Dec. 19, 1922. 1,439,395

B. H. BECKER ET AL.
SOAP PACKING MACHINE.
FILED AUG. 20, 1918.

5 SHEETS-SHEET 1

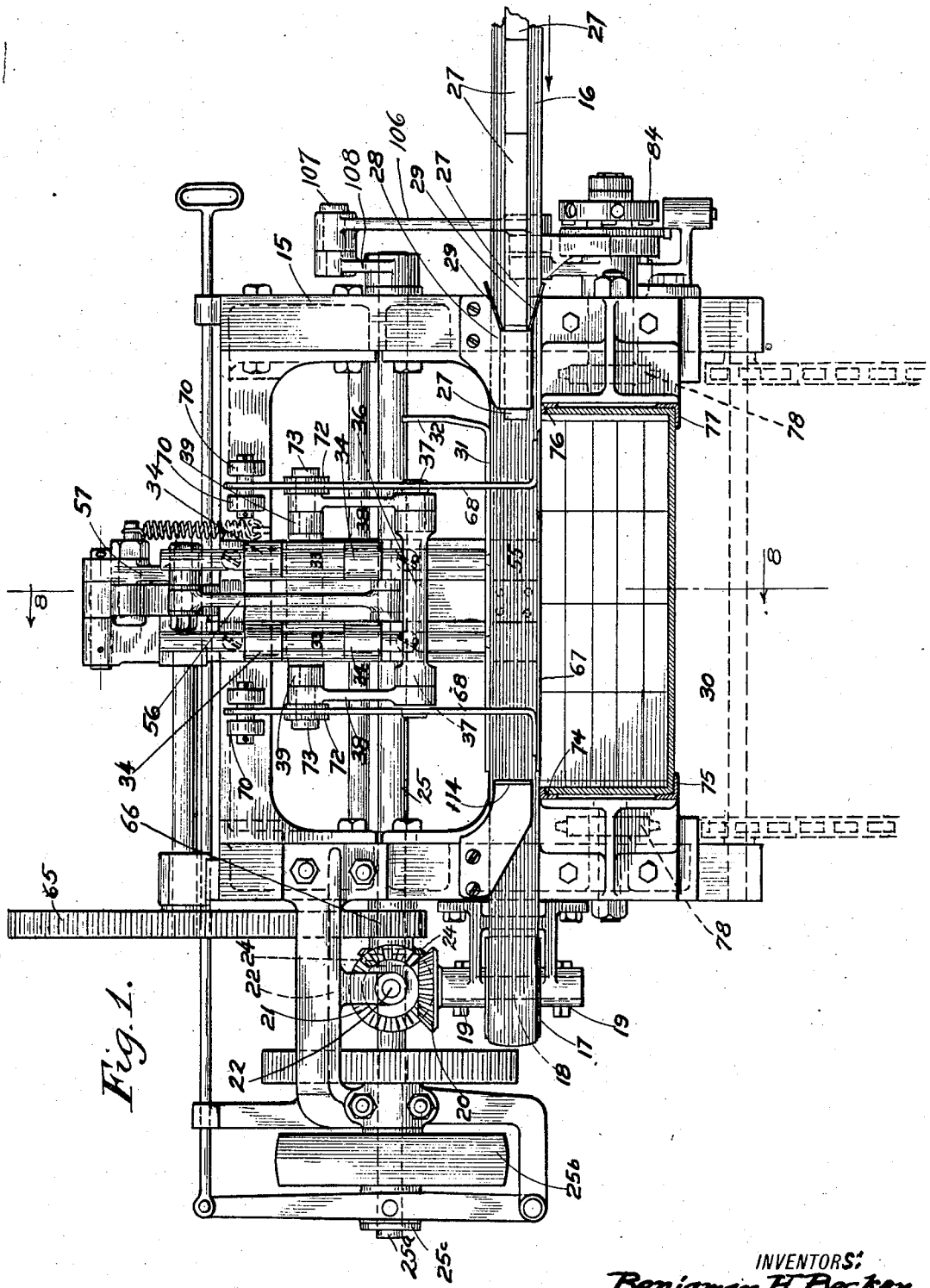


Fig. 1.

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5 SHEETS-SHEET 2

Fig. 2.

