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H. THORNE

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PRESS

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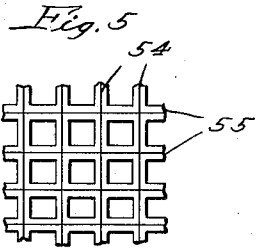
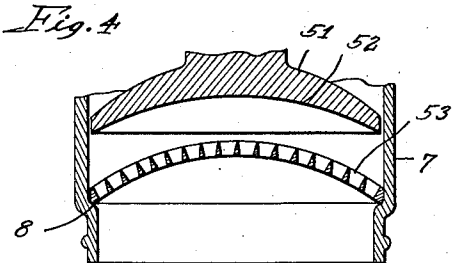
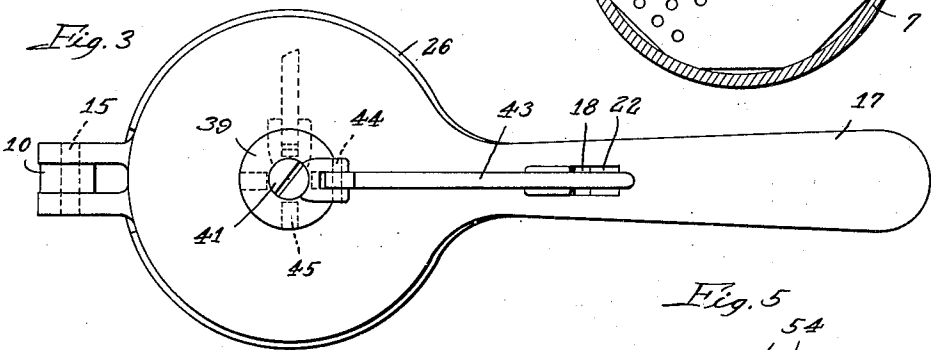
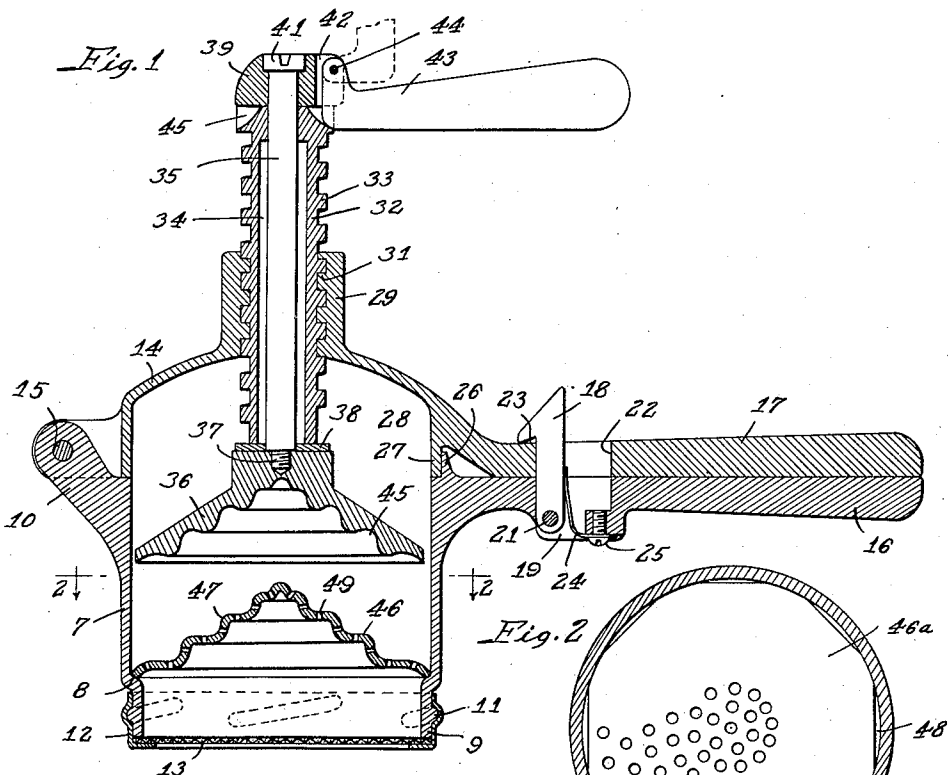


Fig. 5

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PRESS

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8 Claims. (Cl. 100—44)

This invention relates to a press and has particular reference to an article adapted to function as a food press and squeezer and as a colander for extruding material, such as articles of food.

