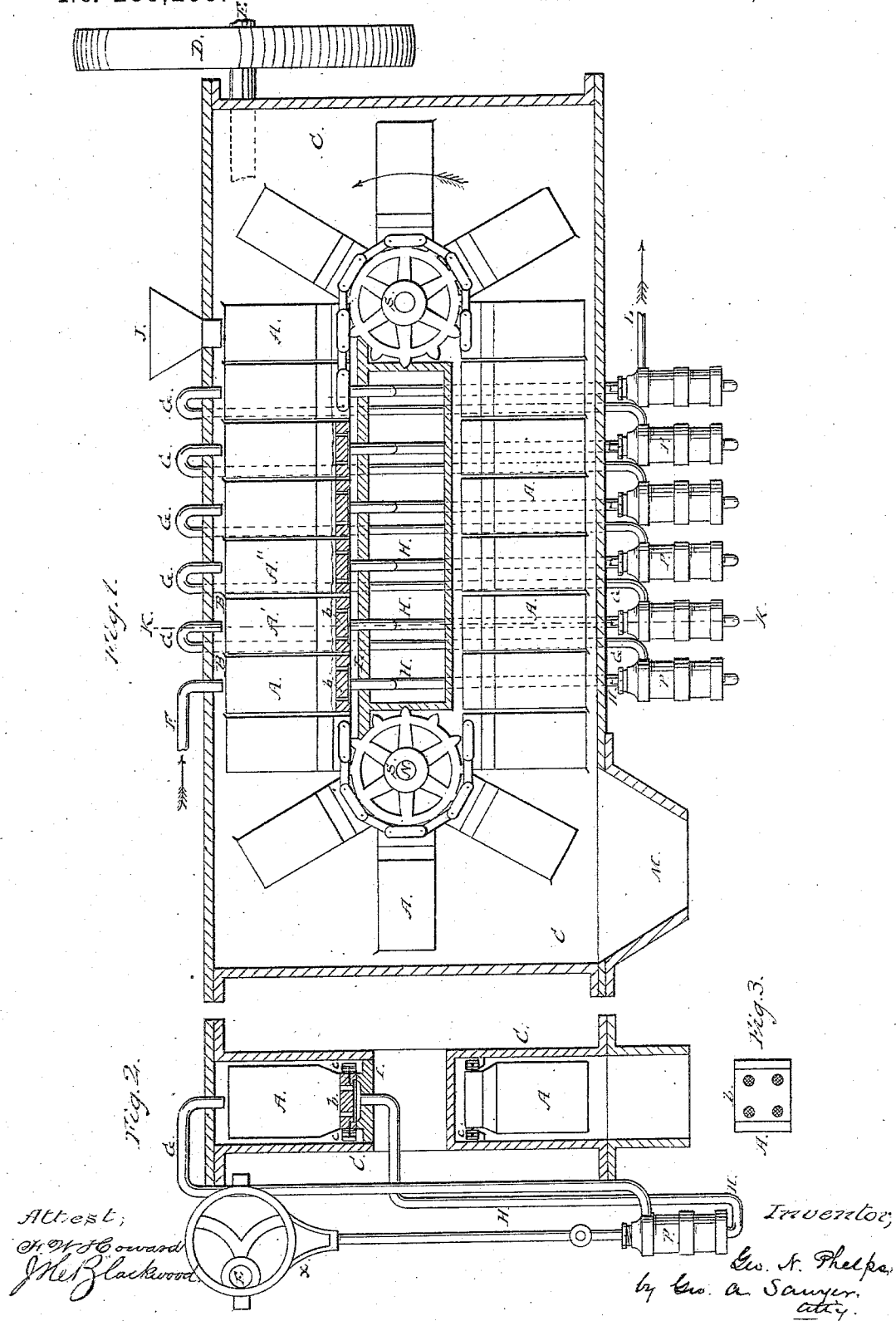
(No Model.)

G. N. PHELPS.

METHOD OF AND MEANS FOR EXTRACTING OLEAGINOUS AND SOLUBLE
MATTER FROM OTHER BODIES.

No. 288,259.

Patented Nov. 13, 1883.



UNITED STATES PATENT OFFICE.

GEORGE N. PHELPS, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF
TO DANIEL WADSWORTH, OF SAME PLACE.

METHOD OF AND MEANS FOR EXTRACTING OLEAGINOUS AND SOLUBLE MATTER FROM OTHER BODIES.

