May 8, 1923. 1,454,031

L. A. BABCOCK

FINISHING MACHINE

Filed Sept. 5, 1919 3 Sheets-Sheet 1

Fig. 1.

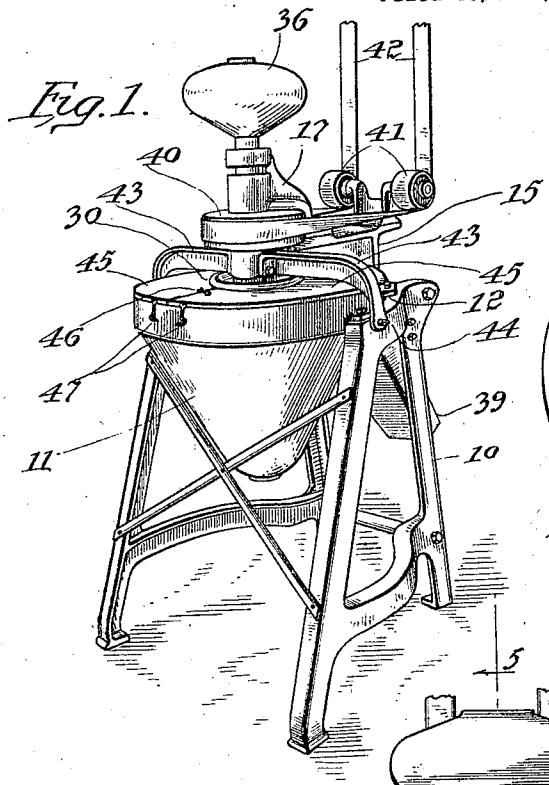


Fig. 3.

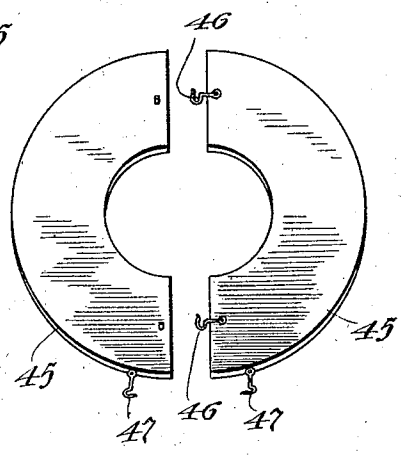


Fig. 4.

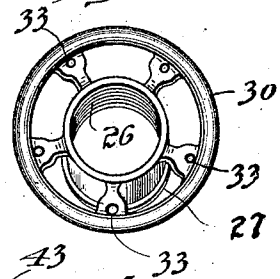


Fig. 2.

