March 10, 1931. C. S. OTT ET AL 1,795,671

MACHINE FOR CLEANING HAM BOILING MOLDS

Filed April 27, 1929 3 Sheets-Sheet 1

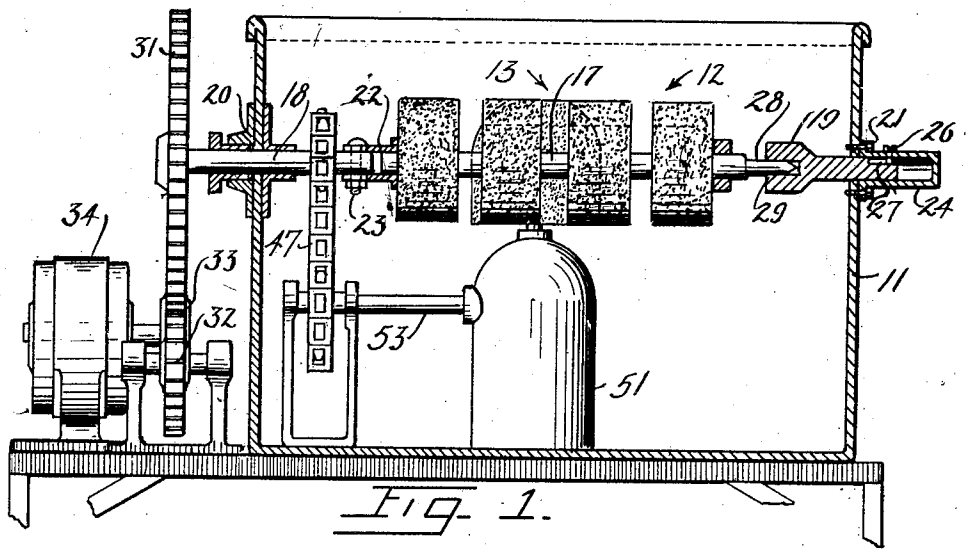


Fig. 1.

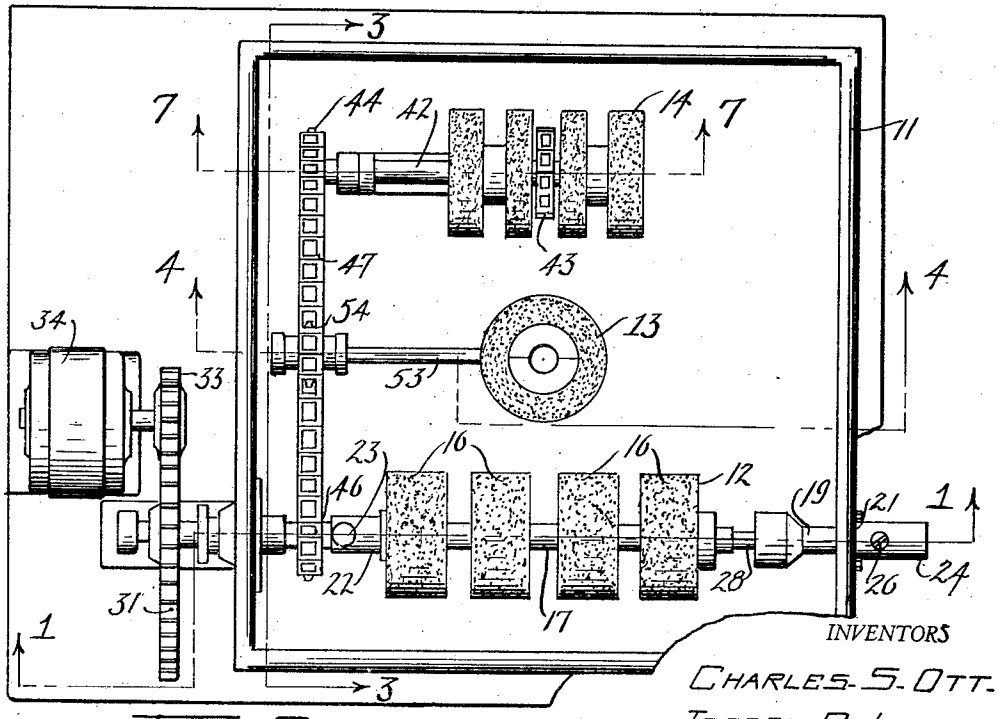


Fig. 2.

