

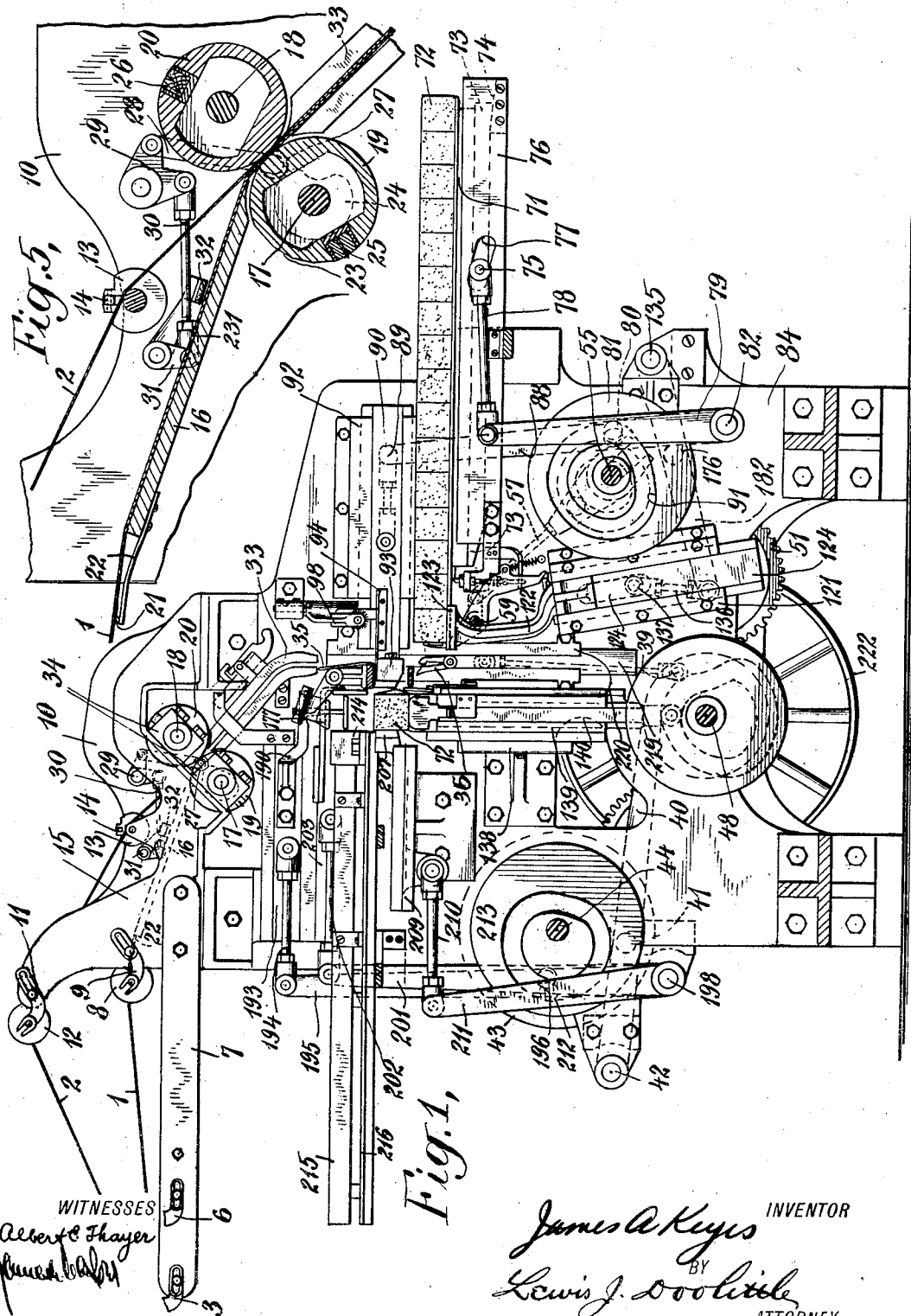
J. A. KEYES.
WRAPPING MACHINE.

APPLICATION FILED AUG. 21, 1911.

Patented Mar. 4, 1913.

7 SHEETS—SHEET 1.

1,055,049.



