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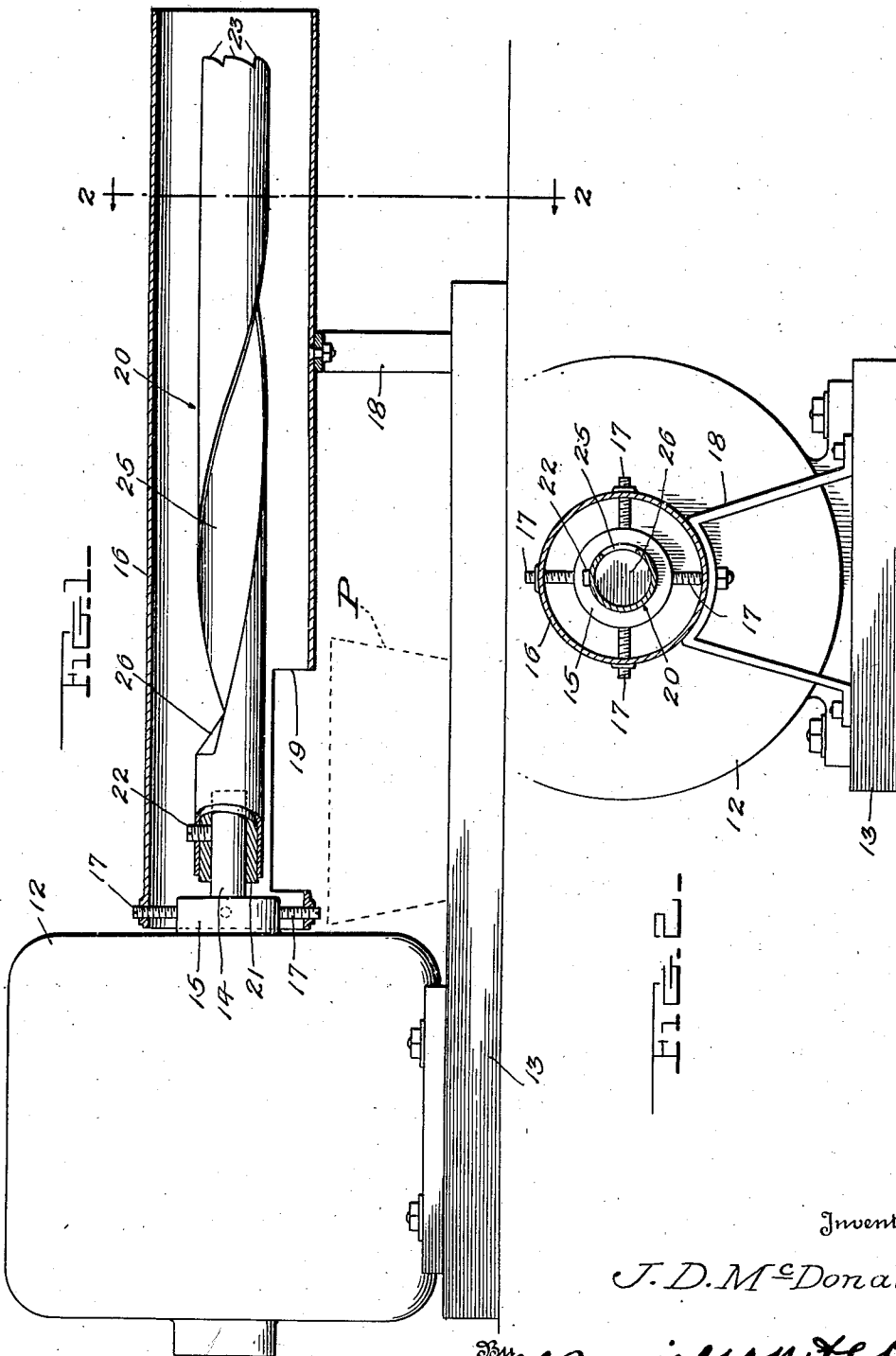
J. D. McDONALD

