No. 775,059. PATENTED NOV. 15, 1904.

P. M. WISE.

BOTTLE FILLING MACHINE.

APPLICATION FILED MAR. 30, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

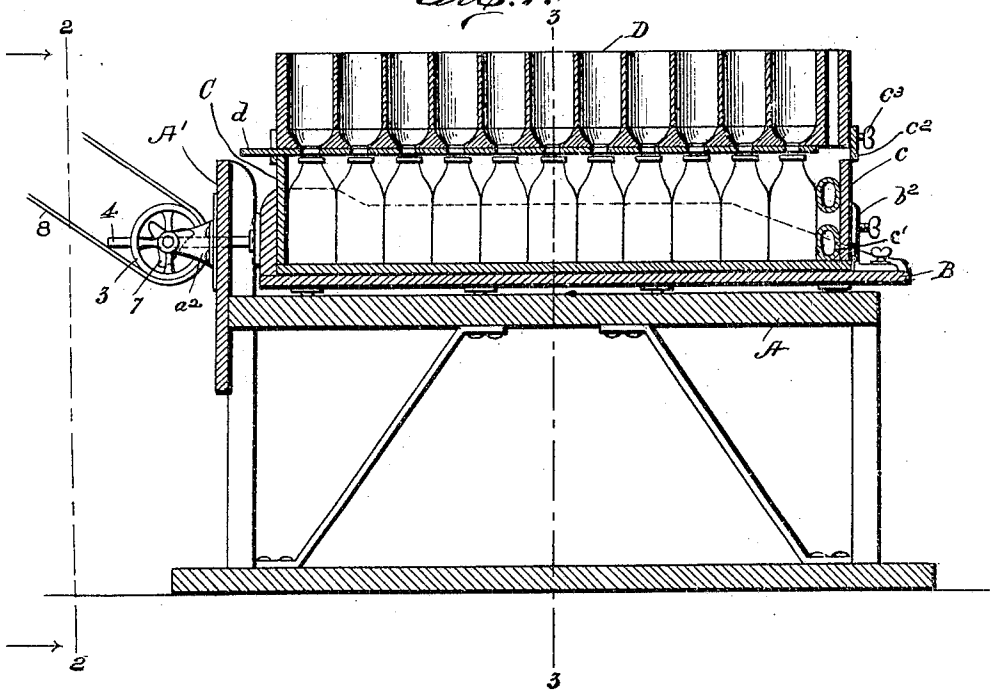


Fig. 2.

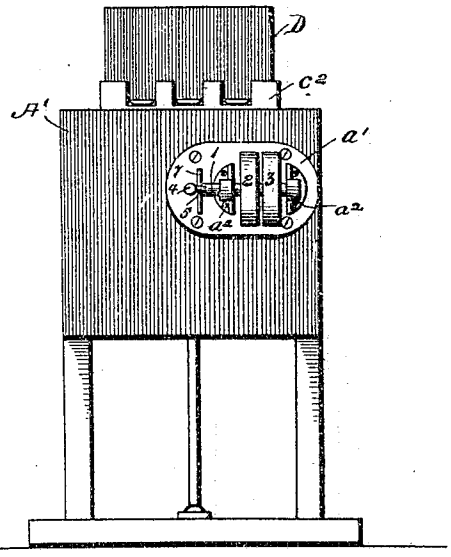
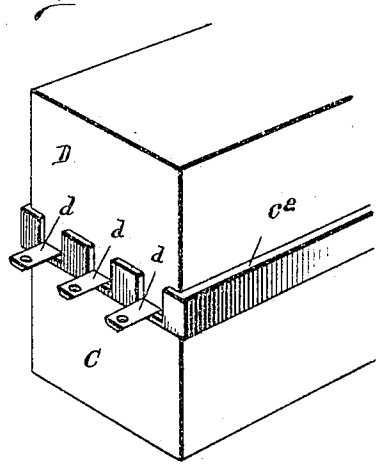


Fig. 6.