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7 SHEETS—SHEET 2.

1,055,049.

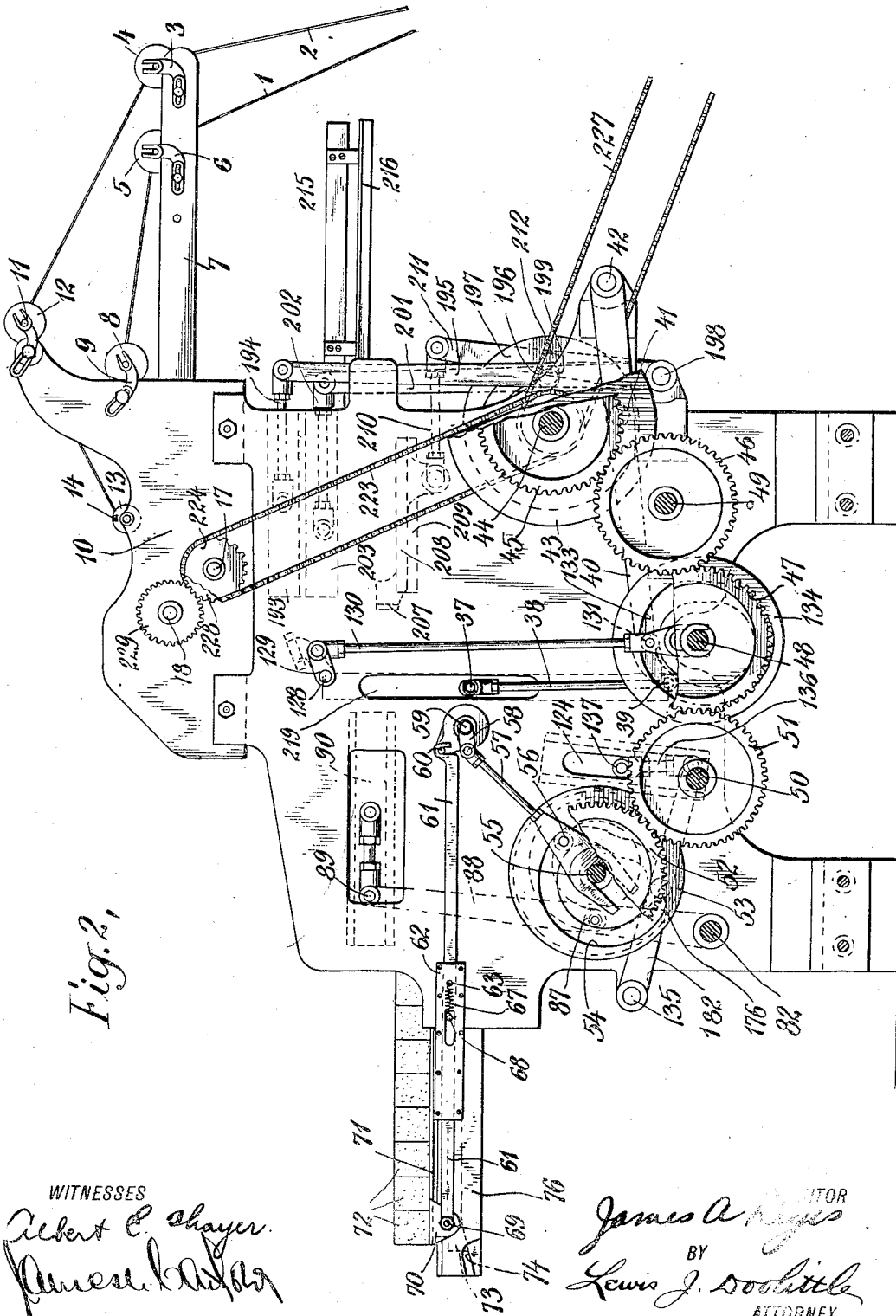


Fig. 2,

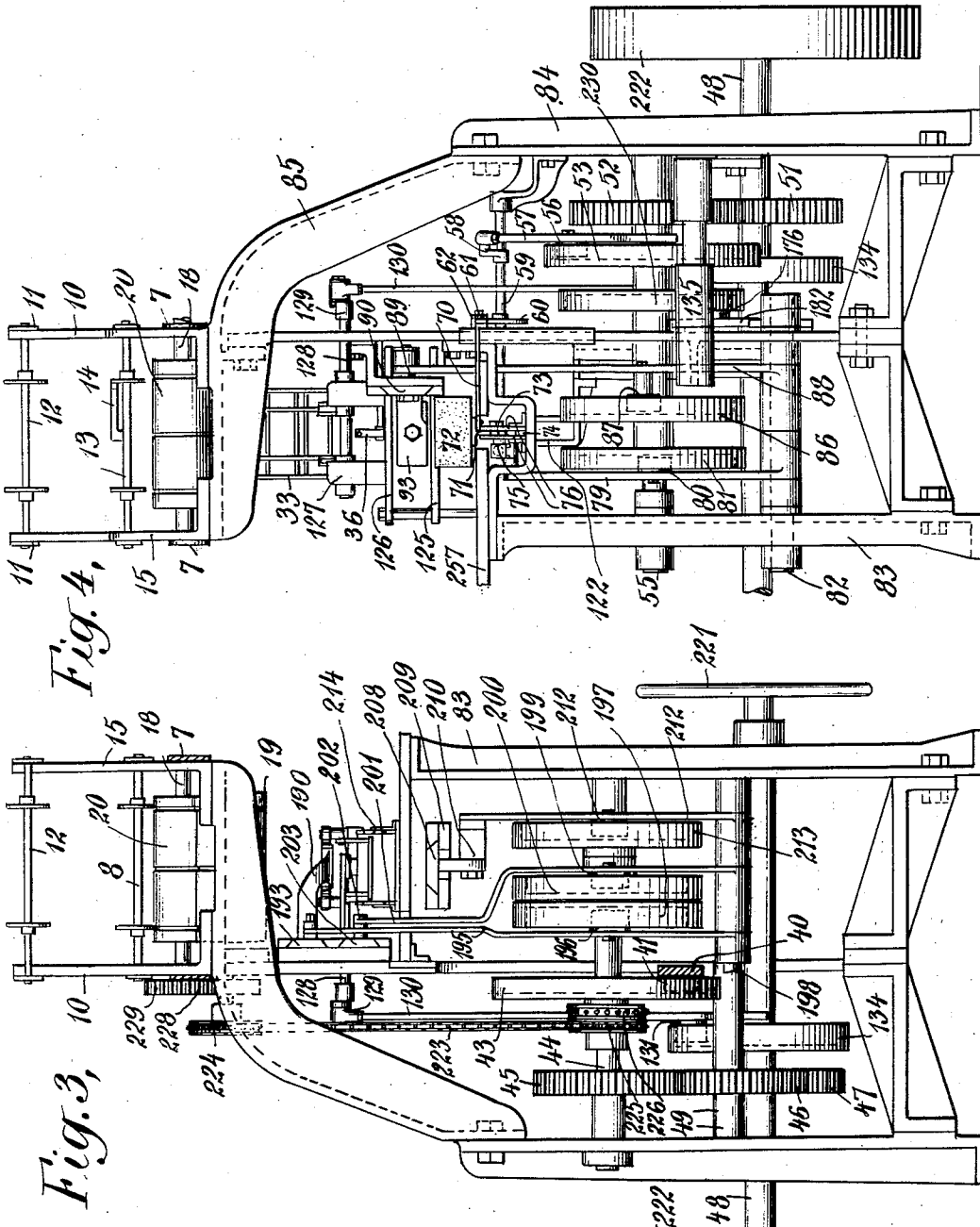
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1,055,049.

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7 SHEETS—SHEET 3.



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7 SHEETS—SHEET 4.