5 An object of the invention is to provide a press of the type having a chamber and a presser foot therein, wherein the chamber has an open end for the selective reception of any of a plurality of grids shaped and formed to perform specifically different operations upon the material within the chamber.

Another object of the invention is the provision of a press having an open end chamber adapted to be closed by any of a plurality of grids and having indexing means for urging material through and against the grid.

I have also aimed to provide a press wherein the presser foot is carried on a screw for movement toward and away from the grid, and an indexing means serves to advance the foot.

Another object of the invention is to provide a press of the character described having means for holding the body of the press, and handle means thereabove adapted to be reciprocated to advance the presser foot.

A still further object of the invention is to provide a press having a chamber provided with an end open through substantially the entire cross-section of the chamber and having means for supporting any of a plurality of different grids across the end of the chamber, whereby the press may be caused to perform a number of specifically different operations.

Another object of the invention is to provide a press having a body and a cover hinged to the body, the body and cover having a chamber for the reception of the presser foot adapted to urge material against or through a grid positioned in the open end of the chamber, a screw for moving the presser foot, a handle for holding the body and a handle adapted to advance the screw through reciprocation of the handle.

I have also aimed to provide a press having a novel form of grid, and novel means for supporting the grid in its operative position.

Other objects and attendant advantages will become apparent to those skilled in the art from the following description and the accompanying drawing, in which—

Figure 1 is a vertical section through the press;
Fig. 2 is a section on the line 2—2 of Figure 1 showing a different form of grid;

Fig. 3 is a top view of the press;

Fig. 4 is a vertical section through the lower

end of the body and through a modified form of presser foot and grid, and

Fig. 5 is a fragmentary top view of the grid shown in Fig. 4.

The invention contemplates a press and colander of generally improved form having an improved type of grid and improved means for selectively supporting any of a number of different grids in the press adapted to carry out different types of operations. The invention also contemplates improved means for carrying the presser foot and for urging the same toward the grid, the press having a handle for holding the body of the press and a second handle in such relation to the first and associated with the presser foot in such a manner as to facilitate the advancement of the latter in its pressing function.

Directing attention first to Figure 1, the press includes a body portion designated generally by the numeral 7 which is preferably, though not necessarily, cylindrical in cross-section, the diameter of the same being reduced near its lower open end to provide a shoulder, such as shown at 8, for the reception of the grids presently to be described. The lower end 9 of the body portion may be cylindrical in shape and carry a plurality of ribs 11 for the purpose of receiving the cylindrical sides 12 of a screen 13, the screen being supported on the body through a bayonet connection. The body 7 carries an ear 10 at one side to which a cover portion 14 is pivotally attached through a hinge pin 15. A handle portion 16 is attached to the side of the body 7 opposite the ear 10 and cooperates with a handle portion 17 attached to the cover portion 14 to form a handle for the press. A latch pawl 18 is pivotally supported in an opening 19 of the handle portion 16 on a pin 21 and projects upward through an opening 22 in the handle portion 17 when the cover portion occupies its closed position, the pawl 18 being adapted to latch over the handle portion 17, as shown at 23, to secure the two handle portions together. A spring 24 is positioned in the opening 19 by means of a screw 25 to actuate the pawl 18. The top of the body 7 is provided with an annular flange 26 receiving the lower edge 27 of the top portion 14, which effectively prevents the escape of fluid along the junction between the cover and the body during the pressing operations. The central portions of the body 7 and the cover 14 form, when closed, a chamber designated generally by the numeral 28 within which the material under treatment is placed. A boss 29 is formed on the upper side of the cover portion 14 sub-

stantially on the vertical center line of the chamber 28 and is provided with internal threads, as shown at 31.

A screw, designated generally by the numeral 32, is carried in the boss 29 and has threads 33 complementary to the threads 31, whereby upon rotation of the screw 32 the screw will be moved in either direction. The screw 32 is provided with a longitudinal bore 34 which is preferably of greater diameter at its lower end than at its upper end for a purpose which will presently appear, and a rod 35 is positioned within the bore 34, the rod being of substantially the same diameter as the upper end of the bore 34 so as to have a reasonably close fit in the upper end of the screw. A presser foot designated generally by the numeral 36 is threaded onto the lower end of the rod 35, as shown at 37, a washer 38 being interposed between the presser foot and the lower end of the screw 32 so as to permit relative movement between the screw and the presser foot. The upper end of the rod 35 carries a bushing 39 which is held in position against the upper end of the screw 32 by the head 41 of the rod 35, the bushing being rotatable with respect to the screw and also with respect to the rod. The bushing 39 is slotted, as shown at 42, to receive one end of a bell crank lever 43 which is secured therein by means of a pin 44 for rotation between the solid line position shown in Figure 1 and the dotted line position shown therein. Index slots 45, in this case four in number, though not necessarily so limited, are formed in the upper end of the screw 32 and are of such length, width and depth as to receive the elbow of the bell crank lever 43 in the manner shown in Figure 1. Thus, with the handle 43 in the position shown in Figure 1, the screw 32 may be indexed in either direction by movement of the handle 43 such as to rotate the bushing 39. The handle 43 may then be rotated to the dotted line position and repositioned in the next succeeding index slot 45 so as to give the screw an additional quarter turn. In this way, the screw 32 may be indexed or inched downward by repeated operation of the handle 43.