Witnesses

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APPLICATION FILED MAR. 30, 1904.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

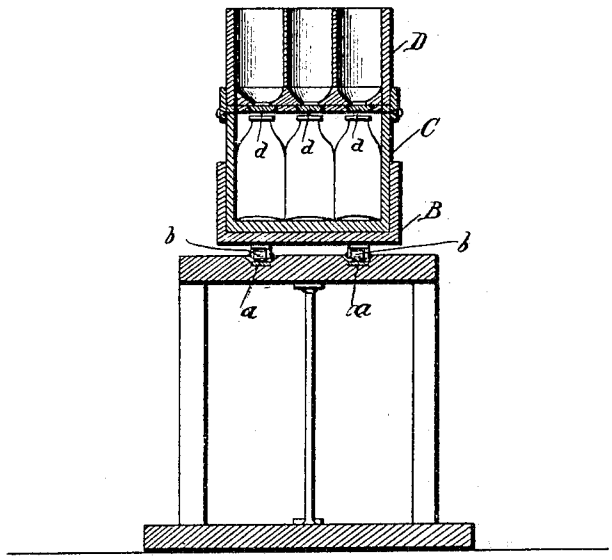


Fig. 4.

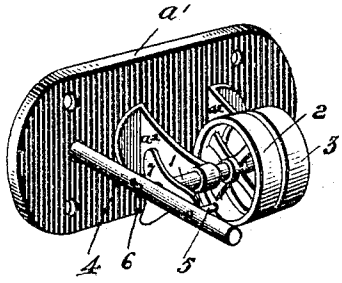
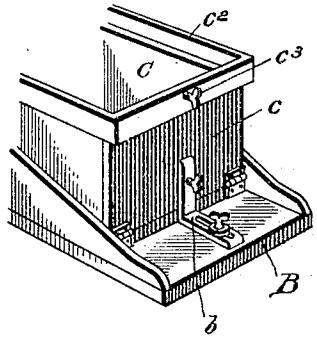


Fig. 5.



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No. 775,059. Patented November 15, 1904.

UNITED STATES PATENT OFFICE.

PETER MANUEL WISE, OF NEW ROCHELLE, NEW YORK, ASSIGNOR TO BIOPLASM COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

BOTTLE-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 775,059, dated November 15, 1904.

Application filed March 30, 1904. Serial No. 200,742. (No model.)

To all whom it may concern:

Be it known that I, PETER MANUEL WISE, a citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Bottle-Filling Machines, of which the following is a specification.

My said invention consists in an improved construction and arrangement of parts of a machine for filling bottles or other containers with dry substances, such as powder of various kinds, whereby a machine for this purpose is provided which will be very efficient in use and comparatively inexpensive to construct, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar reference characters indicate similar parts, Figure 1 is a longitudinal vertical section through a machine embodying my said invention; Fig. 2, an end elevation of the same as seen when looking in the direction indicated by the arrows from the dotted line 2 2 in Fig. 1; Fig. 3, a transverse section on the dotted line 3 3 in Fig. 1; Fig. 4, a detail perspective view showing the operating parts; Fig. 5, a similar view of one end of the bottle-containing box, and Fig. 6 a similar view of the opposite end of the same with the material-containing box therein.

In said drawings the portions marked A represent the frame of the machine; B, a vibratory table; C, a box for holding the bottles or containers to be filled; D, a second box mounted thereon for containing the material which is to be bottled or packed.

The frame A is of any suitable construction and arrangement, consisting of a longitudinal bed suitably supported and braced, on which are mounted tracks *a*, preferably in longitudinal and parallel grooves in its top surface. On one end it is provided with a part A′, which extends above said bed and has secured on its outer face the plate a', carrying the brackets a^2, in which is mounted the shaft 1, on which shaft are mounted a fast pulley 2 and a loose pulley 3.

The vibratory table B is of suitable dimensions to hold the box in which the containers are held and has antifriction-rollers *b* on its bottom adapted to engage and travel upon the tracks *a* of the bed of the frame A. Upon one end it is provided with a horizontal shaft 4, rigidly secured thereto and extending out through a bearing in the part A′ and plate a' on the end of the frame A. Transverse pins 5 and 6 are mounted in the outer end of said shaft a short distance apart and extend inwardly toward the brackets containing the shaft 1. On the outer end of said shaft and in a position between said pins is mounted a three-armed cam 7 of the peculiar form most clearly illustrated in Figs. 1 and 4, the operation of which will be presently more fully described. Said vibratory table B is provided with suitable side pieces to hold the box C in position and with a clip b^2 at the end opposite the shaft 4, which end is otherwise open to readily admit the box C and permit its removal, which clip is for the purpose of holding said box C tightly against the opposite end of said table and preventing any independent motion thereof.

