

Nov. 24, 1925.

1,563,101

C. OFFENHAUSER

MIXING MACHINE

Filed July 7, 1922

3 Sheets-Sheet 1

Fig. 1.

ON LINE 1-1, FIG. 2.

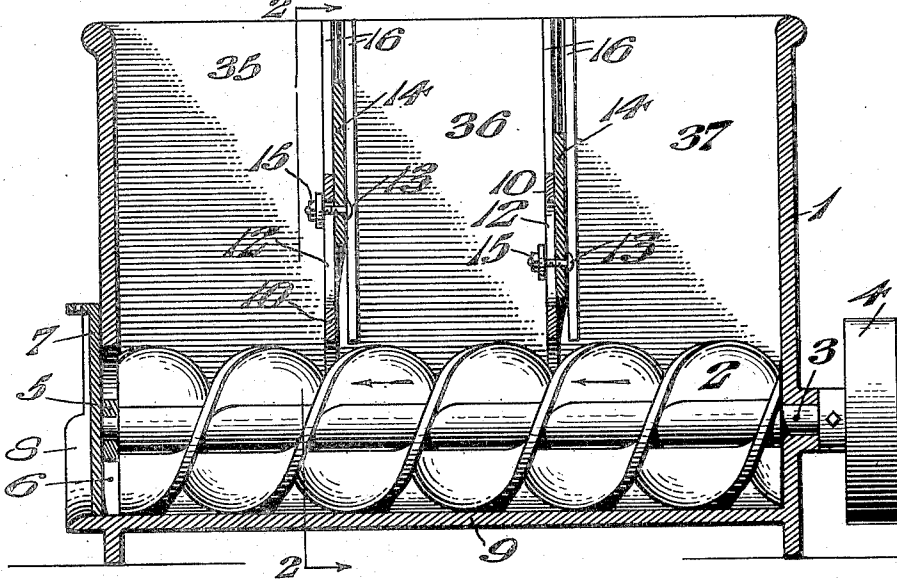


Fig. 2.

ON LINE 2-2, FIG. 1.

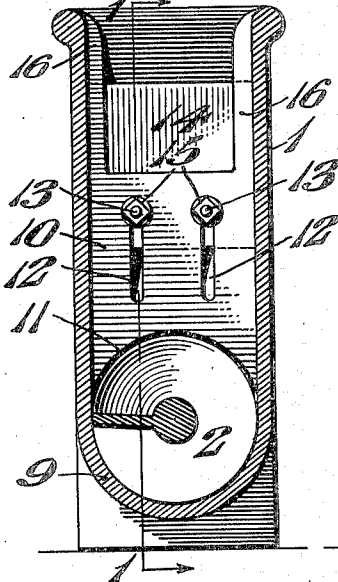
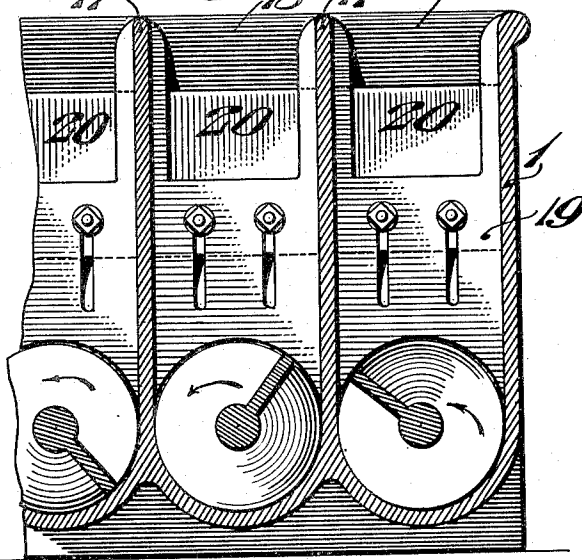


Fig. 3.



INVENTOR:
Christopher Offenhauser,
BY
Widerhook & Garbault,
ATTORNEYS.

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Fig. 4.

ON LINE 4-4, FIG. 5.