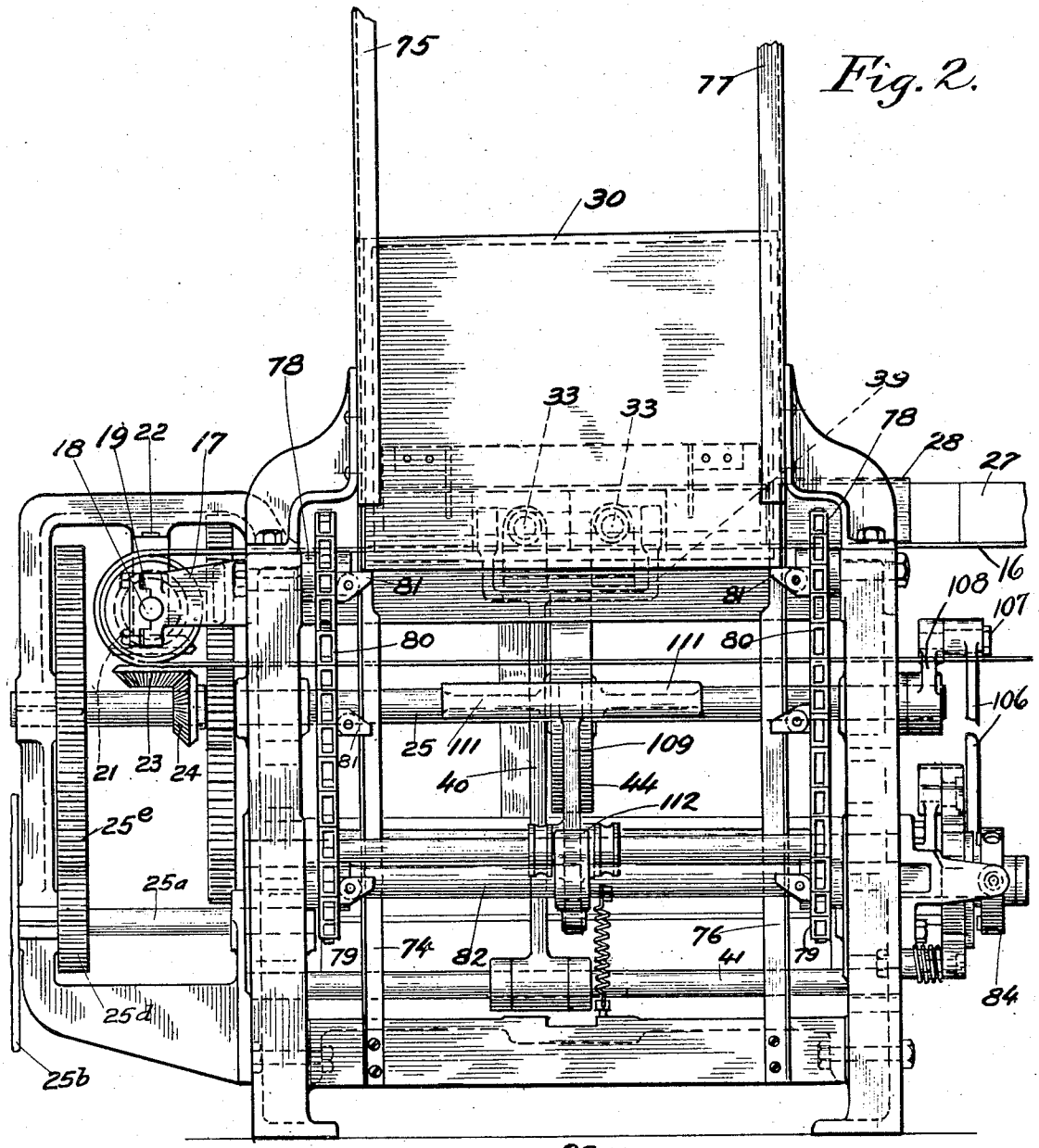
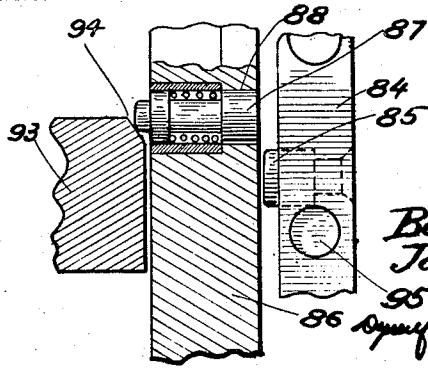


Fig. 6.



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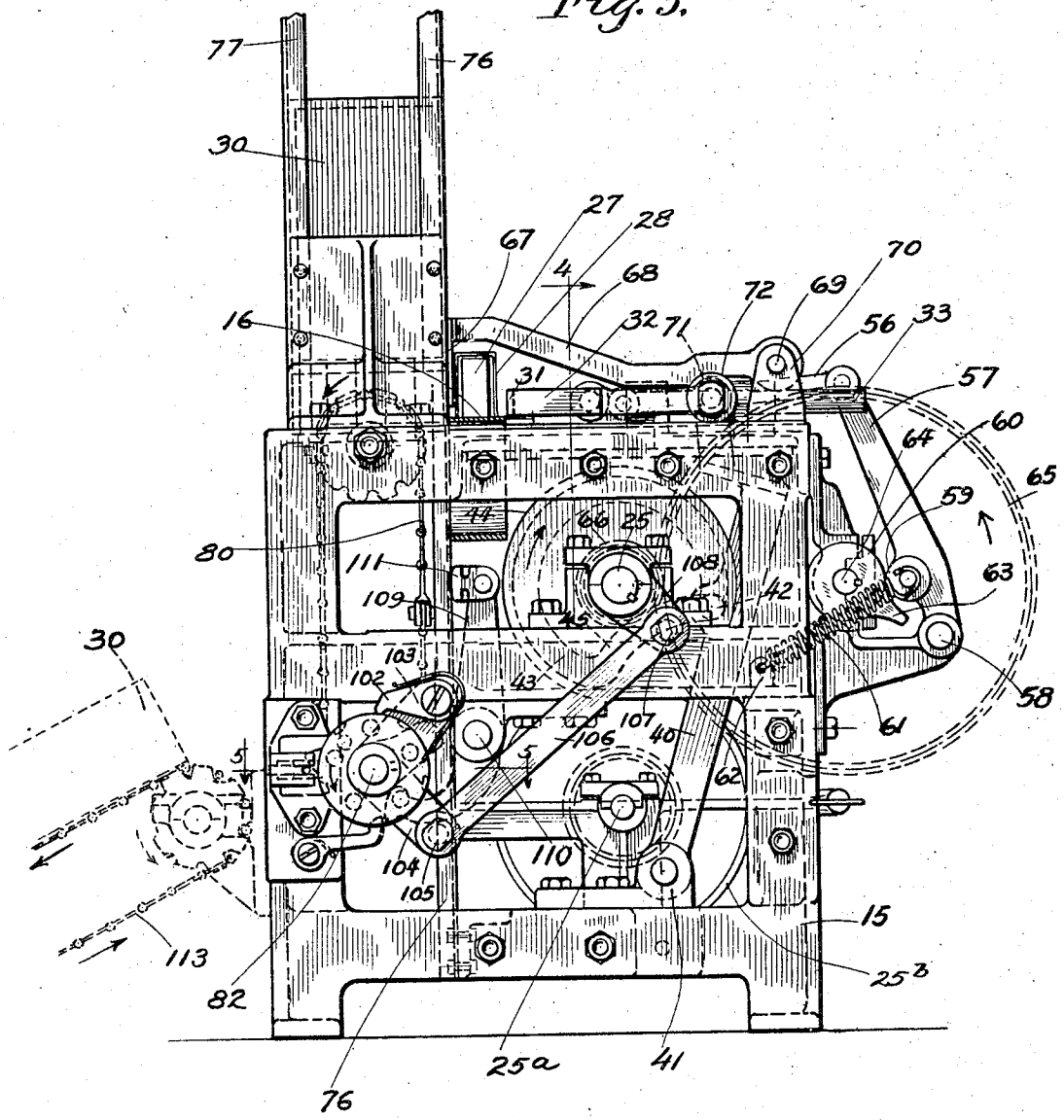
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5 SHEETS-SHEET 3

Fig. 3.



