Sept. 21, 1937. L. X. GARFUNKEL 2,093,755

SLICING MACHINE

Filed Nov. 15, 1934 2 Sheets-Sheet 1

Fig. 1.

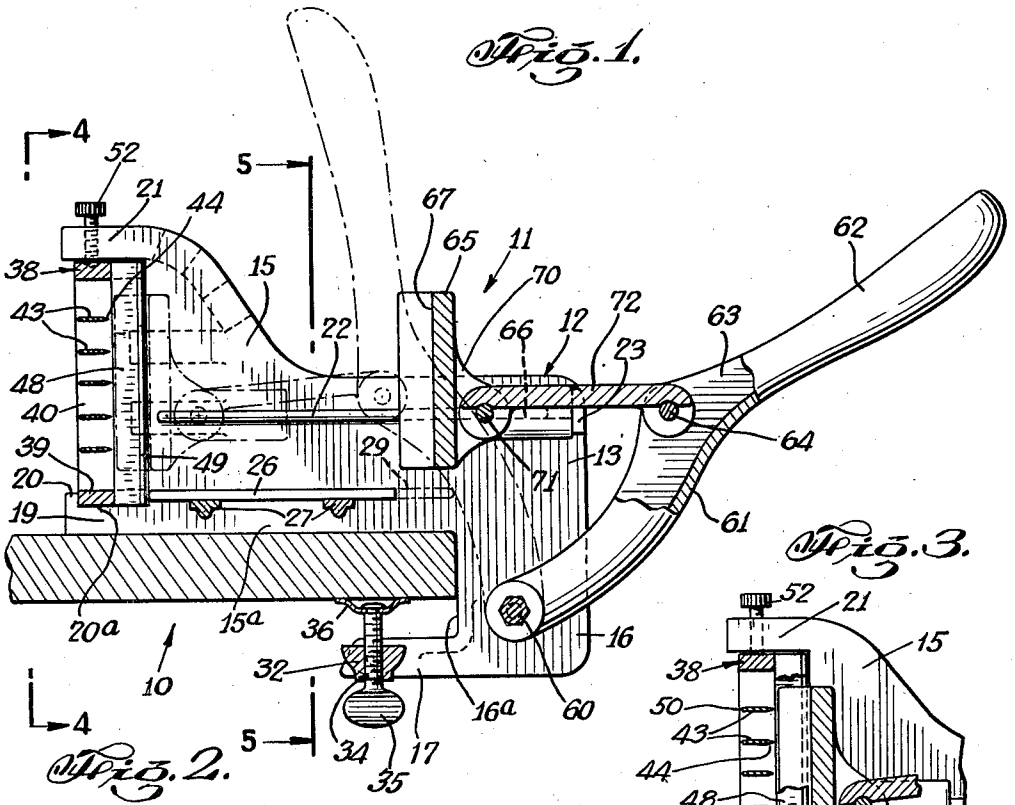


Fig. 2.