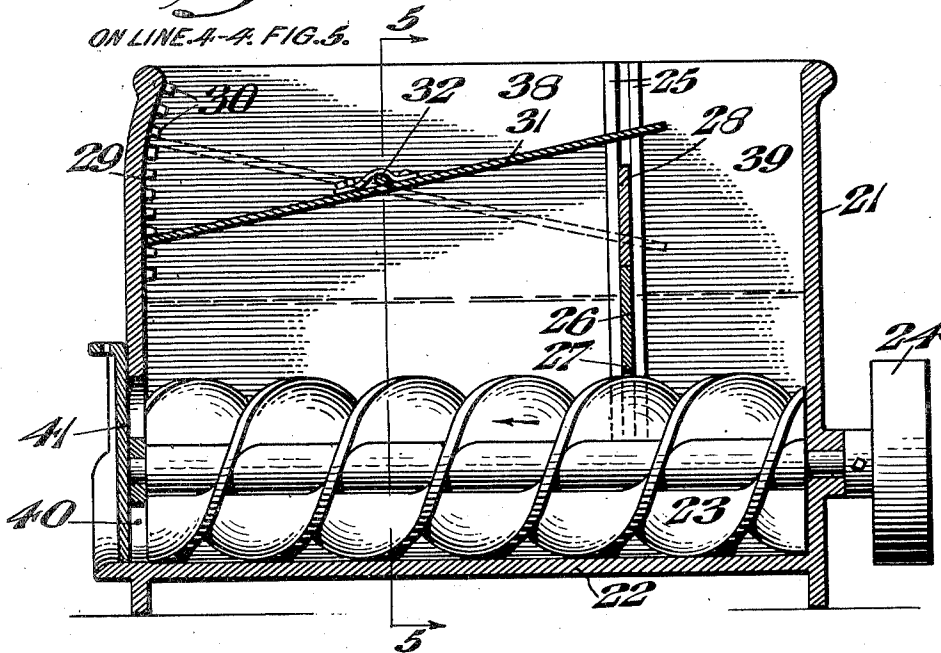
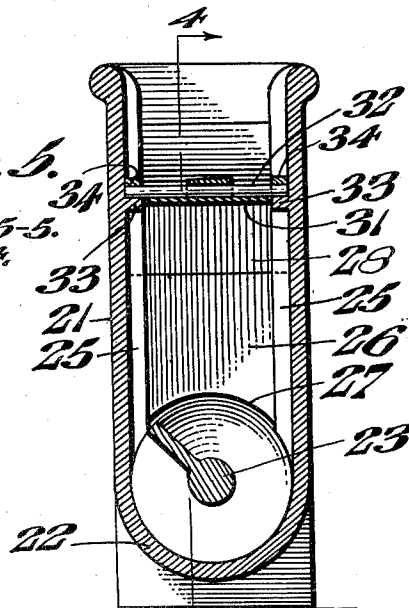


Fig. 5.

ON LINE 5-5,
FIG. 4.



INVENTOR:

Christopher Offenhauser,
BY *Nicholas J. Gumbatz,*

ATTORNEYS.

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Fig. 6.

