

Oct. 31, 1939.

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2,178,345

DOUGHNUT FILLING MACHINE

Filed Feb. 2, 1939

2 Sheets-Sheet 1

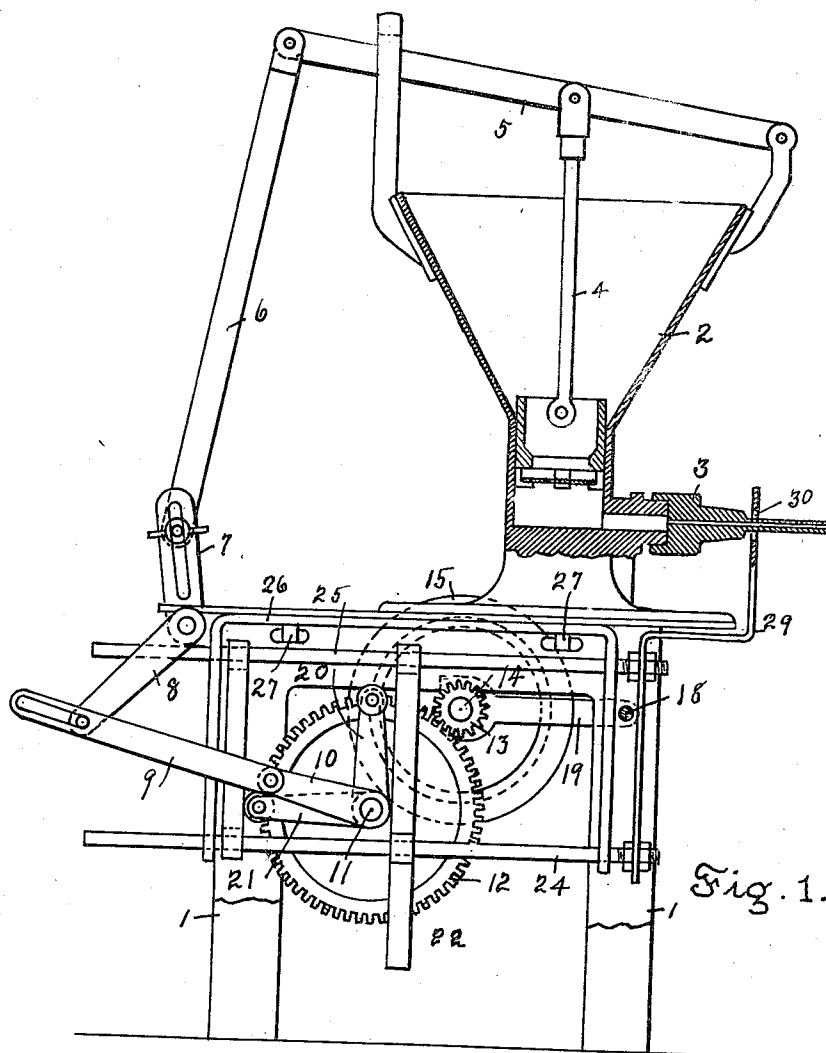
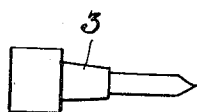


Fig. 4.

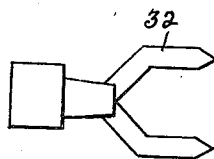


Fig. 5.

