

Machinery for de- stemming and selecting grapes and small fruits by ripening class



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PATENT STATUS: Filed

PRIORITY NUMBER: 102020000006892

PUBLICATION: -

PUBLISHED AS: ITA

Invention



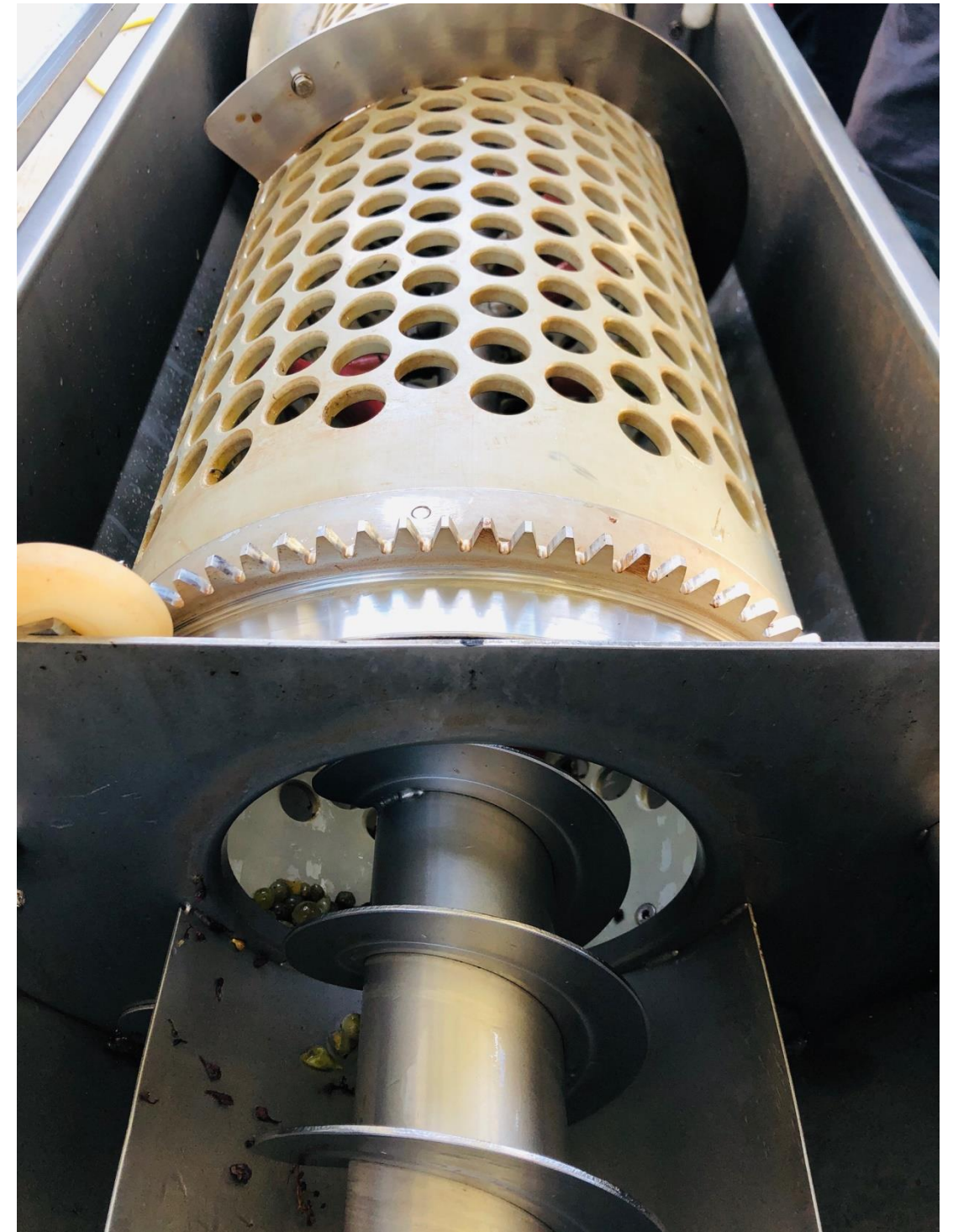
The present invention relates to an apparatus to be used for the production of wine immediately after harvesting the bunches, which consists in separating the berries from the stalk and at the same time dividing the berries into different ripening classes. The patented invention seeks to solve the problem of the inhomogeneity of the grapes entering the winemaking process even within the same bunch.

The idea of this invention is to propose a system that divides the grapes entering the cellar into two or more parts, separating them by degree of ripeness using different energy intensities that allow the grapes to be detached from the stalk with different degrees of ripeness. This fractionation is very important to obtain different musts and therefore different wines from the same batch of grapes.

The invention involves the use of an apparatus which, by applying increasing mechanical energy to bunches of grapes, is able to detach the grapes from them, and to collect them in different fractions following the order of detachment. The detachment force of the berries decreases during ripening.

The system can be also applied to the selection of small fruits.

Drawings
& pictures



Industrial applications



The patented technology is of interest to the wine sector, but also in other sectors where small fruits are harvested by hand. The system is designed for all those production companies that choose to harvest grapes or fruit by hand and cannot afford the expense of a sorter. The system is the evolution of a machine already existing in the oenological process, capable of achieving possible advantages: fractions of grapes with different ripeness and therefore different musts; produce different wines to be managed with blends later; a system of selection of the grapes punctual on the bunch; a lower cost than the methods available on the market.

Possible developments



Currently the patent idea has been tested on a horizontal axis destemmer machine with specially modified traditional tumbler.

In reality, using the same principle, of the relationship between the degree of ripeness and ease of detachment of the berries, it could be applied to other machines such as grape harvesters or less common destemmers (e.g. Dream by CMA) which use other methods to detach the grapes. berries.

A possible development of the system we have tested could include a process control that, by measuring the collected fractions by weight or sugar content, can act in feedback to adequately regulate the intensity of the forces to be applied to obtain the various fractions.

This system, by adapting the intensity of the forces to the various situations, would overcome the variability normally present between the different cultivars cultivated and between the different degrees of ripeness of the harvested grapes.

The results are not consolidated to date (with variable behaviors in the tests carried out) so a preliminary test path and subsequent development with the company concerned would be necessary.

The TRL of the invention is 3/4 and the patent is available under an exclusive and non-exclusive license for the entire residual duration of the IPR.

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