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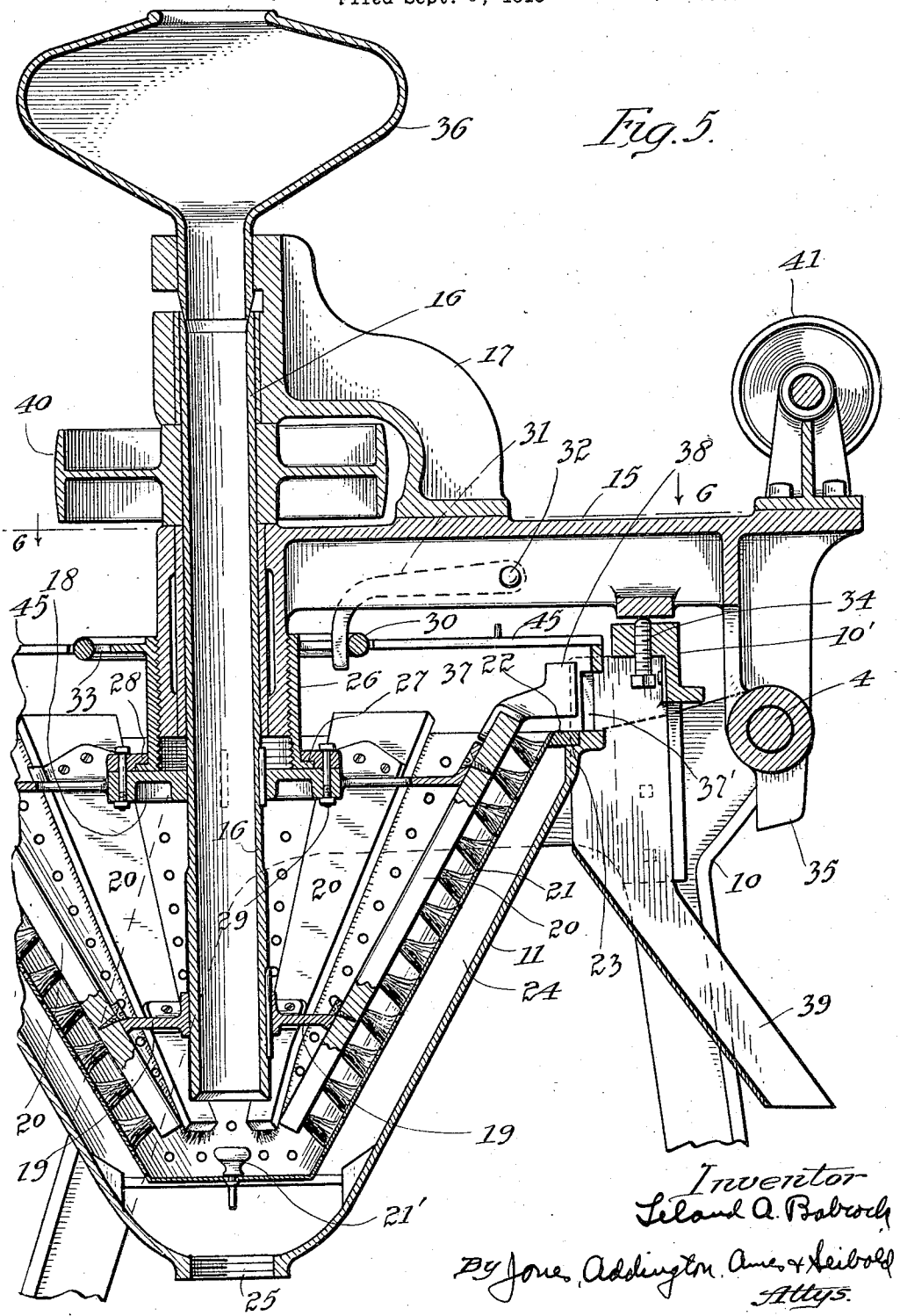
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Filed Sept. 5, 1919 3 Sheets-Sheet 2

Fig. 5.



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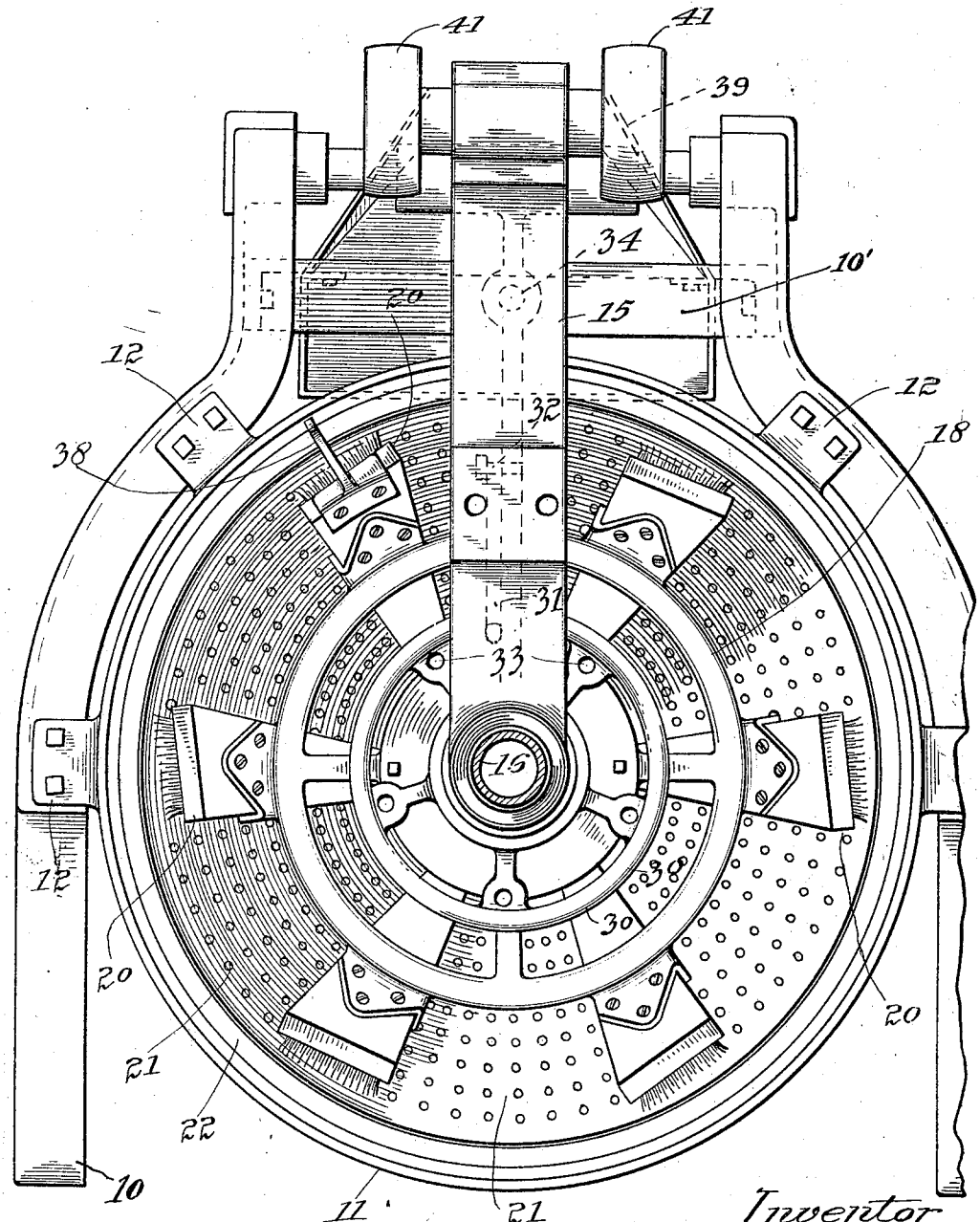
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FINISHING MACHINE