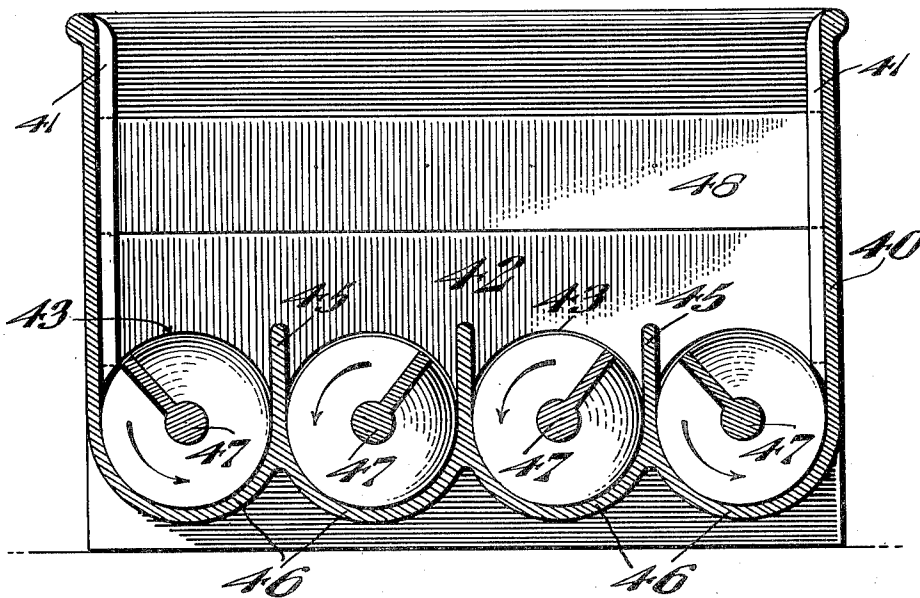
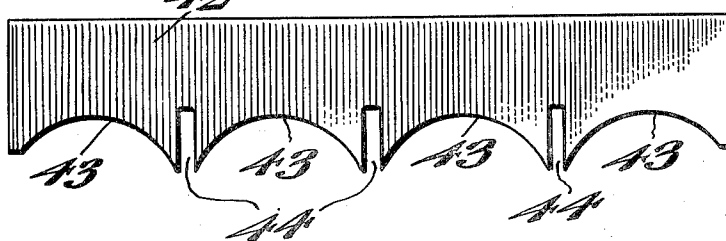


Fig. 7.



INVENTOR:
Christopher Offenhauser.
BY
Widerking & Gaultz.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHRISTOPHER OFFENHAUSER, OF PHILADELPHIA, PENNSYLVANIA.

MIXING MACHINE.

Application filed July 7, 1922. Serial No. 573,283.

To all whom it may concern:

Be it known that I, CHRISTOPHER OFFENHAUSER, a citizen of the United States, residing at Philadelphia, county of Philadelphia, State of Pennsylvania, have invented a new and useful Mixing Machine, of which the following is a specification.

My present invention comprehends a novel construction of a mixing machine wherein a material feeding member is disposed in the bottom of the casing and a plurality of baffles are employed with means to relatively adjust the effective height of the baffles, said baffles being located in the return path of the material.

It further comprehends a novel mixing machine wherein provision is made for feeding the material from one end of the casing towards the opposite end by means of one or more feeding members and a novel construction and arrangement of baffle is employed over which the material passes on its return movement towards the feed member.

It further comprehends a novel construction and arrangement of an adjustable baffle and guide member which serves to limit the height to which the material is raised and to direct and guide the material during its return movement towards the feeding member or members.

Other novel features of construction and advantage will hereinafter more fully appear in the detailed description and the appended claims.

For the purpose of illustrating my invention, I have shown in the accompanying drawings embodiments thereof which are at present preferred by me, since these embodiments will be found in practice to give satisfactory and reliable results. It is, however, to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents, in sectional elevation, a mixing machine, embodying my invention, the section being taken on line 1—1 of Figure 2.

Figure 2 represents a section on line 2—2 of Figure 1.

Figure 3 represents, in sectional elevation, another embodiment of my invention.

Figure 4 represents a section on line 4—4

of Figure 5, showing another embodiment of my invention.

Figure 5 represents a section on line 5—5 of Figure 4. Figure 6 represents a transverse section of another embodiment of my invention. Figure 7 represents, in front elevation, a baffle seen in Figure 6.

Similar numerals of reference indicate corresponding parts.

Referring to the drawings.

1 designates the casing of a mixing machine embodying my invention. A feed member 2 in the form of a screw is located in the bottom of the casing and is provided with a shaft 3 to which is fixed a pulley 4 in order to adapt it to be connected to any desired source of power. The shaft 3 is journaled in the casing 1 and in a bearing 5 which is preferably removable and positioned in the discharge outlet 6 which latter is controlled by means of a door 7 of any desired or conventional type. This door, as illustrated, is vertically slidable in suitable guides and controls the passage of the material which has been mixed in the casing 1 to the discharge outlet 8. The bottom portion of the casing which receives the feed screw is preferably rounded, as seen at 9, Figure 2, in order to conform to the contour of the feed member or conveyor 2.

