PERFORMANT PNEUMATIC PRESS

***Ganea Grigore, Broşovan Roman**

Universitatea Tehnică a Moldovei – Chişinău, Moldova

***Ganea Grigore, m_bernic@mail.utm.md**

Abstract: In the paper work above we analyzed the constructive, technological and economic disadvantages of grape destemmers that at the moment are used at the grapes primary processing factories. Also here we mentioned the improvement ways of these disadvantages through the modernization of the existing grape destemmers; the advantages that will have the grape destemmers after the improvement implementation proposed in the paper work
Keywords: gain, economic, strining surface, increases the capacity, flexible strip.

The present machine relates to processing of harvested material to be separated into a component noble and workable and waste. The machine relates more particularly to a stemmer for the treatment of materials for stemming, for example such as the harvest or the like.

The operation of stalking can separate bays(egg grapes) from the stems, leaves, pieces of twigs, branches and other foreign matter likely to be found in harvested materials (example also rocks, clods, bird nests…). This is done by a machine called a stemmer, which generally consists of a hopper receiving the grapes or the like and horizontal perforated cylindrical cage, inside which is mounted rotatably mixer shaft or stalking. The latter projects the grapes or the like material against the wall of the perforated cage, while the advancing in the latter.

Bays separated then pass through the holes in the cage and the waste is moved by the movement of progression to the end of the cage opposite to the feed hopper to be evacuated.

The cylindrical cage also eventually turns on itself (low speed) to prevent waste from accumulating and clogging the perforations in said cage. The shaft is generally destemming or beater eccentrically mounted with respect to the longitudinal axis of symmetry of the cage. Thus, at the top, the clear distance between the drummer and the wall of the cage allows the grapes or similar out of the way of the said drummer and back again to be beaten by the latter, through the transfer of the material in said cage for stemming.

Currently, the trees of stalking or drummers are usually provided with a plurality of pile driving and discrete form of cylindrical fingers disposed on a support shaft in one or more longitudinal arrangement fan-shaped (often two or three helices). At the end of each rigid finger is fixed a pallet (with an angle which may be adjustable) so as to form the corresponding finger with a kind of spatula. Due to the rotation shaft stalking around its axis, these spatulas hit the grapes or materials similar to stalk to separate the noble component of the waste. The pitch of each helix formation or arrangement formed by the fingers or spatula, and the orientation of the pallet end, determine the rate of progression of the harvest or the like in the cage. However, the existing stalks above have a number of drawbacks and limitations revealed by the use and operation of such a duration consistent stemmers.

Thus, the total striking surface is relatively limited and fingers or spatula realize a significant crushing of the grapes or materials similar to stalk, resulting in an increased risk of bursting berries in a fragmentation of certain waste making their separation more difficult, or similar problems. Furthermore, because of their relative rigidity, there is a break frequency of the fingers relatively large and jamming to stalk materials or waste between the fingertips and the wall of the cage (rotation lock of the tree). Finally, the installation of the fingers and replacement of damaged fingers are delicate operations and tedious, resulting in costs of labor costs.

The present machine is intended to overcome the above drawbacks and overcome the limitations mentioned. To this end, the present machine relates to a stemmer for the treatment of materials for stemming, consisting essentially of a perforated cylindrical cage and a drummer or stalking shaft, rotatably mounted in the cage and provided with means mounted on a radial support shaft and constituting at least a helical formation extending along said shaft, said shaft and said cage destemming being installed in a cabinet or enclosure similar provided a supply means for stemming material and means for discharging the two components separated by treatment stemmer characterized in that the or each helical formation of said mixer shaft destemming or has a free longitudinal edge region formed by a continuous strip of a flexible material and/or flexible.