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2 Sheets-Sheet 2

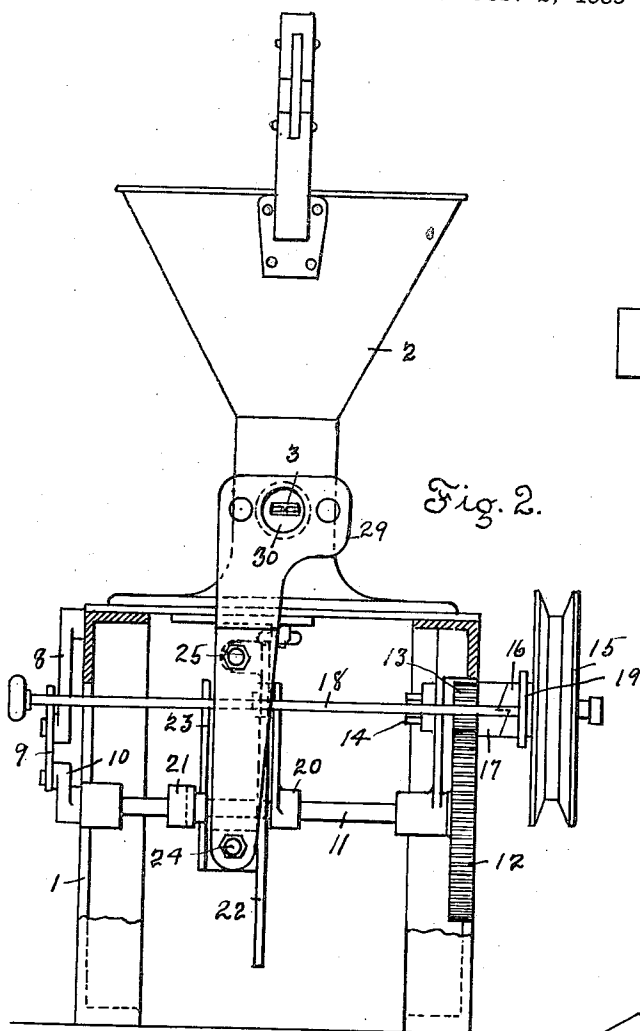


Fig. 2.

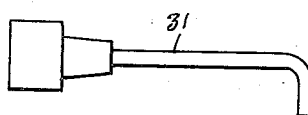


Fig. 6.

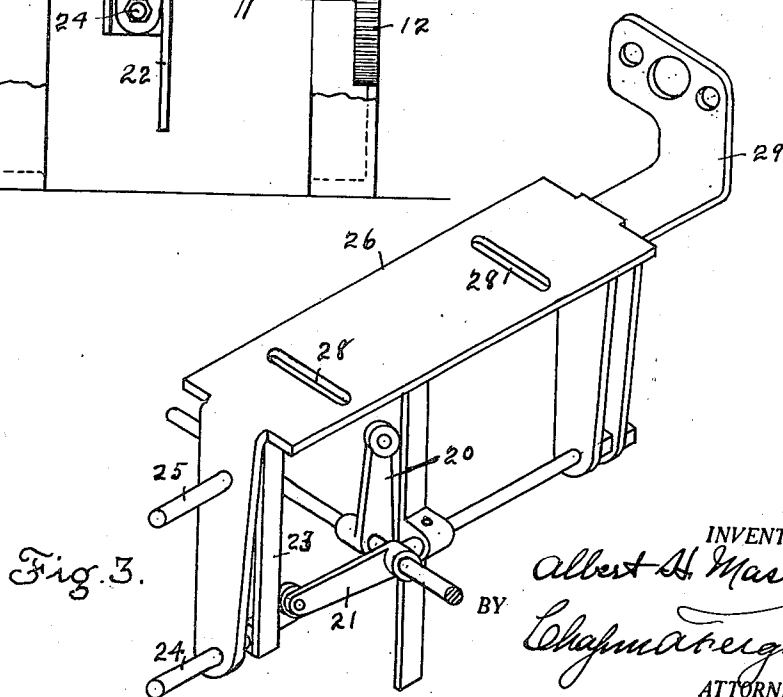


Fig. 3.

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DOUGHNUT FILLING MACHINE

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2 Claims. (Cl. 107—1)

This invention relates to an improved machine for filling doughnuts and similar articles and has for its object to provide a simple and efficient mechanism for discharging the doughnuts after being filled.

The invention consists of the novel construction and arrangement of the parts and combination of parts hereinafter more fully set forth in the following specification and pointed out in detail in the appended claims.

In the accompanying drawings:

Figure 1 is a side elevation of my invention partly broken away and showing the hopper in section.

Figure 2 is a front view of Figure 1 with part of the framework broken away and in section.

Figure 3 is a detail perspective view of the adjustable frame in which the discharging mechanism operates.

Figure 4 is a detail plan view of one form of nozzle used in the filling process.

