

No. 720,588.

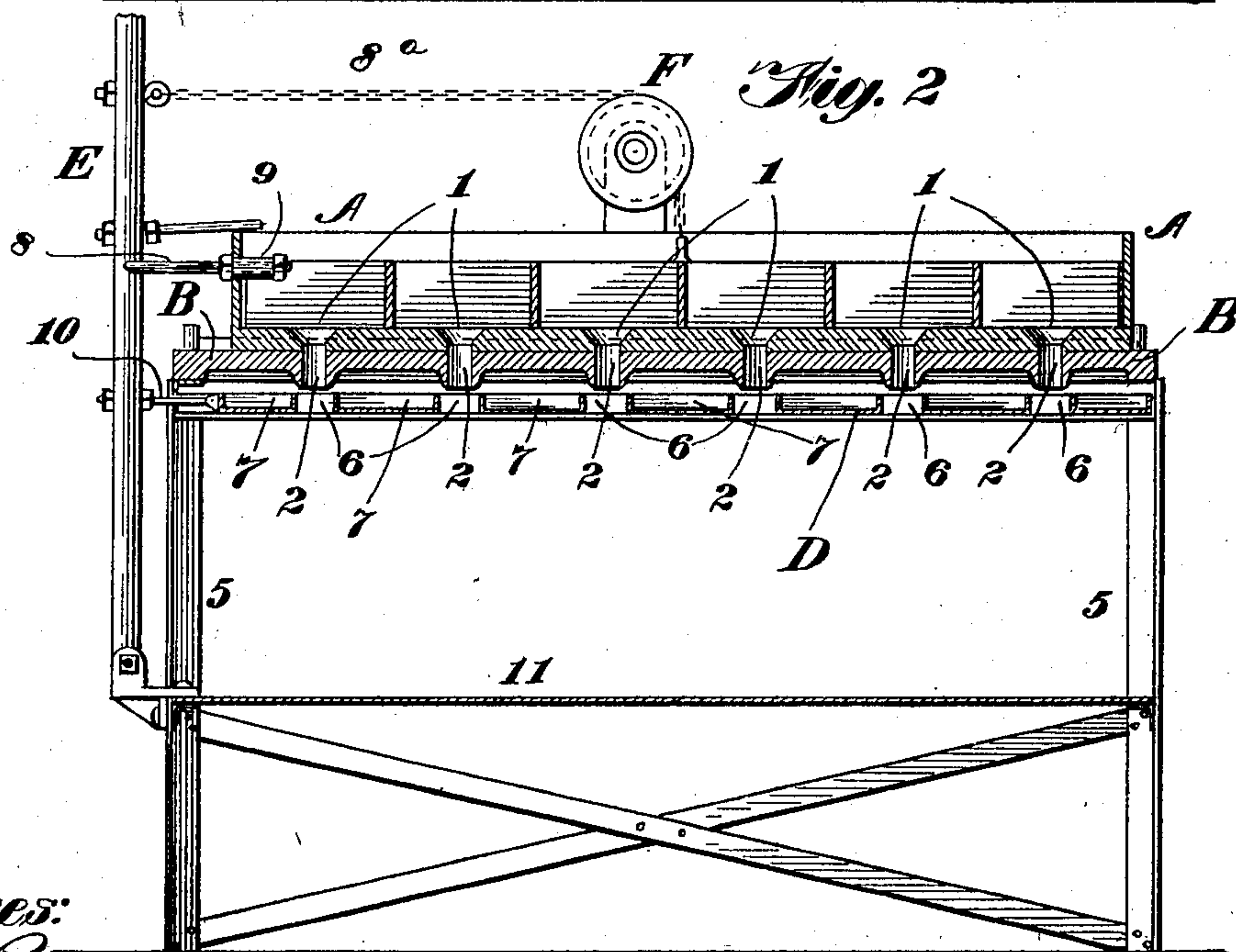