The box C is rectangular in form and of suitable dimensions to contain the number of bottles desired arranged in rows, as indicated in the drawings, and preferably has one end, *c*, hinged for convenience in examining the bottles before removing the box from the machine. On the inside of said hinged end or door are mounted buffers or packing-rings c', which are made of suitable material, as rubber, and fill the space between said bottles and said door to prevent any motion of the bottles independent of the box. Around the top of said box C is mounted a band or flange c^2.

The box D is of suitable dimensions to just fit within said flange c^2 on the top of the box C, being held by said flange from any independent movement. It is formed with a number of cells corresponding to the number of bottles to be filled by the machine, each cell

being preferably of a size which will contain a quantity of the material required to just fill each of the bottles or containers. An aperture is formed in the lower end of each cell which exactly registers with the mouth of each bottle or container. Said apertures are adapted to be closed by a sliding plate *d*, arranged beneath each row of cells and containing apertures which when said plate is properly adjusted will open said cells into the mouths of said bottles or containers.

In operation the box C is first filled with the bottles or containers properly arranged and is placed in the vibratory table B and secured firmly by means of the clip c^2. The box D, with the cells filled with just the quantity of material which it is desired to pack in the bottles or containers, is placed upon the top of said box C within the flange c^2, being held tightly in such position by means of a set-screw c^3, extending through said flange c^2 and impinging against the end of said box. The driving-belt 8 is then shifted from the loose pulley 3 to the fast pulley 2 and imparts a rapid rotary motion to the shaft 4 and cam 7. The several faces of said cam will then operate to strike in rapid succession first one and then the other of the pins 5 and 6 and drive the shaft 4 rapidly back and forth, carrying with it the vibratory table B and the boxes containing the bottles and the material.

Each cam-face of the cam 7 is so arranged as to strike the respective pins 5 and 6 with a sudden stroke, imparting to the shaft a sudden jar at each reversal of its motion, which serves effectually to jar the material in the cells of the box D, so that any arching thereof or sticking to the sides of the cell will be prevented and all of said material will be transferred to the containers beneath. It also serves to more rapidly and completely settle the material into said containers and pack it as desired, thus securing a very rapid and effective operation. This peculiar form of cam whereby this jar is imparted, as well as the vibratory motion given to the table, is an important feature of my invention.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bottle-filling machine, the combination of a vibratory table, a frame holding the containers mounted on said table, a box provided with cells for holding the material to be packed mounted on the top of said frame above said containers and provided with openings arranged to communicate with said containers, a valve for opening and closing said openings, means for holding said frame securely on said vibratory table and means for holding said box securely on the top of said frame, and the driving mechanism, substantially as set forth.

2. In a bottle-filling machine, the combination of a bed, a vibratory table mounted on said bed on antifriction trucks or rollers, means for imparting a vibratory motion to said table, a box or frame for holding the containers, one end of which is adapted to be opened and closed, means for holding said end closed and securing the frame to the vibratory table, a second box mounted on the top of the first and secured thereto containing the material to be packed having apertures communicating with the containers, and a regulating-valve for opening and closing said apertures, substantially as set forth.

3. In a bottle-filling machine, the combination of the vibratory table, the containers mounted thereon, the material-holding box above said containers arranged to communicate therewith, and mechanism for imparting vibratory motion to the said table consisting of an arm or shaft having projecting points, a transverse driving-shaft having a cam mounted thereon, said cam being formed to strike said projecting points a sudden blow at each reversal of the motion of the shaft, substantially as set forth.

4. In a bottle-filling machine, the combination of the vibratory table carrying the containers and the material-holder, a horizontal arm or shaft extending out from one end thereof, a driving-shaft, and a cam mounted on said driving-shaft arranged to engage between transversely-extending points on said horizontal shaft and strike said points sudden blows alternately, substantially as set forth.

5. In a bottle-filling machine, the combination of a vibratory table carrying the containers, the material-holder arranged to communicate therewith, and operating mechanism comprising a reciprocating arm or shaft having projecting points at a distance one from the other and a rotary cam having a plurality of cam-faces mounted between said projecting points and arranged to throw said reciprocating arm or shaft back and forth, the formation of the cams being such as to strike said projecting points a sharp blow and impart to the vibratory table a sudden jar at each reversal of its motion, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at New York, N. Y., this 24th day of March, A. D. 1904.

PETER MANUEL WISE. [L. S.]

Witnesses:
JOS. R. WALKER,
E. R. MCKEE.