Filed Sept. 5, 1919 3 Sheets-Sheet 3

Fig. 6.



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Patented May 8, 1923. 1,454,031

UNITED STATES PATENT OFFICE.

LELAND A. BABCOCK, OF CHICAGO, ILLINOIS, ASSIGNOR TO SPRAGUE CANNING MACHINERY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

FINISHING MACHINE.

Application filed September 5, 1919. Serial No. 321,960.

To all whom it may concern:

Be it known that I, LELAND A. BABCOCK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Finishing Machines, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

This invention relates to improvements in finishing machines, and more particularly to a machine of this character designed for use in especially reducing tomato pulp to the proper consistency for use in the manufacture of ketchup.

The object of this invention is the production of a machine of the type referred to in which the rotating parts will be so arranged as to be subjected to uniform wear in use, and in which the rotating element for forcing the material treated through the conical screen employed in the device may be readily and easily adjusted toward and from the screen during rotation of said element or while the machine is in operation.

A still further object is the production of a machine in which the rotating parts will be properly braced against vibration during operation of the machine.

A still further object is the production of a finishing machine which will be of durable and economical construction and highly efficient in use.

Other objects will appear hereinafter.

With these objects in view, the invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings, forming a part of this specification, and in which—

Fig. 1 is a perspective view of a finishing machine embodying the invention;

Fig. 2 is a front elevation of the upper portion of the machine;

Fig. 3 is a perspective view of the cover of the bowl or tank of the machine;

Fig. 4 is a perspective view of the adjusting wheel employed in the structure;

Fig. 5 is a substantially central section through the upper portion of the machine, taken on substantially line 5—5 of Fig. 2 and

Fig. 6 is a section taken on substantially line 6—6 of Fig. 5, the brace arms cooperating with the shaft bracket being omitted.

The preferred form of construction, as illustrated in the drawings, comprises a base 10, in the upper portion of which is mounted a conical downwardly tapered bowl or tank 11, said bowl being provided at its upper end with laterally projecting lugs 12, which are engaged by screws 13 for rigidly securing the same in frame 10.

Pivotally connected with the upper end of frame 10 is a bracket 15 arranged to swing in a vertical plane and adapted, in operative position, to assume a position directly over the bowl 11 as clearly seen in Fig. 5. Rotatably mounted in the free end of bracket 15 is a hollow shaft 16, the upper end of which is additionally braced by a supplemental bracket or bearing member 17 secured to bracket 15.

The arrangement is such that the shaft 16, when the bracket 15 is in operative position, is positioned coaxial with the bowl 11, the lower end of said shaft projecting into said bowl for the support of a revolvable presser member which is carried thereby. Said presser member comprises two spaced annular members or collars 18 and 19, which are splined to said shaft and which support a series of elongated brushes 20 which are symmetrically arranged about said shaft for cooperation with a conical screen 21 arranged within the bowl 11.