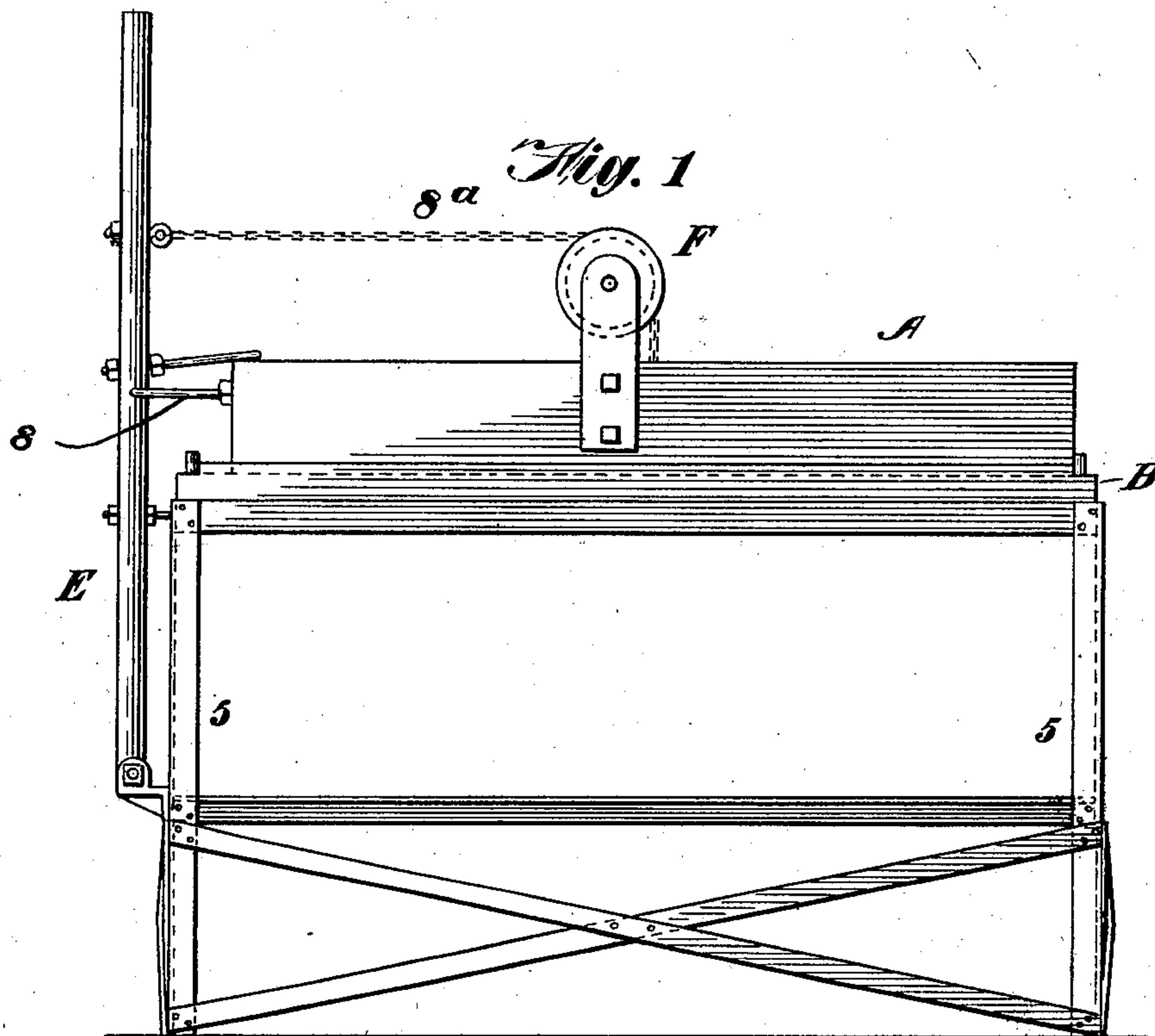
PATENTED FEB. 17, 1903.

