

Nov. 5, 1935.

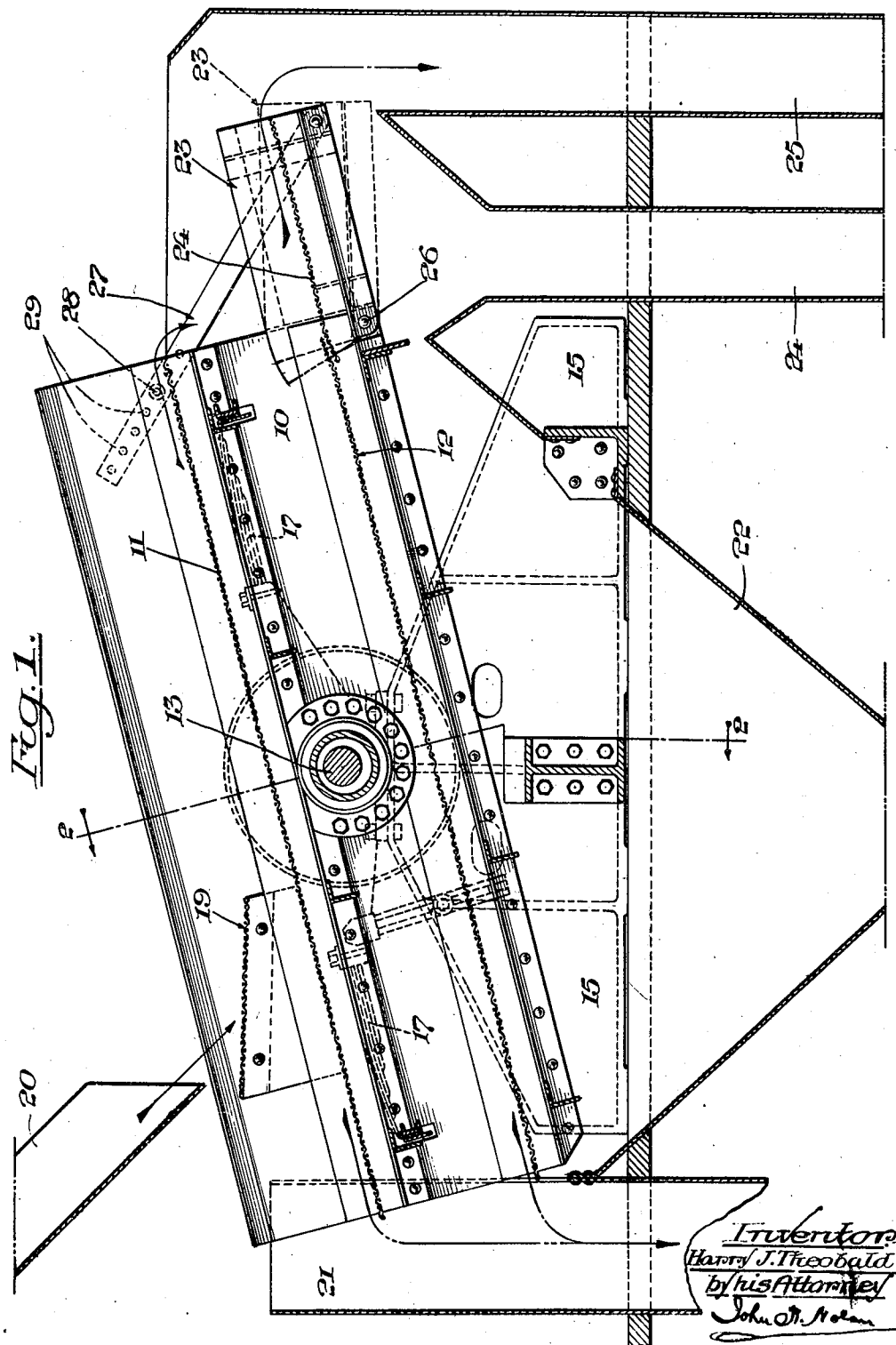
H. J. THEOBALD

2,019,547

PROCESS OF PRODUCING GRANULAR POULTRY FOOD

Filed Sept. 2, 1933

2 Sheets-Sheet 1



Nov. 5, 1935.