2,297,158

BUN CORING MACHINE

Filed Dec. 24, 1941

3 Sheets-Sheet 1



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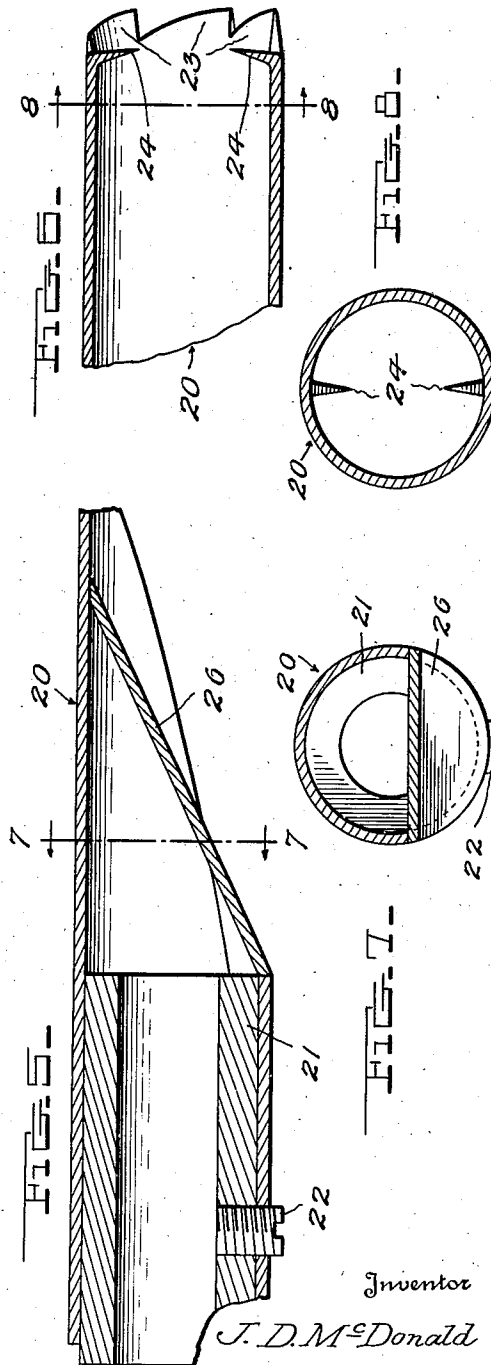
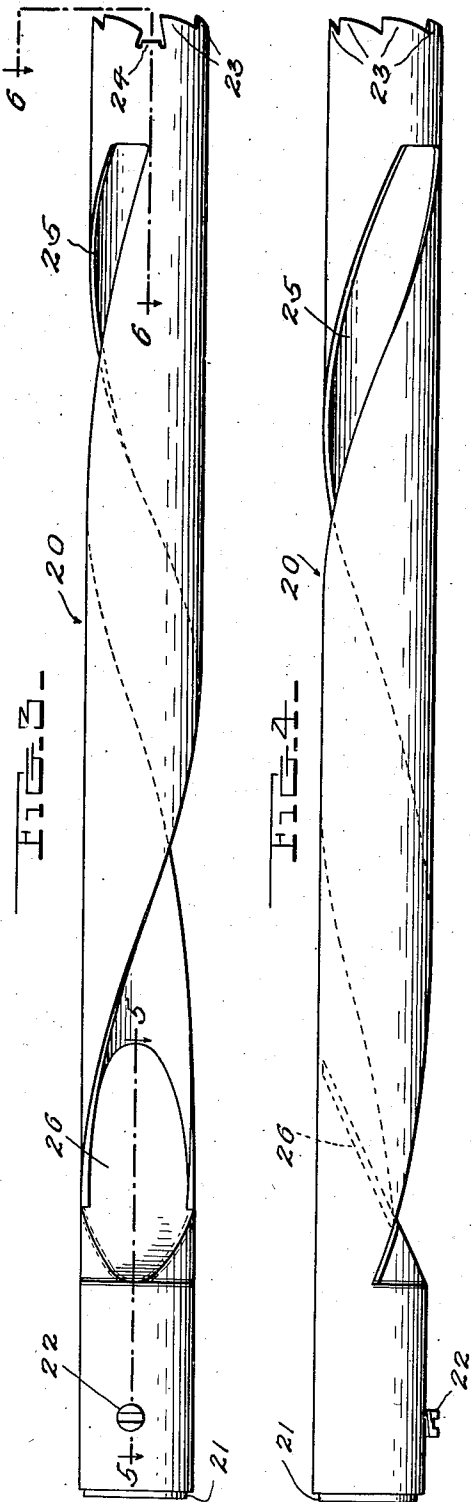