R. W. HUSS.
FILLING MACHINE.

APPLICATION FILED JUNE 26, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3

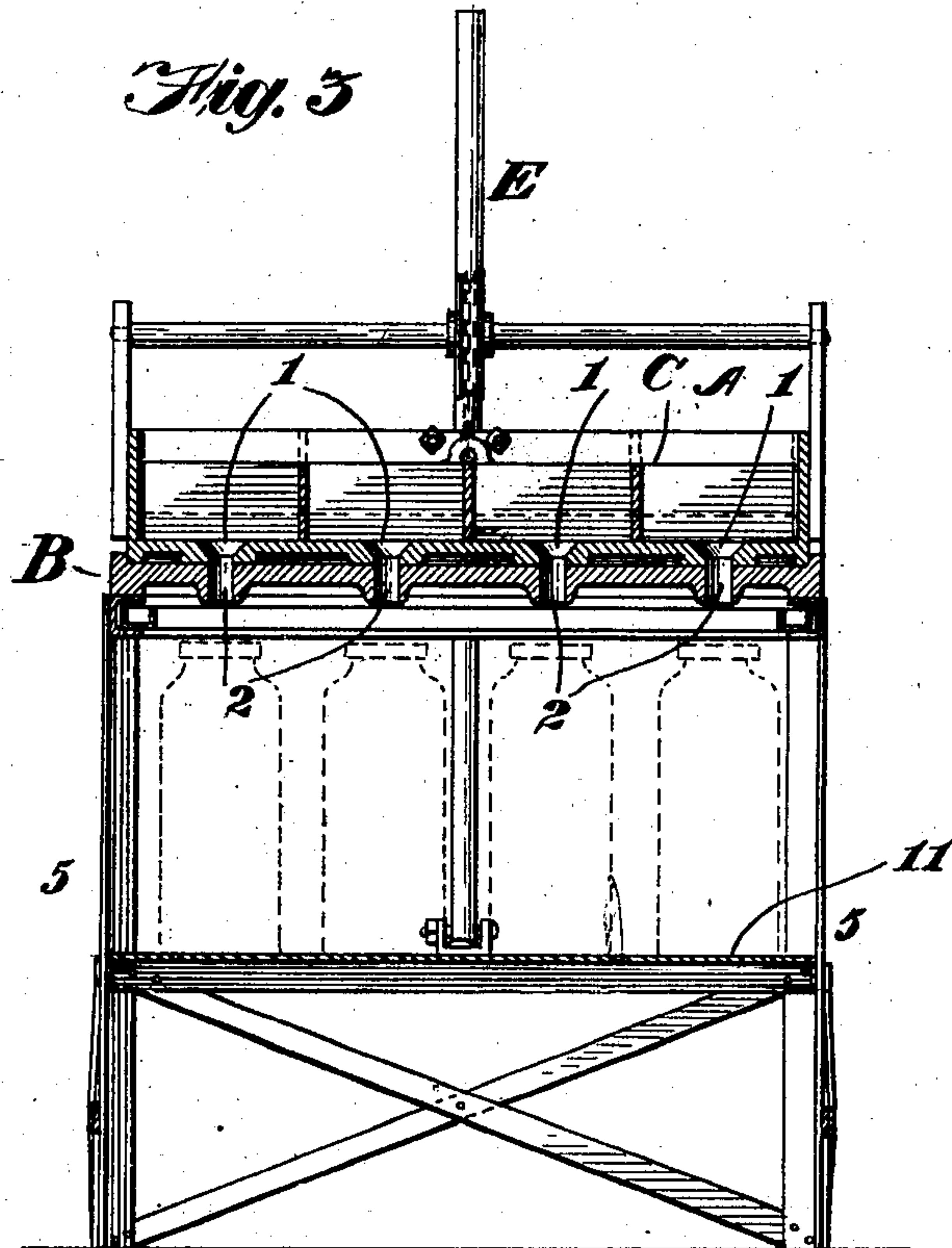
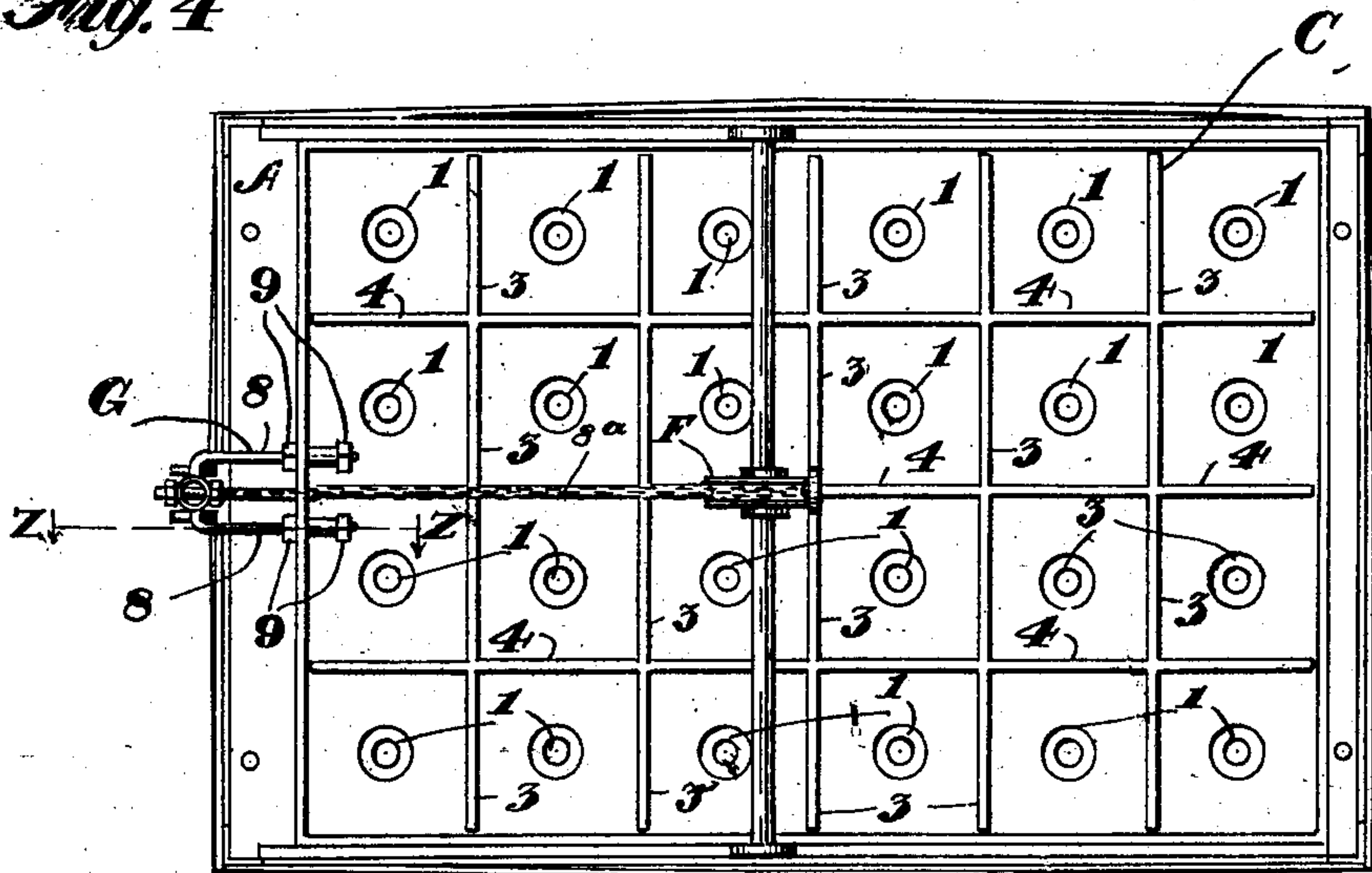