The machine also relates to a drummer for a stemmer and the aforementioned type having the characteristics set out in this. The machine will be better understood from the following description which refers to a preferred embodiment given by way of example, and explained with reference to the accompanying drawings, where in:

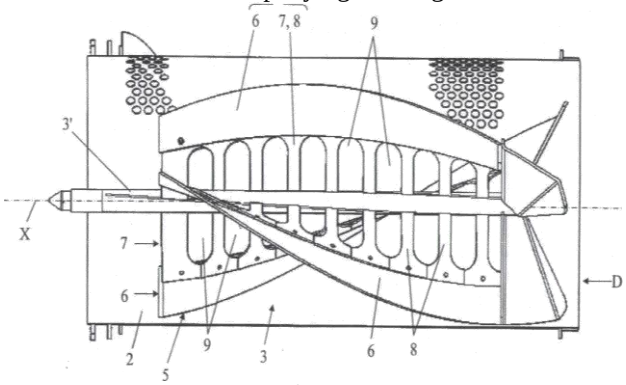

Fig.1. Is a side elevation view partly in section of a tree or drummer destemming mounted in a cage with a perforated stemmer**.**

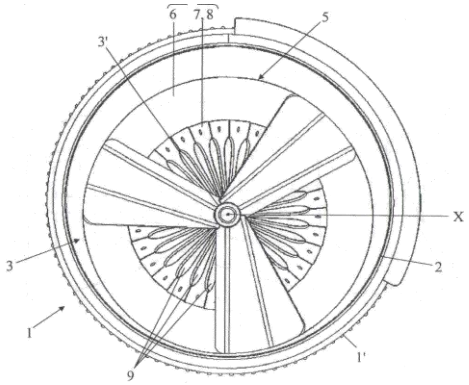

Fig.2. Is an elevation view of a stemmer, given the supply side, including a tree and picking off a cage as shown in Figure 1 (seen in the direction D of the latter);

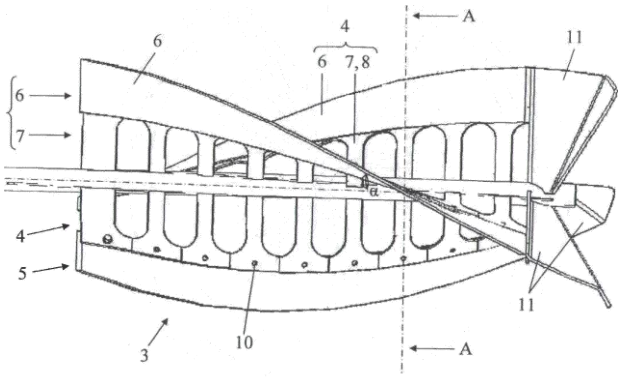

Fig.3. Is a side elevation view of a tree destemming as shown in FIGS 1 and 2;

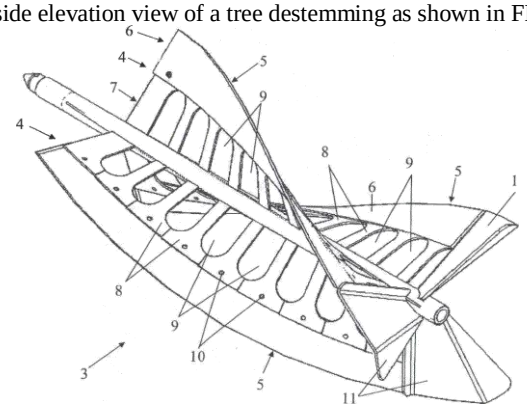

Fig.4. Is a perspective view of destemming the shaft shown in FIG 3;

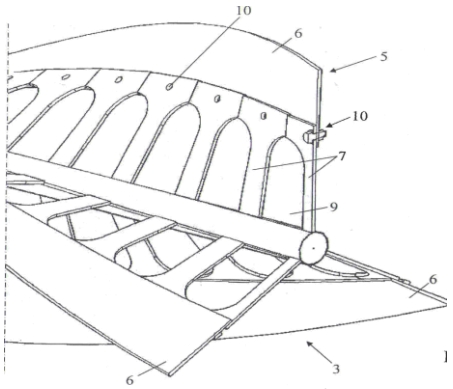

Fig.5. Is a partial sectional view along AA and perspective of the tree destemming shown in Figure 3.

Figures 1 and 2 of the accompanying drawings show, at least partially, a stemmer 1 for the treatment of materials for stemming, consisting essentially of a perforated cylindrical cage 2 and a drummer or stalking shaft 3 mounted rotatably in the cage 2 and provided with radial means mounted on a support shaft 3 and constituting at least a helical formation 4 extending along said shaft, said shaft and said cage 2 destemming 3 being installed in a box or enclosure a similar long a means for supplying materials to stalk and means for removing the two components separated by treatment (means not shown).