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Filed April 27, 1929 3 Sheets-Sheet 2

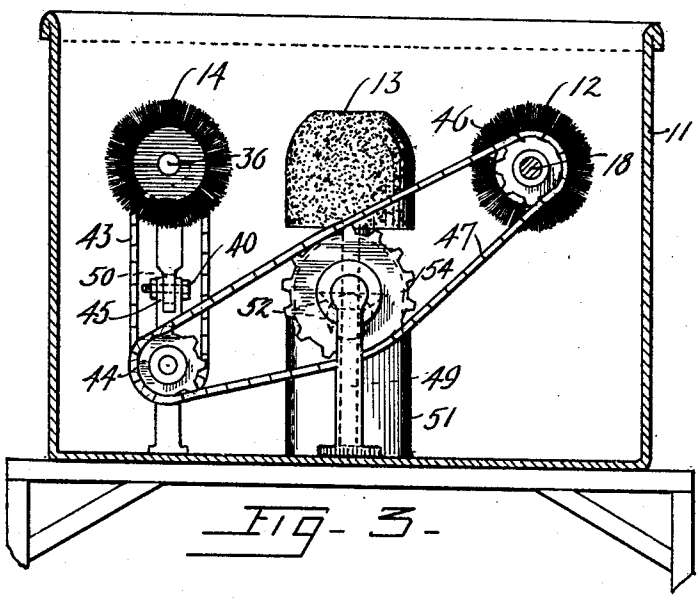


Fig. 3.

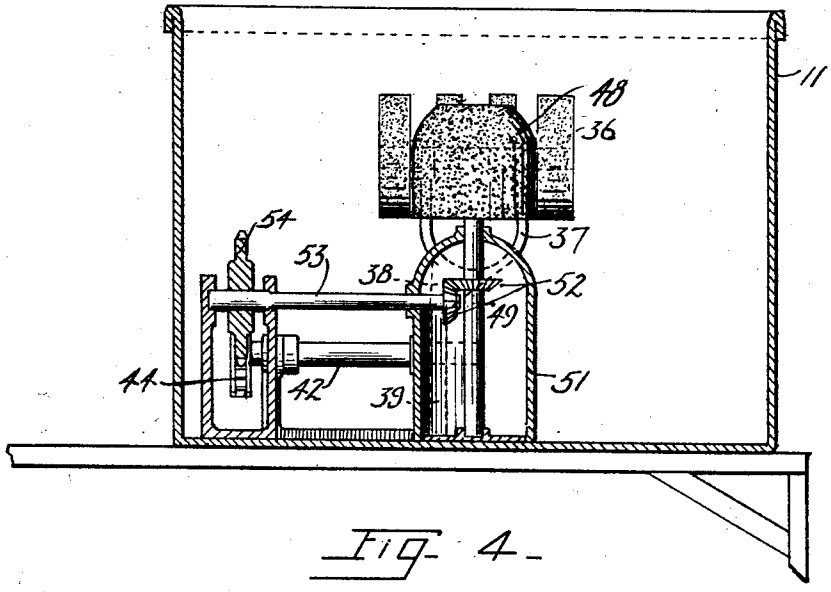


Fig. 4.

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Fig. 5.