Fig. 8,

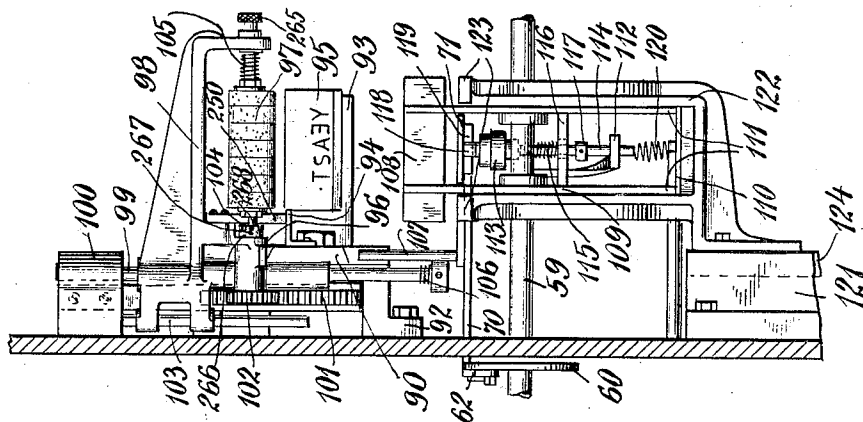


Fig. 7,

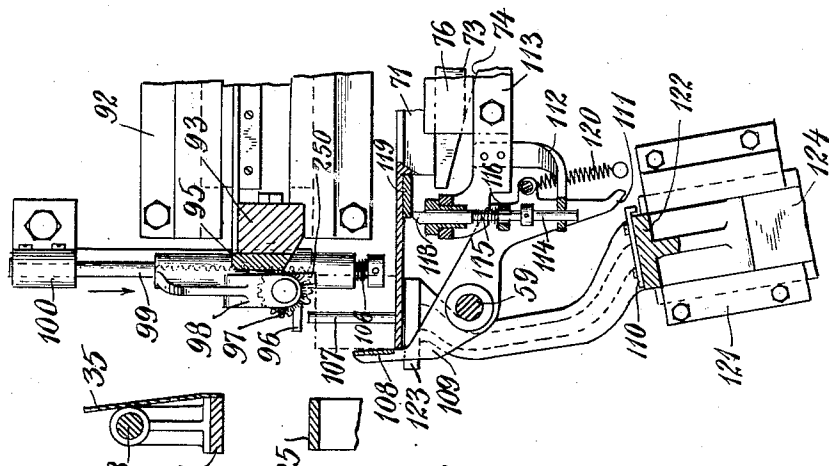
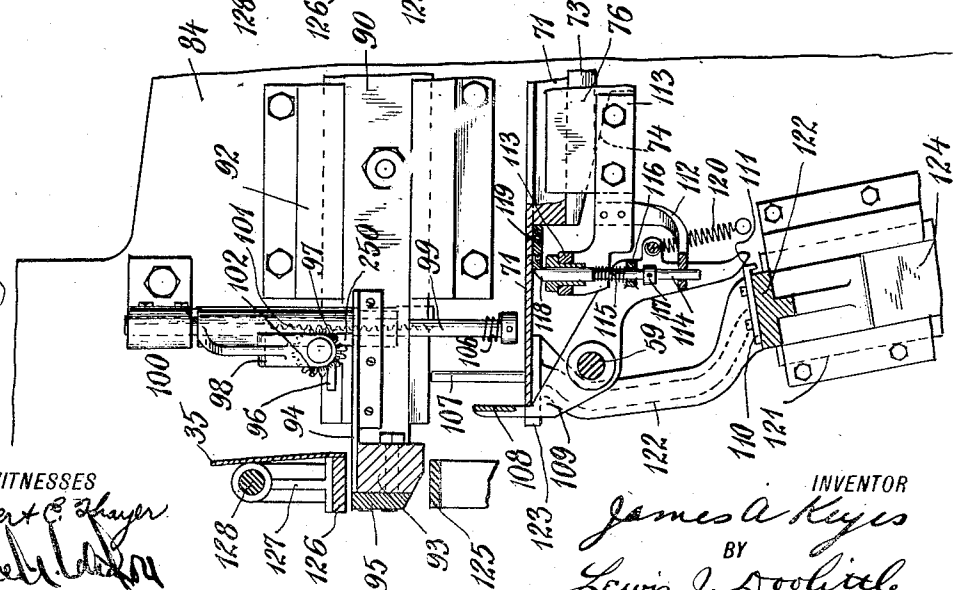