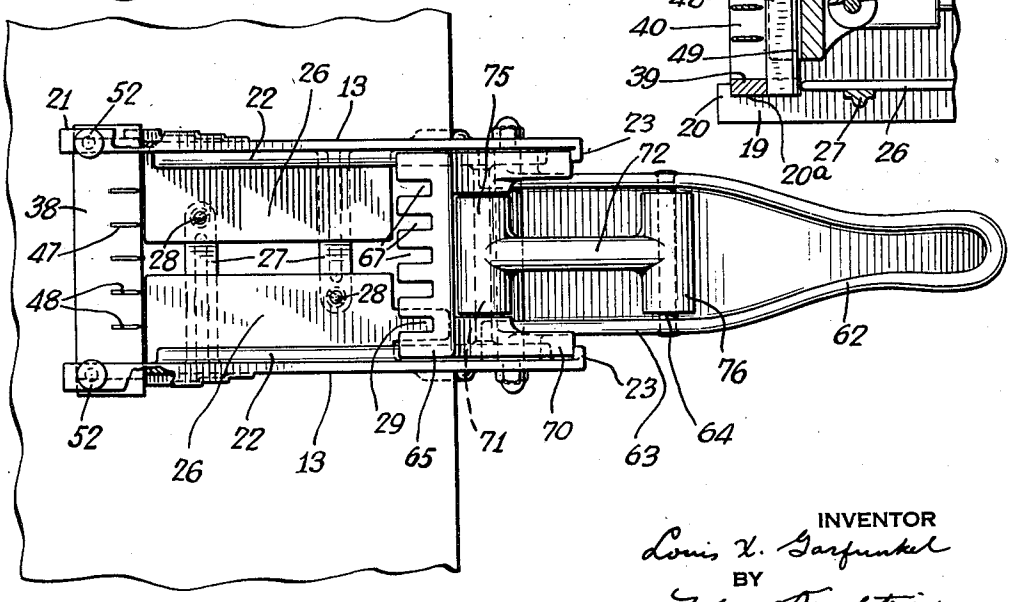


Fig. 3.

INVENTOR
Louis X. Garfunkel
BY
Wm. Feinstein
ATTORNEY

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Filed Nov. 15, 1934 2 Sheets-Sheet 2

Fig. 4.

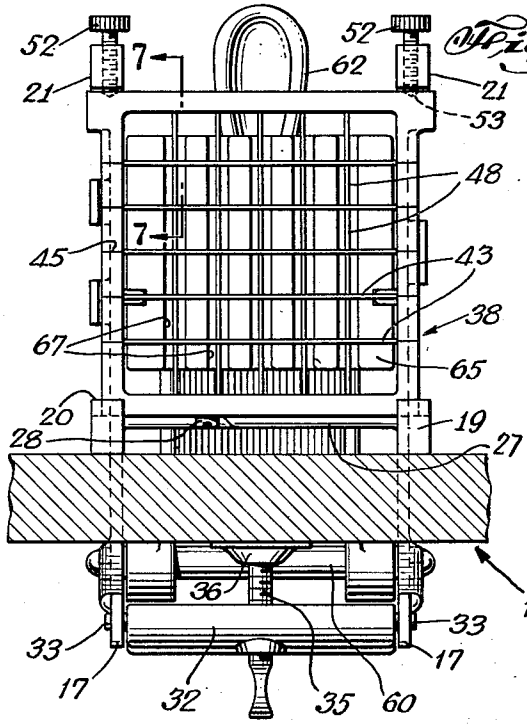


Fig. 5.

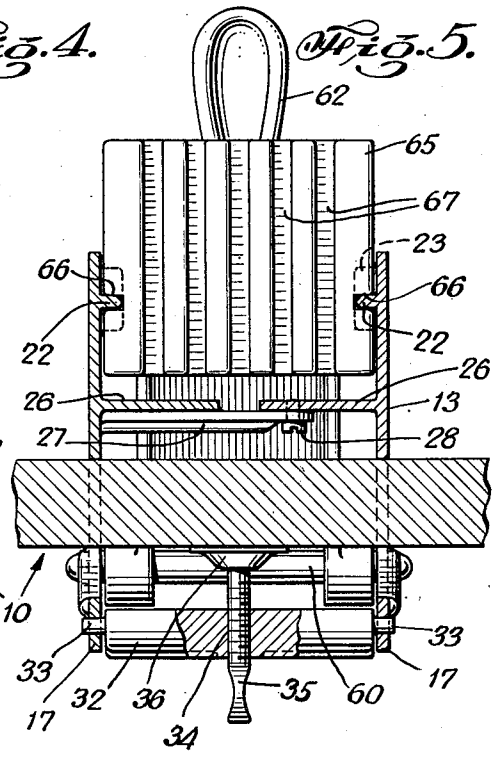


Fig. 6.

