



No. 06-009534- -00002-0000

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Act 538 PETICION Folios 2

Señores

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

DIVISION DE NUEVAS CREACIONES

E. _____ S. _____ D. _____

Ref: Expediente No. 06-009.534

Solicitud de patente de invención titulada: "UN PROCEDIMIENTO Y UN APARATO
PARA RELLENAR ENVASE".

Solicitante: PFIZER LIMITED.

SOLICITUD DE EXAMEN DE PATENTABILIDAD SEGÚN
EL ARTÍCULO 44 DE LA DECISION 486, GACETA No. 578

CARLOS R. OLARTE, mayor de edad y vecino de Bogotá, D.C., identificado tal como aparece al pie de mi firma, en mi condición de apoderado del solicitante, respetuosamente me permito solicitar que se examine si la invención reúne los requisitos de patentabilidad previstos en la misma, dando cumplimiento a lo establecido en el artículo 44 de la Decisión 486 de la comisión de la Comunidad Andina de Naciones. Adjunto recibo por el monto de \$202.000 pesos para cubrir la tasa correspondiente, según la Resolución 36155 del año 2006.

Atentamente,

CARLOS R. OLARTE
C.C. 79.782.747 de Bogotá
T.P. 74.295

Anexo: Recibo por \$202.000 pesos

LMB/P2006/ 000014 070816

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 06-009534- -00002-0000

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Folios 2

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 07 - 65,776
FECHA : AGOSTO 15 DE 2007

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	Vr. PAGO
GLARTE RAISBEK	CONSIGNACION	BANCO POPULAR	050-00110-6	68287833	15/08/2007	3,220,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01	SOLICITUDES	
		114 PTC CAP-II EXAMEN DE PATENTIBILID	202,000.00
		TOTAL :	\$ 202,000.00

SUN: DOSCIENTOS DOS MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 06-09534

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **578** DE

FECHA **31 DE JULIO DE 2007** EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL **26 DE OCTUBRE DE 2007**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