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5 SHEETS-SHEET 4

Fig. 5.

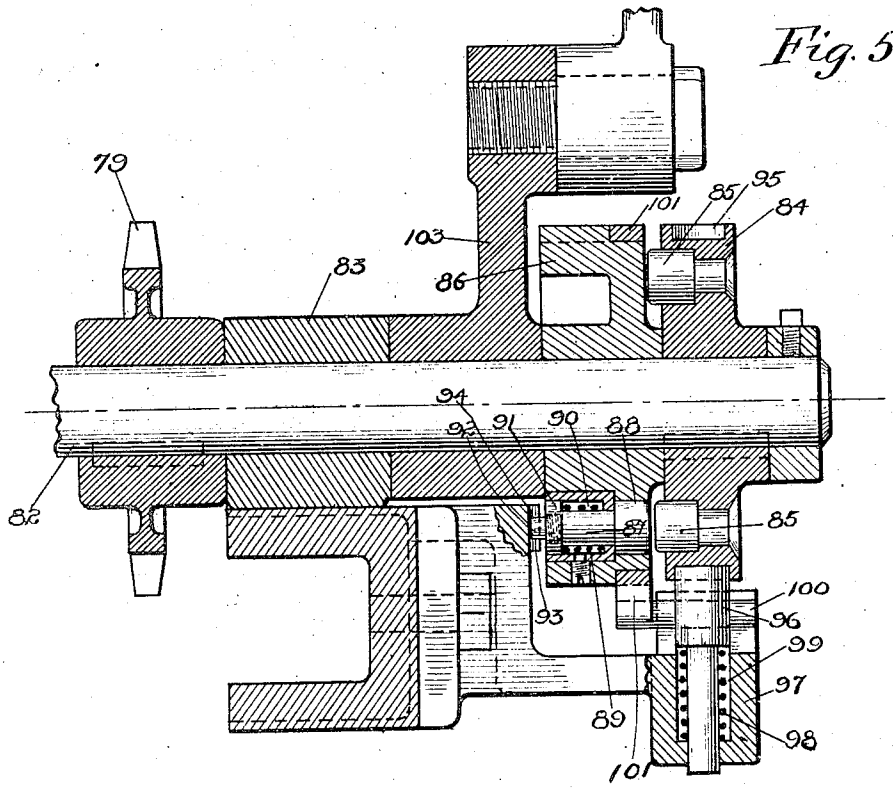
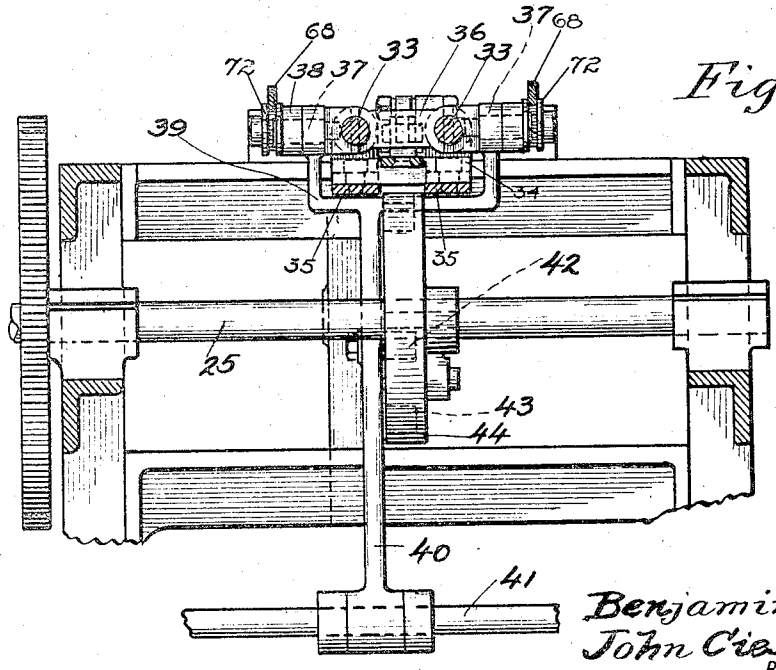


Fig. 4.



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5 SHEETS-SHEET 5

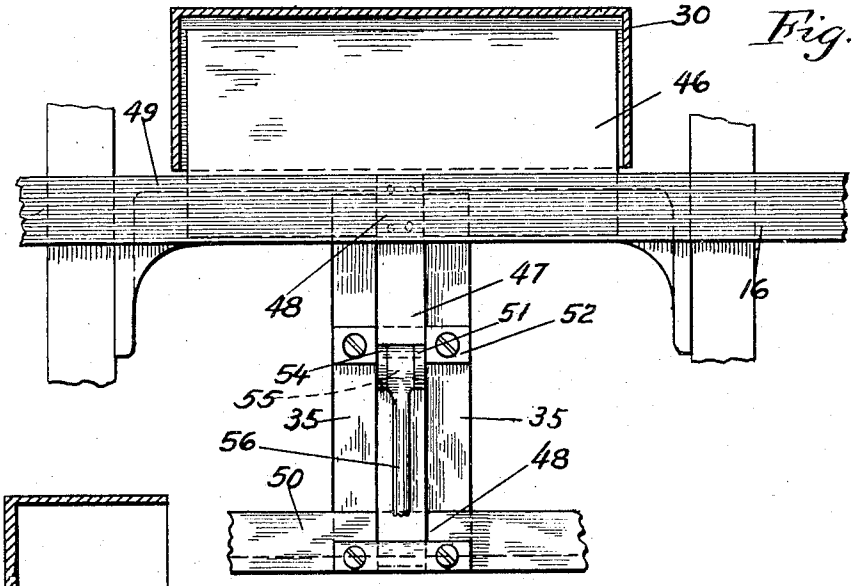


Fig. 7.

