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J. A. TAYLOR & J. F. GUDRIDGE.
CAN FILLER.

(Application filed Oct. 26, 1899.)

(No Model.)

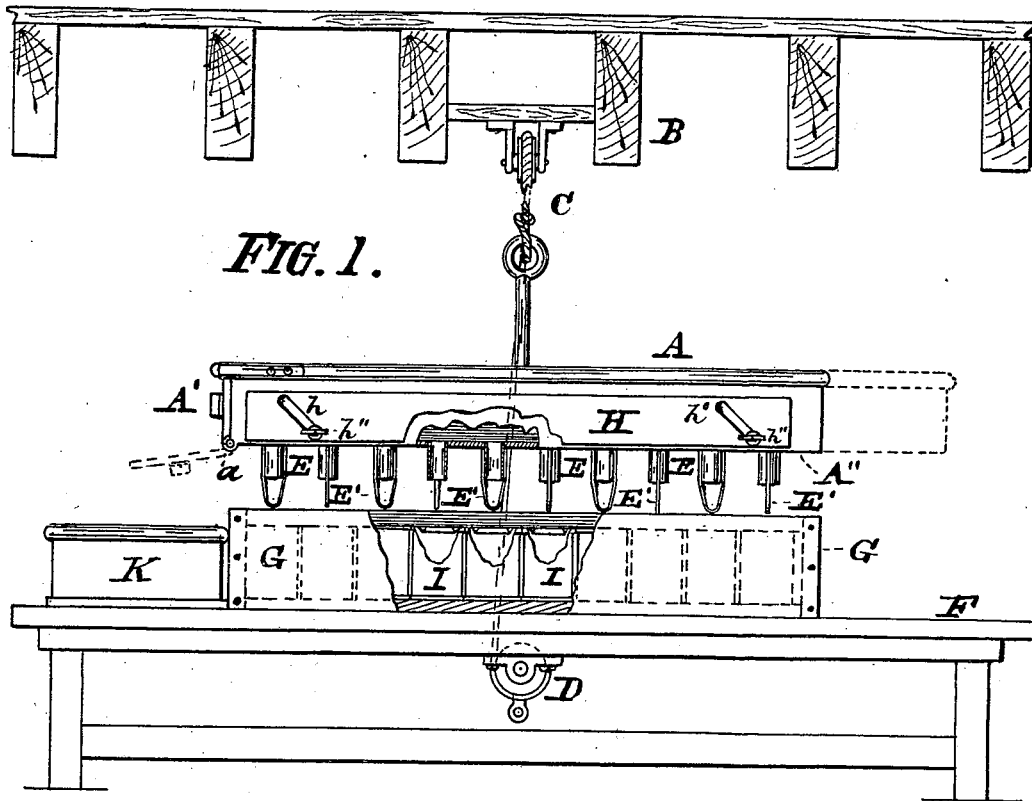


FIG. 2.

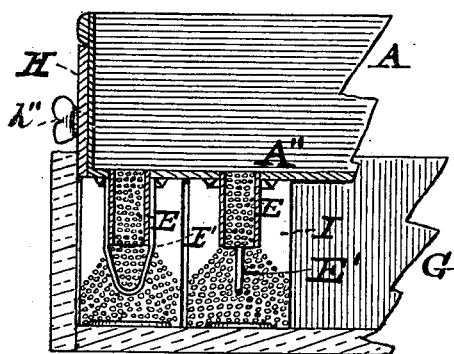
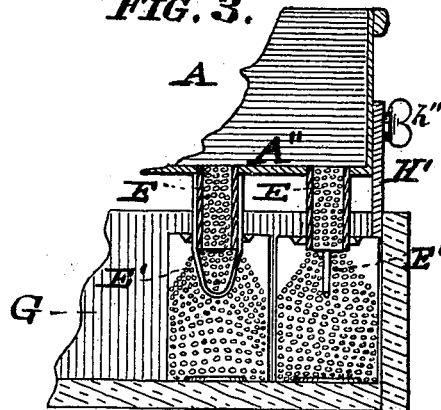


FIG. 3.



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UNITED STATES PATENT OFFICE.

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CAN-FILLER.

SPECIFICATION forming part of Letters Patent No. 646,508, dated April 3, 1900.

Application filed October 26, 1899. Serial No. 734,877. (No model.)