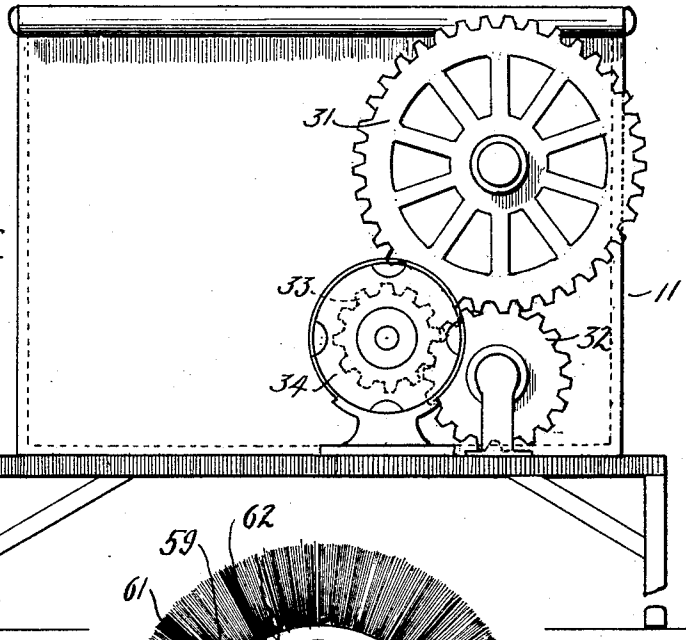
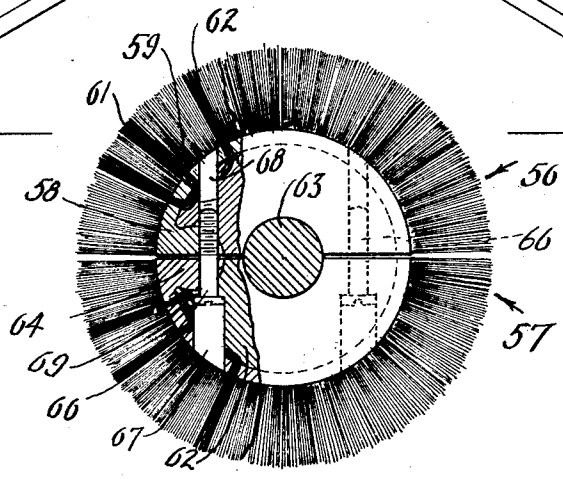


Fig 6



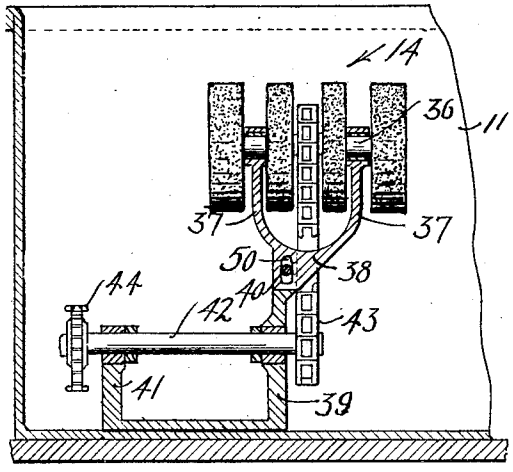


Fig. 7.

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UNITED STATES PATENT OFFICE

CHARLES S. OTT AND JOSEPH R. LEWIS, OF SAN FRANCISCO, CALIFORNIA, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO SAID OTT AND ONE-HALF TO MANUEL EDWARD LEWIS

MACHINE FOR CLEANING HAM-BOILING MOLDS

Application filed April 27, 1929. Serial No. 358,547.

The present invention relates to improvements in a machine for cleaning molds used for the boiling of hams. It is a fact well-known by those familiar with the art that it is extremely difficult to remove the impurities sticking to the mold after the same have been used for boiling ham from the inner face thereof and we have developed an apparatus, by means of which this operation may be performed easily and with great speed.