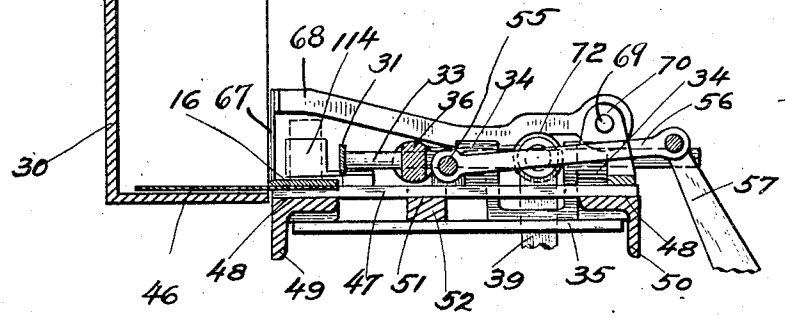


Fig. 8.

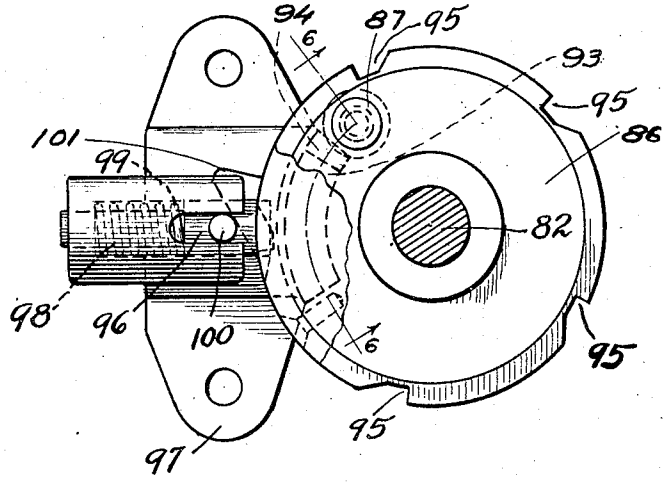


Fig. 9.

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UNITED STATES PATENT OFFICE.

BENJAMIN H. BECKER AND JOHN CIESLA, OF CHICAGO, ILLINOIS; HATTIE BECKER EXECUTRIX OF SAID BENJAMIN H. BECKER, DECEASED.

SOAP-PACKING MACHINE.

Application filed August 20, 1918. Serial No. 250,646.

To all whom it may concern:

Be it known that we, BENJAMIN H. BECKER and JOHN CIESLA, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Soap-Packing Machines, of which the following is a specification.

Our invention relates, more particularly, to the packing of bars of soap, preferably wrapped, in the boxes in which they are to be shipped or stored, and our primary object is to provide a novel, simple, and positively operating machine for performing the packing by an automatic operation and which machine shall be economical of manufacture and operation.

Referring to the accompanying drawings:

Figure 1 is a plan view of a machine constructed in accordance with our invention, certain parts thereof being shown broken away and other parts being shown in section. Fig. 2 is a view in rear elevation of the machine, or, in other words, a view of the portion of the machine through which the filled boxes are discharged. Fig. 3 is a view in side elevation of the machine, the machine being viewed from the righthand side of Fig. 2. Fig. 4 is a section taken at the line 4 on Fig. 3 and viewed in the direction of the arrow. Fig. 5 is an enlarged broken section taken substantially along the lines 5 on Fig. 3 and viewed in the direction of the arrows, with the pin on the ratchet and cam-surface co-operating therewith and located above the line 5 being shown in section, this view showing a detail of the box-feeding mechanism. Fig. 6 is a section taken at the irregular line 6—6 on Fig. 9 and viewed in the direction of the arrows, this view showing a detail of the mechanism shown in Fig. 5, with the disk member shown therein illustrated in elevation. Fig. 7 is a plan view, partly broken, of slide mechanism adapted to be projected into and out of the box to be filled and along which the soap is fed into the box. Fig. 8 is a section taken at the line 8—8 on Fig. 1 and viewed in the direction of the arrows; and Fig. 9 a face view of the ratchet forming a part of the mechanism shown in Fig. 5.

As a preface to the following detailed description of the illustrated mechanism, it may be stated that in the particular construction illustrated, provision is made for continuously feeding in alined formation, the bars of soap to be packed and also feeding boxes into which the soap is to be packed, into a position for receiving the bars. The bars of soap presented opposite the open side of an uprightly-extending box to be filled, are automatically pushed into the box by a series of separate operations, along a slide to cause a layer of the bars to extend into the box, a layer in the particular arrangement shown consisting of twenty bars on edge arranged in five rows of four each. As soon as such a layer has been produced, the slide upon which the soap was slid into the box, is withdrawn, stripper means being provided for preventing the withdrawal of the soap with the slide, and the box is then automatically lowered a distance substantially equal to the height of the bars of soap, the slide means again introduced into the box and another layer of bars discharged into the box, these operations continuing until the box has been filled, the box each time a layer has been formed lowering partway, as stated. When the box has been filled, box-tipping mechanism engages the box and ejects it from the machine, whereupon another box becomes positioned for filling, as explained of the first box.