To all whom it may concern:

Be it known that we, JAMES A. TAYLOR and JOHN F. GUDRIDGE, citizens of the United States, and residents of the town of Hamburg, in the county of Erie, and State of New York, have invented certain new and useful Improvements in Can-Fillers; and we do hereby declare that the following description of our said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the arts to which it appertains to make and use the same.

This invention has general reference to package-fillers; and its object is the production of a simple and very efficient machine for filling peas into metallic (so-called "fruit") cans.

To attain this end, our invention consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described and then pointed out in the claims.

In the drawings already referred to, Figure 1 is a front elevation, partly in section, of our improved can-filler. Figs. 2 and 3 are longitudinal sectional elevations of a fragment of the machine, illustrating the manner in which the packages are being filled.

Like parts are designated by corresponding letters of reference in all the figures.

A in the drawings designates a rectangular receiver constructed either of wood and metal-lined or entirely of metal, at the pleasure of the manufacturer. This receiver has one of its ends A' hinged at *a*, so as to allow its being swung downwardly, as indicated in dotted lines in Fig. 1. This receiver A is suspended from the ceiling B of the room within which the apparatus is being used by means of a rope and pulley C, and it is raised and lowered by means of a winch or hoist D, all as shown in Fig. 1.

In the bottom A' of the receiver A there are a series of openings, each of which is fitted with a tube E, which we shall hereinafter designate the "filling-tubes," permanently attached to the bottom of said receiver and each provided at its lower end with a U-shaped guide E', the object of which will hereinafter more fully appear.

F is a table to which the winch D, hereto-

fore mentioned, is affixed. Upon this table is placed a receptacle K of a length fully equal to the width of the receiver A.

G is a tray of suitable length and width to hold a predetermined number of fruit-cans or other packages to be filled, corresponding with the number of filling-tubes E in the receiver A.

H H' are two gages adjustably attached to the front and rear walls of the receiver A. They consist of flat pieces of wood or metal having slotted and inclined apertures *h h'*, through which fastening thumb-screws *h''* are passed and by means of which the gages H H' are adjustably secured to the receiver A. The object of inclining the apertures *h h'* in the gages H H' is to enable the latter being more securely fastened to the receiver A, since were these slots made vertically in the plates H H' these latter would be more liable to move upwardly when the receiver A is lowered upon the cans. They are also placed obliquely in order to enable a more delicate vertical adjustment of the gages than could be obtained by vertical slots, because it requires a greater lateral movement of the gages with the oblique slots to attain a certain variation in the height of the gages than with gages having vertical slots, this feature being a very important one to attain slight changes in the contents of the packages to be filled.

I are the cans or packages to be filled, being in the present instance round fruit-cans having the usual openings in their tops through which they are filled, and which openings are afterward closed by a cap soldered to the top in the usual and well-known manner.

In describing the operation of this apparatus we shall first state that for a successful manipulation of the same there are required a considerable number of the trays G, so that while one tray, with its complement of empty packages, is in the machine for filling others are being supplied with the empty packages, while still other trays, with their cans already filled, are being passed on to the cappers or attendants, who remove the cans already filled, &c. Each of these trays holds in the present instance one hundred cans, the exact number, however, being immaterial and may be varied to suit special requirements, and the receiver A has therefore one hundred fill-

ing-tubes E so disposed that they correspond with the disposition of the packages in the tray G, so that when the receiver A is lowered the filling-tubes will enter the packages, being guided somewhat by the guides E' on the lower end of said filling-tubes. The tray G being in proper position, the receiver A is lowered until the gages H H' rest upon the outermost rows of the cans. Now the operator places into the receiver A a quantity of peas or other substance or material more than sufficient to supply the entire number of packages in the tray and which peas or other substance or material passes through the filling-tubes E into the cans I until by gently brushing over the bottom of the receiver A no more peas will enter the filling-tubes. The operator now opens the end gate A' of the receiver A and discharges all the surplus peas into the receptacle K, after which he operates the winch D to elevate the receiver A, and thereby to withdraw the filling-tubes from the packages, all the peas in said filling-tubes dropping down into the cans while the receiver A is being elevated. The tray G, with its cans properly filled, is now removed from the table F and replaced by another tray filled with empty packages and the operations heretofore described repeated until an entire batch of peas is canned, it being understood that the surplus peas in the receptacle K remaining from one filling are again placed into the receiver A and, together with others supplied to the apparatus, used in filling the next set of cans, the object of removing all the surplus of peas from the receiver A being to prevent any from entering the filling-tubes E as soon as the trayful of cans are filled and the receiver being elevated.