Ham molds, as used at the present time, are of two standard forms, one form being used to produce the cylindrical boiled ham well-known in the market and the other type being used for producing the flat type of ham resembling somewhat the original shape of a ham. These molds are formed in two sections which are not symmetrical, the dividing line not corresponding with the central line.

In the cylindrical mold, for instance, one section will be more than semicylindrical and the other section less than semicylindrical.

For washing these ham molds, we find that a set of three different brushes best suits the purpose, and in our machine, we have arranged a tank containing a cleansing fluid with three revolvable brushes therein, which are different in character and which seem to meet all the requirements.

As a further object of the present invention, we have developed a new kind of brush—that is, a new means of securing the bristles in a rotary brush in such a manner that loops of comparatively long bristles may be firmly secured in a cylindrical or annular backing having a comparatively small central core.

Further objects and advantages of our invention will appear as the specification proceeds.

The preferred form of our invention is illustrated in the accompanying drawing, in which

Figure 1 shows a vertical section through our machine taken along line 1—1 of Figure 2;

Figure 2, a top plan view of our machine;

Figure 3, a vertical section taken along line 3—3 of Figure 2;

Figure 4, a transverse vertical section taken along line 4—4 of Figure 2;

Figure 5, a side elevation of the machine;

Figure 6, an end view of one of the brushes, portions being shown in section to show the structural features thereof, and

Figure 7, a sectional view taken substantially along line 7—7 of Figure 2.

While we have shown only the preferred form of the invention, we wish to have it understood that various changes or modifications may be made within the scope of the claims hereto attached without departing from the spirit of the invention.

In its preferred form, our invention comprises a tank 11, of any suitable form, which may be filled to a suitable height with any desired kind of cleansing liquid. In this tank are supported three brushes, indicated at 12, 13 and 14, respectively. The brush 12, which is the longest of the three, consists of a plurality of brush sections 16 mounted on a shaft 17, which latter is removably supported on two jack shafts 18 and 19 held in bearings 20 and 21 fastened to opposing walls of the tank 11. The means for fastening the shaft 17 to the jack shaft 18 comprises a sleeve 22 extending from the shaft 17 and telescoped on the shaft 18 and held by means of a bolt 23. The jack shaft 19 is slidably held in a housing 24 extending from the tank and is held against rotation by means of a screw 26 bearing on a flattened section 27 of the shaft. The screw 26 also serves to hold the shaft against end-wise motion in adjusted position within the housing 24.

The end of the shaft 17 is reduced in diameter, as at 28, and is journaled in a bearing 29 formed within the inner end of the jack shaft 19. It will be seen that for removal of the brush 12, it is only necessary to retract the jack shaft 19, which frees one end of the shaft 28, and to remove the bolt 23 for releasing the other end.

Rotary motion is imparted to this brush through a large gear wheel 31 mounted on the same, a second gear wheel 32 meshing with the latter and a third gear wheel 33 fastened to the shaft of the motor 34. The

motor and the train of gears are preferably arranged on the outside of the tank.

The brush 14 is made considerably smaller in length than the brush 12 and also consists of several sections. This brush is mounted in parallel relation to the first shaft and spaced therefrom by a considerable distance, and it is supported in such a manner that its ends are free to allow a deep mold section to drop beyond the axis of the brush. Its shaft 36 is supported in the arms 37 of a bracket 38, which latter rests on one leg 39 of a second bracket 41 rising from the bottom of the tank. It will be seen that the two arms 37 support the shaft 36 between the two brush sections on each side so as to leave the outer face of each outer brush section unobstructed. The second bracket forms a bearing for a shaft 42, which is connected through a chain drive, indicated at 43, to the shaft 36 and through another chain drive including the sprockets 44 and 46 and the chain 47 with the shaft 17. The bracket 38 is held to the bracket 41 by means of a bolt 40 passing through apertures in the forked end 45 of the lower bracket and a slot 50 in a lug of the upper bracket, which allows the upper bracket to be raised by the introduction of spacing sheets between the two brackets for taking up any slack in the chain 43.

