

1,011,768.

UNITED STATES PATENT OFFICE.

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FILLING-MACHINE.

1,011,768.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM M. FOWLER, a citizen of the United States, and a resident of Sound Beach, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Filling-Machines, of which the following is a specification, taken in connection with the accompanying drawing, which forms a part of the same.

This invention relates to filling machines and more particularly to one which consists of the minimum number of parts which can be readily shipped and can be quickly set up and easily operated by unskilled labor.

It further relates to such a machine which will take up the minimum space in the bottling or filling room, one which can be manufactured at the minimum expense, and can be operated with any number of filler tips which can be adjusted for different size or diameters of containers.

In the accompanying drawing I have shown an illustrative embodiment of my invention in which the same reference numerals refer to similar parts in the several figures.

Figure 1 is a side elevation of my improved filling machine; Fig. 2 is a front elevation of a detail; Fig. 3 is a front elevation of the bed; Fig. 4 is a horizontal section on line 4-4 of Fig. 3; Fig. 5 is a horizontal section on line 5-5 of Fig. 1, the tray, bottles and bed being omitted; and Fig. 6 is a detail sectional view showing the preferred form of casters which I preferably mount in the bed.

In the illustrative embodiment of my invention shown in the drawing, 1 is any suitable support for the filling machine such as a table, shelf or bench.

My filling machine includes a base 2 of any suitable material, but preferably metal which is secured to the support in any suitable manner, as for example by means of the screws 3, 3. On the forward portion of the base is a downwardly extending flange 4 to which is connected in any suitable manner a shelf 5. On this shelf 5 I mount, in any suitable manner, a pulley 6, on an axle 7 carried preferably, though not necessarily, by the downwardly extending lugs 8, 8 connected to the shelf 5. On the base 2 I preferably form a hollow boss 9 which may be strengthened, if desired, by a fin 10. Pref-

erably, though not necessarily, the base is formed of one casting, though it may be formed of separate parts, if desired. Within the aperture 11 in the hollow boss 9 I mount one end of the standard or post 12, securing it in the boss 9, if desired, by a pin 13, though this form of connection may be varied for, in some cases, the standard or post 12 may be permanently secured in any suitable manner to the base 9. On this standard or post 12 is slidably and adjustably mounted the head 14 which is secured in its adjusted position on the post by any suitable means such as the set screw 15. A yoke 16 is carried by the head and extends out from it, its end 17 being bent down to be substantially parallel to the head 14. Mounted in the head 14 and in this end 17 of the yoke 16 are mounted one or more rods 18 and 19. While my device will operate with one rod, I preferably use two such rods to support the filler head 20, 20, which are provided with apertures or openings to receive and cooperate with the rods 18 and 19, the filler heads 20, 20 being adapted to be adjusted back and forth and with relation to each other on the horizontal rods 18 and 19.

While, of course, my filling machine will operate with simply one filler head 20, it is to be understood that my invention covers one or more such filler heads, two being shown simply for purposes of illustration. The upper ends of the filler heads may, in some cases, be provided with lateral bosses 21 which act as spacers, though these may be omitted, if desired.

On the lower portion 23 of the filler heads 20, 20 I secure filler tips 22, 22 of any approved construction and of any suitable capacity for the particular work to be done. Preferably these filler tips 22, 22 are the same as those illustrated, described and claimed in my United States Letters Patent No. 783,189, patented Feb. 21, 1905 and therefore will not be further described.

Supported on the head in any suitable manner I mount the filler pipe 24 and the exhaust or overflow pipe 25. Preferably these pipes 24 and 25 are carried by an arm 26 which is preferably, though not necessarily, formed integral with the head 14. An economical manner of securing the pipes to the arm 26 is to perforate the arm to receive the different pipes and then secure the filler pipe 24 to the arm 26 by means of jam

nuts 27, 27, while similar jam nuts 28, 28 are employed to secure the exhaust or overflow pipe 25.

To one end of the filler pipe 24 is secured the feed pipe 29 which is preferably formed flexible as of hose, so as not to interfere with the ready adjustment of the head 14 on the post 12 which is necessary to accommodate bottles or other containers of different heights. A similar flexible hose 30 is connected to the end of the exhaust or overflow pipe 25.

To the filler pipe 24 is connected a second flexible tube, pipe or hose 31, the other end of which is connected with the hollow filler head 20, it being understood that there is such a flexible tube 31 for each filler head used in the machine.

To the exhaust or overflow pipe 25 there is also connected a flexible tube 32, one for each filler head 20, which carries the overflow, if any, from the filler top 22 (see Patent 783,189) to the exhaust or overflow pipe 25 and thence to the pipe 30 which not only prevents any loss of the material being fed to the containers, but prevents the overflow from dripping on the bottles or other containers which might stain or soil them. This drip would be particularly objectionable if they are labeled before being filled.