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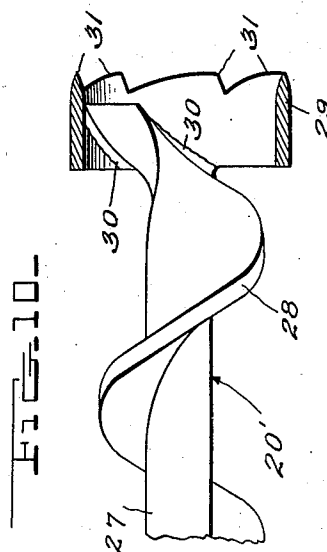
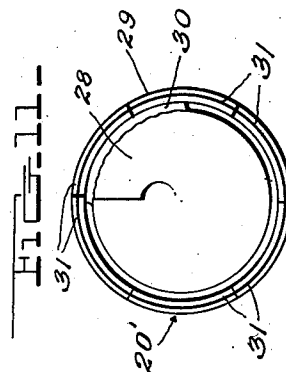
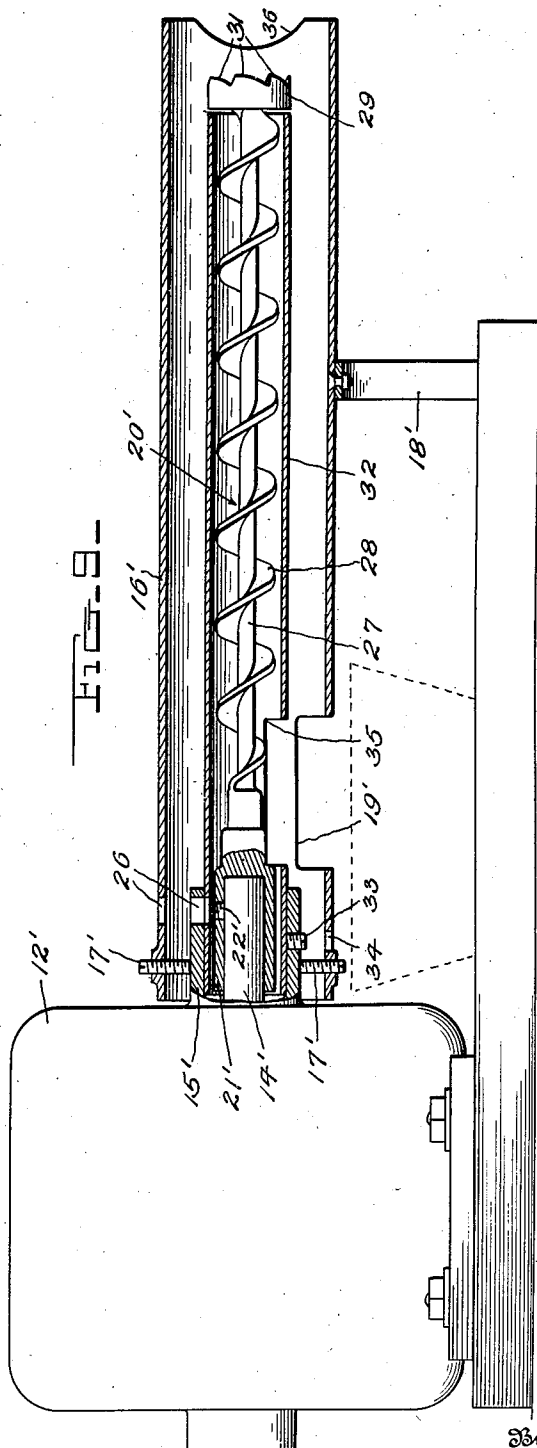
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UNITED STATES PATENT OFFICE

