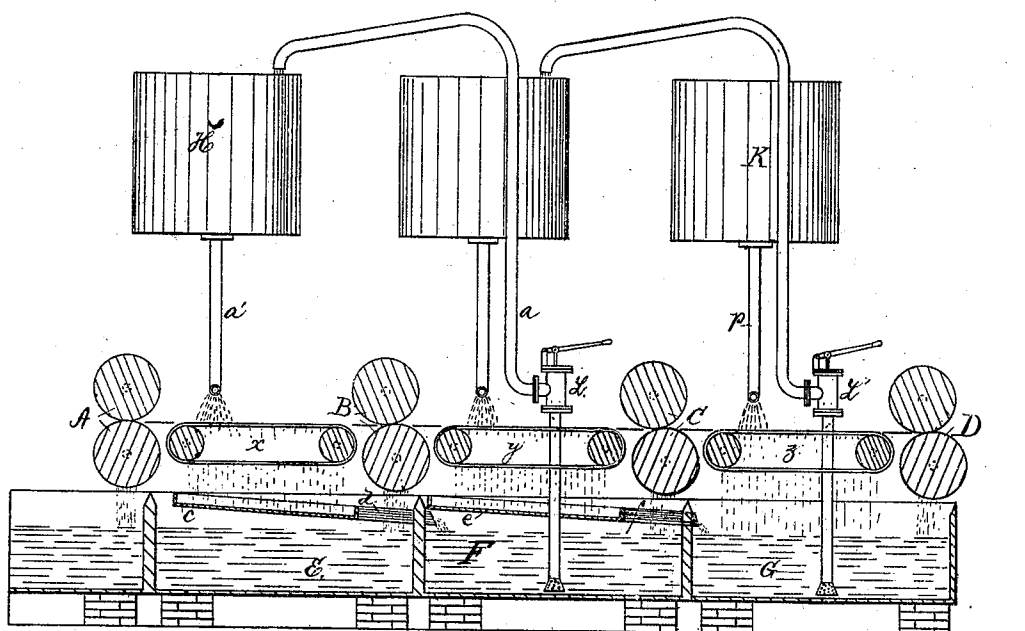


M. S. BRINGIER.
APPARATUS FOR EXTRACTING SACCHARINE LIQUOR FROM CANE.
 No. 179,679. Patented July 11, 1876.



WITNESSES.

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IMPROVEMENT IN APPARATUS FOR EXTRACTING SACCHARINE LIQUOR FROM CANE.

Specification forming part of Letters Patent No. **179,679**, dated July 11, 1876; application filed February 12, 1876.

To all whom it may concern:

Be it known that I, MARIUS S. BRINGIER, a resident of the city of New Orleans, and State of Louisiana, have invented a certain new and useful Improvement in Apparatus for Extracting Saccharine from Cane; 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.

The object of my invention is to extract all the saccharine matter contained in sugar-cane without impairing the quality of the juice, thereby permitting the manufacture of sugar by the old simple process of ebullition in open kettles, and increasing the yield of the sugar-canes without having to resort to the many expensive and intricate apparatus lately introduced for said purpose, such as vacuum-pans, steam-trains, bone-black filters, centrifugals, &c.

The different new processes for extracting the juice, known as diffusion or maceration, as well as the injection of steam on the bagasse, have all proved defective, for the reason that the high temperature required for the said processes necessarily dissolves the gummy, coloring, and waxy matter contained in the cane, and which, being carried off mixed with the juice, renders it a matter of impossibility to make sugar from the latter in open kettles, and at times even in the ordinary vacuum-pan.

In order that my invention may be better understood, attention is called to the annexed drawing, whereon—

A represents a two-roller sugar-mill from which the bagasse is carried to two, three, or more additional mills or sets of two rollers each, to be subjected to so many additional pressures.

The process is as follows: The bagasse, falling from the rollers A upon carrier *x*, is by it conveyed to the rollers B. While on its way to the latter it is subjected to a shower of liquid that is obtained from the tank F, from whence it is forced, by means of a pump, L, through the pipe *a* to the cistern H, which is provided with a pipe, *a'*, the lower end of

which is perforated, so as to deliver its liquid in a shower upon the bagasse, as stated. The bagasse thus impregnated passes between the rollers B, and the juice there expressed is received in the tank E, while the drippings from carrier *x* are, by the tray *c* and trough *d*, carried back into the tank F. From the rollers B the bagasse is next conveyed to the rollers C by the carrier *y*, on which it is, in like manner, subjected to a second shower of liquid, this time taken from the tank G. The juice obtained by the rollers C is caught in the tank F, and the drippings from the carrier *y* are, by the tray *e* and trough *f*, conveyed back to tank G. The bagasse is next conveyed, by the carrier *z*, to the third, and in this case the last, set of rollers D. On its way to these it is subjected, through the perforated pipe *p*, to a shower of water obtained from the tank K. The drippings from the carrier *z* and rollers D are received in the tank G. Thus it will be perceived that the feeble juice from tank G is used as a showery liquid for the bagasse on carrier *y*, while that from F, being stronger, is used for the bagasse on carrier *x*, and that the liquid from tank E is sufficiently strong to be worked, if desired, with the first juice.

The water and liquid showered upon the bagasse is used cold, that no coloring, waxy, or gummy matter can by it be melted or dissolved.

The successive pressures to which the cane is subjected, after being thus saturated by the cool liquid, break up and destroy the cells of the same, so that all the saccharine matter therein contained is extracted entirely free from the detrimental substances hereinbefore mentioned.

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

1. An apparatus for extracting saccharine juice from cane, consisting of two or more sets of crushing-rollers, A B, carriers *x y*, cisterns H H, tanks or reservoirs E F, and pump or other appliance L for elevating the juice, the whole combined and arranged substantially as shown, whereby the bagasse in its passage

through the apparatus shall be subjected to a shower of cool saccharine liquid, substantially as described.

2. The combination of a series of crushing-rollers, A B C, carriers *x y z*, pumps or other liquid-elevators L L, tanks E F G, cisterns or reservoirs H K, pipes *a a' p*, arranged substantially as shown, whereby the bagasse in its

passage shall first be subjected to a shower of cool saccharine liquid, and finally to a shower of water, as and for the purpose specified.

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Witnesses:

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