According to the machine, the or each helical formation 4 has an area of five longitudinal free edge formed by a continuous strip of flexible material 6 and/or flexible.

In accordance with a preferred embodiment of the machine, suggested by the accompanying figures, the or each helical formation 4 includes a rigid support 7 fixed with a longitudinal extension of the support shaft 3 by wrapping around of the latter and carrying along it's free edge of the strip 6 of flexible material and/or flexible, constituting the threshing unit and the wear part of the training in question,

In a first embodiment, shown in the accompanying drawings, the support portion 7 of each training or helically 4 consists of a succession of individual support elements 8, advantageously shaped spatula or pallet flat structure or flat, forming with the support shaft 3 a screw conveyor worm.

The spatula or pallet can be mutually contiguous or not, and are rigidly fixed on the support shaft 3 with the desired orientation and inclination according to the profile to obtain propeller. Their low apparent thickness in the direction of development of the propeller increases the free passage into the cage 2 and reduced resistance to progression to stalk material or waste. In a second embodiment, not shown in the accompanying drawings, the support portion 7 of each training or helically 4 consists of a continuous element or flat planar structure, such as a sheet metal strip, in accordance to achieve with the support shaft 3 a screw conveyor worm.

This second variant is actually a junction spatula 8 of the first variant in one piece. In accordance with a preferred embodiment of the machine, the or each helical formation has four days or nine cuts in its support part 7, to form a helix-coil at least partially hollow.

The size, shape and number of days or nine cuts are possibly adapted to stalk materials (waste current size, degree of agglomeration…), to participate in the separation function, while avoiding blockages.

It may also be provided 7 ongoing support portions or full, that is to say devoid of days or cuts.

As shown in the accompanying figures, the six band of flexible material and/or hose is secured rigidly to the support part 7, preferably detachably, for example by clamping, by telescoping or screw-nut assemblies 10. Thus, the or each strip 6 is an element of wear easily interchangeable without requiring any adjustment of its inclination. Each band will be held 6 laterally over a wide internal support part 7, which will also its orientation. The free edge of the flexible strip6 can be straight (same width throughout its length) or submit a profile cutting or non-linear (eg cuts in niches imitating the paddles of the prior art).

Preferably, the angle of inclination of the or each helical formation 4 with respect to the axis X of the support shaft 3, for singing radial of said shaft 3, is between 10 deg.and 25 deg., preferably from about 20 deg. As shown in the accompanying figures, the support shaft 3 is advantageously provided with at least two, preferably three, four helical formations extending mutually parallel along said bearing shaft 3, the latter being preferentially eccentrically mounted downwardly in the stand 2.

In accordance with an embodiment of the machine, the flexible band 6 and/or advantageously consists of a flexible material selected from the group consisting of rubber, natural or synthetic, high-density polyethylene, polyacetal and polyurethane. The strip 6 can for example have a width between 60 and 120mm and a thickness of 4mm and 15mm, depending on the constituent material and the stiffness or flexibility desired (eg 10mm rubber). The preferred fixing is effected by screws mounted at regular intervals along the free edge of the propeller 4 concerned. Each strip 6 may optionally also include reinforcement if necessary, possibly at its part or its attachment points.

In order to evolve continuously the cage 2 and fold the material to stalk in helical passages between 4 formations, picking off the shaft 3 is provided at its proximal end by means of for stemming material feed, one or more blade 11 hemming shaped shovels, each of which abuts on a helical formation 4. With the machine it is possible to provide a stemmer with a mixer with 3 compared to known stemmers described in the introduction to the following advantages:

1. Economic gain in manufacturing (especially when the support part 7 is in one piece);
2. Greater flexibility and less typing handling of the crop: the part in contact with the grape is more flexible and therefore less risk of damaging the berries and stems;
3. Larger striking surface, which increases the capacity and effectiveness of stalking;
4. Ability to pass without blocking foreign bodies, avoiding jamming and damage to the drummer or cage;
5. The flexible strip protects the rest of the batter: in case of damage it can be changed easily.

Of course, the machine is not limited to the embodiment described and shown in the accompanying drawings. Modifications remain possible, particularly in terms of the constitution of the various elements or by substitution of technical equivalents, without thereby departing from the scope of protection of the machine.

References

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2. FR 2963209 A1 02.02.12