The presser foot 36 is of such diameter as to be closely received within the chamber 28 yet be free for vertical movement. In order to give the presser foot a floating support, the bore 34 of the screw 32 is tapered inwardly from bottom to top, as previously described, so that the rod 35 may have a certain amount of lateral movement and permit the presser foot to adjust its lateral position as required.

Two different types of grids and presser feet are contemplated by the present invention operating on somewhat different principles, each of which types may be represented by a number of different specific modifications. One type of grid is adapted to retain the solids on the grid and cause the liquid to pass through the grid. This is the type commonly used for pressing oranges, lemons, and the like. The second form of grid is that adapted to pass the solid and convert the same into a different physical form, bringing about substantially the result of a colander. The first type is illustrated in Figure 1 and the second type in Figs. 2, 4 and 5.

Referring to Figure 1, the presser foot has a general conical configuration on its inner surface, the surface also being provided with circular recesses 45. The interior shape of the presser foot is complementary to the outer shape of a grid 46 which is positioned within the chamber

28. The grid 46 is also pyramidal in shape and has outer configurations 47 adapted to be received in the recesses 45 of the presser foot when the latter is brought to its advanced position. This pyramidal shape of the grid lends strength to the same since the edges of the pyramid are confined against the walls of the chamber 28. In order to completely drain the fluids from the chamber 28, particularly along the lower edges of the grid, the edge of the grid is given the shape shown in Fig. 2, that is, it is provided with flat sides, such as shown at 48, which bridge across the shoulder 8 to provide small openings through which the fluid may pass. The grid 46 is also provided with a plurality of openings 49 for the passage of fluids. It will be noted that because of the annular ribs or convolutions on the grid and the position of the openings 49, the tendency for the fruit, such as the orange, to stop up the openings and thus prevent the passage of juice is materially decreased. This results from the fact that the solid portion of the fruit tends to press against the annular ribs and leave a small vacant space in the valleys for the collection of the juice so that it may more readily pass through the openings. In Figure 1, the screen 13 serves to retain the fine particles of pulp which may normally pass through the openings 49 of the grid.

Referring now more particularly to Fig. 2, I have shown a grid of the type commonly known as a ricer having a plurality of small circular openings through which vegetables or other materials may be passed for the purpose of comminuting the same. This type of grid may be used in the body for the purpose of mashing potatoes or otherwise cutting up vegetables, such as beans, peas, and the like to form puree.

In Fig. 4, I have shown a modified form of presser foot 51 wherein the lower surface of the foot is curved, as shown at 52, complementary to the upper curved surface of a grid, designated generally by the numeral 53. This grid is made in the form of a lattice work having sharp upper edges, as shown in Fig. 5, and has spaced parallel bars 54 intersected by spaced parallel bars 55 at right angles thereto, the grid being curved, as shown in Fig. 4. This grid and presser foot converts the press to a dicer or mechanism for cutting materials into shapes of rectangular cross-section, as is required in the dicing of vegetables.

It will be noted that the operations required in the use of grids shown in Figs. 2 and 4 require a considerable amount of pressure on the presser foot in order to urge the material through the grid. One of the features of this invention is the fact that through the convenient manipulation of the handle 43 such a large amount of pressure can be generated on the material in the chamber of the press so as to urge it through the grid. Furthermore, this pressure may be developed without excessive effort on the part of the operator. This is in contra-distinction to the ricers now commonly used wherein it is impossible, in many instances, to develop sufficient pressure with all of the physical force of which the operator is capable.

Attention is directed to the fact that the chamber 28 is so arranged that any number of grids of different shape characteristics may be positioned over the opening so as to permit the pressure to be used for different types of operations. It will be noted further that the grids, because of their curved shape, are capable of withstanding relatively great pressures without being bent

or distorted out of shape and yet may be made by the usual punch press methods.