In the particular construction of machine illustrated, the frame of the machine is represented at 15, this frame being preferably of open-work structure and affording the open back and top as represented in the drawings. The machine is provided with an endless conveyer belt represented at 16 which is supported at its opposite ends on pulleys, one only of which is shown, namely at 17, this pulley being rigid on a shaft 18 journaled in bearings 19 on the frame of the machine and carrying a gear 20 meshing with a gear 21 on a shaft 22, this shaft carrying a gear 23 meshing with a gear 24 on a shaft 25 which may be driven in any suitable manner as through the medium of a drive-shaft 25^a journaled on the machine-frame and driven from a drive-pulley 25^b journaled on the shaft 25^a with a clutch control represented at 25^c between the pulley 25^b and shaft 25^a, the shaft 25^a being connected with the shaft 25 by the gears 25^d and 25^e on these two shafts. The conveyer belt is continuously driven in the direction of the arrow in Fig. 1 and is adapted to receive in alined condition the bars of soap,

represented at 27, preferably wrapped and delivered to this belt in any suitable manner, it being desirable that the bars of soap fed along the belt 16, present an unbroken line. In order that the bars 27 be in properly alined condition when opposing the open side of a box to be filled as hereinafter to be described, we provide a guide-device represented at 28, which is in the form of an inverted U secured to the frame 15 of the machine to extend above the belt 16, through the channel in which the bars 27 pass in their movement to the left in Fig. 1, the righthand end of this guard-device being formed with the outwardly flaring sections 29 operating to center the bars as they pass through this guard.

At the rear side of the frame 15 is provided a box-magazine for receiving the boxes in superposed relation and through which the box is moved under the action of box-feeding mechanism hereinafter described, in a path parallel with the direction of travel of the belt 16. In other words, the boxes, represented at 30, are fed downwardly in succession alongside of the belt 16 with their open sides arranged opposite the belt in order that the bars of soap conveyed by the belt may be pushed into the box, as by the following described mechanism:

The pusher mechanism referred to comprises a plate 31 having a rearwardly-extending section 32 for a purpose hereinafter described, mounted on the ends of parallel bars 33 guidingly confined in bearings 34 secured to bars 35 forming a part of the frame of the machine, the pusher bar 31 being preferably of about the same length as the width of the box 30 to be filled. The bars 33 are connected together by a cross-bar 36 carrying studs 37, to the ends of which links 38 are pivoted, the rear ends of these links being pivotally connected with the yoke-shaped upper end 39 of a lever 40 fulcrumed, as indicated at 41, to the lower portion of the frame 15. The lever 40 carries a laterally-extending roller 42 which extends into, and is confined in, an internal cam groove 43 provided on a face of a disk 44 secured to the shaft 25, the cam portion of this groove being represented at 45 and the purpose of this construction being to successively reciprocate the pusher mechanism to the left in Fig. 3 for introducing the bars of soap into the box. The cam 45 is so formed that each movement of the pusher bar to the left in Fig. 3 moves the bars of soap engaged thereby to a position in which their outer faces are substantially flush with the open face of the box being filled, so that as the filling operation proceeds, the series of soap bars previously acted on by the pusher and pushed partway into the box, are pushed farther into the box by engagement with the next series of bars acted on by the pusher, the series of bars forming a layer being intermittently pushed to final position in the box by means of the pusher mechanism operating against the newly positioned series in succession.

Co-operating with the pusher mechanism described are the slide means hereinbefore referred to and comprising, in the particular construction of machine illustrated, a plate 46 preferably of less length than the width of the box 30 to be filled, and provided on the forward end of a bar 47. The slide 46 is positioned immediately below the upper portion of the belt 16 and is guidedly supported to be reciprocated into and out of the box 30, in guide-channels 48 provided in cross members 49 and 50 connected with the frame 15 of the machine and in a guide-channel 51 formed in a block 52 extending crosswise of, and connected with, parallel, stationary, bars 35 carried by the frame 15. The slide bar 47 is thus supported both at its ends and between its ends, whereby it is supported in all positions of its movement. The bar 47 is provided with spaced ears 54 carrying a cross pin 55 connected with one end of a link 56, the opposite end of this link being pivotally connected with the upper end of a lever 57 which is fulcrumed as indicated at 58, to the frame of the machine. The lever 57 carries a roller 59 yieldingly held at all times in contact with a cam member 60 by means of a coil-spring 61 secured to the lever 57 and to the frame 15 at 62. The cam 60 which presents the abrupt cam portion 63, is rigid on a shaft 64 which is rotated in the direction of the arrow in Fig. 3, through the medium of a gear 65 rigid on this shaft and meshing with a pinion 66 on the shaft 25. In the particular construction illustrated, these gear ratios are such as to cause the shaft 64 to rotate one-fifth as fast as the shaft 25 with the result that the cam 63 engages and shifts the lever 57 and with it the slide bar 46, to the right in Fig. 3 to withdraw it from the box once every fifth revolution of the shaft 25.

The stripper mechanism hereinbefore referred to and provided for the purpose of preventing the bars of soap from being withdrawn from the box in the operation of withdrawing the slide 46 therefrom, comprises a vertically-disposed bar 67 which extends across the open face of the box as shown in Figs. 1 and 3, this plate being carried on the forward ends of arms 68 pivoted at their rear ends on pins 69 provided in ears 70 on the frame of the machine. These arms 68 intermediate their ends are formed with the inclined, abrupt, portions 71 at their under sides at which they oppose grooved rollers 72 provided on the ends of the pins 73 pivotally connecting the links 38 with the lever 39. The relative position of the surfaces 71 and grooved rollers 72, as stated,

occurs when the parts of the machine are in the position represented in Fig. 3, namely when the pusher is entirely withdrawn, and when the pusher is shifted to the left in Fig. 3 by the swinging of the lever 40, the latter, through the medium of the rollers 72 engaging the surfaces 71, swings the stripper member out of the path of movement of the bars of soap into the box.