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Oct. 28, 1958

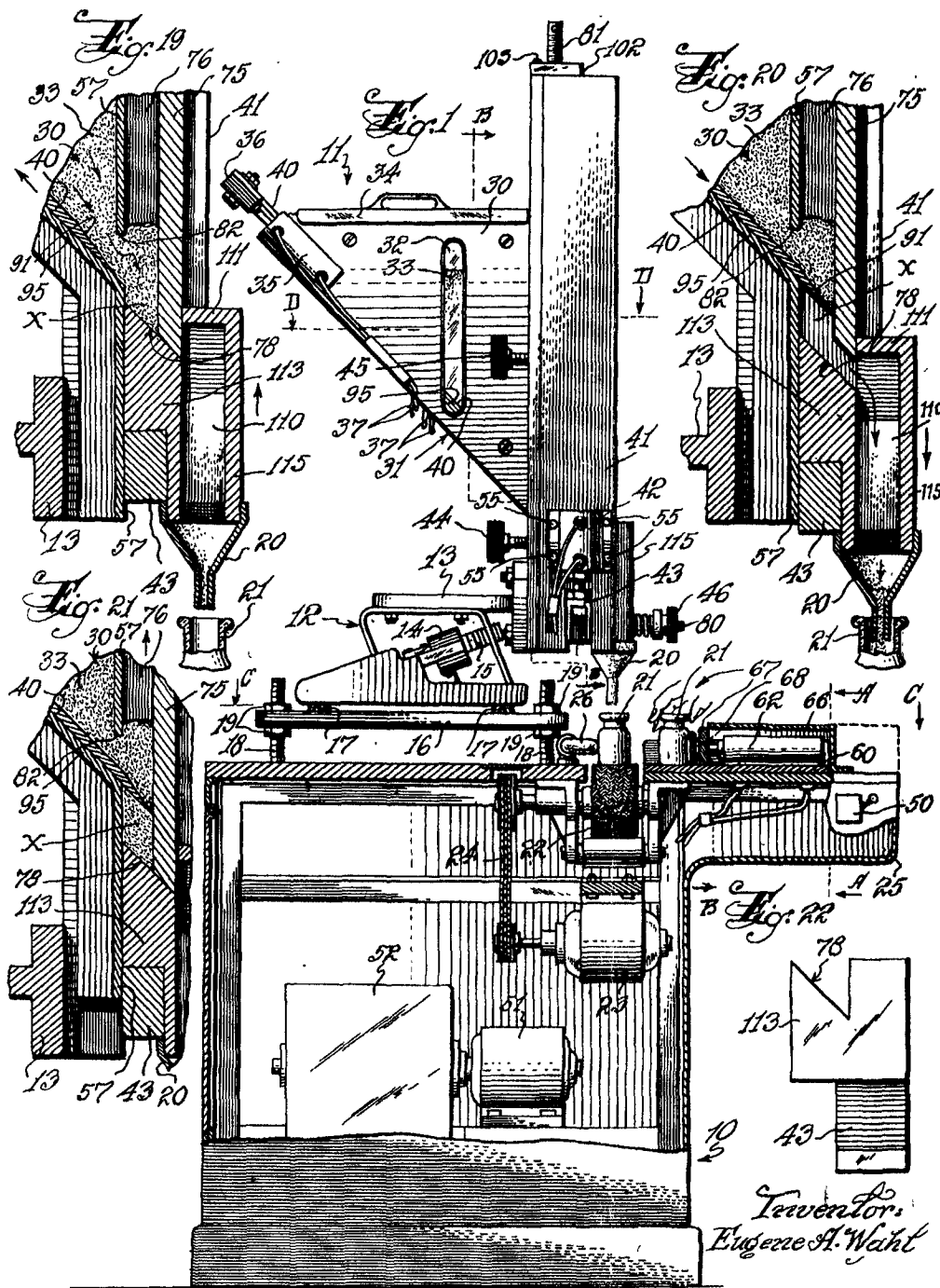
E. A. WAHL

2,857,938

POWDER-FILLING MACHINE

Filed Oct. 27, 1953

10 Sheets-Sheet 1



Inventor:
Eugene A. Wahl

By: Gaylor, Ciferi & Jurick
Attorneys

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Oct. 28, 1958

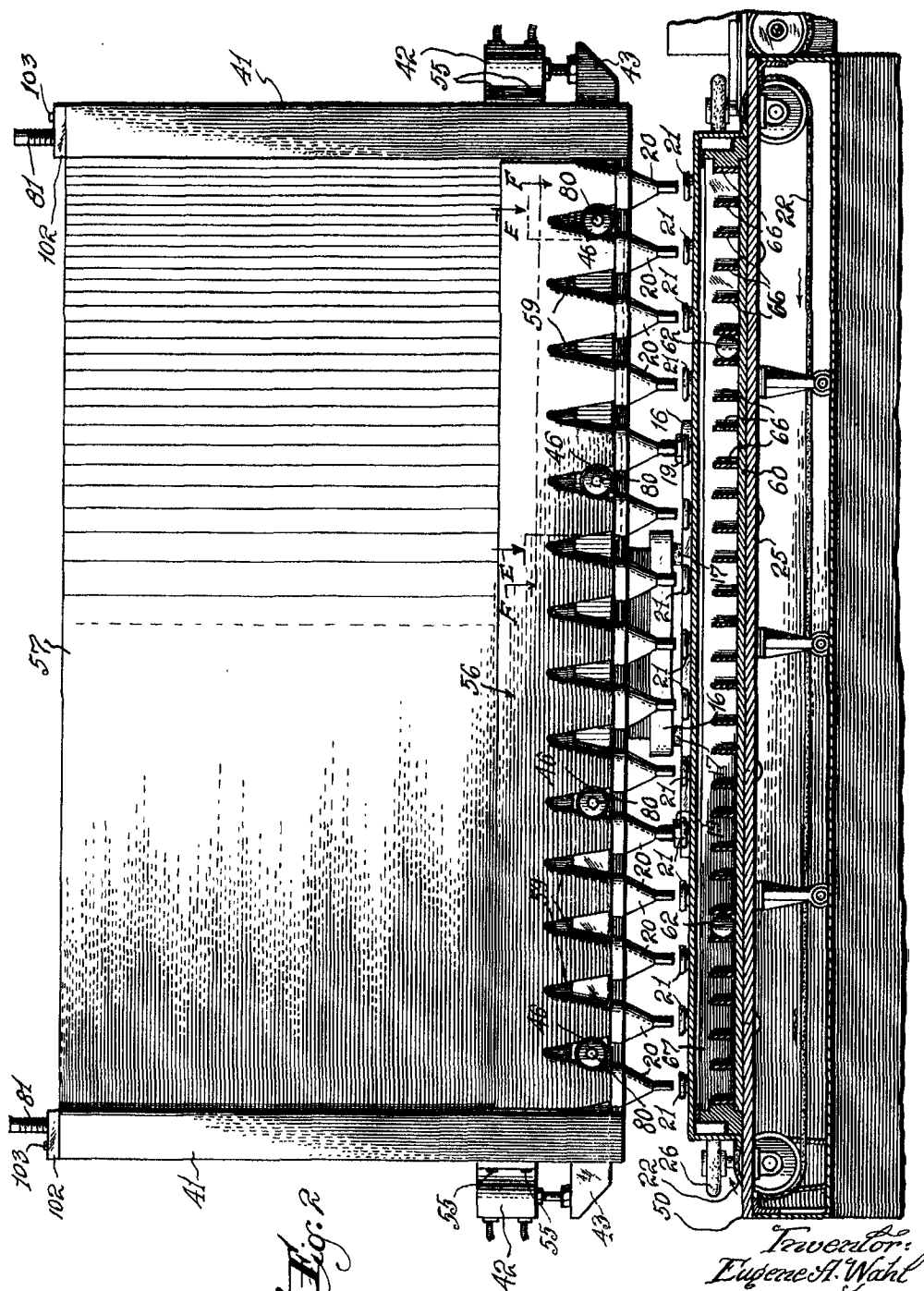
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Filed Oct. 27, 1953

10 Sheets-Sheet 2



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United States Patent Office

2,857,938

Patented Oct. 28, 1958

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2,857,938

POWDER-FILLING MACHINE

Eugene A. Wahl, Glen Ridge, N. J.

Application October 27, 1953, Serial No. 388,543

17 Claims. (Cl. 141—71)

This invention relates to a bottle-filling machine and more particularly to a novel machine for automatically filling bottles with a measured amount of powder at a relatively high rate of speed and accuracy.

Various automatic powder filling machines have been provided heretofore. However, such prior machines are of complex construction, operate unreliably and at a relatively slow speed and the amount of powder fed into a plurality of bottles varies considerably. Further, such machines are not adapted to the filling of powders of widely different flow characteristics, i. e. free flowing granular dry powder, and sticky amorphous powder. They are also not readily adjusted to compensate for the greatly varying densities found in powders of even the same composition; nor is the adjustment for changing the measured amount easily accomplished. Still further, and importantly from a practical standpoint, the prior machines are not readily converted for operation with bottles of a different size and are not capable of convenient dismantling and reassembly, by unskilled help, for purposes of periodic sterilization as is required particularly in the pharmaceutical field.

The majority of machines heretofore employed for powder-filling include a rotating auger, the rate of powder movement being controlled by the auger speed. In such arrangement, a sticky powder will adhere to the auger thereby variably reducing the quantity of powder fed into the bottle. On the other hand, free-flowing, granular powder tends to over-run the auger when the latter is disposed in the customary, vertical position. Other machines involve the use of differential air pressure wherein the powder is drawn into a measuring chamber having a screen bottom. In these machines the screens become progressively clogged thereby resulting in serious volume variations. Further, the latter type machines are not adjustable over a wide operating range and are of a complexity requiring excessive maintenance. In both cases the machines are not accurate for precision powder-filling and are unsuited for filling small bottles with small quantities of powder, say 20 milligrams.

It is the primary object of this invention to provide an automatic powder-filling machine which overcomes the above-mentioned difficulties inherent in machines now available or heretofore proposed.

My machine, while capable of general use, is particularly designed for the precise filling of relatively small bottles or vials with very fine powders of the pharmaceutical class. I accomplish this by providing a vibration-producing means that supports a hopper and a plurality of associated measuring chambers. Simple valve means alternately control the supply of powder from the hopper to the measuring chambers and the discharge of the powder from the measuring chambers into a plurality of bottles positioned therebelow. Automatic timing means are provided to control the vibration of the hopper and measuring chambers, the operation of the valve means, and the movement of the bottles to and from the filling stations. The timing means assures a predetermined vibration period whereby the powder in the measuring chambers is compacted to the same degree for each bottle-filling cycle thereby assuring a uniform quantity of powder in each bottle. Various adjustment means are

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provided whereby the machine may readily be conditioned for operation with bottles of another size and for changing the volume of the measuring chambers to increase or decrease the amount of powder fed into a given series of bottles. Additionally, my machine is of simple, rugged construction and those parts which must be sterilized periodically, as for example, each day in the pharmaceutical industry, are adapted for easy dismantling and reassembly.

10 An object of this invention is the provision of an automatic powder-filling machine of simple, straight forward design, rugged construction, of positive, high operating speed and one having a degree of operating precision exceeding that available in prior machines of this class.

15 An object of this invention is the provision of an automatic machine for filling bottles with powder and comprising a storage hopper for the powder, an adjustable measuring chamber communicating with the hopper, a slide valve member controlling the discharge of powder from the hopper into the measuring chamber, valve means controlling the discharge of powder from the measuring chamber into a bottle, electro-magnetic means to vibrate the hopper and measuring chamber and means controlling the operation of the electro-magnetic means and the alternate operation of the slide valve and valve means.

20 An object of this invention is the provision of an automatic machine for filling bottles with powder and comprising a hopper, a plurality of measuring chambers having a predetermined volume, means to feed powder from the hopper to the measuring chambers in a manner such that the powder is always compacted to a constant degree, means to feed a plurality of bottles into bottle-filling association with the measuring chambers, means controlling the discharge of the powder from the measuring chambers into the bottles and automatic means to remove the filled bottles.

25 An object of this invention is the provision of an automatic machine for filling bottles with powder comprising a storage hopper in communicating relation with a measuring chamber of predetermined, adjustable volume, means effective to open and close the hopper with respect to the chamber, means to feed a bottle into bottle-filling registry with a discharge opening in the chamber, means controlling the discharge of powder from the chamber into the bottle, means to move the filled bottle out of registry with the discharge opening in the chamber, mechanical-vibration-producing means, and means securing the hopper and chamber to the vibration-producing means, the flow of powder from the hopper into the measuring chamber and from the measuring chamber into the bottle being effected by the mechanical vibrations imparted to the hopper and chamber by the said vibration-producing means.

30 An object of this invention is the provision of an automatic powder-filling machine comprising a housing, a conveyor belt carried by the housing, means for setting a plurality of bottles in upright, spaced position on the conveyor belt, a super-structure disposed over and carried by the housing, a powder-storage hopper carried by the super-structure, a plurality of measuring chambers of predetermined and variable volume disposed under the hopper and communicating therewith, each measuring chamber having a discharge opening aligned with a bottle, a slide valve operable to close-off the hopper from the measuring chambers, gate means operable to close off the discharge openings of the measuring chambers, electro-magnetic means for vibrating the super-structure, means for energizing the electro-magnetic means for a predetermined period of time, cyclic control means for alternately operating the slide valve and gate means, and means for imparting movement to the belt after the powder is discharged from the measuring chambers.