2,297,158

BUN CORING MACHINE

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Application December 24, 1941, Serial No. 424,355

8 Claims. (Cl. 146—106)

The invention aims to provide a new and improved machine for easily and rapidly coring elongated rolls or buns, leaving a bore to receive a "hot dog" and seasoning therefor, or other stuffing, and providing the equivalent of a sandwich from which there is no danger of any of the contents dripping.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, description being accomplished by reference to the accompanying drawings.

Figure 1 is a side elevation partly in longitudinal section, showing one form of the invention.

Figure 2 is a transverse sectional view on line 2—2 of Fig. 1.

Figure 3 is an enlarged side elevation of the core-removing member.

Figure 4 is a view similar to Fig. 3 but taken at right angles thereto.

Figures 5 and 6 are further enlarged longitudinal sectional views as indicated by lines 5—5 and 6—6 of Fig. 3.

Figure 7 is a transverse sectional view on line 7—7 of Fig. 5.

Fig. 8 is a transverse section on line 8—8 of Fig. 6.

Figure 9 is a view similar to Fig. 1 but showing a different construction.

Figure 10 is an enlarged fragmentary side elevation partly in section showing the core-removing member which is illustrated in elevation, primarily, in Fig. 9.

Figure 11 is an end elevation of the core-removing member shown in Figs. 9 and 10.

The construction shown in Figs. 1 to 8 will first be described.

I have disclosed an electric motor 12 mounted on one end of an elongated base 13, said motor having a short projecting shaft 14 and a rigid boss 15 surrounding said shaft. Surrounding this boss, is the inner end of a bun guiding sleeve 16 which is preferably of cylindrical form, said sleeve being secured to the boss 15 in concentric relation with the shaft 14, by means of set screws 17 threaded through said sleeve and abutting said boss. Toward its outer end, the sleeve 16 is supported by a suitable bracket 18 secured to the base 13. The outer end of the sleeve 16 is open to permit pushing of an elongated bun into said sleeve for core-removing purposes, as hereinafter explained, and to permit the discharge of crumbs removed from the bun, the lower side of said sleeve 16 is formed with an opening 19. A pan or other suitable receptacle

P may be placed on the base 13 under the opening 19 to receive the discharged crumbs.

Disposed centrally and longitudinally within the sleeve 16, is a core-removing member 20 formed primarily from an elongated metal tube of cylindrical form. Secured within the inner end of this member 20 is a bushing 21 to snugly surround the motor shaft 14, a set screw 22 being employed to lock the member 20 and the bushing to said shaft. The outer end of the member 20 is open and is spaced inwardly to some extent from the outer end of the sleeve 16, and said outer end of said member 20 is formed with a plurality of circumferentially spaced cutting teeth 23 which cut the bun to form a smooth-walled bore therein. This front end of the member 20 is also provided with two substantially radial prongs or teeth 24 which project into its interior and serve to break up the core being removed from the bun, into small pieces or crumbs. For feeding these crumbs inwardly and discharging them through the opening 19, the tube of which member 20 is formed, is provided with a slowly pitched helical groove 25, the edges of which act as a screw conveyor to inwardly feed the crumbs. For turning these crumbs from the interior of the tube to the exterior thereof, said tube is provided with a diagonal partition plate 26.

With the motor 12 running and therefore driving the core-removing member 20, an elongated bun or the like is pushed into the outer end of the sleeve 16, causing said member to form a bore in the bun, disintegrate the core within this bore, and discharge the crumbs through the opening 19, the bun being then in readiness to receive a "hot dog" with desired relish or other seasoning, or to receive any desired edible stuffing.

In Figs. 9, 10 and 11, a somewhat different construction is shown. The electric motor 12' is provided with a tubular projecting boss 15' around its shaft 14'. The sleeve 16' is mounted by means of set screws 17' and a bracket 18' and is formed with a discharge opening 19'. A socket 21' on the inner end of a core-removing member 20', is secured upon the shaft 14' by means of a set screw 22', openings for giving access to said set screw, being shown at 26.

The member 20' comprises a screw conveyor having a central stem 27 and a helical web 28, together with a ring 29 surrounding and secured to the outer end of said web 28. The ring and web are preferably welded together as indicated

at 30 in Figs. 10 and 11. The outer edge of this ring is provided with circumferentially spaced cutting teeth 31 to act upon the bun.

A fixed tube 32 surrounds the conveyor screw 27—28 and is secured in the tubular boss 15' by means of a set screw 33, and if desired, an opening 34 may be formed in the sleeve 16' to give access to said set screw 33. The lower portion of the tube 32 is formed with an opening 35 directly over the opening 19' of the sleeve 16'.