Fig. 4

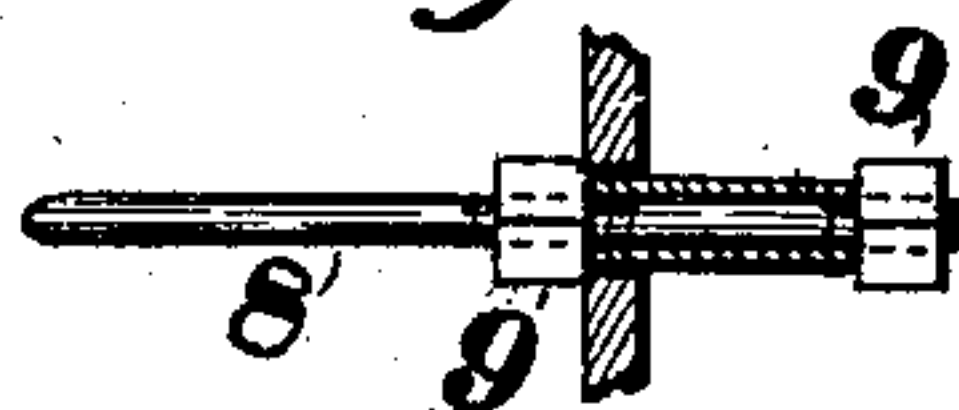


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Fig. 5



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UNITED STATES PATENT OFFICE.

RUDOLPH W. HUSS, OF CHICAGO, ILLINOIS.

FILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 720,588, dated February 17, 1903.

Application filed June 26, 1902. Serial No. 113,348. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH W. HUSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Filling-Machines, of which the following is a specification.

My invention relates to a machine or apparatus for filling bottles, jars, cans, and similar receptacles with semiliquid matters, such as catsup, jam, and the like.

Objects of my invention are to provide a simple construction of machine or apparatus, to provide a construction of filling-machine which may be readily taken apart and cleaned, to equalize the flow of semiliquid matters from the reservoir into the receptacles that are to be filled, to successively operate certain members of the machine in a simple and efficient way, and to provide certain new and improved details, as hereinafter set forth.

In the accompanying drawings, Figure 1 represents my improved machine in side elevation. Fig. 2 is a vertical longitudinal section of said machine. Fig. 3 is a transverse section of the machine, and Fig. 4 is a top plan view of the same. Fig. 5 is a detail section on line *z z* in Fig. 4.

The tank or reservoir A is supported upon a bed or table B, and the bottom of the reservoir and the bed or table are provided with corresponding ports or openings, through which the contents of the reservoir may flow when the ports or openings through the bottom of the reservoir are in register with the openings through the bed or table. The opposing contacting surfaces formed by the top side of the bed or table and the under side of the bottom of the reservoir are flat, and the reservoir is arranged for reciprocal sliding movement upon the bed or table, whereby it can be operated for the purpose of placing its ports 1 out of register with the ports 2 in the bed or table when it is desired to close the ports or outlets of the reservoir and permit the latter to be filled to a desired extent, and, conversely, when it is desired to discharge from the reservoir through its ports or outlets it can be shifted in a direction to place the ports of these two members in register.

Within the reservoir is a frame C, which I term an "equalizer," for the reason that it

serves to cause the flow from the reservoir to be evenly distributed through the discharge-ports and also insures the discharge of equal predetermined quantities of semiliquid into such jars or bottles as may be placed under the ports in the bed-plate. This frame is composed of a set of parallel strips or plates 3 and a set of parallel plates or strips 4, arranged transverse to and in planes intersecting the planes of the strips or plates 3. These relatively transverse plates or strips are arranged to provide a set of short vertical passages open at top and bottom and of uniform size, it being seen that while the frame is not constructed with marginal sides the side walls of the reservoir will afford sides for such of the passages as may be wanting in one or two sides by reason of the construction of the frame. As illustrated, the side walls of the reservoir form walls for two sides of each corner passage, also forming a wall for one side of each of the marginal passages directly between the corner passages. The frame C can be raised and lowered within the reservoir and when lowered to the limit of its down movement the lower edges of its component strips or plates 3 and 4 will be held above the bottom of the reservoir to an extent to leave a clear space between the two.

In the practical construction and operation of the machine or apparatus the feature of the equalizer or equalizer-frame C having the outer sides of its vertical passages or measuring-compartments next adjacent to the walls of the reservoir formed directly by such walls is a matter of importance, it being found extremely difficult and, in fact, impractical to form the outer side walls of the marginal compartments by means of a rectangular frame adapted to properly fit and work up and down within the reservoir. In accordance with my invention, however, the outer side walls of the marginal measuring-compartments are simply formed by the walls of the reservoir, and for such purpose the partitions 3 and 4 are arranged with their ends abutting against the side walls of the reservoir.