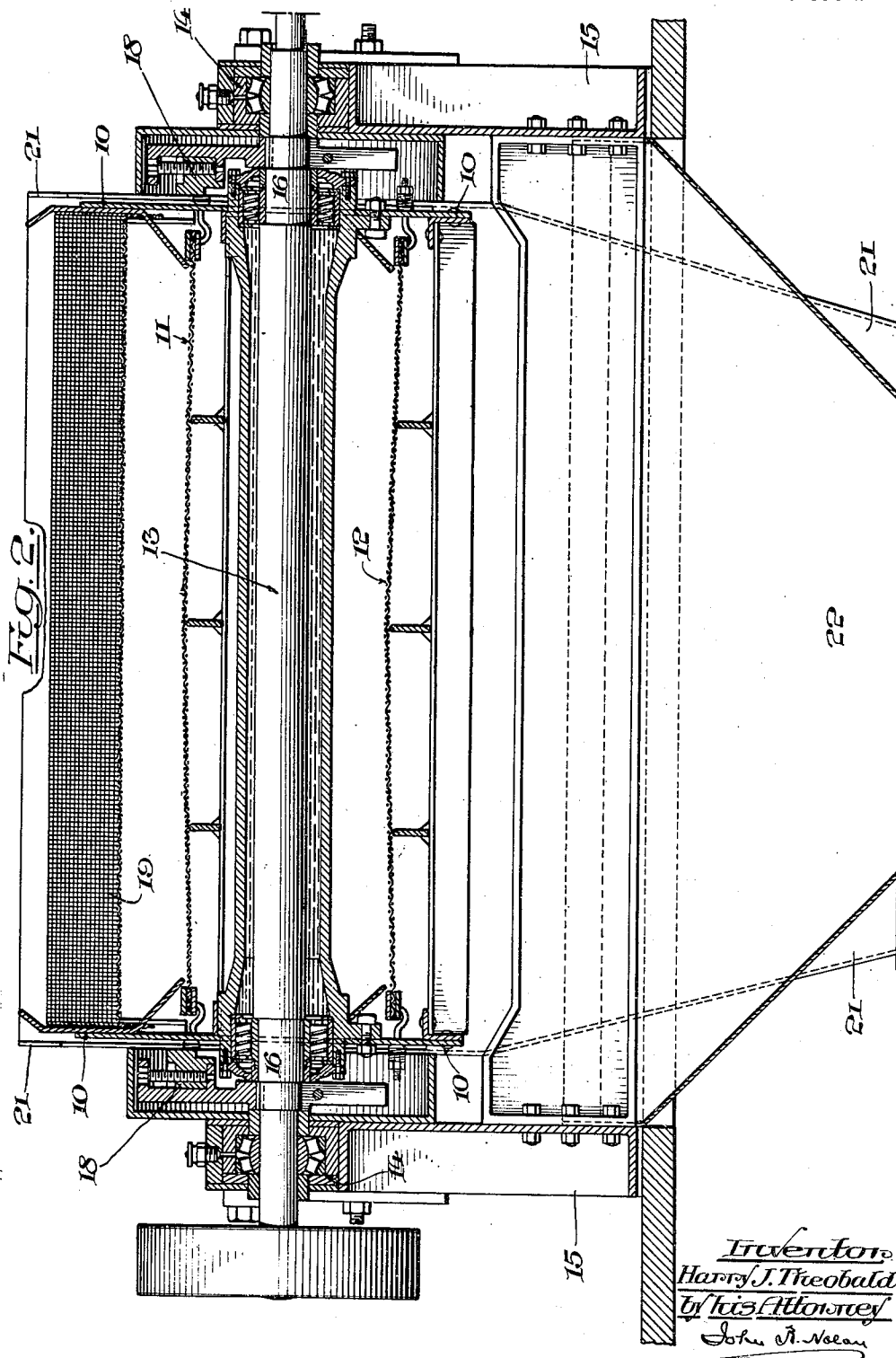
H. J. THEOBALD

2,019,547

PROCESS OF PRODUCING GRANULAR POULTRY FOOD

Filed Sept. 2, 1933

2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,019,547

PROCESS OF PRODUCING GRANULAR
POULTRY FOOD

Harry J. Theobald, Kearny, N. J., assignor to
Robins Conveying Belt Company, Passaic, N. J.,
a corporation of New Jersey

Application September 2, 1933, Serial No. 687,922

1 Claim. (Cl. 209—326)

This invention relates to the production of granular poultry food from meat scraps. Such scraps, which are collected from various sources, e. g., abattoirs and butchers, are first boiled, or rendered, to obtain the grease, and the remaining fibrous meat, including a certain percentage of bone chips, hide, hair and parchment-like tissue which surrounds the bone, is then subjected to the action of heavy hydraulic pressure and converted into large discal cakes. These cakes are next stored for several weeks to age or season, whereupon they are crushed or ground to provide granular food for poultry. It is important that food for this use be as free as possible from bone chips and hair, particularly the latter, and therefore it is the object of my invention to effect the removal of such objectionable materials before the product is ultimately packed for the market.

In carrying out my invention in a simple and efficient manner I feed the comminuted compressed scrap material to and upon an inclined screening element which is gyrated in vertical orbital paths in a direction opposite to the normal downward flow of relatively heavy material on the screen, and hence the hair, or "fluff" as it is called, gradually works up the surface of the screen and spills over its upper edge, while, at the same time, the fine products are sifted through the mesh and the coarse oversize meat scraps and chips of bone are discharged from the lower edge of the screen. As the hair gradually travels up the screen surface it is worked into fluff-like rolls, which frequently contain large meat particles enmeshed therein. These rolls are discharged over the upper edge of the screen and deposited upon a coarse mesh screen which, being gyrated similarly to the first named screen, effectually loosens the enmeshed meat particles from the fluff. Such particles thereupon pass freely through the large openings of the coarse screen while the rolls of fluff thoroughly cleaned of bone or meat particles pass over the screen to a fluff receiving hopper. The separated meat particles are then returned to the grinding mill and again passed over the primary screening element as before, thus resulting in the utilization of all the valuable meat components of the scrap material free from hair and bone chips.