The box magazine hereinbefore referred to is formed of the upright parallel angle-bars 74, 75, 76 and 77 with their angles turned outwardly and arranged in the form of a rectangle to guide and confine the boxes 30 in their downward movement. The angle irons 74 and 76 extend downwardly to a distance well below the level of the top of the frame 15, but the angle bars 75 and 77 extend downwardly a slight distance short of the top of the table in order that, the boxes when filled with soap, may be tilted backwardly out through the rear end of the machine. Cooperating with the box-guides 74, 75, 76, and 77 are box-feeding means hereinbefore referred to, for lowering the boxes by an intermittent movement, a description of the mechanism shown for this purpose being as follows:

Journalled on the frame of the machine at opposite sides of the opening in the rear thereof through which the boxes are discharged, are upper and lower sprockets 78 and 79, and connecting these sprockets are endless sprocket chains 80 equipped with dogs 81 forming seats for the boxes during their movement downwardly at the rear side of the machine, these dogs being preferably constructed to yield downwardly in the movement of the chain upwardly, viz, while they are moving along the forward reach of the chains, or, in other words, these dogs being rigid when in the position of the uppermost ones in Fig. 2 and supporting a box, but yielding downwardly after they have passed around the lower sprockets 79 in order that they will not damage the portions of the box opposing the dogs. The dogs for this purpose may be constructed in any suitable way, but it is preferred that they be pivoted as shown, and provided with stop surfaces and springs to render them immovable on the chain in one direction and yieldable in the opposite direction. The sprockets 79 are rigidly connected with a shaft 82 journaled in the frame of the machine, one of the bearings being shown at 83, and this shaft co-operates with mechanism for producing an intermittent movement thereof from the shaft 25, this mechanism being as follows:

Rigidly secured to the shaft 82 is a disk 84 carrying on its inner face a series of laterally-extending pins 85, which in the particular construction shown are five in number and are equi-distantly spaced. Journaled on the shaft 82 adjacent the disk 84 is a ratchet disk 86 provided with a pin 87 slidably mounted in an opening 88 in the ratchet 86 and normally held in retracted position by means of a spring 89 confined in a socket 90 in the ratchet disk and bearing at its ends against an end of this socket and a nut 91 on the pin, this pin being of greater length than the thickness of the ratchet and in normal position projecting at its portion 92 beyond the face of the ratchet as shown in Fig. 5. The pin 87 is adapted to be projected outwardly and behind one of the pins 85 during a portion only of the rotation of the ratchet 86, namely during one-fifth of the rotation of this ratchet in the particular construction illustrated, to effect simultaneous rotation of the disk 84, shaft 82, and sprockets 79, together with the sprocket chains 80, during a fifth of the revolution of the ratchet 86, and to this end a cam 93 is provided on the stationary frame 15 of the machine, this cam having the inclined face 94 for wedging the pin 87 to the right in Fig. 5 when the ratchet 86 in its movement, as hereinafter described, carries this pin into engagement with the cam, the latter in the particular construction illustrated, being of such length that it will hold the pin 87 in projected position, as stated, during substantially one-fifth of the rotation of the ratchet. The disk 84 is provided about its periphery with a series of sockets 95 equi-distantly spaced apart for cooperation with a spring-pressed pin 96 slidably mounted in the portion 97 of the stationary frame of the machine, the spring, shown at 98 and located in a socket 99 in this section, operating to force the pin 96 into the opening 95 opposing it and locking the disk 84 against rotation. This pin is connected with a cross-bar 100 which extends into the path of a cam 101 on the ratchet 86 and which is so positioned that immediately before the pin 87 is projected into interlocking relation with one of the pins 85, the pin 96 will be automatically withdrawn from engagement with the disk 84, but will be permitted to automatically spring into interlocking engagement with one of the sockets 95 in the disk, as soon as the pin 87 moves out of interlocking position with relation to the pin 85 previously engaged. The ratchet 86 cooperates with a spring pawl 102 pivoted on one arm of a bell crank lever 103 journaled on the shaft 82, the other arm 104 of this lever being pivotally connected at 105 with a link 106, which is pivotally connected at 107 with a crank 108 rigid on the shaft 25, the arrangement of these parts being such as shown that each time the shaft 25 makes a complete revolution, it rotates the ratchet one-fifth of a revolution and thus through the medium of the pin 87, operated as hereinbefore described, rotates the disk 84 one revolution for each twenty-five revolutions of the shaft 25. The parts just described are so

proportioned and arranged that a one-fifth rotation of the disk 84 and consequently the shaft 82 moves the sprocket chains 80 a distance sufficient to lower the box 30 a distance substantially equal to the height of the bars of soap to be introduced into the box.

The box-tilting mechanism hereinbefore referred to and provided for the purpose of discharging the filled box from the machine, comprises, in the particular construction illustrated, a lever 109 pivotally supported on the frame 15 of the machine at 110 and provided at its upper end with a bar 111 which opposes the bars of soap charged into the box, the lower end of this lever co-operating with an abrupt cam member 112 rigid on the shaft 82 and operating when engaged by this cam to rock the lever 109 in anti-clockwise direction in Fig. 3 and tilting the filled box backwardly into a position in which its open side is uppermost, upon a travelling conveyer such as that represented at 113.

The operation of the machine is as follows:

Assuming the box-magazine to contain boxes arranged end to end in superposed relation with their open sides facing to the right in Fig. 3, and the parts of the machine to be in the positions illustrated in the main views of the drawings, wherein a box 30 is shown in the position for receiving the first layer of soap bars and has had this first layer introduced therein upon the slide mechanism, by the successive actions of the pusher mechanism in the manner hereinafter described, the rotation of the shaft 64 causes the cam 63 to engage the roller 59, swinging the lever 57 to the right in Fig. 3, which withdraws the slide from its position under the layer of soap bars in the box, the stripper plate 67 remaining down in the position shown in Fig. 3 during the withdrawal of the slide. Following the withdrawal of the slide from the box 30 as stated, the ratchet 86 under the operation of the pawl mechanism hereinafter described, is moved into a position where its pin 87 interlocks with one of the pins 85, the pin 96 having been withdrawn from the disk 84, and rotates the shaft 82 and moves the sprocket chains 80 in the direction of the arrows in the drawings to lower the partially filled box a distance equal to substantially the width of the bars of soap. Following this intermittent lowering of the box, the slide 46 again enters the box above the layer of soap bars introduced therein as stated. The machine continuing its operation introduces another layer of bars of soap into the box by the successive actions of the pusher mechanism, the bars being fed into the box as follows:

