E. C. CLEVELAND.

Centrifugal Sugar Machine.

No. 67,953. Patented Aug. 20, 1867.

Fig. 2.

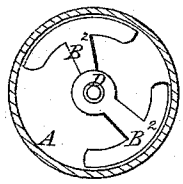
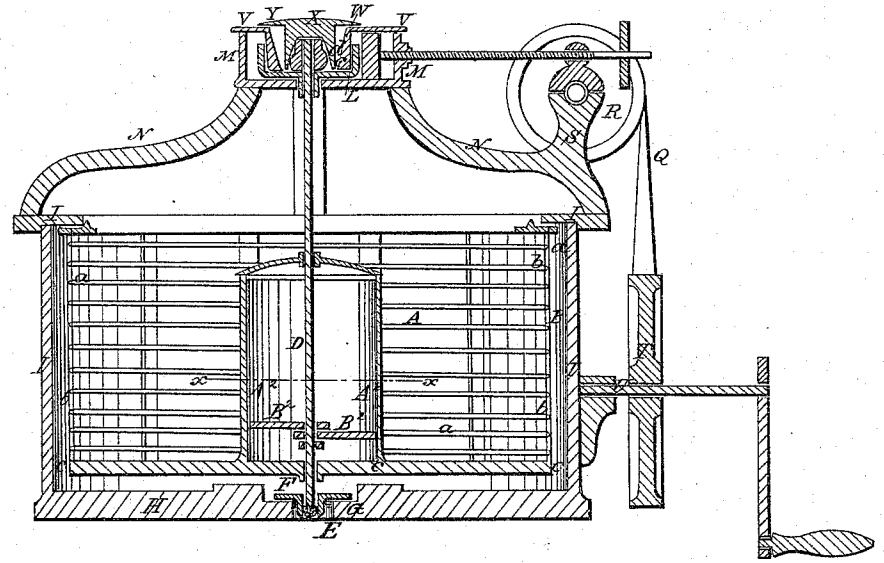


Fig. 1.



Witnesses:

Theo Tuschke

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AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

United States Patent Office.

E. C. CLEVELAND, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 67,953, *dated August* 20, 1867.

IMPROVED CENTRIFUGAL MACHINE OR HYDRO-EXTRACTOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, E. C. CLEVELAND, of Worcester, in the county of Worcester, and State of Massachusetts, have invented a new and useful Improvement in Hydro-Extractors; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

The present invention consists in so supporting or hanging and arranging the basket of the hydro-extractor, that is to be revolved at a great speed, as to move about from side to side freely for a limited distance, thereby changing the upright shaft from a vertical line.

In combination with the above, the invention also consists in the use of several counter-weights upon the shaft to the basket, that are encased, whereby the weight of the loose substance or material in the basket to be extracted is counterbalanced or equalized as the basket is revolved. In the accompanying plate of drawings my improvements in the hydro-extractors are illustrated—

Figure 1 being a central vertical section through a hydro-extractor made according thereto, and

Figure 2 a transverse horizontal detail section in plane of the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

A, in the drawings, represents the basket to the hydro-extractor. The side B of this basket A is formed of a series of parallel wires, *a*, supported at suitable points by upright bars *b*, that at their lower ends are fixed to the edge or periphery *c* of the circular bottom plate C. The basket is fixed to and about a centre upright shaft, D, that, projecting through the bottom plate C, is at such end placed in a step, E, that by its flanged end F is supported around the edge of an opening or hole, G, in the bottom H of the vessel or case I surrounding the basket. The basket-shaft turns on the step E, and such step can freely play from side to side upon the bottom to vessel I. To the upper end of the basket-shaft D a pulley, L, is fixed. This pulley is made hollow, and upon its upper side is open. M, a case surrounding pulley L, which case is fixed in a horizontal position by means of curved upright arms N secured to the upper edge or rim of the vessel I. To this case M are two vertical openings or slots, through which passes the endless belt O, from and around the pulley L, to and around the loose flanged pulleys R R, hung to spindles upon opposite sides of the upright S, and from thence down to and around the pulley T, fixed upon the driving-shaft U. By this arrangement of pulleys above described the basket is driven or revolved. The upper end to the case N, about the pulley L, is closed by a head plate, V, fixed thereto, which plate, by its centre-piece W, projects into the hollow pulley L. This centre-piece is bored out, leaving a shoulder, *c*, near its lower end, on which rests the lower open end *d*, to a socket, X, that by its flange Y is fixed to the upper side of head plate V. Z, a box, made of a hemispherical shape upon its outside, and placed within the socket X, hereinabove referred to. From this box the upper end of basket-shaft extends, and by means of it the basket, as it is revolved, can freely move from side to side, within a certain limit, as is obvious without any further explanation, the advantages of which are self-manifest to all conversant with hydro-extractors.

Surrounding the shaft to the basket, upon the inside of the latter, is constructed a case or boxing, A^2, that is tightly closed. Within this box A^2, counter-weights B^2 are hung to the shaft so as to freely turn thereon, by means of which weights the weight of the material or substance in the basket is counterbalanced as the basket is revolved.

By means of the construction and arrangement of parts above described the basket is allowed free action from side to side, and being balanced, will run in a vertical position or nearly so. That furthermore, however tight the driving-belt may be upon the pulley to the basket-shaft, the basket is free for action.

I claim as new, and desire to secure by Letters Patent—

The hydro-extractors, the basket, when hung for operation, substantially as and for the purposed described.

I also claim, in combination with the above, the counter-weights applied to the basket-shaft substantially as and for the purpose specified.

E. C. CLEVELAND.

Witnesses:

W. W. RICE,

C. E. PHELPS.