A. STONER.

Machine for Mashing Yucca.

No. 203,386. Patented May 7, 1878.

Fig: 1.

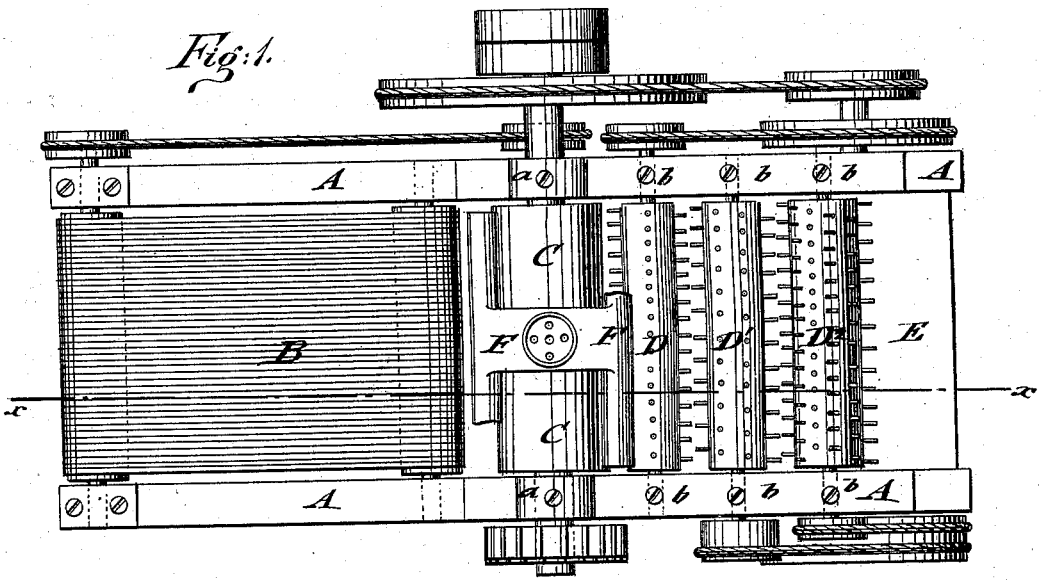



Fig: 3.

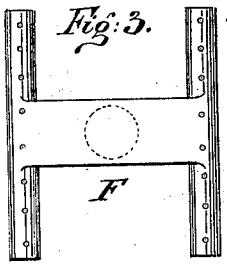
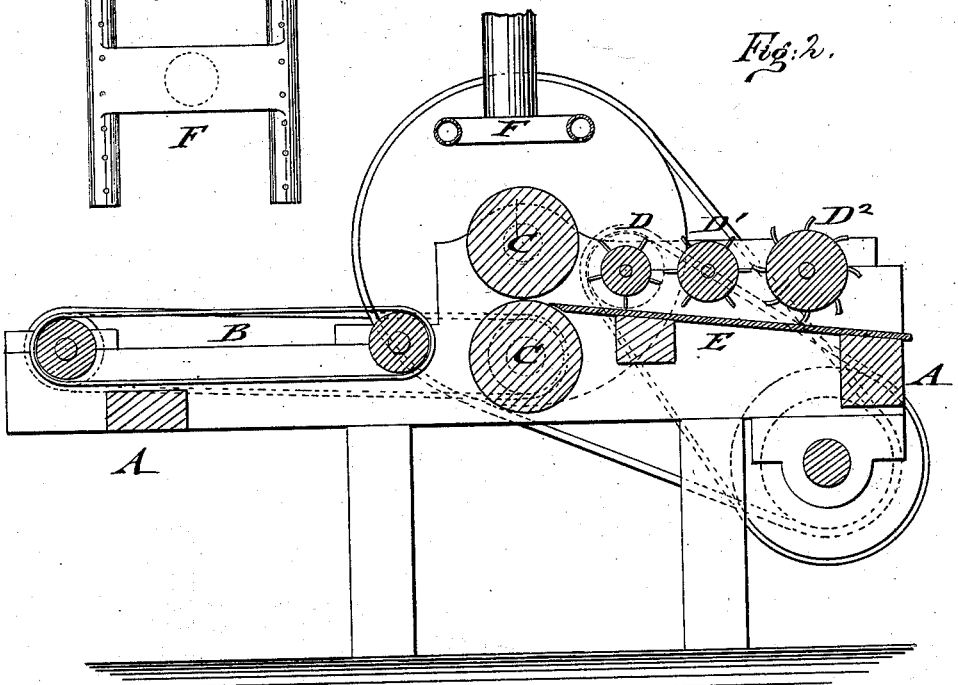



Fig: 2.

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ABRAHAM STONER, OF STONY POINT, LOUISIANA.

## IMPROVEMENT IN MACHINES FOR MASHING YUCCA.

Specification forming part of Letters Patent No. **203,386**, dated May 7, 1878; application filed January 29, 1878.

*To all whom it may concern:*

Be it known that I, ABRAHAM STONER, of Stony Point, in the parish of East Baton Rouge and State of Louisiana, have invented a new and Improved Machine for Mashing Yucca, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a plan view of my improved machine for mashing yucca-blades. Fig. 2 is a vertical longitudinal section of the same on line *x x*, Fig. 1; and Fig. 3 a bottom view of the sprinkling device arranged above the mashing-rollers.