The casing is provided with one or more partitions 10 secured to or integral with the casing 1 and having their lower ends provided with a curved recess 11 in order that the lower end of a partition will be in close proximity to the feed conveyor 2. Each partition 10 is provided with one or more slots 12 through which pass the bolts 13 which are carried by the baffle members 14 so that when the nuts 15 are tightened the baffle members 14 will be secured in their adjusted position. The baffle members are adjustable in the slots formed between the guide members 16.

In the embodiment seen in Figure 3, the construction is the same except that I employ a plurality of feed members 2 and the casing 1 is divided by longitudinally extending partitions 17 so that separate channels 18 are formed, so that I can mix in the same machine the same material, or materials of different characteristics can be mixed in the different mixing chambers. The partitions 19 correspond to the partitions 10 and the baffle members 20 are adjustable with respect to the fixed partitions

19 in a similar manner to that already described with reference to Figures 1 and 2. It will be understood that the feed members are intergeared so as to be operated in unison in the same direction with the same source of power and as such gearing arrangement is conventional, I have not deemed it necessary to illustrate it.

In the embodiments seen in Figures 4 and 5, 21 designates a casing the bottom of which is rounded as at 22 in Figure 5, in order to receive the feed conveyor 23 which is mounted in the same manner as that shown in Figure 1 and provided with a driving pulley 24. In this embodiment, I employ near the front end of the machine in the return path of the material the guides 25 which receive the lower partition member 26 having its bottom edge curved as indicated at 27 and above this partitioning member 26, I drop one or more partitioning members 28 depending upon the height which it is desired to make the baffle formed by the members 26 and 28. The rear end of the casing 21 is curved, as indicated at 29, and provided with the teeth or lugs 30 which are adapted to receive one end of a baffle and guide member 31, the opposite end of which extends above and preferably over the baffle 28, as seen in Figure 4.

The baffle 31 has connected to it a bar 32 the ends of which extend beyond the sides of the baffle 31 and rest on the supporting lugs 33, see Figure 5, and is retained in position by means of the cap 34. The casing has a discharge port 40 controlled by a door 41.

In the embodiment seen in Figure 6, the casing 40 is provided with the guides 41 located at a desired place in the length of the casing and adapted to receive the lower baffle or partition 42 which latter is provided with the curved bottom faces 43 and the slots 44 thereby providing for the longitudinally extending partitions 45 being received in the slots 44. The bottom of the casing is provided with the rounded portion 46 in order that the feed screws 47 will be received in longitudinally extending compartments in the bottom of the casing. The feed screws 47 are in practice intergeared to revolve in the same direction. If it is desired to increase the height of the baffle 42 an additional baffle 48 is inserted in position.

The operation of my novel mixing machine will now be readily apparent and is as follows:—

Referring first to Figures 1 and 2, the baffle members 14 are adjusted so that the front baffle is preferably lower than the rear baffle or in case only one is employed, it is adjusted to the desired height. The material is placed within the casing 1 and assuming that the feed member 2 is rotat-

ing, it will be fed forwardly through the channel in which the feed member is located, and assuming that the door 7 is closed, it will ride upwardly in the compartment 35 and pass over the baffle 14 into the compartment 36 and over the next baffle 14 into the compartment 37 from which it will be drawn outwardly by the feed member 2. The feed member 2 will also have a tendency to draw a portion of the material from the compartment 36 and feed it forwardly and feed it into the compartment 35. After the material has been mixed the door 7 is raised and the mixed material will be discharged through the discharge spout 8 into a suitable receptacle.

The embodiment seen in Figure 3 operates in a similar manner to that already described, the main difference being that I employ separate feed channels with a feed member for each channel and with a separate or common discharge outlet for the feed channels as may be desired, the outlet or outlets being controlled by a door or doors.