The bed or table B is provided with supporting legs or standards 5, which also support suitable guideways for a slide D, having a series of transversely-arranged oblong slots or openings 6. When this slide is posi-

tioned as in Figs. 2 and 3, its openings 6 will be directly below the lines of ports 2 in the bed, each transverse series of ports 2 being over one of the oblong openings 6 in the slide.

5 The slide D is also adapted to form a series of shallow receptacles 7 at opposite sides of the openings 6, so that when desired the slide can be adjusted to an extent to place its receptacles under the ports 2 of the bed for the
10 purpose of catching any drip therefrom.

As a simple and convenient means for operating or adjusting the movable members hereinbefore described a swinging arm E is hinged at its lower end to one side of the
15 main frame. A pulley F is supported upon the reservoir, and a cord or chain 8^a is trained over the pulley and attached to both the swinging arm E and the frame C. When this swinging arm is in an upright position, as in
20 Fig. 1, the frame C will be lowered within the reservoir; but when the arm is swung away from the main frame the frame C will be raised.

In order to shift the reservoir, the arm E is provided with a pitman G, which connects
25 with the sliding reservoir. The pitman G is preferably shaped as a bail, so as to have two arms 8, which extend through one side of the reservoir. Each of these arms 8 is provided with two stops 9, respectively at opposite sides
30 of the side of the reservoir, through which the arm passes, and set apart, as illustrated in Fig. 4, so that by arranging the pitman to have a sliding connection with the reservoir the movement of the latter may take place after
35 a certain extent of movement on the part of the frame or equalizer C—that is to say, when the several members are in the position shown a swing on the part of the arm E in a direction away from the reservoir will raise the
40 equalizer C to a certain extent before the reservoir begins to move in a direction to close its ports, it being seen that the pitman G will move with the arm to an extent proportional to the distance between its stops before it will
45 operate the reservoir. The slide D is also operated from the swinging arm E by a connecting-rod 10, so that when the arm E is swung in a direction to raise the equalizer the slide D will be moved in a direction to bring its
50 receptacle 7 under the ports or passages 2 of the bed B.

In using this machine or apparatus the arm E is swung in a direction to raise the equalizer and shift the reservoir to an extent to
55 bring its ports 1 over the imperforate portions of the bed or table, and thereby close the same. The bottles or jars to be filled are placed upon a lower shelf 11 of the main frame, as indicated by dotted lines in Fig. 3, and the cat-
60 sup, jam, or the like is then poured into the reservoir by way of any one or more of the short transversely-rectangular passages formed by the frame C. The frame E is then swung in a direction and to an extent to lower
65 the equalizer within the reservoir and also to shift the reservoir to an extent to open its ports, said movement of the swinging arm also

serving to shift the slide D to an extent to bring its openings 6 in register with the open-
ings 2 through the bed. When the members 70 are thus positioned, there will be a strata of the semiliquid matter between the bottom of the reservoir and the lower edges of the strips or plates forming the frame C. When the semiliquid matter has been discharged through the
75 registering ports 1 and 2 and the passages 6 into the jars or bottles, the supply within the reservoir, which was sufficient to fill the bottles or jars, will be exhausted if such supply
80 was first limited to the capacity of bottles or jars; but if the supply is greater than the capacity of the jars or bottles then the discharge from the reservoir can at any instant be promptly cut off by laterally shifting
85 the reservoir upon the bed. It will be seen that the bottom of the reservoir is provided with ports or outlets 1 corresponding in number to the number of short vertical passages formed by the frame C and that each
90 port 1 is opposite the lower end of and centrally arranged as to one of these passages. By shifting the reservoir all of its ports will be simultaneously closed or opened, in accordance with the direction in which it is shifted,
95 and when desired the reservoir can be lifted from the bed or table, so as to permit the parts to be cleaned, it being observed in this connection that the stops 9 on the pitman G are preferably formed by nuts, whereby the pit-
100 man can be readily detached from the reservoir.

The laterally-adjustable reservoir thus described is subdivided by sets of relatively transverse partitions 3 and 4 into measuring-
105 compartments, each of which may contain a predetermined quantity of semiliquid, and by perforating the bottom of the reservoir, so as to form perforations or ports 1 corresponding in number and position with the compartments and forming relatively small outlets
110 therefor, the reservoir can be subdivided into a comparatively large number of compartments and the ports thus formed by the perforations in the bottom of the reservoir can be opened and closed by a comparatively limited
115 extent of movement on the part of the reservoir.