A more detailed description of the arrangement for feeding the bottles on to the conveyor belt will be described with specific reference to Figures 4 and 5. For the moment suffice to say that the horizontal extension or ledge 25, forming a portion of the base member, supports a suitable rack that extends along the length of the machine. Such rack is provided with a series of compartments corresponding to the number of funnels and the operator places a bottle into each such compartment. Having so filled the rack compartments with bottles the operator then slides the rack toward the funnels whereby the bottles are transferred on to the conveyor belt. A suitable bumper rail, or stop, 26, preferably made of somewhat resilient material, defines the limit of movement of the bottles when the rack is moved forward and when the rack is withdrawn to its initial position the bottles remain on the conveyor belt, each bottle ready to receive powder discharged from the associated funnel.

The super-structure includes a storage hopper 30 having an inclined base 31 and provided with windows 32 through which the level of the contained powder 33 may be ascertained without removing the hopper cover 34. The super-structure also includes a plurality of measuring chambers adapted for communication with the hopper, each chamber carrying a funnel such as the funnel 20 visible in Figure 1; the specific construction of such measuring chambers being illustrated in Figure 6 to be described in detail hereinafter. The side walls of the hopper support a pair of air cylinders such as the cylinder 35 visible in Figure 1. These cylinders have pistons connected to a crossbar 36 whereby said crossbar is moved to one of two positions in response to air pressure fed to the cylinders through suitable connecting hoses 37. The air cylinders are of the conventional two-way type whereby air pressure admitted into one of the hoses will force the crossbar outwardly relative to the hopper and air pressure admitted into the other hose will move the crossbar inwardly relative to the hopper. Such movement of the crossbar controls the position of a slide plate 40 that serves as the means for closing and opening the hopper with respect to the measuring chambers, as will be described in detail hereinafter with specific reference to Figure 6. Mounted on the vertical frame 41 of the super-structure are another pair of air cylinders, such as the cylinder 42 visible in Figure 1, and which cylinders have pistons connected to another crossbar 43. This cross bar, which extends along the entire front of the super-structure, is solid and of generally rectangular cross section throughout substantially its entire length; the ends of the cross bar being channeled (see Figure 17) to facilitate attachment of the cross bar to the pistons of the air cylinders. These cylinders are likewise of the two-way type and control the lowering and raising of the crossbar 43 at the proper point in the operating cycle of the machine. The raising and lowering of the crossbar 43 controls the discharge of the powder from the measuring chamber through the funnels and into the bottles as will be described in detail hereinafter with reference to Figure 6. Suitable thumb screws 44, 45 serve to secure the hopper and measuring chambers to the super-structure side frame 41 thereby facilitating the dismantling of these parts for purposes of periodic sterilization. The thumb screws 46 secure the funnel assembly to the crossbar 43.

Having now given an overall description of the machine as shown in Figure 1, it appears desirable to point out the operating cycle of the machine before proceeding to a more detailed description of the construction of the various parts making up the numerous assemblies. Assuming the hopper has been filled substantially with the powdered material and that a plurality of bottles are positioned on the conveyor belt, in the bottle-filling position, the operator starts the machine by closure of a readily-accessible electrical switch 50. The closure of the switch 50 energizes a motor 51 which drives a suitable timing mechanism enclosed within the housing 52.

Such timing mechanism controls the entire operating cycle of the machine which, briefly, is as follows:

(1) The electro-magnetic vibrator 12 vibrates the entire super-structure;

(2) The air cylinders 35 operate to raise the slide plate 40 outwardly of the hopper whereby powder is fed from the hopper into the measuring chambers;

(3) The air cylinders 35 operate to close the hopper with respect to the measuring chambers;

(4) The air cylinders 42 lower the funnels into the bottles and the powder from the measuring chamber is simultaneously discharged into the bottles;

(5) The air cylinders 42 operate to raise the funnels and thereby simultaneously close off the discharge opening of the measuring chambers;

(6) The motor 23 is energized and the conveyor belt moves the bottles to the next station out of range of all the funnels;

(7) The air cylinders 35 operate to open the hopper with respect to the measuring chambers whereby such chambers are again filled with the powder;

(8) The operator slides the loading rack forwardly so as to feed another series of bottles under the funnels, the operator having filled the loading rack with bottles while the machine has been going through the above operating cycle.

Movement of the powder from the hopper into the measuring chambers and from the latter through the funnels into the bottles is accomplished by vibration, it being noted that the entire super-structure is supported by the vibration-producing means. The amplitude of the vibration is such that the powder is caused to flow freely and uniformly from the hopper into the measuring chambers. Further, and importantly, the absolute timing of the slide plate which closes off the hopper from the measuring chambers and the time period during which the measuring chambers are being supplied with powder from the hopper assures a uniform compacting of the powder within the measuring chambers for each operating cycle of the machine. This, together with the fact that the measuring chambers each have a precise volumetric capacity, results in a uniform quantity of powder fed into the bottles.

Reference is now made to Figure 2 which is a longitudinal sectional view taken along the line A-A of Figure 1. The super-structure which, obviously, is set back from the ledge supporting the bottle-loading rack, is here shown in elevation. While I show the entire super-structure supported by the single vibration-producing means resting on the mounting plate 16 it is apparent that two or more of such vibration-producing mechanisms may be employed. The side frames 41 of the super-structure carry the air cylinders 42, the latter being secured thereto by the screws 55. The pistons of the air cylinders are attached to the channeled ends of the crossbar 43 which crossbar has secured thereto the entire funnel and bottom gate assembly generally identified by the numeral 56. Such funnel and bottom gate assembly spans the space between the frames 41 and constitutes an element separate from the front wall 57 of the hopper. The threaded rods 80, carrying the thumb screws 46, are secured to and extend laterally forward from the crossbar 43 and are disposed within the triangular spaces 59 formed in the assembly 56. It will be apparent that when the pistons of the air cylinders 42 are moved downwardly under air pressure the crossbar 43 and the laterally-extending, threaded rods 80 are moved downwardly causing the entire assembly 56, including the funnels 20, to be lowered. The amount of downward movement of the assembly 56 is predetermined so that the tip of the funnels 20 will enter into the bottles 21 when the air cylinder pistons reach the limit of their downward travel. It is here pointed out that when the funnels are so lowered into the bottles the powder is emptied from the individual measuring chambers into the

it is preferable that this be done when the cams are in the position shown in Figure 25, and such position of the cams will be made apparent to the operator when the illustrated cam 120 brings about a stoppage of the super-structure vibration.

While I prefer to design the machine for continuous automatic operation, as described, it will be apparent that a discontinuous type of operation may be provided by inserting a conventional single-revolution clutch between the cam shaft 125, Figure 24, and the reduction gearing 126. In such arrangement, the closure of the main operating switch will result in a single revolution of the cams after which the machine will stop. Each operating cycle, therefore, must be initiated by a closure of the main switch by the operator. Also, the rack which moves the next series of bottles on to the belt into the bottle-filling position need not be automatically operated by the air cylinders 62 shown in Figures 1 and 5. Elimination of these air cylinders will require the operator manually to move the rack to its forward and return positions. It is believed these variations, designed to meet specific operational requirements, can readily be made by those skilled in this art.

With respect to the continuously automatic arrangement shown in the drawings, I here wish to point out that the operating speed is set so that the cams will complete a full revolution in 10 seconds and that the time during which the bottle-feed rack is in its normal position is approximately 8 seconds, which time is ample for the operator to position a plurality of bottles into proper position in the rack. The number of funnels incorporated in a given machine will, of course, involve a consideration of the time during which the rack is in its normal position. I have found that the above timing-cycle will support a 20 funnel machine without imposing undue hardship on the operator.

A powder-filling machine made as herein described affords numerous advantages over prior machines of this class, specifically:

(1) The machine is of simple construction requiring a minimum of maintenance.

(2) The vital operating components, particularly those coming into contact with the powder, are of dust-tight construction.