The continuous rotation of the belt 16 in the direction of the arrows in Figs. 1 and 2 operates to advance the bars of soap into a position in front of the open side of the box and adjacent its lower portion, the forwardmost one of the bars of soap engaging a stationary stop 114 provided on the stationary frame 15 to extend above the conveyer 16 and closely adjacent the wall of the box at the lefthand side of Fig. 1. When a series of four of the soap bars 27 are presented in the position as stated, the slide 46 being in the box as shown in Fig. 1, the portion 45 of the cam 43 engages the roller 42, thereby shifting the pusher mechanism to the left in Fig. 3 with the result of simultaneously pushing these four cakes of soap partway into the box, the stripper 67 by engagement of the grooved rollers 72 with the levers 68 rising out of the path of movement of the cakes into the box and dropping back into the position shown in Fig. 3 upon the retraction of the pusher device to the position shown in this figure, which occurs when the roller 42 moves out of engagement with the portion 45 of the cam 43. The belt 16 in its continued movement, advances another row of the soap bars 27 opposite to the box and up against the stop 114 and the pusher mechanism again operates to engage this series of bars and push it partway into the box, this last series of bars pushing the previously introduced series of bars into the box, the stripper mechanism 67 operating as hereinbefore described. These operations continue until five series or rows of the soap bars have been introduced into the box, whereupon the cam 60 again engages the roller 59, swinging the lever 57 to the right in Fig. 3, and withdrawing the slide from its position under the soap bars introduced into the box, the stripper plate 67 remaining down in the position shown in Fig. 3 during the withdrawal of the slide. The box feeding mechanism then again operates to lower the box for receiving another layer of the bars. These successive operations continue as to the box being filled until the last layer of bars is introduced into the box, in which position the upper edge of the box extends below the lower ends of the bars 75 and 77. The cam 112 then strikes the lower end of the lever 109, tilting its upper end in Fig. 3 to the left, which throws the filled box rearwardly into upright position on the conveyer belt 113, as shown in dotted lines in Fig. 3, where it is carried to a point of discharge. The parts of the apparatus are so constructed and arranged that as certain of the dogs 81 reach substantially the uppermost point in their path of movement in which position the filled box is being moved backwardly, these dogs engage under the next box 30 above the box just filled and operate as a support therefor, to intermittently lower the box by a step-by-step movement in alternation with the other operations hereinbefore described.

The portion 32 of the pusher bar is provided for the purpose of engaging with the end of the bar 27 of soap on the conveyer 16 immediately adjacent those which are engaged by the pusher and pushed into the box, in order that the travel of the bars with the belt will be prevented until the pusher has been retracted and another row of soap bars presented for advancement into the box.

It will, of course, be understood that while we have described our invention as applied to the packing of soap into a box, it may be used for the packing of other articles, and while we have illustrated and described a particular embodiment of our invention, we do not wish to be understood as intending to limit it thereto, as the same may be variously modified and altered without departing from the spirit of our invention, it being our intention to claim our invention as fully and completely as the prior state of the art will permit.

What we claim as new and desire to secure by Letters Patent is—

1. In a machine of the character set forth, the combination of means for supporting a box to be filled with articles, a slide adapted to be projected into the box and along which the articles are fed into the box, means movable relative to said slide for introducing the articles into the box and upon said slide, and means for withdrawing said slide from the box.

2. In a machine of the character set forth, the combination of means for supporting a box to be filled with articles, means whereby said box may be shifted from one elevation to another, a slide adapted to be projected into the box and along which the articles are fed into the box, means movable relative to said slide for introducing the articles into the box and upon said slide, and means for withdrawing said slide from the box operating in such timed relation to said box shifting means as to cause said slide to be withdrawn before the box is shifted.

3. In a machine of the character set forth, the combination of means for supporting a box to be filled with articles, means for lowering said box, a slide adapted to be projected into the box and along which the articles are fed into the box, means movable relative to said slide for introducing into the box a plurality of rows of the articles to form a layer of the articles in the box by introducing the rows in succession into the box, and means for withdrawing the slide from the box so timed with relation to said first-named means that said slide will remain in the box while the pluralities of rows to form a layer are being introduced therein, and so timed with relation to said box-shifting means that said slide will be removed prior to the lowering of the box.

4. In a machine of the character set forth, the combination of means for supporting and intermittently feeding a box to be filled with articles, means, operating automatically, to introduce into the box a plurality of rows of the articles, to form a layer of the articles in the box by introducing the rows into the box to extend in substantially the same plane by a succession of movements of said last-named means, and slide means along which the articles are fed into the box.

5. In a machine of the character set forth, the combination of means for supporting and intermittently feeding a box to be filled with articles, means operating automatically to introduce into the box a plurality of rows of the articles to form a layer of the articles in the box by a series of successive movements, slide means movable into and out of the box and along which the articles are fed into the box and furnishing a support for the articles in the box, said second-named means and said slide means being relatively movable, and means for moving said slide means into and out of the box.

6. In a machine of the character set forth, the combination of means for supporting a box to be filled with articles, means, operating automatically, to introduce into the box a plurality of rows of the articles to form a layer of the articles in the box by introducing the rows in succession into the box, and slide means along which the articles are fed into the box, said second-named means and said slide means being relatively movable.

7. In a machine of the character set forth, the combination of means for supporting and intermittently feeding a box to be filled with articles, reciprocating means operating automatically to introduce the articles into the box to form, by successive reciprocations, a plurality of layers of articles in the box, a slide movable into and out of the box and along which the articles are fed into the box, and means operating automatically to withdraw the slide from the box preparatory to the lowering of the box through the medium of said first-named means.

