May 24, 1932. T. HUSTON 1,859,562

BAG FILLING APPARATUS

Filed Dec. 14, 1929

Fig. 1

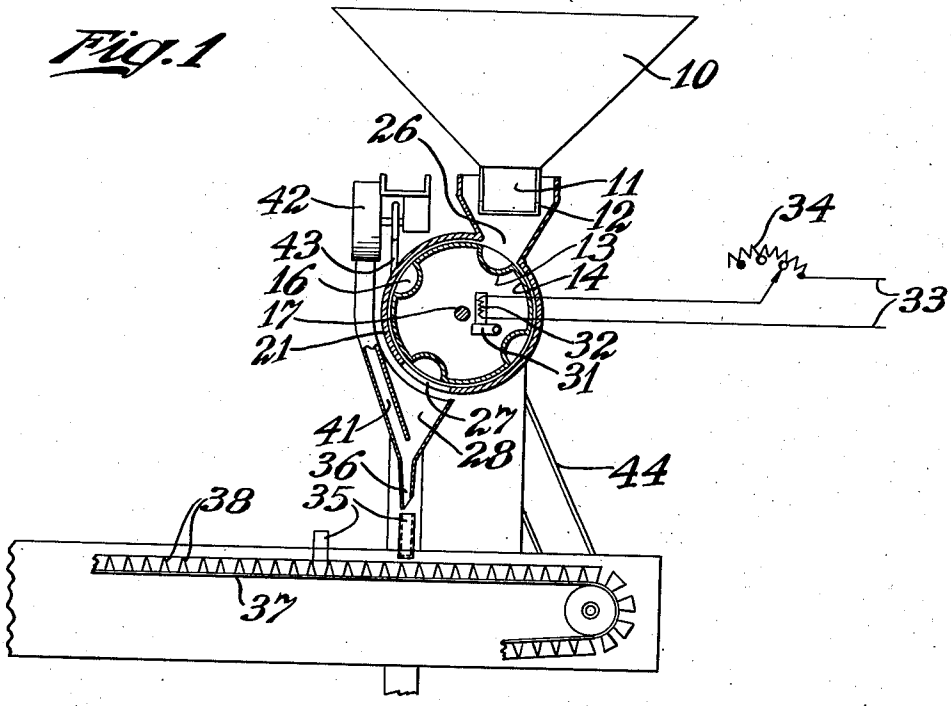


Fig. 2

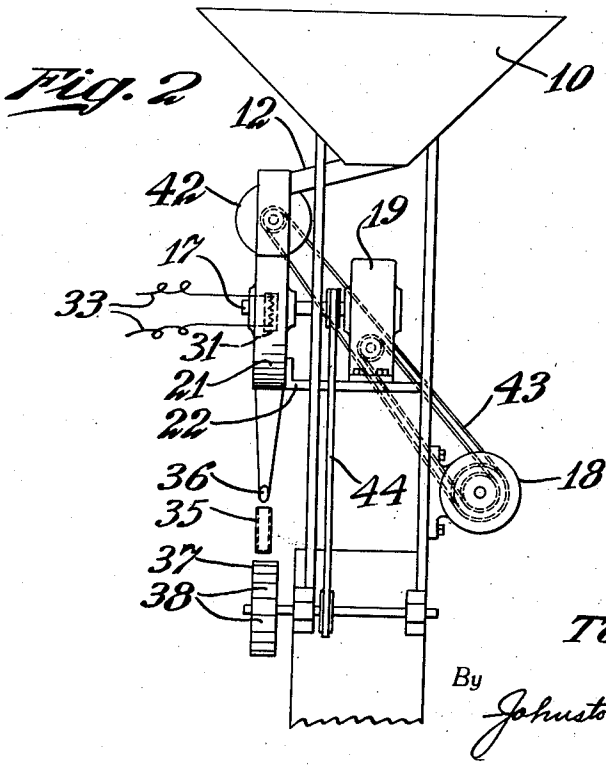
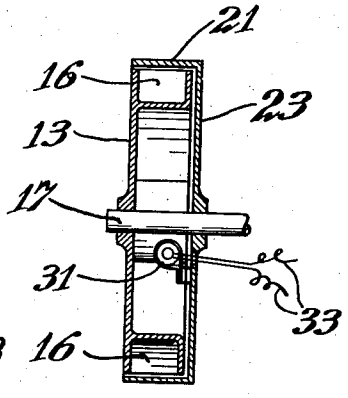


Fig. 3



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UNITED STATES PATENT OFFICE

TOM HUSTON, OF COLUMBUS, GEORGIA, ASSIGNOR TO TOM HUSTON PEANUT COMPANY, A CORPORATION

BAG FILLING APPARATUS

Application filed December 14, 1929. Serial No. 414,078.

My invention relates to apparatus for filling bags with measured quantities of material, particularly with material having a tendency to adhere to and clog the apparatus, such as salted peanuts, and has for its object the provision of apparatus of the character designated which shall include simple effective means for filling the bags and for preventing adherence of said material.

A further object of my invention is to provide a bag filling apparatus embodying a moving, measuring and dispensing element, together with means for heating the element and the material to prevent adherence of material to the parts of the apparatus.

A still further object of my invention is to provide a bag filling apparatus having a moving, measuring and dispensing element therein, together with means for preventing adherence of the material to the apparatus including an air blast which opens the bags and delivers the material thereinto.

In apparatus for bagging certain materials, particularly materials which have been given a coating of salt, such as salted peanuts, difficulties have been encountered due to particles adhering to the moving parts thereof and interfering with its proper operation. In order to prevent this objectionable adherence of the material, it has heretofore been the practice to provide the moving parts with some sort of scraper or brush. While this expedient served for the parts which could be reached with the scraper, it could not be arranged so as to reach into the measuring cups of the apparatus.