(3) The operating accuracy of the machine far exceeds that of present machines. By actual test, my machine will fill the bottles with an accuracy of 2% on sticky powders and better than 1% on free-flowing powders.

(4) Those parts of the machine coming into contact with the powder are easily dismantled and reassembled for purposes of periodic sterilization.

(5) The machine is readily adjusted to compensate for density variations among powders of different batches and such adjustment is possible over a wide range.

(6) The machine can be conditioned quickly and accurately to discharge a required, measured amount of powder into the bottles, from 20 milligrams to 5 grams, or more, by merely replacing the measuring chambers. In actual practice, a given set of measuring chambers are adapted for a 10 to 1 variation in volumetric capacity by means of the adjustment screws.

(7) The machine will operate uniformly with a wide variety of powders from free-flowing to sticky. The vibration of the super-structure at an amplitude of approximately .020 inch results in a reliable movement of even sticky amorphous powders having the consistency of wet clay.

Having now described my invention in detail in accordance with the patent statutes, various changes and modifications will suggest themselves to those skilled in this art and it is intended that such changes and modifications shall fall within the spirit and scope of the invention as recited in the following claims.

I claim:

1. Apparatus for dispensing measured quantities of powder or the like material comprising a storage hopper for the material and having an opening in the bottom; a measuring chamber disposed in fixed position below the hopper opening and having an upper end normally communicating with the hopper through the hopper opening; a vertically-movable member having a sloping wall forming the bottom of the measuring chamber, said member being movable between an uppermost position to close the bottom of the measuring chamber and to a lowermost position to space the sloping wall from a side wall of the measuring chamber thereby forming a chamber-discharge opening; a slidable plate movable between a chamber-closing position where said plate closes the upper end of the chamber from the hopper and a chamber-opening position permitting flow of material from the hopper into the chamber; means alternately moving the said slidable plate from chamber-closing to chamber-opening position and correspondingly moving the said vertically-movable member from lowermost to uppermost position; and means continuously vibrating the hopper and measuring chamber, said means being operatively disassociated from the means moving the said slide plate and vertically movable member.

2. The invention as recited in claim 1, wherein the measuring chamber is offset relative to the bottom of the hopper and said slide plate is movable along a wall of the hopper.

3. A powder-filling machine comprising a base member; a normally-stationary conveyor belt carried by the base member; a super-structure disposed over and spaced from the base member; a storage hopper for powder carried by the super-structure; a measuring chamber carried by the super-structure and communicating with the hopper, said chamber having a discharge opening over the belt; a first closure means operative to close-off the measuring chamber from the hopper; a second closure means operative to close-off the discharge opening of the chamber; means controlling the operation of the said first and second closure means to alternately permit the flow of powder from the hopper into the measuring chamber and from the measuring chamber through its discharge opening; means for positioning a bottle on to the belt and in bottle-filling-alignment with the discharge opening of the chamber, automatic means to move the belt after the said second closure means has closed the discharge opening of the measuring chamber, and power means continuously vibrating the super-structure at a positive, substantially-constant amplitude and frequency during the entire time that powder flows into and out of the measuring chamber.

4. The invention as recited in claim 3, wherein the said power means vibrating the super-structure comprises electromagnetic means carried by the base member and wherein the super-structure is supported solely by the said electro-magnetic means.

5. The invention as recited in claim 3, including means adjustable to alter the spacing between the super-structure and the base member.

6. The invention as recited in claim 3, including adjustable means to vary the volumetric content of the measuring chamber.

7. The invention as recited in claim 3, wherein the means for positioning a bottle on to the belt comprises a rack slidably carried by the base member and including means for supporting a bottle in upright position, said rack being movable from a first position spaced laterally of the belt to a second position overlying the belt.

8. A powder-filling machine comprising a base member; a conveyor belt movable along the upper surface of the base member; an electric motor adapted when energized to move the belt; mechanical vibration-producing means supported on the base member; a super-structure

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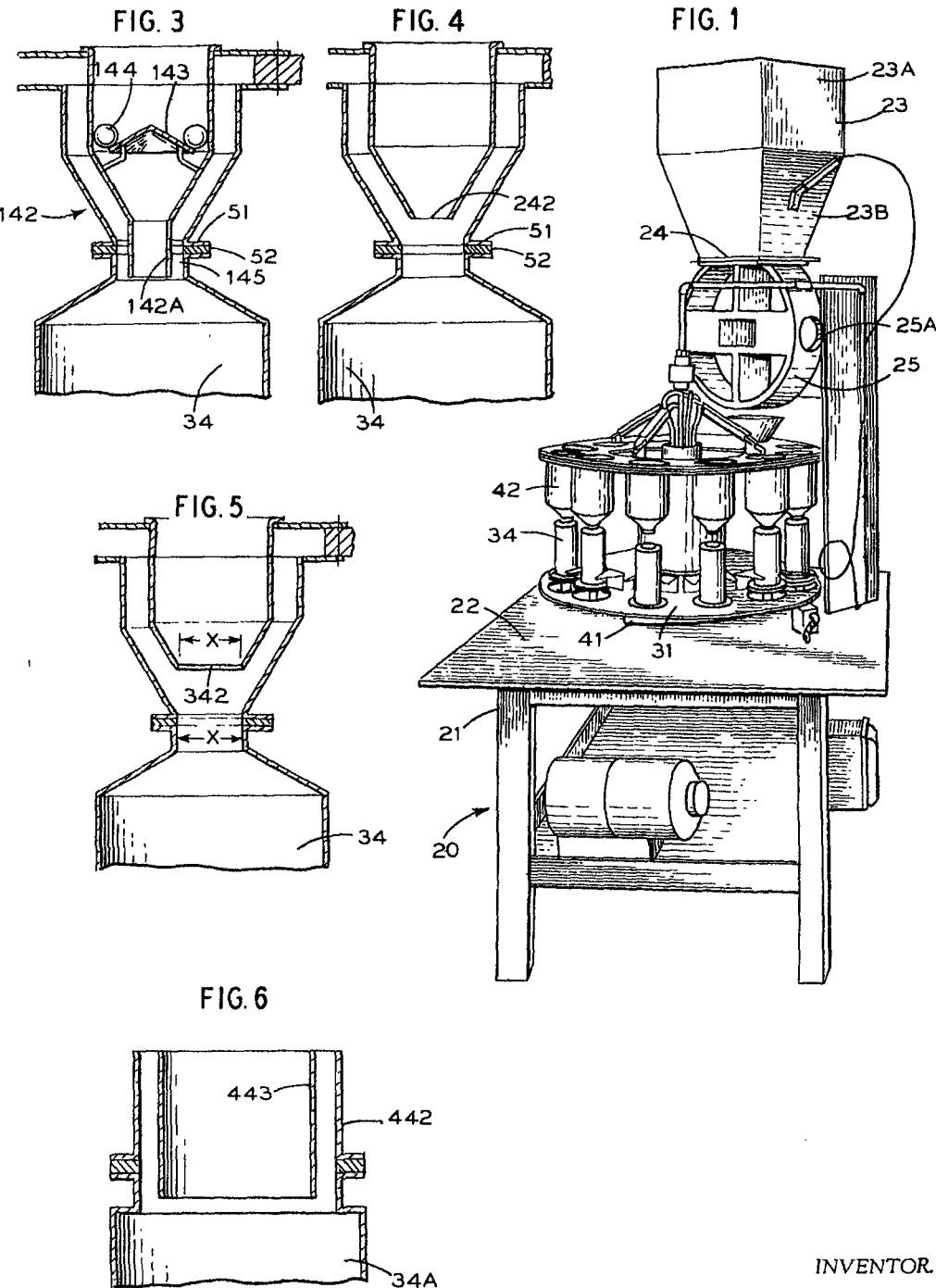
Feb. 28, 1967