8. In a machine of the character set forth, the combination of means, operating automatically, to feed into the box a plurality of rows of the articles to form a plurality of layers of the articles in the box, each by introducing rows of articles in succession into the box by a series of successive reciprocations of said means, and means operating to support a box in position for receiving the articles and automatically shift the box relative to said first-named means, to a position for receiving another layer of the articles after one layer has been introduced therein.

9. In a machine of the character set forth,

the combination of means for supporting a box to be filled with articles, article-feeding means operating to move the articles into a position in front of the open side of the box, a slide movable into and out of the box and serving to support the articles in the box, and means operating automatically to move the articles from said feeding means onto said slide, into the box.

10. In a machine of the character set forth, the combination of means for supporting and intermittently lowering a box to be filled with articles, article-feeding means operating to move the articles into a position in front of the open side of the box, a slide movable into and out of the box and forming a support along which the articles move into the box and supporting the articles in the box, and means, operating automatically, to move the articles from said feeding means onto said slide, into the box to form plural layers of the articles therein, by a series of successive movements, and means for actuating said slide operating automatically to be withdrawn from the articles superposed thereon preliminary to the box-lowering operation, and thereafter projected into the box to form a support for the next succeeding layer of articles introduced therein.

11. In a machine of the character set forth, the combination of means for supporting a box to be filled with articles, article-feeding means operating to move the articles into a position in front of the open side of the box, a member movable into the box to a position in which it extends closely adjacent the rear wall thereof, and movable out of the box and forming a support along which the articles may move into the box, and means, operating automatically, to move the articles from said feeding means onto said member, into the box.

12. In a machine of the character set forth, the combination of means for supporting a box to be filled with articles, article-feeding means operating to move the articles into a position in front of the open-side of the box, a slide movable below said article-feeding means and into and out of the box and forming a support along which the articles may move into the box, and means, operating automatically, to move the articles from said feeding means onto said slide and into the box.

13. In a machine of the character set forth, the combination of article-feeding means for feeding articles to a box to be filled, a member movable into and out of the box and forming a support along which the articles may move into the box, means, operating automatically, to move the articles from said article-feeding means onto said member into the box, means operating to support the box in position for receiving the articles and automatically shift to a position for receiving another layer of the articles after one layer has been introduced therein, and means operating to withdraw said member from the box before the latter is caused to automatically shift.

14. In a machine of the character set forth, the combination of article-feeding means for feeding articles to a box to be filled, a member movable into and out of the box and forming a support along which the articles may move into the box, means, operating automatically, to move the articles from said article-feeding means onto said member into the box in a plurality of rows to form a layer of the articles in the box by a series of successive operations, means operating to support the box in position for receiving the articles and automatically shift to a position for receiving another layer of the articles after one layer has been introduced therein, and means operating to withdraw said member from the box before the latter is caused to automatically shift, said second-named means being so timed relative to said other means as to operate a plurality of times before said member is withdrawn and the box is shifted.

15. In a machine of the character set forth, the combination of a continuously operating conveyer for conveying in line formation the articles to be filled into a box, a member movable into and out of the box and forming a support along which the articles may move into the box, means, operating automatically, to move the articles from said article-feeding means onto said member into the box, means operating to support the box in position for receiving the articles and automatically shift to a position for receiving another layer of the articles after one layer has been introduced therein, and means operating to withdraw said member from the box before the latter is caused to automatically shift.

16. In a machine of the character set forth, the combination of a support for the articles, means for feeding the articles into a box, and means for supporting and intermittently feeding the box to permit of the feeding of the articles into the box at different portions of the latter comprising box-engaging elements, a drive-member therefor presenting a plurality of shoulders, a second drive member carrying a pin adapted to be moved into and out of engagement with said shoulders for driving said first-referred-to drive member, a cam in the path of movement of said pin for projecting the latter into engagement with said shoulders, and means for driving said second drive member.

17. In a machine of the character set forth, the combination of a support for the articles, means for feeding the articles into a box, and means for supporting and inter-

mittently feeding the box to permit of the feeding of the articles into the box at different portions of the latter comprising box-engaging elements, a drive-member therefor presenting a plurality of shoulders, a second drive-member carrying a pin adapted to be moved into and out of engagement with said shoulders for driving said first-referred-to drive-member, a cam in the path of movement of said pin for projecting the latter into engagement with said shoulders, and ratchet means operating to intermittently drive said second drive-member.

18. In a machine of the character set forth, the combination of a support for the articles, means for feeding the articles into a box, and means for supporting and intermittently feeding the box to permit of the feeding of the articles into the box at different portions of the latter comprising box-engaging elements, a drive-member therefor presenting a plurality of shoulders, a second drive-member carrying a spring pressed pin adapted to be moved into and out of engagement with said shoulders for driving said first-referred-to drive-member, a cam in the path of movement of said pin for projecting the latter, against the action of its spring, into engagement with said shoulders, and means for driving said second drive-member.

19. In a machine of the character set forth, the combination of means for supporting a box to be filled with articles, a support for the articles adapted to be moved into and out of the box, means for withdrawing said support from the box, a stripper mechanism extending across the articles in the box in the outward movement of said support, means for moving the articles into the box and upon said support, said last-named means and said support being relatively movable, and means, operating automatically, to move said stripper mechanism out of the path of movement of the articles into the box during the article-feeding operation.

20. In a machine of the character set forth, the combination of means for supporting a box to be filled with articles, a support for the articles adapted to be moved into and out of the box, means for feeding the articles into the box and upon said support, said last-named means and said support being relatively movable, stripper mechanism extending across the articles in the box in the outward movement of said support, and means, operating automatically, to move said stripper mechanism out of the path of movement of the articles into the box.

21. In a machine of the character set forth, the combination of means for supporting a box to be filled with articles, a slide for the articles adapted to be projected into the box into a position wherein it extends into that part of the box in which the articles are to be packed, and a member for effecting the introduction of articles into the box and upon said slide, said slide and member being relatively movable.

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