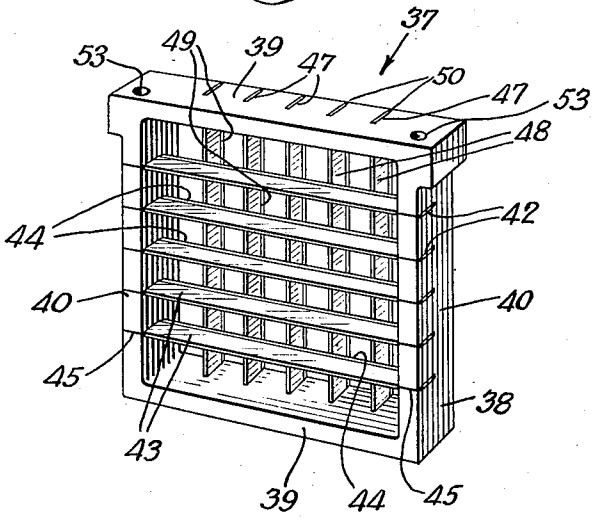
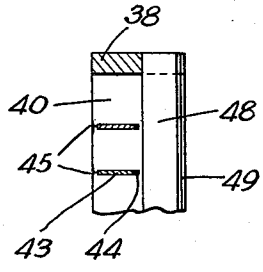


Fig. 7.



Louis X. Garfunkel INVENTOR

BY

Wilson Thornton ATTORNEY

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UNITED STATES PATENT OFFICE

2,093,755

SLICING MACHINE

Louis X. Garfunkel, New York, N. Y.

Application November 15, 1934, Serial No. 753,114

6 Claims. (Cl. 146—169)

This invention relates to slicing machines.

An object of this invention is to provide a highly improved slicer for vegetables, particularly potatoes, to produce slices for French frying, and the like purposes.

A further object of this invention is to provide a rugged, neat and compact slicer of the character described, which shall be comparatively inexpensive to manufacture, easy to mount, assemble and manipulate, and withal practical and efficient to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawings, in which is shown one of the various possible illustrative embodiments of this invention.

Fig. 1 is a side elevational, cross-sectional view of a device embodying the invention;

Fig. 2 is a top plan view of the structure shown in Fig. 1;

Fig. 3 is a partial view of the front end of the slicer with the pusher pressed forwardly;

Fig. 4 is a cross-sectional view taken on line 4—4 of Fig. 1;

Fig. 5 is a cross-sectional view taken on line 5—5 of Fig. 1;

Fig. 6 is a perspective view of the cutting unit; and

Fig. 7 is a cross-sectional view taken on line 7—7 of Fig. 4.

Referring now in detail to the drawings, 10 designates a counter, table or support on which is mounted a slicing machine 11 embodying the invention. The machine 11 comprises a frame 12 having a pair of similar, symmetrically disposed, parallel side walls 13. The side walls 13 have main portions 15 formed with horizontal lower edges 15a contacting the upper surface of the support 10.

Extending downwardly from the portions 15, at the rear, are portions 16 having front vertical edges 16a contacting the front end of the support 10. Extending forwardly from the lower end of the portion 16 are forwardly projecting portions 17 disposed below said support 10.

The portions 15 of the side walls 13 have at the front ends thereof and at the bottom edges thereof forwardly projecting portions 19 having upwardly extending lugs 20, forming seats 20a. The portions 15 are also provided at the front ends thereof and at the top thereof, with forwardly projecting portions 21 parallel to the portions 19.

The side walls 13 are furthermore formed on the inner surfaces thereof with aligned, horizontal guides or rails 22 and vertical projections 23 at the rear ends of the guides, forming stops for the purpose hereinafter appearing.

There extend inwardly from the inner surface of the side walls 13 horizontal aligned walls 26 parallel to and disposed below the guides 22. Extending from each wall 26 is a projecting ledge 27 contacting the underside of the other wall 26 and secured thereto by screws 28 for attaching the walls 13 together in spaced parallel, aligned relation. One of the walls 26 may be provided with a rearwardly extending projection 29.

For attaching the device 12 to the support, the portions 17 are formed with aligned bearing openings rotatably supporting a member 32 having outwardly projecting aligned pin portions 33 received in said opening. The member 32 is formed with a through screw threaded opening 34, for a wing screw 35 carrying a contact member 36 at the upper end thereof, adapted to engage the underside of the support. It will be noted that the member 32 may be pivoted about the pins 33 to fit supports having undersurfaces of various angles. Thus, should the undersurface of the support 10 be inclined, the member 32 may be rotated to bring the screw 35 to a perpendicular position with respect to said undersurface.