In the embodiment seen in Figures 4 and 5, the operation is similar to that described in connection with Figure 1 except that I have shown only one baffle which is formed in sections so that the effective height of the baffle is varied by removing or inserting baffle members such as 28. As the material is fed forwardly by the feed member 23, it will rise in the compartment 38 and be discharged into the compartment 39. In order to prevent it rising to such height that it might overflow the casing 21, I provide the baffle 31 which is rotatably adjustable so that the angle of feed from the compartment 38 into the compartment 39 may be varied as desired.

In the embodiments seen in Figures 6 and 7 it will be apparent that the operations will be the same as that shown in Figure 3 except that the casing 40 forms a single compartment instead of forming a multiplicity of compartments as in Figure 3.

In case the matter to be mixed contains several different materials of different characteristics and specific gravities, the lighter materials always come to the top and ordinarily remain there in devices of this character as heretofore made. In accordance with my present invention, these lighter materials will be forced upwardly into inlet compartments at the inlet end of the feed member and be again forced through the material so that all the ingredients will be intimately mixed. It will thus be seen that the lighter ingredients which tend to remain on the top will be forced rearwardly through the machine and passing over the baffles will pass into the first compartment and be recirculated by the feed member so that a continuous cycle is maintained.

It will now be apparent that I have devised a novel and useful construction of a mixing machine which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in the present instance, shown and described embodiments thereof which are at present preferred by me and which will give in practice satisfactory and reliable results, it is to be understood that these embodiments are susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

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

1. In a mixer, a casing having a feed conveyor in its bottom portion, a controllable discharge port in alignment with said conveyor, and an adjustable partition forming a baffle extending above said conveyor to divide the casing into a plurality of compartments, one of which forms an inlet compartment and the other of which forms a discharge compartment so that the material passing from the discharge compartment must pass over said baffle, in combination with a controllable discharge port in substantial alignment with said conveyor.

2. In a mixer, a casing having a feed conveyor near its bottom portion and a controllable discharge outlet, a vertically adjustable partition in proximity to the feed end of said conveyor dividing the casing into a plurality of compartments, and a laterally extending baffle to direct the material from one compartment into the other.

3. In a mixer, a casing having a feed conveyor near its bottom portion and a controllable discharge outlet, a vertically adjustable partition in proximity to the feed end of said conveyor dividing the casing into a plurality of compartments, a laterally extending baffle to direct the material from one compartment into the other, and means

to vary the position of said laterally extending baffle.

4. In a mixer, a casing, a feed conveyor in the bottom of said casing, said casing having a controllable discharge outlet, an adjustable partition dividing said casing into a discharge compartment and an inlet compartment and in free communication with said feed conveyor throughout the length of said compartment, a laterally extending baffle fulcrumed to lie within said discharge compartment and rotatably adjustable, and means to fix said laterally extending baffle in its adjusted position.

5. In a mixer, a casing having a plurality of partitions extending longitudinally along its bottom portion to form feed passages, feed conveyors in said passages, and a baffle having slots to receive said partitions and having the bottom face in proximity to said conveyors of a curved contour.

6. In a mixer, a casing having guide members intermediate its ends and having bottom portions rounded, with partitions extending upwardly between said rounded portions to form feed passages, intergeared feed conveyors in said feed passages to revolve in the same direction, and a baffle positioned by said guides having slots to receive said partitions and having the bottom faces in proximity to said conveyors conforming to the contour of said conveyors.

7. In a device of the character stated, a mixing chamber, a conveyor in the lower portion thereof, a controllable discharge port for said chamber in alignment with said conveyor, an upright partition located in said chamber at an angle to said conveyor and having slots therein, an upright baffle member slidably mounted upon said partition, the latter having a plurality of upright slots therein, and fastening devices passing through said slots and common to said partition and baffle member, whereby the height of the latter can be adjusted according to requirements.

CHRISTOPHER OFFENHAUSER.