In the accompanying drawings I have illustrated a form of screening machine for efficiently practicing the process hereinbefore set forth, which machine will be hereinafter described. The scope of the invention will be expressed in the appended claim.

In the drawings—

Figure 1 is a longitudinal vertical section of the screening machine, and

Fig. 2 is a transverse vertical section of the machine, as on the line 2—2 of Fig. 1.

The machine illustrated comprises an inclined screen frame 10 having two screen decks 11 and 12 and an actuating shaft 13 extending transversely through the midsection of the screen frame between the decks, which shaft is journaled in stationary bearings 14 on the base 15 and has eccentric connections 16 with the frame. Resilient stabilizing springs 17 mounted on the base 15 and connected with the screen frame maintain the latter in correct screening position while permitting its positive gyration in vertical orbits during the rotation of the actuating shaft in either direction in respect to the normal or downward flow of material along the screen decks. The shaft is provided with suitable counterweights 18 to compensate for the unbalanced load of the screen frame.

When the screen frame is gyrated in a reverse direction to the normal flow of the material on the screen surfaces the relatively heavy oversize contents of the material flow downward to and are discharged at the lower end of the screen, while light or flimsy material travels up to and over the upper end of the screen.

The gyratory screen frame is provided above the lower portion of the deck 11 with a screen platform, 19, to which the comminuted meat scrap material is delivered by a feed chute, 20, from a suitable source of supply a substantial distance from the upper end of the screen frame. Through and by means of this platform the material is initially screened and well distributed upon the underlying screen deck 11. The openings of the platform are about one-half inch square, and are preferably adjustable in size to meet different requirements of the meat scrap material.

The openings of the deck 11 are usually about three-sixteenths of an inch square, while those of the deck 12 are about from one-twelfth to one-sixth of an inch according to the required degree of fineness of the ultimate product.

When the scrap material is delivered to and subjected to the gyratory action of the relatively coarse screen surface of the deck 11 the hair gradually travels up such surface and is worked into fluffy rolls which are spilled over the upper edge of the deck; most of the fine material is sifted through the coarse mesh thus avoiding a congestion of hair and fine meat powder on the

deck, and the coarse ~~oversize~~ material flows downward and is discharged from the lower end of the deck and into a chute, 21, leading to the grinding mill.

- 5 The material which passes through the deck 11 falls upon and is subjected to the gyratory action of the deck 12, the fine material being sifted through the latter into an underlying hopper, 22, the oversize passing down and off the deck into the chute, 21, and the fine hair gradually working toward and being discharged from the upper end of this deck.

- At the upper end of the main screen frame, 10, is arranged an outwardly extending supplemental frame, 23, having a screen, 24, of relatively large mesh, each opening being, say, five-eighths of an inch square. This supplemental frame is gyrated by and with the main screen frame and is positioned to receive the fluff passing from the respective decks. There is no liability of the fluff passing through the coarse meshes of the supplemental screen (because by the time it has reached the supplemental screen the hairs have been rolled into fluff rolls by the action of decks 11 and 12), but the vibration of the coarse mesh screen surface effectually loosens the meat particles enmeshed in the fluff rolls. Such separated particles pass freely through the large openings of the supplemental screen surface into a chute, 24, leading to the grinding mill, while the cleaned fluff passes over the outer edge of such surface and is delivered to an underlying fluff receiving hopper 25.

- 35 In the machine herein shown the supplemen-

tal screen constitutes, in effect, a continuation of the upper end of the screen 12 so that the fine fluff progresses from the latter to the supplemental screen, while the balled or rolled fluff from the screen 11 drops upon and is intercepted by the supplemental screen. Preferably the supplemental screen frame 23 is pivoted, as at 26, to the side plates of the main screen frame 10 so that the former can be adjusted to any desired angle or inclination relatively to the latter frame. The frame 23 is secured in predetermined position by any suitable means, as, for example, by inclined links 27 each pivotally attached at its lower end to the frame 23, the upper end of the link being extended adjacent the side of the main frame 10 and adjustably secured thereto by means of a bolt 28 in register with any of a row of holes 29 in the link.

I claim—

A method of separating the constituents of 20 comminuted meat scraps of the character described, comprising subjecting the comminuted material in mass to the action of a gyrating screening area effective to sift the finer materials from the mass and to discharge the heavier 25 materials from one end of such area and the hair and fluffy materials, including enmeshed meat particles, from the other end of the area, and separating the enmeshed meat particles from the discharged hair and fluffy materials by subjecting the latter materials to the action of a coarse screening area gyrating with the first named screening area.

HARRY J. THEOBALD. 35