July 5, 1932. T. GILL 1,866,027

ASPARAGUS TRIMMER

Filed April 14, 1931 3 Sheets-Sheet 1

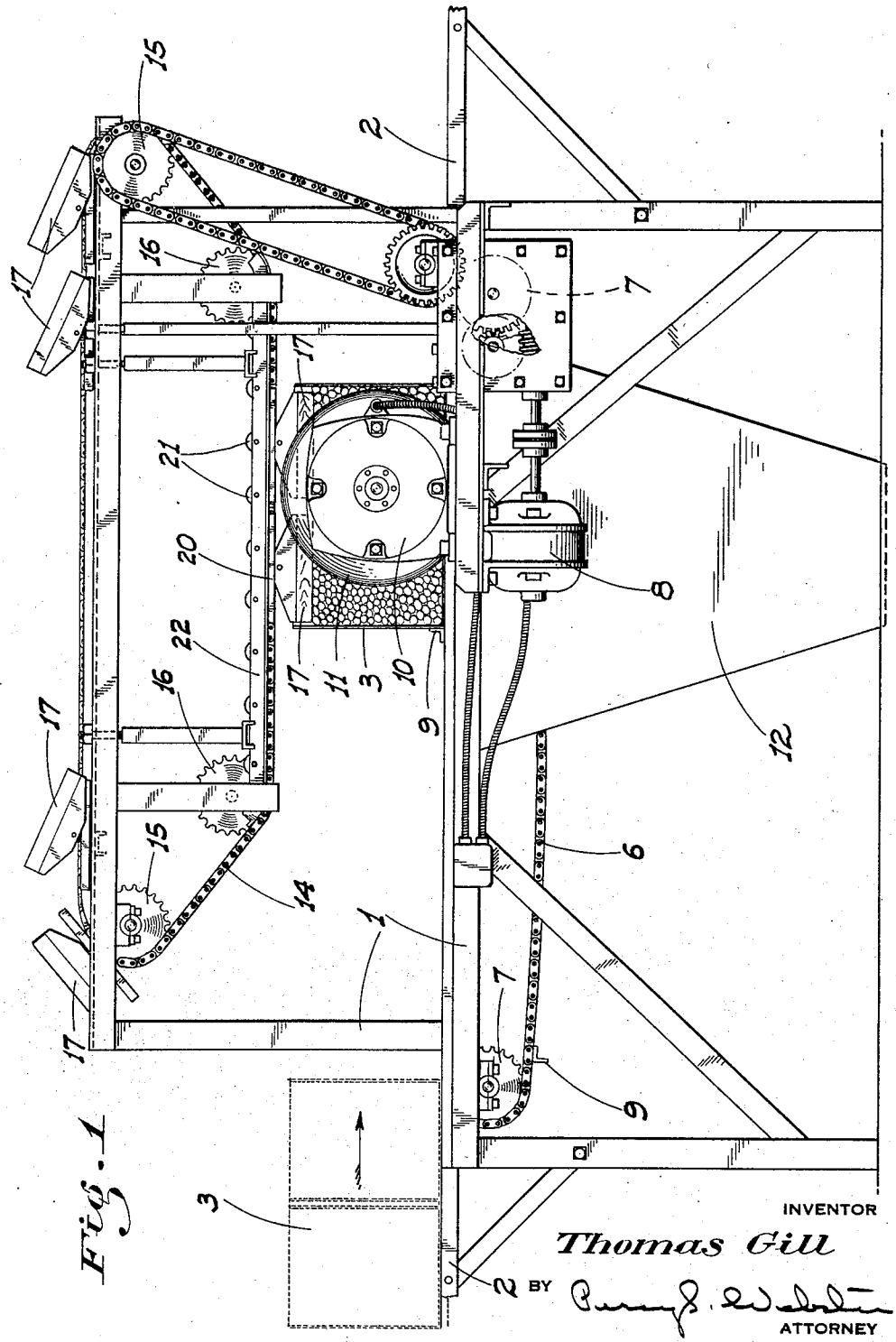


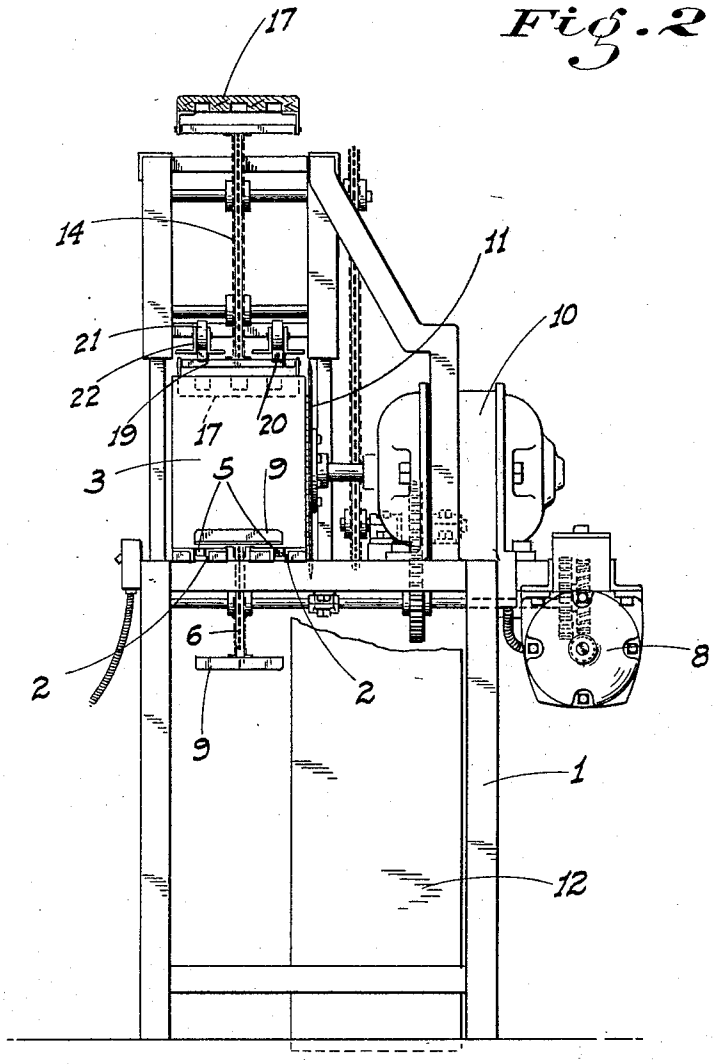
Fig. 1

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Fig. 2



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Fig. 3

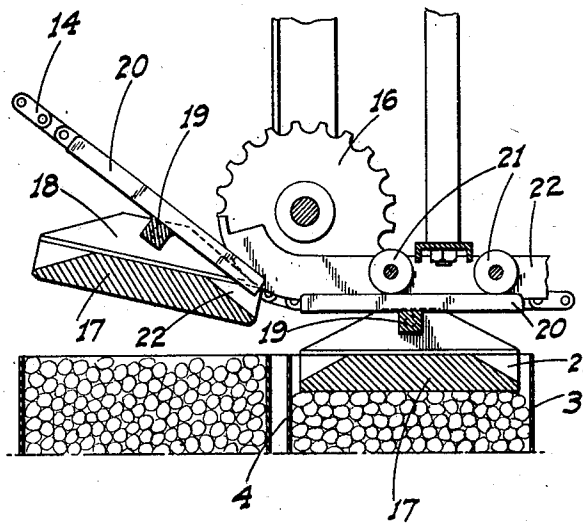


Fig. 4

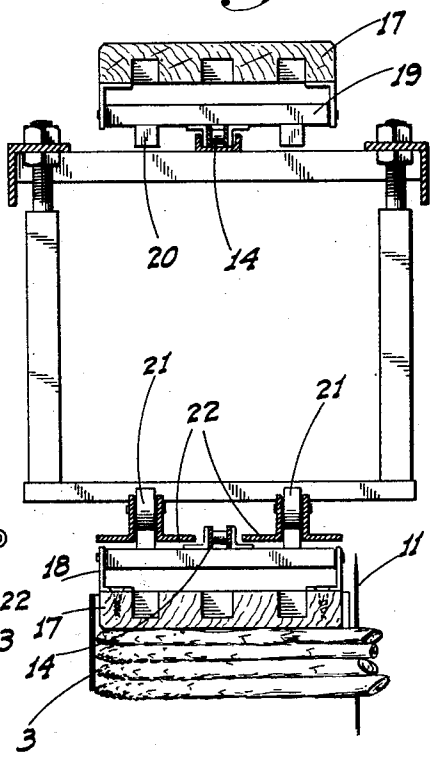


Fig. 5

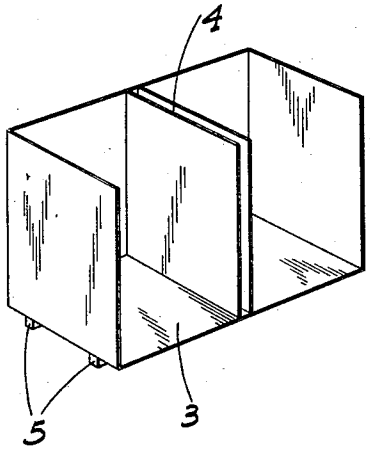
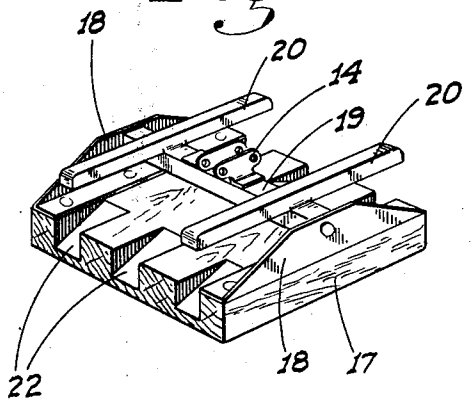


Fig. 6



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Patented July 5, 1932 1,866,027

UNITED STATES PATENT OFFICE

THOMAS GILL, OF JERSEY, CALIFORNIA

ASPARAGUS TRIMMER

Application filed April 14, 1931. Serial No. 529,923.

This invention relates to machines for trimming the butts from asparagus stalks as cut in the field, so that the stalks when shipped will all be the same length; and particularly represents improvements over my Patent No. 1,804,928.

The principal object of the present invention is to provide a machine for the purpose which is entirely automatic in its operation from the time the asparagus containers are placed on the machine until the cutting operations are completed. In other words, I do away with the manual clamping of the asparagus while it is being cut, and the manual manipulation of the cutting element along the container, as was necessary in connection with the operation of the previous device. Trimming operations are therefore speeded up and simplified.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Fig. 1 is a side elevation of the complete machine as in operation.