When a bun is pushed into the sleeve 16', the teeth 31 cut a bore in the bun, the screw conveyor 27—28 feeds all the crumbs inwardly, and these crumbs discharge through the openings 35 and 19'. The tube 32 prevents the crumbs from having any rubbing action upon the side wall of the bore as they are being fed rearwardly and thus prevent said crumbs from either wearing away said wall to an undesired extent, or packing instead of effectively discharging.

In Fig. 9, I have illustrated a notch 36 in the outer end of the sleeve 16'. There is of course a corresponding notch in the side wall of the sleeve which is cut off in this view. The two notches permit the operator to grip the end of the bun when inserting it to the desired distance and allow easy removal. This detail could of course be embodied in Fig. 1 also, if desired.

From the foregoing taken in connection with the accompanying drawings, it will be seen that novel and advantageous provision has been made for carrying out the object of the invention. However, within the scope of the invention as claimed, variations may be made.

I claim:

1. A bun coring machine comprising a support and a short driven shaft projecting therefrom, a bun-guiding sleeve concentric with said shaft and of a diameter to receive and contact with a bun or the like to be cored, said sleeve having an inner end secured to said support, the outer end of said sleeve being open to permit pushing of a hand-held bun or the like into said sleeve, and a core-removing member secured to said shaft and disposed longitudinally within said sleeve, said bun-guiding sleeve and said core-removing member being fixed against longitudinal movement with respect to each other, said core-removing member having means at its outer end for cutting a cylindrical bore in the bun as the latter is pushed into said sleeve, said core-removing member also having helical means extending longitudinally thereof for feeding the removed crumbs from said bore toward said support, the bottom of said sleeve having an opening near said support through which said crumbs are discharged by gravity.

2. A structure as specified in claim 1; said core-removing member comprising a cylindrical tube, said cutting means consisting of circumferentially spaced teeth on the outer end of said tube, said tube having a helical slot, the edges of which constitute said helical means.

3. A structure as specified in claim 1; said core-removing member comprising a conveyor

screw and a ring surrounding and secured to the front end of said screw, the outer or front edge of said ring having circumferentially spaced teeth; the web of said screw constituting said helical means; said teeth constituting said cutting means.

4. A structure as specified in claim 1; said core-removing member comprising a conveyor screw and a ring surrounding and secured to the front end of said screw, the outer or front edge of said ring having circumferentially spaced teeth; the web of said screw constituting said helical means; said teeth constituting said cutting means; and a fixed tube surrounding said conveyor screw and having its outer end in substantially abutting relation with the inner edge of said ring, said fixed tube having a crumb discharge opening near said opening of said sleeve.

5. In a machine of the class described, a core-removing member comprising a tube for connection at one end with a shaft, the other end of said tube being provided with circumferentially spaced cutting teeth, said tube having a helical slot from a point near said one end to a point near said other end, said tube being also provided with teeth projecting inwardly from its side wall near said other end of said tube.

6. In a machine of the class described, a core-removing member comprising a conveyor screw having one end for connection with a shaft, and a ring surrounding and secured to the other end of said screw, the outer edge of said ring having circumferentially spaced cutting teeth.

7. A structure as specified in claim 6; and a fixed tube surrounding said screw and having an end in substantially abutting relation with the inner edge of said ring, said fixed tube having an opening near its other end from its interior to its exterior.

8. A bun coring machine comprising a base, a motor secured upon one end of said base and having an outwardly projecting bearing boss disposed toward the other end of said base, said motor being provided with a shaft concentric with said bearing boss, a horizontal bun-guiding tube disposed horizontally over said base and having an inner end surrounding said bearing boss, the outer end of said tube being open to receive a bun to be cored, radial set screws threaded through said inner end of said tube and abutting said bearing boss to secure and center said inner end of said tube, a supporting bracket for said outer end of said tube, said bracket being secured to said base and to said tube, and bun-coring means disposed centrally within said tube and secured to said shaft, said bun-coring means including means for feeding the crumbs toward the inner end of said tube, the bottom of said tube having an opening near said inner end through which the crumbs may discharge by gravity into a pan or the like placed on said base.

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