T. ARONSON
FILLING MACHINE

3,306,323

Filed April 23, 1964

3 Sheets-Sheet 1



INVENTOR
Theodore Aronson
BY *Irving Seidman*
ATTORNEY

Feb. 28, 1967

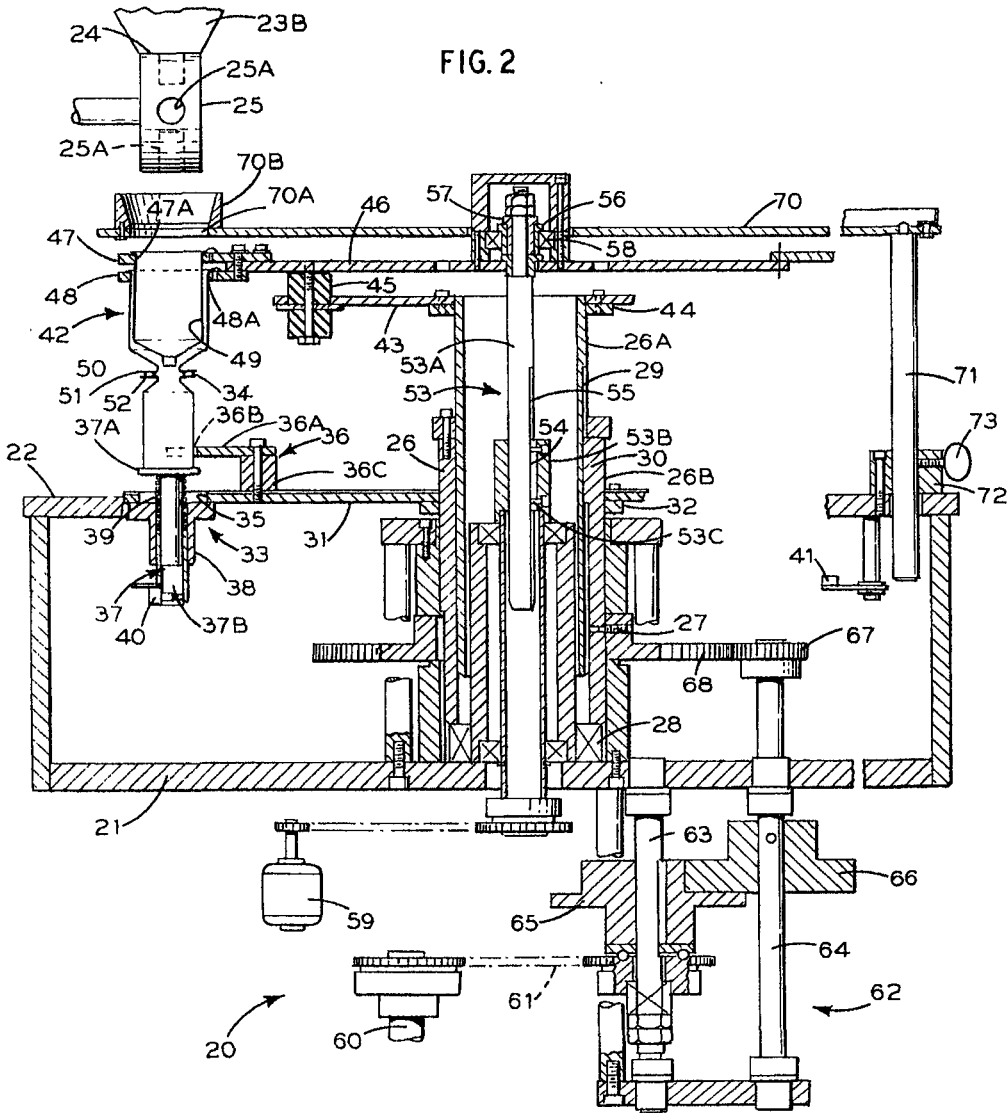
T. ARONSON

3,306,323

FILLING MACHINE

Filed April 23, 1964

3 Sheets-Sheet 2



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Feb. 28, 1967

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FILLING MACHINE

3,306,323

Filed April 23, 1964

3 Sheets-Sheet 3

FIG. 7

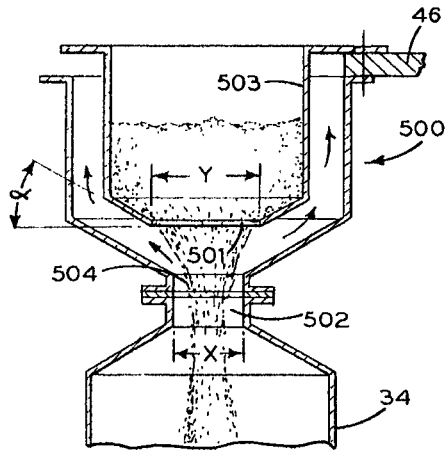


FIG. 8

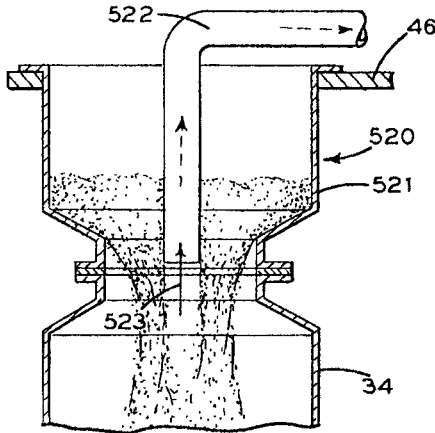


FIG. 10

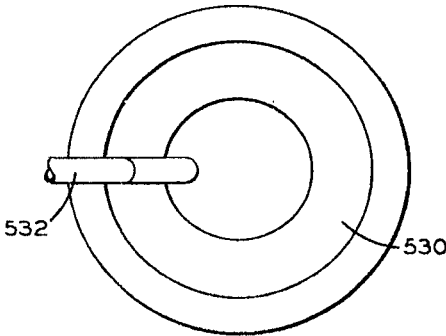


FIG. 12

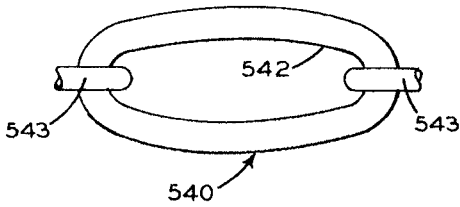


FIG. 11

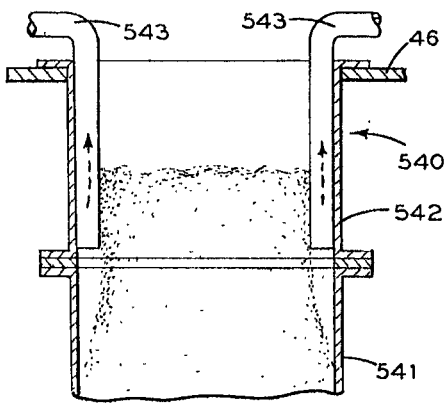
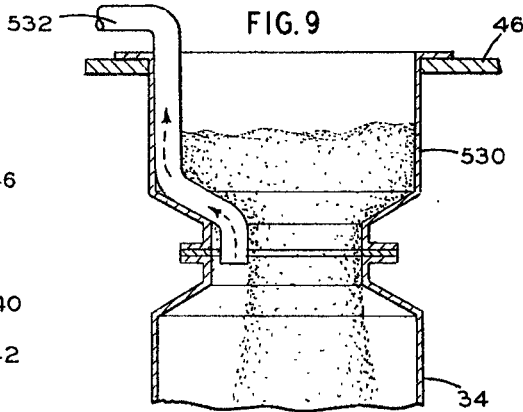


FIG. 9



INVENTOR.