Said screen is supported by a ring 22 provided at its upper end which engages an annular seat or shoulder 23 provided adjacent the upper edge of said bowl. The arrangement is such that said screen is held concentric with the bowl 11, a passage 24 being formed between said screen and bowl which leads to an outlet opening 25. At the lower end of said screen a handle or knob 21′ is provided whereby said screen may be readily handled in inserting or removing the same.

The brushes 20 are rigidly fastened to members 18 and 19 which serve to constantly hold the same in parallel relation with screen 21, the arrangement being such, however, that the members 18 and 19 are permitted to move vertically or longitudinally upon shaft 16 in order to adjust said brushes toward or from the screen 21 as will be readily understood. Such adjustment of said brushes

is effected through the medium of a sleeve 26 which is threaded upon the depending free end of bracket 15, said sleeve being formed with an annular outwardly projecting flange 27 which loosely engages with a flange 28 secured by bolts 29 to the member 18. At its upper end sleeve 26 is provided with a hand wheel 30 whereby the same may be rotatively adjusted to raise or lower the same and consequently to raise or lower the brushes 20. Said hand wheel is locked in positions of rotary adjustment by means of a latch 31 pivoted at 32 upon bracket 15, the free end of said latch being adapted to engage with any one of a plurality of openings 33 formed in the spokes of said wheel.

The arrangement is such, as will be seen, that the member 18 and flange 28 are free to rotate independently of the sleeve 26 and flange 27, so that adjustment of the brushes toward and from the screen may be as readily effected during operation of the machine as when the same is stopped.

Vertical adjustment of the operative position of bracket 15 in order to obtain proper centering of shaft 16 is effected by means of a set screw 34 threaded in a cross piece 10′ at the upper end of frame 10, which set screw is adapted to contact with the underside of said bracket as clearly seen in Fig. 5. Outward and downward swinging of bracket 15 is limited by a lug 35 provided at the pivoted end thereof which is adapted to contact with the lower flanged edge of cross piece 10′, as will be readily understood.

The material to be treated, such as tomatoes, is introduced into the machine by depositing the same into a hopper 36, supported by the bracket 17, said hopper being arranged to discharge into the upper end of hollow shaft 16, whence the material travels downwardly in said shaft and being deposited into the lower end of screen 21. At this point the material is caught up by the brushes 20 and forced thereby through the screen 21. Refuse, such as the hard green portions of tomatoes and mold and other undesirable parts thereof, are forced by said brushes upwardly into an annular passage 37, formed at the upper edge of bowl 11. The refuse collected in said passage is caught up by a sweep 38 carried by one of the brushes 20 and discharged thereby through an opening 37′ into a refuse discharge chute 39 which leads laterally from the machine. The material which is forced through the screen enters the passage or space 24 whence the same passes downwardly, being discharged through the outlet 25.

Driving of the shaft 16 is effected by means of a pulley 40 fixed to the upper end portion thereof. Provided upon bracket 15 are pulleys 41 arranged subsequently coplanar with the pulley 40 with their axes disposed at substantially right angles thereof, the arrangement being such that a belt 42 is adapted to travel around the pulley 40 and idler pulleys 41 in the propulsion of shaft 16, as clearly illustrated in Fig. 1.

In order to brace the shaft bracket 15 against lateral vibration during operation of the machine, the free end of said bracket is provided with laterally projecting brace arms 43 which are provided at their outer ends with screws 44 adapted to engage against opposite sides of frame 10 when said bracket is in operative position, as clearly seen in Fig. 2. By adjusting the screws 44 into engagement with frame 10 it is, of course, apparent that bracket 15 and hence shaft 16 will be securely held against lateral vibration, said screws, at the same time, affording means for accurately centering the shaft transversely of the machine. The top of the bowl 11 is provided with a cover formed of two sections 45, adapted to be locked together by suitable fastenings 46 and to be fastened to the upper portion of said bowl by suitable fastenings 47.

A machine of the construction set forth is highly efficient and is not susceptible to readily becoming inoperative. The swinging mounting of the shaft-carrying bracket, permits of said shaft, together with the brushes and other parts carried thereby, being swung out of registration with the screen. The parts are thus rendered readily accessible, with the result that the machine may be easily maintained in clean and sanitary condition and broken or disabled parts readily repaired or replaced. Through the rigid fastening of the brushes 20 to the supporting members 18 and 19, whereby said brushes are constantly held in parallel relation with the screen, said brushes wear uniformly along all points thereof, with the result that the life of each brush is extended to the maximum which, of course, would not be the case was the wear on the brushes not uniform.

