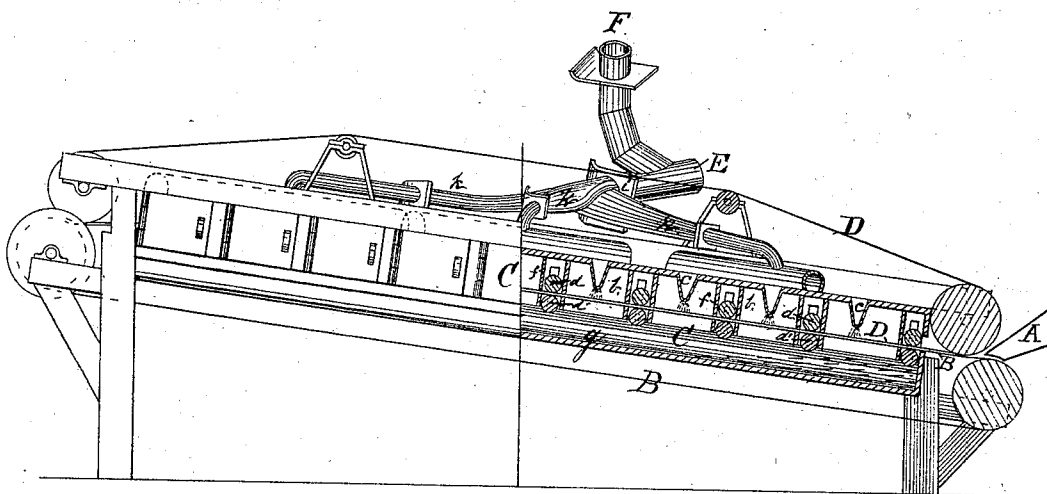


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CONDENSING SATURATORS FOR BAGASSE.

No. 170,180.

Patented Nov. 23, 1875.



WITNESSES.

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ALFRED W. J. MASON, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN CONDENSING-SATURATORS FOR BAGASSE.

Specification forming part of Letters Patent No. 170,180, dated November 23, 1875; application filed April 23, 1875.

To all whom it may concern:

Be it known that I, ALFRED W. J. MASON, a resident of the city of New Orleans and State of Louisiana, have invented a certain new and useful Improvement in Condensing-Saturators; and I do hereby declare the following to be a full, clear, and correct description of the same, reference being had to the annexed drawing, making a part of this specification.

My invention is designed for the purpose of arresting the waste of the saccharine matter contained in bagasse or crushed sugar-cane, &c. It consists of a carrier or endless belt, made of slats, woven wire, or other suitable material, upon which the bagasse is received from the first mill immediately after being crushed in the same. To this carrier the bagasse is securely held by an endless-wire belt, and conveyed through an inclosed steam-chamber, where it is subjected to a process termed diffusion or maceration, by saturating it with steam or hot water, or with both, while at the same time it is being passed between and kneaded by a series of rollers, for the purpose of thoroughly disengaging and dissolving the saccharine matter contained in the said bagasse. The action of the steam or hot water also contributes to the softening of the fiber, &c., so that when it is discharged to the second or two-roller mill it is admirably prepared for a complete and effective depleting pressure, spreading the material equally over the surface of the rollers, and issuing from the same in well-defined sheets.

My invention will now be much more readily understood by referring to the drawing, on which A represents the bagasse-chute, from which the bagasse is delivered to the apron of the carrier B. Here one man scatters the bagasse, so that it is evenly spread for diffusion, saturation, or maceration. Upon this carrier the bagasse is borne along at a slightly-accelerated speed, to keep free of bunches that frequently fall from first mill. As it, the said bagasse, enters the inclosed chamber C it is covered and held firmly down upon its carrier B by an upper belt, D, during its passage through the aforesaid chamber C, which may be sixty-feet, more or less, in length, a good length being necessary to insure a thorough saturation and softening of the material.

The machine is or may be divided into various compartments, as shown at *b*, in each of which, or at stated distances apart, should the chamber C not be subdivided, are perforated pipes *c*, the full width, or as required, corresponding with width of belts B and C. The said pipes *c* are placed, as shown on the drawing, above the belts, in order that the condensation and steam may be delivered to the passing bagasse with greater force and effect; but, if required, perforated jets may be introduced underneath the said belts, although not acting with the same general effect. The supply steam-pipe E is provided with a valve, *i*, to control the steam passing into the distributing-pipes *k k' k''*, which are also provided with regulating-valves, as shown. By means of the valve *i* the steam may at any time be cut off from the machine, and allowed to escape through the escape-pipe F. In each partition of the inclosed chamber C, or at certain distances within the same, are two rollers, *d d'*, one supporting the belts, and the other acting as a valve or kneader for the bagasse, thus assisting the operation. As the bagasse is carried through the chamber C, or the various compartments thereof, the exhaust-steam from the mill-engine, or direct steam of a low temperature, is delivered to it at each stroke of the piston, the rollers being acted on by the belts, the partitions, should there be any, preventing the steam from passing from one sub-chamber to the other. Thus being confined it is rapidly condensed, and is absorbed by the spongy bagasse, relieving the saccharine by said absorptions, and softening the fiber, &c. If required, water may be added to assist the steam.

Assuming the machine to be fifty (50) feet long, and the first mill moving at the rate of twenty-four (24) feet per minute, the engine making thirty-five (35) per minute, it will be seen that the bagasse will be subjected to one hundred and forty (140) exhaust-discharges, and the time in passing will be about two (2) minutes. The bagasse, being so thoroughly prepared by the impinging steam, is in admirable condition to receive the powerful actions of the second-mill rollers, and spreads over the roller-surface, issuing therefrom in sheets resembling (though not of the tenacity

of) pasteboard, well prepared as fuel, well depleted of the saccharine, and in good condition for paper-stock. This effective action in depleting the bagasse will also allow of one-third additional speed being given to the mill, and instead of it only moving at twenty-four (24) feet per minute, a speed of thirty-two (32) feet per minute might be easily imposed, thus gaining one-third ($\frac{1}{3}$), or compressing a season of six (6) weeks into one of four (4) weeks, making a vast difference in expense as now incurred, and a large increase in the profits and product saved from destruction.

In the construction of the inclosed chamber C the whole space underneath the lower rollers *d*, if partitions *f* are used, should be left entirely free, so that it will be easier to wash out the same when required. The bottom *g* of the chamber C should incline from its sides to its center, so as to form a trough for the collection of the juice, &c., which, by reason

of one end of the chamber being elevated somewhat higher than the other, is conveyed through the said trough to the lower end of the machine, from whence it is carried off by pipes, or by any other suitable means.

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

1. An inclosed chamber, C, carrier B, in combination with the tubes for supplying the saturating-agent, the whole being constructed and arranged to operate substantially and for the purpose specified.

2. The inclosed chamber C, carrier B, belt D, pressure-rollers *d d'*, the whole being combined and arranged to operate substantially as described.

ALFRED W. J. MASON.

Witnesses:

H. N. JENKINS,
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