Figure 5 is a plan view of another form of filling nozzle.

Figure 6 is a side elevation of a nozzle used for filling pies and similar articles.

Referring to the accompanying drawings, forming part of this specification, and in which like reference numerals designate like parts throughout the several views thereof, 1 designates a frame upon which is mounted a hopper 2 having a removable nozzle 3. The hopper 2 has a plunger 4 connected at its upper end to a lever 5 which latter is connected through the medium of the levers 6, 7, 8, 9 and 10 to the shaft 11. On the shaft 11 is rigidly mounted a large gear-wheel 12 in mesh with the pinion 13 on the shaft 14. On the outer end of the shaft 14 is mounted a pulley 15 which is driven from any suitable source of power. The said pulley 15 is keyed to the shaft 14 and is adapted to move sideways thereon to throw the clutch face 16 in or out of engagement with the clutch face 17 which is fast to the shaft 14. A rod 18 extends across the frame 1 and has a yoked arm 19 which extends over the shaft 14. This rod 18 serves to throw the clutch faces 16 and 17 in and out of engagement. The shaft 11 is provided with arms 20 and 21 fast on said shaft 11, each having a roller on its outer end adapted to contact with the projecting plates 22 and 23 which latter are fast on the rods 24 and 25, respectively. The plate 22 projects downwardly from said rod 24 and the plate 23 projects downwardly from the rod 25. The rod 24 and also the rod 25 are slidably mounted in a frame 26 which is held to the under surface of the frame 1

by the thumbscrews 27; said frame 26 is provided with slots 28 through which the thumbscrews 27 project and permit the said frame 26 to be moved sideways so that the plates 22 and 23 can be moved out of line with the arms 20 and 21, thus bringing the discharging plate 29 out of line with the nozzle 3. The discharging plate 29 is secured to the rods 24 and 25 and move back and forth therewith. This plate 29 is provided with an opening 30 which permits it to move back and forth over the nozzle 3.

When the machine is being operated to fill doughnuts, they are placed one at a time over the pointed end of the nozzle 3 while the plate 29 is in the position shown in Figure 1 of the drawings. The plunger 4 then operates to force the filling material out through the nozzle 3 into the doughnut. As the plunger 4 raises, the plate 29 moves forward, pushing the doughnut off the nozzle 3 when the plate 29 will then move back to the position shown in Figure 1 and the operation is again repeated.

In the event of filling pies or similar articles, the nozzle 3 is removed and the frame 26 is moved sideways to bring the plate out of line with the nozzle 3 and the nozzle 31 is placed on the hopper and the operation of the machine will simply force a predetermined amount of the filling out through said nozzle 31 for the purpose of filling the pie or other article. In filling eclairs or similar articles, a double-pointed nozzle 32 instead of the nozzle 3 is used. The arm 20 operates against the plate 22 to move the discharging plate 29 forward and the arm 21 operates against the plate 23 to move the rods and discharging plate 29 backward.

Having thus described my invention, what I claim is:

1. A filling machine comprising a frame, a hopper mounted on said frame, a plunger within said hopper, a shaft mounted in said frame, means connecting said shaft with said plunger to operate the latter, a gear mounted on one end of said shaft, a short shaft mounted on one side of said frame, a pinion mounted on said last-named shaft and in mesh with said gear-wheel, said shaft having a clutch face on one end thereof, a pulley mounted on said shaft having a clutch face on one side to cooperate with the clutch face on said short shaft, means for throwing the clutch faces in and out of contact, a discharge plate reciprocally mounted in said frame and extending over said discharge nozzle, and means on said first-named shaft to move the discharge plate back and forth over said nozzle.

2. A filling machine comprising a frame, a hopper mounted on said frame, a discharge nozzle secured to and communicating with said hopper, a shaft mounted in said frame, a frame adjustably mounted under said first-named frame, a discharge plate mounted on said adjustable frame and having an aperture through which the said nozzle projects, said last-named frame being adapted to be adjusted sidewise to throw the discharge plate out of line with the discharge nozzle, and means on said shaft for moving the discharge plate back and forth over said nozzle. 5

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