In filling packages it is desirable that the quantum of the substance or material in the packages be reasonably exact. It is also desirable that this quantum may be varied at pleasure, and this result is attained in the present apparatus by the vertical adjustment of the gages H H', which allows the filling-tubes E to enter the packages I to a greater or lesser extent or depth, and thereby to discharge into the cans a greater or lesser quantum of the peas or other substance, and we have shown in Figs. 2 and 3 the extremes of the filling of cans, Fig. 2 showing the filling-tubes E as entering the cans completely and therefore filling the smallest quantum of peas into the cans, while in Fig. 3 the filling-tubes barely enter the cans and therefore filling the latter with the greatest quantum of peas that the cans will hold after the contents of the filling-tubes are discharged therein, it being understood that the filling-tubes E themselves hold but a small portion of the substance passing into the cans and are, as a matter of fact, only conduits or intermediaries between the receiver and the cans.

It is obvious that this apparatus without change or modification other than the shape of the filling-tubes may be successfully used

for filling packages of every kind, size, and shape with any substance or material capable of passing through the filling-tubes without the use of a plunger or forcer. It is furthermore obvious that in place of the separate receptacle K we may extend the receiver A beyond the size required to receive the requisite number of filling-tubes E in its bottom to provide for a space wherein to retain, temporarily, the overplus of peas, and in Fig. 1 we have shown the extension of said receiver A in dotted lines.

The U-shaped guides at the lower end of the filling-tubes E are made of round wire properly fastened to the lower end of said tubes. The object of these guides is to properly arrange the packages in the tray G in case they are not regularly placed in the filling-trays, so that the filling-tubes may enter the openings in the packages, and they are made of round wire to prevent them from lifting any of the peas or substance in the cans when the filling-tubes are withdrawn, which would happen if the guides were made in any but a circular cross-section or not having a sharp upper edge or when the guides are composed of a number of wires in the form of a basket.

Having thus fully set forth our invention and the manner in which it is to be used, we claim as new and desire to secure to us by Letters Patent—

1. In a package-filling machine, a table, a tray thereupon adapted to receive a multiplicity of the packages to be filled, a receiver above the table and adapted to move in a vertical and a horizontal plane, a series of filling-tubes pending from the bottom of said receiver, U-shaped guides at the ends of said filling-tubes, and adjustable gages on the receiver adapted to engage a predetermined abutment and thereby fix the distance which the filling-tubes enter the packages.

2. In a package-filler, a receptacle for a predetermined number of packages, a receiver for the substance or material to be filled into the packages, a series of filling-tubes of a capacity less than the packages to be filled, pending from the bottom of the receiver and corresponding in number with that of said packages, suitable means for elevating and lowering this receiver, guides at the lower end of the filling-tubes, adjustable gages for determining the distance which the filling-tubes enter said packages, and a receptacle for temporarily retaining the overplus of said substance or material.

3. A pea-filler consisting, essentially, of a receiver a series of filling-tubes of smaller size than the packages to be filled, pending from the bottom of the receiver, a winch for elevating and lowering the receiver, adjustable gages at the sides of the receiver and adapted to engage and rest upon the upper ends of said packages, and suitable guides at the ends of the filling-tubes.

4. In a machine for filling packages, a re-

ceiver for the substance or material suspended with capability of being moved in every direction, a series of filling-tubes pending from the bottom of said receiver, guides on the lower end of the filling-tubes, and a tray adapted to receive a number of empty packages corresponding in number with that of the filling-tubes.

5 5. In a machine for filling packages, a receiver, a series of filling-tubes pending from the bottom thereof, and a series of guides on the lower ends of said tubes consisting of round wire loops bent into U shape, as set forth.

15 6. In a machine for filling cans, a receiver for the substance or material to be filled into packages, a series of filling-tubes of less ca-

capacity than the packages, pending from the bottom of said receiver, guides on the lower end of said filling-tubes, plates at the sides of said receiver having inclined slots and adapted to rest upon the upper end of said cans, and fastening-screws in said slots, as described.

In testimony that we claim the foregoing as our joint invention we have hereunto set our hands in the presence of two subscribing witnesses.

JAMES A. TAYLOR.
JOHN F. GUDRIDGE.

Witnesses:

MICHAEL J. STARK,
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