Theodore Aronson

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United States Patent Office

3,306,323

Patented Feb. 28, 1967

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3,306,323

FILLING MACHINE

Theodore Aronson, 60 Crescent Road,
Glen Cove, N.Y. 11542

Filed Apr. 23, 1964, Ser. No. 361,935
15 Claims. (Cl. 141-72)

This invention relates in general to a method and apparatus for filling a bottle, vial or container with a fluid or flowable material, and more specifically to a method and apparatus for facilitating the filling of a comparatively large amount of powdered material or the like into a container such as a bottle, vial or the like which is generally formed with a restricted neck opening.

Heretofore, considerable difficulty has been encountered in the filling of a container, such as a bottle or vial having a restricted neck opening, with a comparatively large amount of a powdered material or the like. In the past, an auger was generally used to feed relatively large amounts of powder into a restricted neck container. Such augers would pick up the powdered material, and upon rotation thereof would advance the powder therealong to its point of discharge. However, the inherent in the operation of an auger is the generation of undesirable heat by the powdered material as it is being advanced along the vanes of the auger. The heat thus generated has a deleterious effect on the powder filling operation as it causes corrosion and eventual jamming, all of which results in a loss of speed and poor efficiency. Frequently, the powdered material itself is adversely affected by the heat generated as many powdered products cannot take such heat.

Another troublesome problem encountered in powder filling operations utilizing the known filling techniques, is that of dusting, which is the contamination of the atmosphere in and around the area of the filling operation by the fine or minute particles of powder which tend to become suspended therein. For this reason, workers in and around a powder filling operation are required to wear face masks to avoid breathing of the minute particles of powder thus suspended in the air for obvious health reasons. This condition becomes even more aggravated in the event a highly poisonous powder is being handled, e.g. insecticides and the like.

Therefore, an object of this invention is to overcome the above noted disadvantages and to provide a method and apparatus for filling containers and especially those having restricted neck openings with a comparatively large amount of powdered material in a rapid, efficient and positive manner.

Another object is to provide a powder filling method and apparatus in which containers with restricted neck openings are filled with a comparatively large amount of powder in a manner which assures compacting of the powder within the container so that the same is filled with a desired capacity.

Another object is to provide a powdered filling method and apparatus that will efficiently and rapidly flow a comparatively large amount of powder through restricted opening of the container in a minimum of time and with a minimum of dusting.

Still another object is to provide a powder filling machine in which provision is made for effecting evacuation of the air which is displaced by the powdered material filling the same from within the container to result in compacting of the powder within the container, thereby allowing the same to be filled to a desired capacity.

Still another object is to provide a method and apparatus in which the air displaced from within the container as it is being filled is evacuated to the atmosphere with a minimum of entrained powdered particles.

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The foregoing objects and other features and advantages are attained by the method of disposing a funnel means provided with air evacuation means adjacent the mouth opening of a container or vial to be filled with a flowable material. Preferably the mouth of the container or vial to be filled is brought into sealing relationship with the discharged end of the funnel means with the interior of the container placed in open communication with the air evacuation means associated with the funnel means. A comparatively large quantity of powdered material or the like is then placed into the funnel means and the funnel means vibrated, the vibration thereof being imparted to the vial or container connected thereto. The air within the container displaced by the powdered material flowing thereinto is then evacuated to the atmosphere through the air evacuating means. Accordingly, the vibration of the funnel means enhances the flow of the material through the opening of the container, the compacting of the material within the vial, and the evacuating of the air displaced by the powdered material flowing into the container.

One form of the apparatus by which the foregoing method can be automatically performed comprises essentially of a frame having mounted thereon a hopper means for containing a supply of powdered material in bulk form. Operatively associated with the hopper means is a rotating filling head means provided with a plurality of measuring chambers. The arrangement is such that upon rotation of the filling head, the respective measuring chambers are successively rotated relative to the hopper means between a filling and discharging position.

A means is provided for successively conveying a series of containers to be filled through the discharging position of the respective measuring chambers. Interposed between the filling head means and the opening end of the containers, transported by the conveying means, is a funnelling means for receiving the powdered material as the same is discharged from the respective filling head measuring chambers. In accordance with this invention the funnelling means comprise a plurality of connected funnelling stations, each of which are successively moved through the discharging position of the respective filling chambers in synchronization with the containers moving therethrough.

The respective funnelling stations each comprise an inner and outer funnel spatically disposed one within the other. The funnels are arranged so that the respective discharge openings thereof are disposed in alignment with the open end of the containers as the latter are carried by the conveying means. Means are associated with the conveyor means for lifting the respective containers carried thereon into sealing relationship with the reduced mouth opening of the outer funnel of its corresponding funnelling station as the respective containers are about to be moved through the discharging position of the rotating filling head means. Means are also operatively associated with the funnel means for imparting a vibratory movement thereto so as to hasten the flow of the powdered material deposited into the respective funnelling station thereof. The arrangement is such that the air within the container, displaced by the powdered material flowing thereinto, is exhausted through the spacing defined between the respective funnels of the associated funnelling station. Means are also provided for varying the vertical distance between a conveying means and the funnelling means to accommodate varying size bottles or containers.

In other forms of the invention each of the respective funnelling stations may comprise of a single vibratory funnel co-operatively associated with a modified air

21. The column 26 comprises an inner and outer tubular section 26A, 26B respectively which are telescopically nested one within the other, and slidably interconnected for relative movement between extended and retracted positions. A suitable set screw 27 or the like is provided to fix the relative positions of the respective column sections 26A, 26B in an adjusted position. In accordance with this invention, the respective sections 26A, 26B of the column are keyed in driving relationship and a suitable bearing 28 is interposed between the base of the column 26 and the frame 21 so as to render the column 26 rotatably journaled thereto. As shown, in FIG. 2, the inner section 26A of the column is provided with a longitudinally extending groove 29 or key way for receiving a complementary key 30 formed on the outer column section, the reason therefor becoming hereinafter more apparent.

A conveying means is provided for successively receiving and transporting a series of containers to be filled successively through the discharging position of the filling head turret 25. In the illustrated embodiment, the conveyor means comprises a turntable 31. The turntable 31 is secured to the outer section 26B of the column 26 by a flange or collar 32 fixed to the column 26. Accordingly, the turntable 31 secured to the column will rotate in unison therewith as will be hereinafter described.

As best seen in FIGS. 1 and 2, the turntable 31 is provided about the outer periphery thereof with a plurality of circumferentially spaced container stations 33, each being adapted to receive and locate a container 34 to be filled thereon. Each container station 33 is defined by an opening 35 formed in the turntable 31 and it is sized to accommodate the bottom of a container 34 or vial to be filled. Guide means 36 are located on the turntable 31 adjacent each of the respective openings 35 formed therein for assuring the positioning of a container 34 in proper alignment with the opening formed therein.

The guide means comprises a positioning plate 36A formed with a suitable notch 36B for receiving a container 34 and it is supported by a block 36C fixed to the table 31. Accordingly the guide plate 36A is fixed above the turntable 31 at each station 33.

Means are provided at each of the container station 33 for supporting the container 34 for vertical movement to effect the raising and lowering of the container thereat during the operating cycle of the filling apparatus as will hereinafter be described. The movable supporting means at each station comprises a piston 37 which is movably mounted in a sleeve 38 fixed in alignment with each of the station opening 35. As shown in FIG. 2, the respective sleeves 38 are suitably connected to the undersurface of the table 31 adjacent each of the station openings. Accordingly, the associated pistons each include a head portion 37A sized to be received in the station opening 35 and a connected stem portion 37B, the latter being slidably received within the bore of the associated sleeve 38 for relative movement thereto. The head portion 37A of the piston, adapted to be received within the opening 35 of each station 33, defines a movable platform or support on which the container 34 is carried during the filling cycle of the apparatus. A spring means 39 disposed about the piston stem 37B is provided to normally bias the head of the piston toward its raised position.