While I have illustrated and described one form of my invention it is, of course, apparent that changes and modifications may be made in this form without departure from my invention, the scope of which is defined by the claims hereunto appended.

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

1. In a finishing machine, a conical screen; a brush mounted to revolve about the axis of said screen and adapted to be moved longitudinally of said axis; rotatably mounted means for adjusting said brush longitudinally of said screen axis; and a pivoted latch engageable with openings provided in said adjusting means for locking said means in positions of rotary adjustment.

2. In a finishing machine, a conical screen; a brush for forcing material through said screen, said brush being arranged to revolve about the axis of said screen and being adapted to be moved longitudinally thereof; means for revolving said brush; said means having a passage through which material to be acted upon may be supplied to said screen; and means for adjusting said brush longitudinally of said screen axis.

3. In a finishing machine, a conical screen; a rotatable shaft arranged coaxial with said screen; a series of revolvable brushes symmetrically arranged about said shaft for forcing material through said screen; an operative connection between said shaft and said brushes permitting of movement of said brushes longitudinally of said shaft; and means for moving said brushes longitudinally of said shaft during revolution thereof.

4. In a finishing machine, a conical screen; a rotatable shaft arranged coaxial with said screen; a series of revolvable brushes symmetrically arranged about and splined to said shaft for forcing material through said screen; and means whereby said brushes may be moved longitudinally of said shaft during revolution thereof.

5. In a finishing machine, a conical screen; a rotatable hollow shaft arranged coaxial with said screen through which the material to be treated may be supplied to said screen; a series of revolvable brushes symmetrically arranged about said shaft; and annular members on said shaft with which said brushes are connected and whereby said brushes are constantly held in parallel relation with said screen said annular members being splined to said shaft, whereby they may be shifted longitudinally to change the relation of the brushes with respect to the screen.

6. In a finishing machine, a conical screen; a rotatable hollow shaft arranged coaxial with said screen through which the material to be treated may be supplied to said screen; a series of revolvable brushes symmetrically arranged about said shaft; annular members splined to said shaft with which said brushes are connected and whereby said brushes are constantly held in parallel relation with said screen; and means engaging one of said annular members for moving said brushes longitudinally of said shaft.

7. In a finishing machine, a screen; a substantially vertical rotatable hollow shaft through which material is supplied to said screen; a brush driven by said shaft for forcing the material through said screen; means on said shaft for driving the same; and means for moving said brush longitudinally of said shaft during revolution thereof.

8. In a finishing machine, a conical screen; a brush mounted to revolve about the axis of said screen for forcing material through said screen; a shaft coaxial with said screen and carrying said brush; a swinging bracket having a bearing at its free end in which said shaft is mounted whereby said shaft may be swung out of said screen; and laterally extending means on said bracket for bracing the free end of said bracket against lateral vibration when the bracket is in operative position.

9. In a finishing machine, a conical screen; a brush mounted to revolve about the axis of said screen for forcing material through said screen; a shaft coaxial with said screen and carrying said brush; a swinging bracket having a bearing at its free end in which said shaft is mounted whereby said shaft may be swung out of said screen; and laterally projecting arms on said bracket for bracing the free end thereof against lateral vibration when said bracket is in operative position.

10. In a finishing machine, a conical screen; a brush mounted to revolve about the axis of said screen for forcing material through said screen; a shaft coaxial with said screen and carrying said brush; a swinging bracket having a bearing at its free end in which said shaft is mounted whereby said shaft may be swung out of said screen; and laterally projecting arms on said bracket having adjusting screws at their outer ends for bracing the free end of said bracket against lateral vibration when said bracket is in operative position.

11. In a finishing machine, a conical, downwardly tapering screen having a vertical axis; a brush mounted to revolve about the axis of said screen for forcing material through said screen and for forcing refuse upwardly to the upper edge of said screen; a shaft coaxial with said screen for driving said brush; an operative connection between said brush permitting of relative vertical adjustment of said brush during rotation of said shaft; a passage adjacent the upper edge of said screen for receiving the refuse from said screen; and a sweep arranged to revolve with said brush for discharging the refuse from said passage.

In witness whereof, I have hereunto subscribed my name.

LELAND A. BABCOCK.