Mounted on the frame 12 is a slicing or cutting unit 37 comprising a frame 38 having top and bottom walls 39 and side walls 40. The rear edges of the side walls 40 are formed with slots 42 to receive the ends of parallel knives 43 having cutting edges 44 at the front. After the knives 43 have been fitted into the frame 38 the material adjacent the rear ends of the slots 42 may be upset or peened, as at 45, to prevent the knives 43 from being withdrawn or accidentally loosening. The front edges of the top and bottom walls 39 are formed with vertical through slots 47 receiving the top and bottom ends of parallel vertical knives 48 having cutting edges 49 at the front. The material at the front ends of the slots 47 is likewise upset, as at 50, to hold the knives firmly within the frame 38.

It will be noted that the horizontal knives 43 are disposed in a plane rearwardly and parallel to the plane of the vertical knives 48. The cutting unit 37 is mounted between the portions 19 and 21 of the side walls 13 and fit within the

seats 20a, contacting the lugs 20. Vertical screws 52 screwed through the portions 21 are adapted to engage within countersunk openings 53 at the top of the frame 38 for firmly retaining the cutting unit in position on the machine. The potato or other vegetable or object to be sliced is placed on the horizontal walls 26. It will be noted that the upper surface of the horizontal wall 26 is substantially flush with the upper surface of the bottom wall 39 of the frame 38.

Means is provided for pushing the object to be sliced through the cutter. To this end, there is fixed to the portions 16 of the side walls 13 a horizontal transverse pin 60. Pivoted to said pin 60 is an actuating arm 61 having a handle portion 62 at the upper end thereof. The arm 61 is formed with side walls 63 on which is fixed a transverse, horizontal pin 64. Slidably mounted between the side walls 13 is a pushing device or member 65 having horizontal grooves 66 on the sides thereof receiving the guides 22. The member 65 is formed on the front face thereof with a plurality of vertical grooves or slots 67, aligned with the vertical knives 48. Said member 65 is furthermore formed with rearwardly extending portions 70 carrying a fixed pin 71. A connecting link 72 formed with tubular portions 75 and 76 at the ends thereof receiving the pins 71 and 64, respectively, serves to interconnect the actuating arm 61 with the member 65.

Upon grasping the handle 62 and swinging the arm 61 forwardly, the member 65 will be pushed forwardly to press the object to be sliced through the vertical and horizontal knives. Upon pushing the arm forwardly, the vertical knives will be received within the grooves 67 and the object will be pressed through the knives to form slices of substantially square cross-section. It will be noted that no portion of the member 65 enters between the horizontal knives 43, the stop member 29 being contacted by the actuating arm 61 to limit forward movement of the member 65 to the position shown in Fig. 3 of the drawings. After the arm 61 has been moved forwardly to bring the member 65 to the position shown in Fig. 3 the vegetables may be easily pulled out through the front end of the machine, being completely cut through. Scraps may fall through the space between the horizontal walls 26.

It will be noted that the vertical knives 48 are pushed forwardly into contact with the bottom of the slots 47 when the machine is in operation. The horizontal knives 43, however, are pushed toward the ends of the slots during such operation.

It has been found that by merely upsetting the material at the ends of the slots 42 or peening the material over the rear edges of the knives, the knives will be held firmly within the frame.

The cutting unit 37 may be readily removed from the machine by merely loosening the screws 52 and moving the unit sidewise off the frame. The side walls 13 of the frame may be readily and rigidly attached together by means of the projecting lugs 27 being screwed to the horizontal walls 26 and further by means of the transverse pin 60.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

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

1. A slicing machine comprising a frame having a pair of parallel plates, said plates having aligned inwardly extending horizontal walls terminating short of each other to form an opening therebetween, said plates being formed on the inner surfaces thereof with aligned ribs disposed parallel to and above said inwardly extending walls, a pusher member received between said plates and having grooves on the opposite sides thereof receiving said ribs, said member being disposed perpendicular to said walls and having vertical grooves on the front face thereof, and a second frame mounted on said first frame adjacent the front end thereof, a plurality of vertical knives mounted on said second frame and adapted to be received within the grooves of said member, a plurality of horizontal knives mounted on said second frame and disposed forwardly of said vertical knives, means on said second frame for preventing withdrawal of said knives, and stop means for limiting forward movement of the pusher member to prevent said pusher member from contacting said horizontal knives.