Associated with the stem 37B of each piston 37 is a cam follower or roller 40 which is adapted to engage with a fixed cam 41 connected to the frame so as to extend to the undersurface of the table. The co-action between the fixed cam 41 and the cam follower 40 of the respective pistons 37 is such that through a certain portion of the filling cycle or operation, as will be hereinafter described, the piston 37 is retracted against the bias of its spring 39 so that the head portion 37A thereof is disposed in its lowered position wherein the surface

of the piston head 37A is rendered substantially flush with the level of the turntable 31. Accordingly the fixed cam 41 is set at that position of the filling operation or cycle in which the filled containers are to be removed and an emptied container substituted therefor.

In accordance with this invention, the filling of the containers, and in particular containers having a restricted neck opening, which are successively carried through the discharging station of the turret filling head on the turntable, is enhanced by a novel funnelling means 42. The funnelling means 42 is specifically constructed and arranged so as to permit the passage of a comparatively large amount or quantity of powdered material through the restricted opening of the containers in a minimum of time and with a minimum of dusting.

This is attained by a funnelling means 42 which comprises a mounting plate 43 which is secured to the upper end of the inner column section 26A. As shown, the mounting plate 43 is fixed to a collar 44 or flange which is connected to the inner column section 26A. Circumferentially spaced about the periphery of the mounting plate 43 are a plurality of shocks 45 on which there is movably supported a substantially circular shaker plate 46. Connected by suitable fasteners to the outer marginal edge portion of the shaker plate 46 are a pair of spaced ring members 47, 48, one ring 47 being connected to the upper surface of the shaker plate 46 and the other ring 48 being connected to the undersurface of the shaker plate 46. The arrangement is such that the respective rings 47, 48 are concentrically disposed with the outer peripheral portions thereof extended beyond the marginal outer edge of the shaker plate 46. Accordingly each of the respective ring members 47, 48 is provided with a series of aligned openings 47A, 48A the number of openings in each ring member corresponding to the number of container stations 33 on said turntable 31.

Supported in the respective openings 47A, 48A of each ring member 47, 48 is a funnel 49, 50. In the arrangement described, and as apparent in FIG. 2, the funnels 49 carried in the openings of ring member 47 are concentrically disposed within the funnels 50 carried by ring member 48. Accordingly each funnel station, thus defined, comprises an inner and outer funnel 49, 50 which are maintained in co-axially spaced relationship with respect to one another. Each of the funnels at each station is provided with reduced neck openings which are arranged to be co-axially disposed with respect to the restricted neck opening of the containers adapted to be associated therewith.

In accordance with this invention, each of the respective outer funnels 50 of at each of the funnel stations 33 is provided with a means against which the neck or opening of a container associated therewith is urged during a filling operation to define a seal therebetween. As best seen in the respective modification of the individual funnel stations of FIGS. 3 to 6, the end of the respective outer funnels is provided with a circular flange 51 to which there is secured a gasket 52 or seal. Thus as the container 34 associated therewith is to be filled, the operation is such that the respective pistons 37 at each of the container stations 33 will move the container 34 into sealing position with the end of the outer funnel 50.

To facilitate the filling operation a means is provided to impart an orbital vibration to the shaker plate and the funnels 47, 48 carried thereon during a filling cycle of the apparatus. The vibration of the shaker plate 46 is accomplished by means of a drive shaft 53 which is rotatably journaled within the supporting column 26 of the apparatus. As noted in FIG. 2, the drive shaft 53 of the vibrating means includes telescopically connected inner and outer shaft sections 53A, 53B, nested one within the other and connected for movement between extended and retracted position. A cooperating key 54 and key way 55 formed on the respective shaft segments 53A,

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES

202086
Bogotá, D.C.,

Abogado
CARLOS R. OLARTE

ASUNTO	Radicación	06009534
	Trámite	011
	Evento	379
	Actuación	430
	Oficio	14189
	Folios	15

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☐		
Vía PCT (fase nacional)	☒	Cap. I	☐
		Cap. II	☒
No. Sol. Internacional	PCT/US2004/02199		
Fecha de Presentación Internal.	09-07-2004		

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

Descripción:	Folios: 31 a 54
Reivindicaciones:	Folios: 54 a 58
Dibujos:	Folios: 60 a 64
Prioridad:	Folios: 4 a 30
	06-08-2003. GB 0318437.1

2. Objeto de la invención

- Título de la solicitud: "UN PROCEDIMIENTO Y UN APARATO PARA RELLENAR UN ENVASE" (folio 31).
- Objeto de la invención: Según el autor existen varios inconvenientes al introducir polvos cohesivos dentro de un envase pequeño ya que estos se pegan a las paredes lo que no permite un llenado homogéneo. Por lo tanto, el autor propone un procedimiento para llenar con un medicamento en polvo un envase, agitando mecánicamente la tolva de llenado y después el

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recipiente de forma que el medicamento se encuentre a una densidad predeterminada.

- El objeto de esta invención se clasifico como B65B1/08; B65B1/22 según la Clasificación Internacional de Patentes (IPC.).

3. De la solicitud de Patente

3.1. Reivindicaciones (artículo 30 D 486)

Después de realizar el estudio completo de la solicitud, se hacen las siguientes observaciones a este capítulo:

- Se sugiere al solicitante eliminar la expresión: “para asegurar que el envase se llena con polvo a una densidad predeterminada” debido a que dentro de las reivindicaciones no se aceptan efectos ventajas o resultados a alcanzar (la expresión no será tenida en cuenta dentro del examen). Adicionalmente eliminar y no incluir dentro de este capítulo términos imprecisos como: “al menos”, etc.
- Se sugiere al solicitante eliminar la reivindicación dependiente veinte (20, folio 58) pues es innecesaria y no esta aportando elementos o características nuevas o inventivas al estado de la técnica.
- Se sugiere al solicitante incluir dentro de todas las reivindicaciones los números de referencia de cada uno de los elementos que hacen parte de la invención, de acuerdo con la numeración empleada en los dibujos (figuras 1 a 8), con el fin de hacer mas fácil y sencilla la comprensión de la materia objeto reivindicada

4. Determinación del Estado de la Técnica

Teniendo en cuenta que la fecha de prioridad reivindicada es 06-08-2003, se encontraron los siguientes documento relevantes:

N.	Documento	Titulo	Fecha de pub.
D1	US2857938	POWDER-FILLING MACHINE	27-10-1953
D2	US3306323	FILLING MACHINE	28-02-1997

5. Análisis de patentabilidad (artículo 14 D486)

5.1 Novedad (artículo 16 D486)

El estudio se realizó comparando elemento por elemento de la invención tal como esta definida en la reivindicación uno (1) con el documento D1, encontrando que el mencionado documento revela todos los elementos y características de dicha reivindicación:

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Reivindicación Uno (1, folio 54)	D1
1. Un procedimiento para llenar con un polvo un envase que tiene un extremo abierto, el procedimiento incluye: posicionar una salida de descarga de una tolva que contiene polvo por encima del extremo abierto del envase	SI Ver: elementos 32, 21, 20, 33 figura 2, 19.
2. Agitar mecánicamente la tolva de manera que haga que el polvo sea transferido desde la tolva hasta el envase	SI Ver: elementos 20, 33, 10, figura 2, 19, columna 6 fila 27 a 43.
3. Y agitar mecánicamente el envase; en el que las etapas de agitar mecánicamente se llevan a cabo, al menos, una cantidad predeterminada de veces suficiente.	SI Ver: elementos 32, 21, 20, 33, 10, figura 2, 19, columna 6 fila 27 a 43

De acuerdo con lo anterior, todos los elementos y características que forman parte del “UN PROCEDIMIENTO Y UN APARATO PARA RELLENAR UN ENVASE” mostrados en la reivindicación independiente uno (1, folio 54), ya fueron divulgados en D1, por lo cual se podría considerar que carece de novedad.

