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(54) Drainage channels for a pneumatic press, in particular for pressing fruit, grapes and their derivates

(57) The present invention relates to the drainage channels of a pneumatic press, as utilized in particular for pressing fruit, grapes and grape derivatives, which comprises a tubular membrane and a rotating drum.

Associated with the internal surface of the rotating drum are drainage channels of diverse shape and size,

of which the arrangement on the internal surface of the drum can be semi-circumferential, circumferential, or single or multistart spiral.

The press thus obtained is a totally enclosed vessel in which the product is forced by the tubular membrane against the drainage channels.



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Description

The present invention relates to the drainage channels of a pneumatic press as utilized in particular for pressing fruit, grapes and grape derivatives.

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Pneumatic presses in use today are composed typically of a tubular or semitubular membrane in non-toxic material, disposed coaxially with the axis of rotation of the drum or fixed to the internal semi-circumference of the drum, by which the product is forced against drainage channels disposed longitudinally in relation to the drum.

These conventional solutions, however, are not without drawbacks: drainage channels disposed longitudinally in relation to the drum do not allow of subjecting the treated product to any washing action during operation of the press, Whereas this becomes necessary in order to keep the drainage surface of the channels free of blockages.

For cleaning purposes, consequently, the channels must be dismantled from their housings and washed thoroughly every time the drainage surface becomes caked.

The main purpose of the present invention is therefore to overcome the drawbacks mentioned above by devising drainage channels which, thanks to their particular constructional shape as well as to their arrangement internally of the drum of the pneumatic press, will allow a complete and efficient self-cleaning action.

The self-cleaning action is made possible by virtue of the fact that the liquid internally of the rotating drum is invested with movement in relation to the drum itself; this allows of subjecting the drainage channels to a thorough and continuous washing action, and thus ensuring it is impossible during operation of the press for waste material to obstruct or be retained by the surface of the channels.

This expedient allows the drainage channels to be kept in a state of perfect efficiency, inasmuch as their capacity to evacuate material remains unaffected over time, without any need for maintenance or removal.

Not least among the objects of the invention is to provide a solution which, in addition to the features mentioned above, is also reliable and safe to use, and can be realized at a reasonable cost.

The purpose and the objects stated above, and others that will become more apparent in due course, are all realized in the construction of drainage channels for a pneumatic press, in particular for pressing fruit, grapes and grape derivatives, comprising a tubular membrane positioned internally of a rotating drum.

The rotating drum is characterized in that it affords drainage channels fixed to its internal surface, of diversifiable shape and dimensions, which may extend through a semi-circumferential or circumferential or spiral path within the selfsame drum.

Further features and advantages of the invention will become increasingly evident from the description of

a particular embodiment that follows, illustrated by way of example in the accompanying drawings, in which:

fig.1 illustrates the structure in a view taken through a median longitudinal cutting plane;

fig.2 is a schematic view taken on a cutting plane transverse to the drum of the structure illustrated in fig.1;

figs.3, 5, 7, 9, 11 illustrate further solutions for the arrangement of the drainage channels internally of the drum, in views similar to that of fig.1; figs.4, 6, 8, 10, 12 are views similar to that of fig.2, showing the details illustrated in figs. 3, 5, 7, 9, 11.

With reference to the aforementioned drawings, the structure illustrated is that of a pneumatic press in particular for pressing fruit, grapes and grape derivatives, which will be seen to comprise a tubular membrane 1 of non-toxic material, and a drum 2.

Fig.1 illustrates the tubular membrane 1 of non-toxic material and the rotating drum 2, and, secured to the internal surface of the drum, drainage channels 3 of polygonal shape which extend semi-circumferentially inside the drum 2.

Figs.3 and 5 illustrate solutions, each constituting an alternative to fig.1, in which the polygonal drainage channels 3 are fixed similarly to the rotating drum 2 but extend circumferentially (see fig.4), or spirally from one or more starts, internally of the rotating drum 2.

In figs.7, 9 and 11, the polygonal drainage channels 3, again fixed to the rotating drum 2, are associated with spaces of polygonal section afforded by the internal surface of the drum, the spaces and drainage channels 3 together assuming configurations that may be: semi-circumferential, as in fig 8, circumferential as in fig.10, single or multistart spiral as in fig.12.

The invention will be seen to be structurally simple; naturally, the materials and dimensions of the single components can be selected as most expedient for the specific requirements.

Claims

- Drainage channels in a pneumatic press, particularly for pressing fruit, grapes and grape derivatives, comprising a tubular membrane and a rotating drum, and associated with the internal surface of the rotating drum, drainage channels diversifiable in shape and size of which the arrangement on the internal surface of the drum can be semi-circumferential, circumferential or multistart spiral.
 - 2. A structure as in claim 1, characterized in that it comprises drainage channels of polygonal shape fixed to the internal surface of the drum and extending through a semi--circumferential path internally of the drum.

- 3. A structure as in claim 1, characterized in that it comprises drainage channels of polygonal shape fixed to the internal surface of the drum and extending through a circumferential path internally of the drum.
- 4. A structure as in claim 1, characterized in that it comprises drainage channels of polygonal shape fixed to the internal surface of the drum and extending through a spiral path from single or multiple 10 starts internally of the drum.
- A structure as in claim 1, characterized in that the internal surface of the rotating drum affords semi-circumferentially extending spaces of polygonal ¹⁵ section with which the drainage channels are associated in such a way as to extend in identical manner.
- 6. A structure as in claims 1 and 5, characterized in ²⁰ that the internal surface of the rotating drum affords circumferentially extending spaces of polygonal section with which the drainage channels are associated in such a way as to extend in extend in identical manner.
- A structure as in claims 1 to 5, characterized in that the internal surface of the rotating drum affords spaces of polygonal section extending spirally from single or multiple starts, with which the drainage 30 channels are associated in such a way as to extend in identical manner.
- 8. Drainage channels of a pneumatic press, particularly for pressing fruit, grapes and grape derivatives, 35 comprising a tubular membrane of non-toxic material, a rotating drum, and associated with the internal surface of the rotating drum, drainage channels diversifiable in shape and dimensions, of which the arrangement on the internal surface of the rotating 40 drum can be as in one or more of the preceding claims, characterized as described and as illustrated in the accompanying sheets of drawings.

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