Fig. 2 is a front end view of the machine.

Fig. 3 is a fragmentary longitudinal section showing the contacting of the presser pads with the asparagus in a container.

Fig. 4 is an enlarged section of the presser structure.

Fig. 5 is a perspective view of the special form of asparagus container used in connection with the machine.

Fig. 6 is a perspective view of one of the presser pads.

Refering now more particularly to the characters of reference on the drawings, 1 denotes the frame of the machine which supports transversely spaced grooved rail units 2 which extend from end to end of the frame and somewhat beyond the same. The rails slidably support the container 3. This container is open on one side and the top and is provided with a vertical partition 4 centrally between its ends so that each container has two compartments of equal size. Longitudinally extending cleats 5 on the bottom of the container engage the grooves of the rails so as to guide the container during its movement along the rails.

Projecting between the rail units and on the same level is the upper run of an endless chain 6. This chain is mounted on sprocket wheels 7 disposed adjacent the ends of the frame 1, one sprocket being driven at a reduced speed from an electric motor 8 which is suitably mounted on the frame 1 to one side of the rails. Transversely extending cleats 9 project outwardly from the chain at definitely spaced intervals.

Mounted on the frame 1 between its ends and above the rails is another electric motor 10. This motor is directly connected to a circular cutter 11 which is positioned so as to lie close to the open side of and parallel to the container when the latter is supported on the rails. In operation the container is loaded in the field so that the butts of the stalks project from the open side. The container is then placed on the front end of the rails and is shoved along by hand until its rear end is beyond the forward end of the upper run of the chain. Then with the movement of the chain one of the cleats 9 engages the back end of the container and pushes the same forward and past the cutter, until the container clears the cutter and is disengaged from the cleat by the turning of the chain down about the rear sprocket. With this movement of the container, the projecting butt ends of the stalks are cut off by the rapidly revolving cutter and are deposited in a waste hopper 12 mounted below the rails.

To hold the asparagus stalks firmly clamped against movement while being cut, I provide the following structure: Disposed above the container in transverse central alinement therewith is another endless chain 14. This chain is mounted on end sprocket wheels 15, one of which is connected in driving relation with the driving sprocket of the chain 6 so as to travel at the same speed.

Besides the end sprocket 15, additional idler sprockets 16 engage the lower run of the chain 14. These sprockets 16 are dis-

posed below the level of the sprocket 15 and are closer together, so that the lower run of said chain extends from the sprocket 16 to the adjacent sprocket 15 at an upward acute angle to a horizontal plane.