El capítulo reivindicatorio no muestra en forma clara lo nuevo que se pretende aportar a la técnica ni aporta diferencias a lo ya existente. El análisis anterior permitiría afirmar que la presente solicitud no cumpliría con lo estipulado en el artículo 16 de la Decisión 486 de la Comisión de la Comunidad Andina de Naciones.

El documento D1 igualmente anticipa las características de las reivindicaciones 2-3 (Ver en D1: columna 6 fila 40 a 43), 4-6 (Ver en D1: elemento 21, columna 8 fila 57 a 60), 7, 10, 14, 17, 19 6 (Ver en D1: elemento 12, figuras 24 a 26), 16, 18 6 (Ver en D1: figura 20, columna 15 fila 54 a 56).

Al comparar elemento por elemento de la invención tal como esta definida en la reivindicación veintiuno (21) con el documento D2, encontramos que el mencionado documento revela todos los elementos y características de dicha reivindicación:

Reivindicación Veintiuno (21, folio 58)	D2
1. Un aparato para llenar con polvo un envase que tiene un extremo abierto, incluyendo el aparato: un soporte para el envase.	SI Ver: elementos 20, 34, 31 figura 1
2. Una tolva que tiene una salida de descarga y que se puede desplazar selectivamente con respecto al soporte para posicionar la salida de descarga por encima del extremo abierto de un envase soportado.	SI Ver: elementos 42, 20, 34, 31 figura 1
3. Un dispensador para agitar mecánicamente la tolva y el envase para hacer que el polvo sea transferido desde la tolva hasta el envase.	SI Ver: elementos 46, 42, 34, figura 1, 2, 7
4. Y un controlador para hacer que el dispensador funcione, al menos, una cantidad de veces predeterminada que sea suficiente.	SI Ver: elementos 53a, 53b, 56, 57, 62, figura 2

De acuerdo con lo anterior, todos los elementos y características que forman parte del “UN PROCEDIMIENTO Y UN APARATO PARA RELLENAR UN ENVASE” mostrados en la reivindicación independiente veintiuno (21, folio 58), ya fueron divulgados en D2, por lo cual se podría considerar que carece de novedad.

El capítulo reivindicatorio no muestra en forma clara lo nuevo que se pretende aportar a la técnica ni aporta diferencias a lo ya existente. El análisis anterior permitiría afirmar que la reivindicación veintiuno (21) no cumpliría con lo estipulado en el artículo 16 de la Decisión 486 de la Comisión de la Comunidad Andina de Naciones.

5.2 Nivel Inventivo (artículo 18 D486)

Continuando con el estudio de patentabilidad, la reivindicación dependiente nueve (9) define para el orificio de la tolva, la malla, el filtro o para la rejilla un tamaño de orificio de aproximadamente 0, 5 mm. Una variación de las dimensiones de la salida de descarga del material para variar los volúmenes del envasado fue revelada con anterioridad por D1 (Ver en D1: columna 15 fila 56 a 63).

Así las cosas, la solicitud se vería afectada por nivel inventivo ya que sería evidente para un experto en la materia modificar la invención propuesta por D1 incluyendo dimensiones diferentes para el orificio de la tolva, la malla y/o el filtro logrando así por medio de un sistema de vibración en la tolva un relleno para envases pequeños de forma que se llene dicho envase hasta el borde sin que haya ningún rastro del medicamento depositado sobre la superficie que rodea el envase. Hecho que no constituye un resultado sorprendente e inesperado y que por el contrario se ubica en el desarrollo normal de la tecnología. El análisis anterior permitiría afirmar que la presente solicitud no cumpliría con lo estipulado en el artículo 18 de la Decisión 486 de la Comisión de la Comunidad Andina de Naciones.

6. **Conclusión:**

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

N°	Documento N°	Reivindicaciones afectadas	Requisito que afecta
D1	US2857938	1-20	NOVEDAD
D1	US2857938	1-20	NIVEL INVENTIVO
D2	US3306323	21	NOVEDAD

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta (60) días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

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Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única N° 10 de 2001.


ALIX CARMENZA CÉSPEDES DE VERGEL
Jefe de División de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista, de fecha
30 Oct. 2009

CONCEPTO TÉCNICO No 3320	EXAMINADOR TÉCNICO Código No.202086
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7/12

REPUBLICA DE COLOMBIA

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

RESOLUCION 41725

Por la cual se niega una patente de invención

Rad. PCT/06-9534

EL SUPERINTENDENTE DE INDUSTRIA Y COMERCIO

en ejercicio de sus facultades legales, en especial de las que se confirieron en el artículo 3, numeral 30 del decreto 3523 de 2009, y

CONSIDERANDO:

PRIMERO: Que la solicitud de patente de invención titulada "UN PROCEDIMIENTO Y UN APARATO PARA RELLENAR UN ENVASE", que corresponde a la solicitud internacional PCT/GB2004/003380 de fecha 04 de agosto del 2004, fue radicada en esta Superintendencia el 01 de febrero del 2006 bajo el número 06-009534 -00000-0000, para que se dé comienzo a la fase nacional en virtud del Tratado de Cooperación en Materia de Patentes (PCT).

SEGUNDO: Que efectuado el examen de forma en cuanto a los requisitos que debe llenar la solicitud y cumplidas las exigencias legales, se ordenó publicar el extracto sin que se hubieran presentado oposiciones por parte de terceros.

TERCERO: Que el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina establece que: *"Si la oficina nacional competente encontrara que la invención no es patentable o que no cumple con alguno de los requisitos establecidos en esta Decisión para la concesión de la patente, lo notificará al solicitante. Este deberá responder a la notificación dentro del plazo de sesenta días contados a partir de la fecha de la notificación. Este plazo podrá ser prorrogado por una sola vez por un período de treinta días adicionales.(...) Si el solicitante no respondiera a la notificación dentro del plazo señalado, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, la oficina nacional competente denegará la patente"*.

CUARTO: Que realizado el examen de fondo, se requirió al solicitante en los términos del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, para que presentara respuesta a las observaciones de carácter técnico visibles a folios 100 a 114 del cuaderno administrativo, relacionadas con la patentabilidad o cumplimiento de los requisitos establecidos por esta Decisión para la concesión de la patente. Frente a dicho requerimiento no hubo pronunciamiento alguno por parte del solicitante, por lo cual es procedente negar el privilegio de patente solicitado con fundamento en lo dispuesto en el artículo 45 de la Decisión 486.

REPUBLICA DE COLOMBIA

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

RESOLUCION 10.

Por la cual se niega una patente de invención

Rad. PCT/06-9534

RESUELVE:

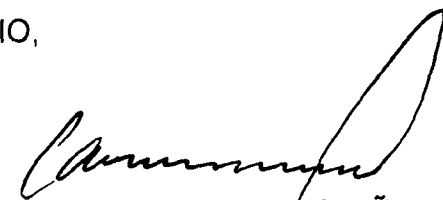
ARTICULO PRIMERO: Negar el privilegio de patente de invención para la solicitud correspondiente a "COMPUESTOS UN PROCEDIMIENTO Y UN APARATO PARA RELLENAR UN ENVASE", que entró en fase nacional en virtud del Tratado de Cooperación en Materia de Patentes (PCT).

ARTICULO SEGUNDO: Notificar personalmente el contenido de la presente resolución al doctor Carlos Reinaldo Olarte García, en su calidad de apoderado de PFIZER LIMITED., o a quien haga sus veces, entregándole copia de la misma, advirtiéndole que contra ella procede el recurso de reposición interpuesto ante el Superintendente de Industria y Comercio, al momento de la notificación o dentro de los 5 días hábiles siguientes a ella.

NOTIFÍQUESE Y CUMPLASE

Dada en Bogotá, D.C., a los 05 de Mayo de 2007

EL SUPERINTENDENTE DE INDUSTRIA Y COMERCIO,


GUSTAVO VALBUENA QUIÑONES

Doctor
CARLOS REINALDO OLARTE GARCIA
Diagonal 34 No. 5-28
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