What I claim as my invention is—

1. In a machine for filling jars, bottles and the like with semiliquid matters, a laterally-
120 adjustable reservoir subdivided by sets of relatively transverse partitions into measuring-compartments, and having its bottom perforated to form relatively small discharge-ports for the measuring-compartments; and
125 a stationary plate or bed arranged under the perforated bottom of the laterally-adjustable reservoir and apertured to form ports or ducts which correspond with the ports in the bottom of the reservoir, and are opened and
130 closed by laterally adjusting the reservoir.

2. In a machine for filling jars, bottles and the like, a laterally-shifting reservoir having outlet-ports through its bottom; an equalizer

constructed with a set of vertical passages and supported for up-and-down movement within the laterally-shifting reservoir; and a plate or bed provided with ports or ducts corresponding with the ports through the bottom of the reservoir, the latter being arranged to slide over the bed whereby its lateral shift will open or close the ports through its bottom, according to the direction in which it is shifted.

3. In a machine for filling jars, bottles and the like, a laterally-shifting reservoir having outlet-ports through its bottom; an equalizer constructed with vertical passages and arranged for up-and-down movement within the laterally-shifting reservoir; a plate or bed arranged under the reservoir and having ports or ducts corresponding with the reservoir-ports, which latter are opened and closed by shifting the reservoir so as to place them in and out of register with the ports or ducts through the bed; and mechanism adapted to laterally reciprocate the reservoir and raise and lower the equalizer, and timed to operate the equalizer in advance of the movement of the reservoir.

4. In a machine for filling jars, bottles and the like, a laterally-shifting reservoir having outlet-ports through its bottom; a plate or bed arranged under the reservoir and having ports or ducts corresponding with the reservoir outlet-ports, which latter are opened and closed by shifting the reservoir so as to place them in and out of register with the ducts through the bed; an equalizer arranged for up-and-down movement within the reservoir; and mechanism for actuating the equalizer and the reservoir, comprising a vibratory arm, a suitably-guided cord or chain connecting the vibratory arm with the equalizer, and a pitman attached to the vibratory arm and having a limited sliding connection with the reservoir.

5. In a machine for filling jars and the like, a plate or bed perforated to form ducts; a reservoir arranged to slide upon the perforated bed or table and having its bottom provided with outlet-ports which are opened and closed by shifting the reservoir; an equalizer

constructed with vertical passages and arranged for up-and-down movement within the reservoir; a vibratory arm; power-transmitting connection between the vibratory arm and the vertically-movable equalizer; and a pitman connecting the vibratory arm with the movable reservoir but permitting the arm to operate the vertically-movable equalizer in advance of the reservoir.

6. In a machine for filling bottles, jars and the like with semiliquid matters, a laterally-adjustable reservoir subdivided into measuring-compartments and having its bottom perforated to form relatively small discharge-ports for the measuring-compartments; a stationary plate or bed arranged under the reservoir and apertured to form ports which correspond with the ports in the bottom of the reservoir, and which are opened and closed by lateral adjustment on the part of the reservoir; and a slide arranged under said plate or bed and provided with drip-receptacles and intervening openings, which said drip-receptacles and intervening openings can be alternately positioned under the ports or ducts in the bed by adjusting the slide.

7. In a machine for filling jars, bottles and the like with semiliquid matters, a box forming a reservoir and having a flat bottom provided with discharge-ports and vertical side walls which rise therefrom; and a vertically-movable equalizer arranged for up-and-down movement within the reservoir and consisting of a frame comprising sets of relatively transverse and horizontally-extending partitions forming a number of cells or compartments which subdivide the reservoir, the outer sides of the outer or marginal cells being formed by the inner vertical walls of the reservoir, and the ends of the partitions being maintained in constant sliding contact with said walls during the vertical movement of the frame involving such partitions within the reservoir.

RUDOLPH W. HUSS.

Witnesses:

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