Mounted in connection with and projecting outward from the chain 14 are the presser pad units. Each unit consists of two separate pads 17, the length and width of which are about the same as the length and width of one of the compartments of the container, while the pads of a unit are spaced apart sufficiently so that they will fit in the two compartments and avoid the central partition. Each pad is provided at the sides with ears 18 which form the supporters for a cross bar 19 swivelly engaging the same. One link on the chain 14 is rigidly secured to the cross bar centrally between its ends as shown in Fig. 6. Towards its ends longitudinally extending rails 20 are rigidly secured to the cross bar and are about the same length as the pad. These rails, when the corresponding portion of the chain is disposed in the horizontal portion of the lower run, are engaged by longitudinal spaced rollers 21, mounted between horizontal supporters 22 suitably carried by the frame 1.

The lower run of the chain 14 is positioned at such a height from the rails 2 that the presser pads will depend into the container a short distance, as shown in Fig. 3. The pads are notched at their ends as at 22 so as to avoid the rails 20 and the chain 14 so that said pads may set nearly horizontally even when the chain and rails are disposed on the slope between the sprockets 16 and 15. In this manner, with the advancing movement of the container and chain 14 at the same speed, the pads will project into the container compartments successively and with no interference. The pads are placed on the chain 14 in such coordinate relation to the cleats 9 on the chain 6 that the container will be in the proper location to receive the pads as the latter come down and pass about the forward sprocket 16, as indicated in Fig. 3. The forward sprocket 16 is set relative to the cutting disc so that the pads will be properly engaged with the container and with the asparagus therein before the cutting action starts; and the rear sprocket 16 is positioned so that the pads will not leave the container until the cutting action has been completed. The container however is still engaged by its cleat 9 for some little time after the pads have left the container, or until the container has been pushed on to the rear portion of the rails 2 so that it may be then taken off by hand without possible interference with any of the moving parts of the machine.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

1. An asparagus trimming machine for use in connection with an asparagus holding container from one side of which the butt ends of the asparagus stalks initially project, said machine including horizontal supporting rails for the container, power means for moving the container along the rails, and a driven cutting element extending vertically of the container to one side of but adjacent the plane of the open side of the container and disposed intermediate the ends of the rails.

2. A structure as in claim 1 in which the container is provided with cleats to engage the rails so as to guide the container during its movement along the rails.

3. An asparagus trimming machine for use in connection with an asparagus holding container from one side of which the butt ends of the asparagus stalks initially project, said machine including a horizontal support for the container, a driven chain having a run extending lengthwise of the support, cleats on the chain at intervals to engage the container and advance the same along the support, another endless chain above the support and the plane of the container, pads supported by and projecting outwardly from the second named chain to enter the container from the top and press down the asparagus therein, means to drive both chains at the same speed, the pads and cleats being positioned so that the pads on the lower run of the chain are always disposed in longitudinal alinement with successively advanced containers, wheels engaging the pad-chain so that its lower run comprises a central horizontal portion and upwardly sloping end portions; and a cutting element mounted on the machine in position to cut the butts from the asparagus in a container as the latter is moving in the zone of the horizontal portion of the lower run of the pad chain.

4. A structure as in claim 3 in which the pads are swivelly connected to their chain in a manner to enable them to remain substantially horizontal as the adjacent portion of the supporting chain is disposed on the slope.

5. A structure as in claim 3 in which the pads are swivelly connected to their chain in a manner to enable them to remain substantially horizontal as the adjacent portion of the supporting chain is disposed on the slope, and means holding the pads against swivel

movement while the pads are engaged with the container.

6. An asparagus trimming machine for use in connection with an asparagus holding container from one side of which the butt ends of the asparagus stalks initially project, said machine including means to support the container, means to advance the container along the support, means for cutting off the projecting butts of the stalks while the container is thus advancing, an endless driven element extending above and lengthwise of the support, said element having a lower run consisting of a central horizontal portion and upwardly sloping end portions, presser pads swivelly mounted on and depending from the lower end of the element and spaced to enter the successive containers being advanced; the cutting element being disposed in a longitudinal plane intermediate the ends of the horizontal portion of said lower element.

7. An asparagus trimming machine for use in connection with an asparagus holding container from one side of which the butt ends of the asparagus stalks initially project, said machine including means to support the container, means to advance the container along the support, means for cutting off the projecting butts of the stalks while the container is thus advancing, an endless driven element extending above and lengthwise of the support, said element having a lower run consisting of a central horizontal portion and upwardly sloping end portions, presser pads swivelly mounted on and depending from the lower end of the element and spaced to enter the successive containers being advanced; and means acting on the pads to hold them against swivel movement while they are in the containers.

In testimony whereof I affix my signature.

THOMAS GILL.