I have found where materials have salt adhering thereto, such as salted peanuts, are being bagged, that if an air blast be arranged to act directly upon the peanuts entering the empty bags and, preferably, if the moving element for measuring and dispensing the peanuts be heated, the material does not adhere thereto and scrapers and the like may be dispensed with. In accordance with my invention, I provide a discharge chute with an air pressure nozzle incorporated in the chute for directing an air blast downwardly into the bags to be filled to open the bags and to expel the material into the bags thereby keeping the chute clean. In addition, I provide a flanged wheel having a series of measuring cups provided in the flange. Telescoping over the flanged wheel is a stationary cylindrical member having spaced openings therein permitting the reception of the material into the cups and the discharge of the material therefrom. Disposed within the cylindrical member is an electrical heating element by means of which the necessary degree of heat may be supplied to the cylindrical member to prevent adherence of the material.

Apparatus embodying features of my invention is illustrated in the accompanying drawings, forming a part of this application, wherein

Fig. 1 is a side view, partly in section, of my improved apparatus;

Fig. 2 is an end view thereof; and

Fig. 3 is a transverse sectional view of the measuring and dispensing wheel together with the heating means.

Referring to the drawings, I show a hopper 10 having an opening 11 at the bottom thereof and leading to a discharge spout 12. At 13 is shown a measuring and dispensing wheel having a flange 14 provided with a series of dispensing cups 16 therein. The wheel 13 is mounted upon a shaft 17 driven from a motor 18 through a reduction gear box 19. Adjacent the wheel 13 is a stationary cylindrical member 21 supported by a frame element 22 and in telescoping relation with the wheel 13. The member 21 has a solid disk wall 23 and the wheel 13 is in the form of a disk so as to provide between the two disks an enclosed chamber.

The cylindrical member 21 is provided with an upper opening 26 in communication with the discharge spout 12 of the hopper 10 and with a lower opening 27 which communicates with a discharge chute 28 leading to the point of delivery of the material being bagged. It will be obvious that, as the wheel 13 is rotated, the cups 16 are filled with the material through the opening 26 and, upon further rotation, when opposite the opening 27, discharge the measured quantities of the material into the chute 28.

In order to prevent material adhering to

the cup 16 and wheel 13, I provide an electrical heating element 31 within the chamber defined by the wall 13 and the cylindrical member 21, said heating element embodying the usual resistance 32. The heating element 31 is supplied with current from a circuit 33 which is provided with a rheostat 34 for varying the current flow thereto and thus varying the radiation of heat therefrom. In this manner I am enabled to provide just the degree of heat required to prevent sticking of the material and no more.

The discharge chute 28 terminates in a nozzle 36 which is arranged above a moving belt 37 having cups 38 mounted thereon which receive filled bags 35 and convey them to a point of packaging, not shown. Extending downwardly into the chute 28 is an air nozzle 41 through which is continuously supplied an air blast from a fan 42 which is driven directly by the motor 18 through a belt 43. The air blast through the nozzle 41 acts directly on the nuts in the chute 28, serves to keep it clear and also serves to open the bags 35 when they are held beneath the nozzle 36 for filling. In practice, the bags 35 are held beneath the end of the nozzle 36 in a flattened condition, whereupon the air blast inflates them and opens them wide for the material to fall thereinto when one of the pockets 16 comes opposite the opening 27.

When filled the bags are dropped into one of the pockets 38 in the belt 37, the belt 37 being driven from the gear box 19 by means of a belt 44.

From the foregoing it will be apparent that I have devised an improved apparatus for bagging material which is simple of design and operation and which embodies means whereby the material being bagged does not adhere to the apparatus.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited but is susceptible of various changes and modifications without departing from the spirit thereof and I desire therefore that only such limitations shall be placed thereupon as are imposed by the prior art, or as are specifically set forth in the appended claims.

What I claim is:

1. In apparatus for filling bags, a rotary measuring and dispensing device comprising a wheel having an overhanging flange and a series of cups formed in the flange for receiving and discharging the material, a stationary cylindrical member enclosing the flanged wheel and having openings therein to permit material to pass into the cups and to be discharged therefrom, and an electric resistance element carried by the stationary cylindrical member and disposed between the cylindrical member and the wheel to heat the wheel and prevent adherence of material in the pockets thereof.

2. In apparatus for filling paper bags embodying a hopper, a flanged wheel having measuring cups in the flanges thereof and arranged beneath the hopper, a cylindrical member telescoping the wheel and provided with openings therein opposite the hopper and at the point of discharge, the combination of a discharge chute registering with the latter opening, means providing an air blast downwardly through the discharge chute to open the bags and to direct the material thereinto, and means for heating the material in the pockets to prevent its adhering to the wheel or the chute.

3. In apparatus for filling bags and embodying a hopper for the material to be bagged and a rotary flanged wheel disposed beneath the hopper and having a plurality of measuring and dispensing cups in the flange thereof, the combination of a cylindrical member telescoping the flanged wheel and having an opening beneath the hopper to permit the entry of material into the cups and a discharge opening in the lower portion thereof, a discharge chute registering with the latter opening, an air conduit extending downwardly into the discharge chute to open the bags and to clear the discharge chute, means providing a blast of air through the air conduit, and heating means within the cylindrical member to heat the material and prevent its adherence to the parts of the apparatus.

In testimony whereof I affix my signature.

TOM HUSTON.