Similar letters of reference indicate corresponding parts.

This invention is designed to furnish an improved machine for treating the blades of the yucca plant (*Yucca filamentosa*, *Yucca angustifolia*) in its green state, so as to separate the fibers mechanically from the green glutinous mass by a thorough mashing process without exposing them to a rotting or wilting process; and the invention consists of a mashing-machine having an endless feed belt or apron, a sprinkling device, revolving mashing-rollers, and a series of toothed brushing-cylinders, arranged in connection with a metallic plate.

Referring to the drawing, A represents the supporting-frame of my improved machine for mashing yucca in its green state, said frame being made of sufficient length to arrange the different parts therein.

An endless feed belt or apron, B, is arranged on wooden driving and stretching rollers at one end of the machine, being about four feet long and of suitable width, and serving to receive the green yucca-blades and carry them to the mashing-rollers C, which are arranged adjoining the end of the feed-belt. A second endless belt, of less length, may be arranged at the other end of the machine if it is desired to carry the fibers from the machine to the so-called "handing apparatus." Both endless belts are driven by belt-and-pulley connection with the lower mashing-roller, which again receives its motion from the upper mashing-roller by intermeshing gear-wheels. The second endless belt, however, is only used when the handing apparatus is required.

The mashing-rollers C are made of suitable size and smooth surface, and adjusted in such a manner as to thoroughly and effectively mash the green glutinous mass loose from the fibers of the yucca-blades. The top roller is adjusted by set-screws or springs *a*, and driven at a speed of about forty revolutions per minute from a suitable power-shaft.

Adjoining the mashing-rollers, on the side opposite to the feed-belt, are arranged three or more brushing-cylinders, D $D^1$ $D^2$, which are made with increasing diameter, the one adjoining the mashing-rollers being the smallest, the next one somewhat larger, and the outermost of largest diameter. These brushing-cylinders are revolved in one direction by transmitting belt-and-pulley connection with the top mashing-roller, and are made of wood or metal, and thickly set with teeth of the best English untempered steel wire, the teeth projecting about a quarter of an inch from the surface of the cylinders, and being filed off to a round smooth point. These teeth are set in straight lines or rows lengthwise over the cylinders, but in a spiral line around the same, as will appear in Fig. 1.

The object of making the first cylinder the smallest is that it may hug closely into the space formed by the mashing-rollers, so as to take up the mashed leaves as they pass through between the mashing-rollers.

An inclined metallic plate, E, is placed closely below the brushing-cylinder, so that their teeth strike the fibers passing along the plate. The teeth of the third brushing-cylinder are bent in the nature of cards, so as to slope back and prevent the teeth from carrying the fiber around the cylinder.

The increasing size of the cylinders $D^1$ and $D^2$ enables them to draw from each other with the same number of revolutions; but when the number of revolutions are increased it is necessary to place a clearing-comb or stationary brush over the last brushing-cylinder.

When the yucca-blades are not more than twelve months old, three brushing-cylinders are sufficient to clean the fibers of the blades by running directly back of each other and playing over the metallic plate at a speed of forty revolutions to one of the mashing-roller.

The brushing-cylinders are adjusted to the

metallic plate by set-screws *b*, so as to run the teeth close enough, but without touching the plate.

Where the yucca grows spontaneously, and is from forty to fifty years old, the green mass is more glutinous and requires more brushing, which is accomplished by arranging an additional set of brushing-cylinders directly below the brushing-cylinders $D^1$ $D^2$, and removing the metallic plate at that part, but leaving the same intact below the first brushing-cylinder, thus running the fibers through between the sets of said cylinders.

The capacity of the machine may be increased by widening the machine or increasing the speed.

The speed of the brushing-cylinders may be increased by enlarging the pulley of the driving top mashing-roller and decreasing the pulleys or cog-wheels of the brushing-cylinders.

Above the mashing-rollers C is arranged a sprinkling device, F, that is made of two horizontal pipes, perforated at the bottom, and of a cross-pipe connected to a supply-pipe.

The perforated pipes furnish a supply of water in jets to both sides of the mashing-rollers, for the purpose of softening the green extraneous mass as it passes through the mashing-rollers and brushing-cylinders.

In case the direct application of water is not convenient, steam may be thrown in jets on the mass.

From the mashing-machine the fiber is conducted either to the handing apparatus, when the fiber is required for weaving purposes, in which case it goes through a scutching and hackling process, or it goes to a rinsing tub or apparatus when the fiber is used for making ropes and cordage.

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

1. A machine for mashing yucca-blades, consisting of an endless feed-belt, revolving mashing-rollers, and of a series of revolving and toothed brushing-cylinders, that work on a metallic plate, substantially as and for the purpose set forth.

2. A machine for mashing yucca-blades, consisting of an endless feed-belt, revolving mashing-rollers, a series of revolving brushing-cylinders, and of a moistening or sprinkling device, substantially as described, above the mashing-rollers, substantially as and for the purpose set forth.

3. A machine for mashing yucca-blades, consisting of an endless feed-belt, of revolving mashing-rollers, and of a series of revolving and toothed brushing-cylinders, working in connection with a metallic plate, the brushing-cylinders increasing in size from the mashing-roller outwardly, substantially as specified.

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Witnesses:
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