SPECIFICATION forming part of Letters Patent No. 288,259, dated November 13, 1883.

Application filed June 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE N. PHELPS, a citizen of the United States of America, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in the Method of and Means for Extracting Oleaginous and Soluble Matter from other Bodies, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to furnish an improved apparatus and means for extracting oleaginous matter or removing soluble matter from other bodies by means of proper solvents applied in the manner described.

In the drawings, Figure 1 is a vertical sectional elevation of the apparatus. Fig. 2 is a cross-section through K K. Fig. 3 is a bottom plan of one of the buckets or treating-boxes.

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

C is a closed case, containing the series of buckets A A' A'', attached to the endless chain or link belt carried around the sprocket-wheels S S', and driven from shaft N by any suitable means. The motion may be continuous, or in this instance in an intermittent manner from shaft E by worm and worm-wheel and friction-clutch. (Not shown.)

The buckets in continuous order on the links contain in the bottom (see Fig. 3) apertures, which are covered with wire-cloth or other pervious material which will permit the free flow of the solvent.

Within the case C, and extending horizontally between the sprocket-wheels S S', is a smooth bed, I, upon which the buckets slide as they are moved along by the rotation of the sprocket-wheels. The upper surface of the bed may be covered with metal or channeled, to facilitate the passage of the solvent as it filters from the buckets to the pipes H H', &c.

Outside of case C, and below the bottoms of the buckets A A', &c., are a series of pumps, P P', &c., each pump provided with a suction-pipe, H H', &c., which brings to it the solvent after it passes through the buckets. The discharge-pipes G G', &c., are bent over at the top, so that each pump discharges into the

next bucket of the series. The last pump is provided with a pipe, L, conveying the saturated solvent to a still or other apparatus for final or further treatment. The pumps are driven from shaft E by eccentrics X.

The case C is provided with a hopper, J, for introducing the material to be operated on, and the spent material is dumped into the hopper M. The pipe F conducts the solvent to the buckets.

The buckets are provided with lips B B', &c., to prevent the solvent from dripping down between them as it escapes from the inlet-pipe F or the pumps.

The action of this apparatus is as follows: The sprocket-wheels S S' are rotated from right to left in the direction of the arrow. The hopper J is opened, and the material, fed from a proper measuring device, falls into the buckets as they successively pass under it. When the filled bucket A reaches the point immediately under the pipe F, the solvent is admitted. This is drawn by the pump P, connected therewith, and delivered through pipe G into bucket A'. The second pump delivers the solvent to the third bucket, and so on until the last pump discharges it saturated to the still by pipe L. While the material is being thus treated the buckets are given an intermittent motion, so as to enable the solvent to act completely and dissolve all the soluble matter, and pass from the apparatus as highly saturated as possible, and thus secure the greatest economy in distilling. By making any one of the pipes G G', &c., the final discharge-pipe, the number of buckets through which the solvent passes may be regulated to suit the circumstances. As the buckets pass over the wheel S they are inverted and the spent material is spilled out into the discharge-hopper M. It will thus be seen that the action of this apparatus is automatic, and that it requires little care or attention.

I am aware of Patents No. 151,050, to Geo. N. Phelps, and No. 275,989, to F. X. Byerley, and I disclaim in this application anything described or claimed in those patents.

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

1. The continuous or endless train of filter-buckets, substantially as described.
2. A continuous or endless train of filter-buckets, in combination with an endless chain
5 and sprocket-wheels, substantially as described.
3. The series of filter-buckets A A', &c., in combination with the bed I and suitable means for moving them thereon, substantially as described.
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4. A train of filter-buckets adapted to move over a smooth bed, in combination with pumps and pipes adapted to cause the solvent to flow continuously through said filters, substantially
15 as described.
5. In an apparatus for treating soluble material, the combination of a series of filter-buckets, a bed upon which they move, suitable means for moving said filters, and a series

of pumps by which the solvent after passing 20 through one bucket is pumped into the second of the series, and so on, substantially as described.

6. The herein-described method of extracting soluble matter by treating it to a solvent 25 in a train of individual filters moving upon a horizontal bed, said filters carrying the material in one direction, while the solvent passes continuously through the filters in the opposite direction, substantially as described. 30

In testimony whereof I affix my signature in presence of two witnesses this 14th day of June, 1883.

GEORGE N. PHELPS.

Witnesses:

DANIEL WADSWORTH,
J. L. CONNELLY.