I mount vertical arms 34, 34 in any suitable manner on the base 2 to cooperate with similar vertical arms 35, 35 carried by the bed 36. Connected in any suitable manner as by the screws 39, 39 to the arms 34, 34 are bent fingers or guides 37, 37. Their free ends 38, 38 are bent down and slidably hold the arms 35, 35 and 34, 34 together. A stem 40 is also connected to the bed 36 being mounted preferably between the lower ends of the arms 35, 35. Any suitable flexible connection, as for example a chain 41, is connected to the stem 40 and is then passed up over the pulley 6, its other end passing around a pin 42 carried by the treadle 43, the free end 44 of the chain being then connected to one of the links of the chain preferably by a hook 45, after the treadle has been properly adjusted. This treadle is separate from the base and includes an upright 46 which is secured to the floor, beneath the filling machine and bench 1, in any suitable manner as by means of the screws 47, 47.

The operation of the filling machine is extremely simple. The containers 48, 48 to be filled are placed on the bed 36 and elevated by pressing on the treadle 43 until the stems 49, 49 have entered the containers and their necks 51, 51 have engaged with the sealing flanges 50, 50 and operate the filler tips 22, 22 in the manner fully described in my former patent referred to. Pressure on the treadle 43 is then eased and the bed 36 permitted to fall back on the shelf 5 by its own gravity. This will clear

the ends of the stems 49, 49 permitting the filled containers to be removed and empty ones substituted.

Preferably to save time and cost in handling the bottles or other containers 48, all preferably of the same size, are packed in a tray 52 which is placed on the bed 36 and as one row or file of bottles or other containers 48, 48 have been filled and the bed 36 brought back to rest on the shelf 5, the entire tray is moved across the bed 36 a sufficient distance to bring the necks 51, 51 of the next file or row of bottles in line with the stems 49, 49 when pressure on the treadle will again lift the bed 36 and the entire tray 52 until that row or file of bottles has been filled, and so on until all the rows or files of bottles in that tray have been filled when a new tray of empty containers is substituted and the steps just described repeated.

To permit the more ready movement of the tray 52 on the bed 36, I may in some cases mount casters either on the trays or on the bed 36. Preferably, I mount the casters in the bed 36. These may be of any approved form, but preferably they comprise a thimble 55 having a flange 56 which is mounted in an opening in the bed 36. Within the thimble 55 I mount on an axle 58 a roller or wheel 57 so that its periphery will extend slightly above the plane of the bed 36, permitting the trays 52 to rest directly on a plurality of these rollers or wheels.

When it is necessary to shift from one diameter of bottles or other containers to another diameter, either greater or less than that which the machine has just been filling, it is merely necessary to adjust the filler heads 20, 20 on the rods 18 and 19, to or from each other, as the case may be, when the filling operation can be instantly renewed with bottles of a different diameter or contour.

As I have illustrated my invention the tray 52 would contain files or rows of bottles, two bottles to a row because there are but two filling tips and filler heads shown. I have previously stated, however, that either a single filler head and tip may be used or any desired number of filler heads and filler tips, the number being preferably determined by the number of bottles or containers in each row or file in the tray, there being preferably one filler tip for each bottle in each row or file. This is not absolutely necessary, however, as the tray can be turned and again passed beneath the filler tips to fill the empty bottles, if there are not enough filler tips to fill all the bottles in each row or file as they first pass beneath the head 14.

Having thus described this invention in connection with an illustrative embodiment thereof to the details of which I do not de-

sire to be limited, what is claimed as new and what it is desired to secure by Letters Patent is set forth in the appended claims.

1. A knock down filling machine, comprising a base, a removable standard or post secured to the base, and an adjustable and removable head carried by the standard or post, a movable and removable bed supported by the base, one or more rods carried by the head, one or more filler heads adjustable on said rods, one or more filler tips, one for each head, and means to elevate the bed.

2. In a filling machine, the combination of a base provided with a hollow boss and a depending flange, guide arms and a shelf carried by the base, a pulley carried by the shelf, a bed having arms to cooperate with those carried by the base and a stem, flexible means connected with the stem and passing over the pulley and connected to a treadle, a treadle, a post or standard carried by the boss, and filling mechanism carried by the head.

3. In a filling machine, the combination of a base provided with a hollow boss and a depending flange, guide arms and a shelf carried by the base, a pulley carried by the shelf, a bed having arms to cooperate with those carried by the base and a stem, flexible means connected with the stem and passing over the pulley and connected to a treadle, a treadle, a post or standard carried by the boss, and one or more laterally adjustable filler heads carried by the head and a filler tip for each filler head.

4. In a filling machine, the combination

of a base provided with a hollow boss and a depending flange, guide arms and a shelf carried by the base, a pulley carried by the shelf, a bed having arms to cooperate with those carried by the base and a stem, flexible means connected with the stem and passing over the pulley and connected to a treadle, a treadle, a post or standard carried by the boss, a yoke mounted on the head, one or more rods carried by the head and yoke, one or more filler heads adjustable on said rods, and a filler tip for each filler head.

5. An article of manufacture comprising a head for a filling machine including a hollow member to receive a post or standard, a yoke connected to said member, one or more rods carried by the yoke and hollow member, and one or more filler heads slidably mounted on said rod or rods.

6. An article of manufacture comprising a head for a filling machine including a hollow member to receive a post or standard, and provided with an arm, filler and exhaust pipes carried by said arm, a yoke connected to said hollow member, one or more rods carried by the yoke and by the hollow member, one or more filler heads slidably and adjustably mounted on the rod or rods, and separate pipe connections from the filler head or heads to the filler and exhaust or overflow pipes.

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Witnesses:

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