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UNITED STATES PATENT OFFICE

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GRAPE STEMMER

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4 Claims. (Cl. 146—55)

This invention relates to a machine for removing the stems of grapes, and while the invention may be employed for removing the stems of grapes of substantially spherical form, it is particularly applicable for "stemming" grapes of elongated or oval form.

This invention is intended primarily for use on seedless grapes, such as the Thompson Seedless or the Sultana variety. These grapes have a peculiarity of growth which differentiates them from other varieties. The individual berries are attached to the main stems of the bunch by a short segment of stem, known technically as the "cap-stem." When the berries are pulled away from the stems of such varieties as Muscats, or other seeded varieties, the natural tendency is for the berry to pull clean away from the stem, a small portion of the flesh coming away with the stem. In contradistinction, the tendency of seedless grapes is for the cap-stem to pull away with the berry, thus leaving the individual berries with this short cap-stem attached to the berry. This characteristic of the seedless grape necessitates a second operation to remove the cap-stems from the berries after they have been separated from the main stem. The purpose of the present invention is two-fold; namely, to provide simple means for removing the berries from the main stem and, secondly, and more importantly, to provide means for removing the cap-stems from the individual berries. This second function is by far the more costly part of stemming seedless grapes, and the machine has great utility even when used for this second operation alone.

The general object of this invention is to provide a machine of simple construction having means for receiving and supporting the grapes and capable of operating to effect the removal of the stems, and particularly the cap-stems.

A further object of the invention is to provide a machine of this kind, which can operate upon large quantities of grapes when placed upon the same, and which does not necessitate the use of means for feeding the grapes to the machine in any particular position, or in any regular manner.

Further objects of the invention will appear hereinafter.

The invention consists in the novel parts and combination of parts to be described hereinafter, all of which contribute to produce an efficient grape stemmer.

A preferred embodiment of the invention is described in the following specification, while the broad scope of the invention is pointed out in the appended claims.

In the drawing:

Figure 1 is a side elevation of a machine embodying my invention and showing the table of the machine set up for operation.

Fig. 2 is a plan of the machine illustrated in Fig. 1, but representing the table of the machine in a horizontal position and not inclined as in Fig. 1.

Fig. 3 is a vertical section on the line 3—3 of Fig. 1, upon an enlarged scale taken at one edge of the table and illustrating details of the construction and mode of operation of the machine. This view illustrates the manner in which the rollers operate to remove the stems of the grapes.

Fig. 4 is a plan showing a short length of two companion rollers, and further illustrating the manner in which they cooperate to support the grapes and effect the removal of the stems from the same.

In practicing my invention I provide one or more pairs of companion rollers mounted for rotation alongside of each other, with the peripheries of the rollers in engagement; these rollers are rotated continuously so that the peripheries of the rollers move downwardly at the point or line of contact between the same. Each pair of companion rollers forms a channel for supporting the grapes resting directly upon the rollers. The machine is provided with means cooperating with the rotating rollers to effect the introduction of the stems of the grapes between the adjacent faces of the companion rollers so that the stems will be removed by the rollers. When operating upon elongated grapes, the grapes tend to assume a position in which the longitudinal axes of the grapes extend longitudinally in the channels of the companion rollers. In order to effect the introduction of the stems into the crack or space between the companion rollers, I prefer to reciprocate the rollers longitudinally. By doing this the grapes are caused to rock in a vertical plane passing through the axes of the grapes and through the line of tangency of the companion rollers. In this way the ends of the grapes alternately become depressed, and in this way the stems sooner or later become caught between the rollers and are removed.

In the preferred embodiment of the invention, I provide a table composed of pairs of companion rollers tangent to each other and rotating in a direction such that the peripheries of each pair of rollers move downwardly at their points of contact. In the operation of the table the com-

a position in which the axes of the grapes extend longitudinally with the channel, and to cause the grapes to rock in a longitudinal plane to project the stems of the grapes downwardly between the contacting peripheries of the rollers.

3. In a grape stemmer for removing the stems of grapes, the combination of a main frame, a frame supported on the main frame for reciprocation in a plane inclined with respect to a horizontal plane, a table mounted on the inclined frame comprising a plurality of adjacent inclined rollers extending longitudinally with the direction in which the inclined frame reciprocates, said rollers comprising pairs of companion rollers with means for revolving the same in opposite directions so that the peripheries of the rollers of said pairs move downwardly at the line of contact of the rollers, said pairs of rollers forming channels for supporting the grapes resting directly thereupon; and means for reciprocating the inclined frame in a direction substantially parallel with the longitudinal axes of the rollers.

4. In a grape stemmer, the combination of a pair of rollers mounted for rotation alongside of each other with the peripheries of the rollers substantially in engagement with each other, means for rotating the rollers so that the peripheries of the rollers move downwardly at the line of contact of the rollers, said rollers forming a channel for supporting the grapes resting directly thereupon, so that they will remove the stems of the grapes without pulling the grapes between the rollers, and means for reciprocating the rollers in a direction substantially parallel with the axes of the rollers to rock the grapes resting on the rollers to project the stems down into the space between the rollers.

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CONDUIT

Filed March 26. 1930

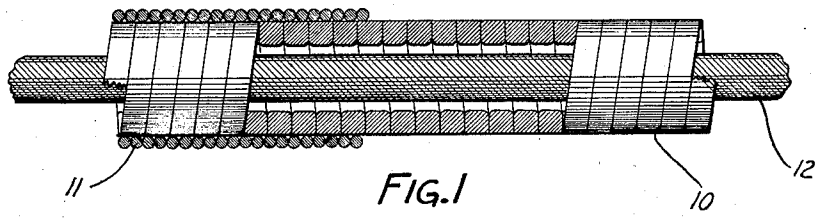


FIG. 1

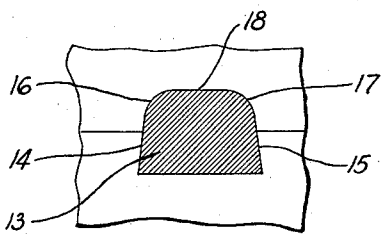


FIG. 2

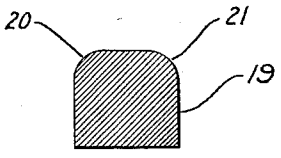


FIG. 3

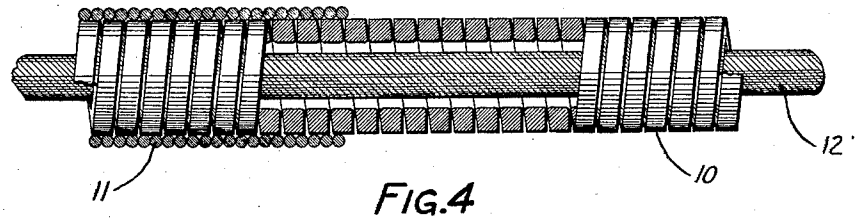


FIG. 4

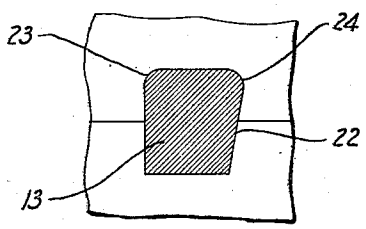


FIG. 5

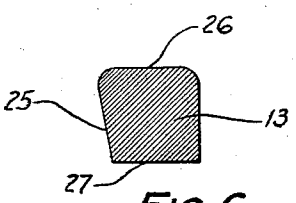


FIG. 6

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