It will be seen that in this manner when the shaft 17 revolves, rotary motion is transmitted to the shaft 42 through chain 47 and from the latter shaft to the shaft 36 and the second brush, through the chain drive 43.

The third brush 13 is mounted on a vertical axis between the two brushes thus far described and is similar in construction with the exception that the brush, the assembly of which is shown in detail in Figure 4, is rounded at the upper corner, as shown at 48. This brush is mounted on a shaft 49 vertically supported in a housing 51 and is driven by means of the two bevel gears 52, a horizontal shaft 53 and a sprocket wheel 54, which latter is driven by the chain 47, as shown in Figure 3, so that when the shaft 17 rotates, rotary motion is also transmitted to the vertical shaft 49 and the brush 13.

The brushes or brush sections used in our machine are made on the same principle, some being formed rectangular and some rounded at the corners. The brush construction is shown in detail in Figure 6, from which it will appear that each brush consists of two sections 56 and 57, each being semicylindrical. Each of these sections is made up of a semicylindrical metallic sleeve section 58 formed with perforations 59 through which bunches of metal bristles 61 are looped in a manner well-known in the art, the bristles radiating from the sleeve section. In order to firmly lock the loops of the bristles in place, a lining 62, preferably of Babbitt metal, is placed against the inner face of the sleeve section, the Babbitt metal being formed with an axial groove 63 in such a manner that the two grooves of two sections fitted together form a cylindrical bore fitting on the shaft to which the brush is to be fastened. The sleeve portion of each section may be formed with one or more suitable projections, indicated at 64, against which the babbitt may be anchored.

Two co-acting sections are drawn together and tightened upon the shaft by means of screws 66 passing through a bore 67 in one section and threaded into a registering bore 68 in the other section, a shoulder 69 in the first bore limiting the movement of the head of the screw.

In actual use, the long brush 12 is preferably made co-extensive in length with the length of the mold and is preferably used for brushing and cleaning the smaller or top section of the cylindrical mold. The smaller brush 14 is preferably used for brushing and cleaning the larger or lower section of the cylindrical mold, the ends of which, as will be seen from Figure 7, are clear so that the mold may be dropped beyond the axis of the brush and freely moved back and forth. The third vertical brush is preferably and principally used for molds known as flat molds and is particularly adapted for this purpose, since, on account of its form, it is more apt to penetrate into the slight irregular curves of the ham mold.

We claim:

1. In a machine for cleaning ham-boiling molds, a tank for a cleansing fluid, a bearing in one wall of the tank having a shaft therein, a sleeve fastened on the inner end of the shaft, a second bearing in the opposite wall of the tank having a shaft slidable therein with a bearing socket in the inner end of the shaft, a brush carrying shaft supported in the sleeve and the socket and means for securing the socket shaft in adjusted position.

2. In a machine for cleaning ham-boiling molds, a tank for a cleansing fluid, a shaft, means for supporting the shaft in horizontal position, a bracket fastened to the supporting means with freedom of vertical adjustability and terminating in spaced prongs, a second shaft revolvably mounted in the prongs and having a sprocket wheel thereon between the prongs, brush sections on the second shaft, a sprocket on the first shaft in alinement with the first-mentioned sprocket and a chain operatively connecting the two sprockets.

3. In a machine for cleaning ham-boiling molds, a tank for a cleansing fluid, a shaft, means for supporting the shaft in horizontal position, having spaced lugs extending therefrom with registering perforations in said lugs, a bracket having a projection fitting between the lugs with a longitudinal slot in registry with the perforations, means extending through the slot and the perforations

for fastening the lugs upon the projection, spaced prongs on the bracket, a second shaft revolvably mounted in the prongs and having a sprocket wheel thereon between the prongs, brush sections on the second shaft, a sprocket on the first shaft in alinement with the first-mentioned sprocket and a chain operatively connecting the two sprockets.

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