While I have thus described and illustrated a specific embodiment of the invention, I am aware that it may be embodied in a number of different physical forms without materially departing from the spirit of the invention and I do not wish to be limited except as required by the prior art and the scope of the appended claims, in which—

I claim:

1. An article of the character described comprising a body having a chamber open at one end and a laterally disposed handle, a grid across the open end of the chamber, a screw supported opposite said grid, a presser foot carried by the screw for movement toward and away from the grid upon rotative movement between the screw and the support, indexing mechanism for imparting intermittent rotation between the screw and its support including a handle positioned for reciprocation through a small amplitude above said first mentioned handle and in a plane transverse to the axis of the screw for urging the presser foot toward the grid to express material through the grid.

2. An article of the character described comprising a body having a laterally extending handle and a chamber open at its ends, the chamber having a shoulder adjacent to one of said ends, a grid shaped for reception within the chamber on said shoulder, a presser foot within the chamber substantially spanning the same and movable toward the grid to compress the material in the chamber, a screw movable to urge the presser foot toward the grid, means on said body overhanging the opposite end of said chamber for carrying said screw, said means being pivoted to said body for movement to carry said presser foot out of said chamber, means for latching said last mentioned means to the body, and manually operable indexing means for advancing the screw.

3. An article of the character described comprising a body having a chamber provided with open ends, a grid secured across one of said ends, a cover for said chamber pivotally supported on said body for movement between an open position for charging the chamber and a closed position closing the other end of the chamber, said cover having a recess forming a continuation of the chamber, a presser foot within the chamber, and a screw carried in said cover for manual rotation to move the presser foot between a position in said recess whereby the cover may be swung to open position, and positions applying pressure to the material in said chamber to urge the material against the grid.

4. An article of the character described comprising a body having a laterally disposed handle and a chamber provided with open ends, a grid secured across one of said ends, a cover for said chamber pivotally supported on said body for movement between an open position for charging the chamber, and a closed position closing the other end of the chamber, said cover having a recess forming a continuation of the chamber, means for securing the cover in the closed position, a presser foot carried on the cover within the chamber and means on the exterior of the cover for moving the presser foot between a position in

said recess whereby the cover may be swung to open position, and positions applying pressure to the material in said chamber, said means including a laterally disposed handle movable through a small arc laterally of the body and above said first mentioned handle to advance the pressure foot toward the grid.

5. A fruit squeezer comprising a body having a chamber open at one end, the chamber having a shoulder adjacent to the open end, a conical grid shaped for reception within the chamber and on said shoulder with the highest point of the grid extending upwardly substantially at the center of the chamber, said grid having a plurality of spaced annular ribs, a presser foot of conical configuration closely fitting the walls of the container for urging the fruit within the chamber against said grid, said foot having a plurality of spaced annular ribs complementary to the ribs on said grid, and a screw for urging the presser foot toward the grid to compress the fruit therebetween.

6. An article of the character described comprising a body portion having a chamber provided with a grid, a cover portion pivoted on the body portion for movement between a position closing one end of the chamber and an open position, latch means for securing the cover in the closed position, a screw passing through the cover, a presser foot carried on the screw within the chamber of a size to substantially span the container and trap the material therein between the foot and the grid, and indexing mechanism manually operable from outside the cover to urge the presser foot toward the grid.

7. An article of the character described comprising a body portion, a cover portion pivoted thereto for movement between a closed and an open position, the body and cover portions having recesses forming a chamber when the cover occupies the closed position, means for latching the cover portion in the closed position, a grid in the body portion opposite the cover, and a presser foot in the chamber carried on the cover portion for movement toward and away from the grid, the foot substantially spanning the chamber, said presser foot being movable in the chamber to a position within the cover portion and above the body portion for rotation of the cover to the open position.

8. An article of the character described comprising a body portion having a cylindrical opening, a cover portion having a recess forming a continuation of said cylindrical opening and providing therewith a chamber, pivotal means for supporting the cover portion on the body portion for movement between an open and a closed position, a grid in the body portion opposite said cover portion, a presser foot in the chamber of a size to substantially span the same and retractible into said recess, a screw supported in the cover portion and carrying said presser foot for movement toward and away from the grid to express there-through material placed in the chamber, and indexing means between the cover portion and the screw for advancing the presser foot toward the grid, the indexing means including a handle reciprocable through a small amplitude to advance the screw.

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