2. A slicing machine comprising a frame having a pair of parallel plates, said plates having aligned inwardly extending horizontal walls terminating short of each other to form an opening therebetween, said plates being formed on the inner surfaces thereof with aligned ribs disposed parallel to and above said inwardly extending walls, a pusher member received between said plates and having grooves on the opposite sides thereof receiving said ribs, said member being disposed perpendicular to said walls and having vertical grooves on the front face thereof, and a second frame mounted on said first frame adjacent the front end thereof, a plurality of vertical knives mounted on said second frame and adapted to be received within the grooves of said member, a plurality of horizontal knives mounted on said second frame and disposed forwardly of said vertical knives, and stop means for limiting forward movement of the pusher member to prevent said pusher member from contacting said horizontal knives, each of said horizontal walls having a projecting ledge underlapping the other horizontal wall and being fixed thereto.

3. A slicing machine comprising a frame having a pair of parallel plates, said plates having aligned inwardly extending horizontal walls terminating short of each other to form an opening therebetween, said plates being formed on the inner surfaces thereof with aligned ribs disposed parallel to and above said inwardly extending walls, a pusher member received between said plates and having grooves on the opposite sides thereof receiving said ribs, said member being disposed perpendicular to said walls, and having vertical grooves on the front face thereof, and a second frame mounted on said first frame adjacent the front end thereof, a plurality of vertical knives mounted on said second frame and adapted to be received within the grooves of said member, a plurality of horizontal knives mounted on said second frame and disposed forwardly of said vertical knives, stop means for limiting forward movement of the pusher member to prevent said pusher member from contacting said horizontal knives, each of said horizontal walls having a projecting ledge underlapping the other

horizontal wall and being fixed thereto, and a pivoted clamp pivoted to said parallel plates.

4. A slicing machine of the character described adapted to be attached to a support, comprising a pair of parallel plates having aligned inwardly extending ribs, and having a portion thereof extending below said support, and a member projecting from each wall and fixed to the other wall, a handle disposed between said plates and pivoted thereto, a plurality of knives mounted on said machine, a pusher member disposed between said parallel plates and connected to said handle whereby said pusher member is adapted to push objects through said knives, means for limiting the forward movement of said member, a shaft having the ends thereof journalled in the said portion of the parallel plates extending below said support and clamping means mounted on said shaft for rotation therewith whereby said clamping means may take a tilted relationship to said support.

5. A slicing machine comprising a frame having a pair of parallel plates, said plates having aligned inwardly extending horizontal walls terminating short of each other to form an opening therebetween, said plates being formed on the inner surfaces thereof with aligned ribs disposed parallel to and above said inwardly extending walls, a pusher member received between said plates and having grooves on the opposite sides thereof receiving said ribs, said member being disposed perpendicular to said walls and having vertical grooves on the front face thereof, and a second frame mounted on said first frame adjacent the front end thereof, a plurality of vertical knives mounted on said second frame and adapted to be received within the grooves of said member, a plurality of horizontal knives mounted on said second frame and disposed forwardly of said vertical knives, and stop means for limiting forward movement of the pusher member to prevent said pusher member from contacting said horizontal knives.

6. A slicing machine comprising a frame having a pair of parallel plates, said plates having aligned inwardly extending horizontal walls terminating short of each other to form an opening therebetween, said plates being formed on the inner surfaces thereof with aligned ribs disposed parallel to and above said inwardly extending walls, a pusher member received between said plates and having grooves on the opposite sides thereof receiving said ribs, said member being disposed perpendicular to said walls and having vertical grooves on the front face thereof, and a second frame mounted on said first frame adjacent the front end thereof, a plurality of vertical knives mounted on said second frame and adapted to be received within the grooves of said member, a plurality of horizontal knives mounted on said second frame and disposed forwardly of said vertical knives, stop means for limiting forward movement of the pusher member to prevent said pusher member from contacting said horizontal knives, and means for maintaining said plates in spaced relationship.

LOUIS X. GARFUNKEL.