Fig. 6,



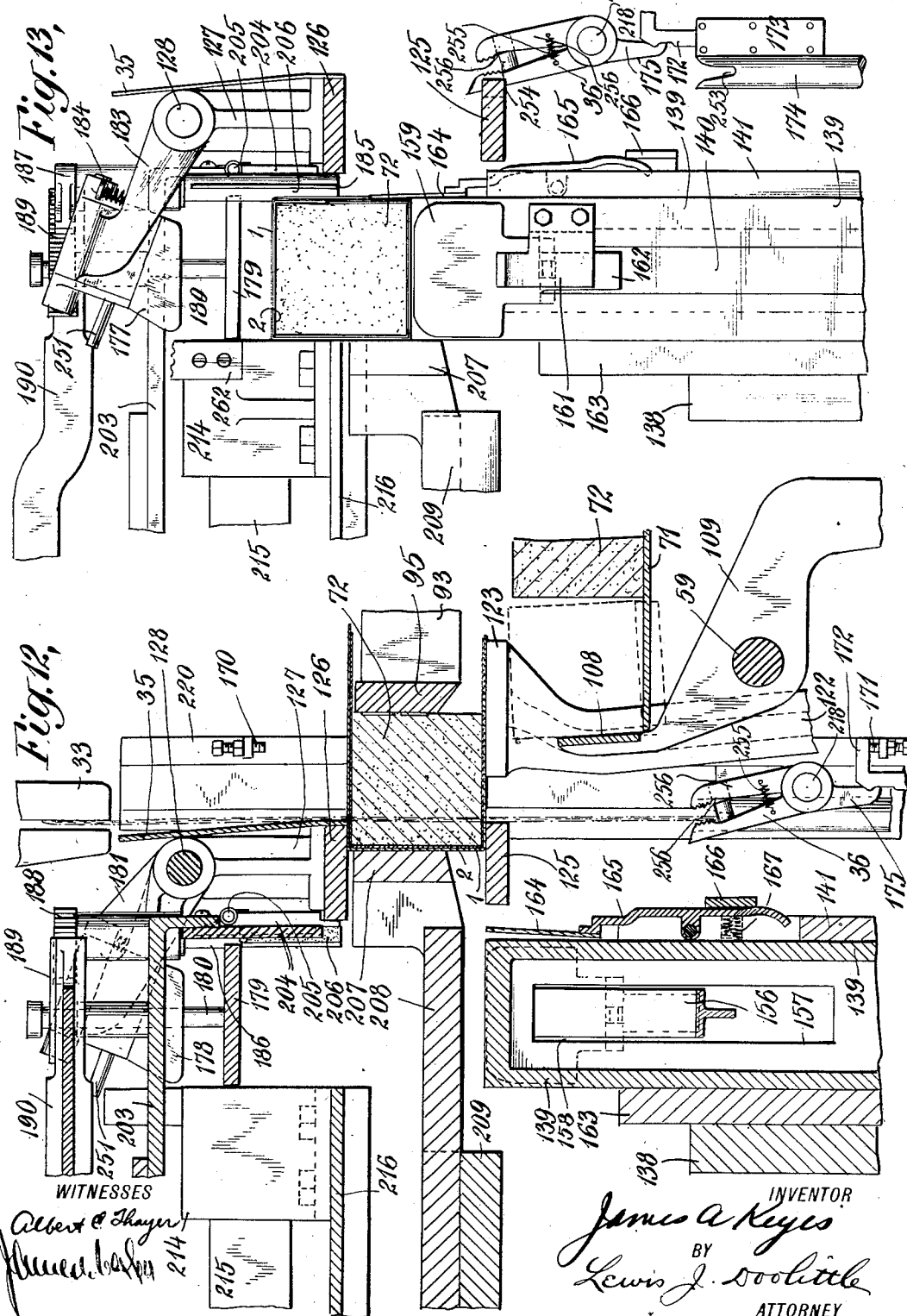
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1,055,049.

Patented Mar. 4, 1913.

7 SHEETS-SHEET 6.



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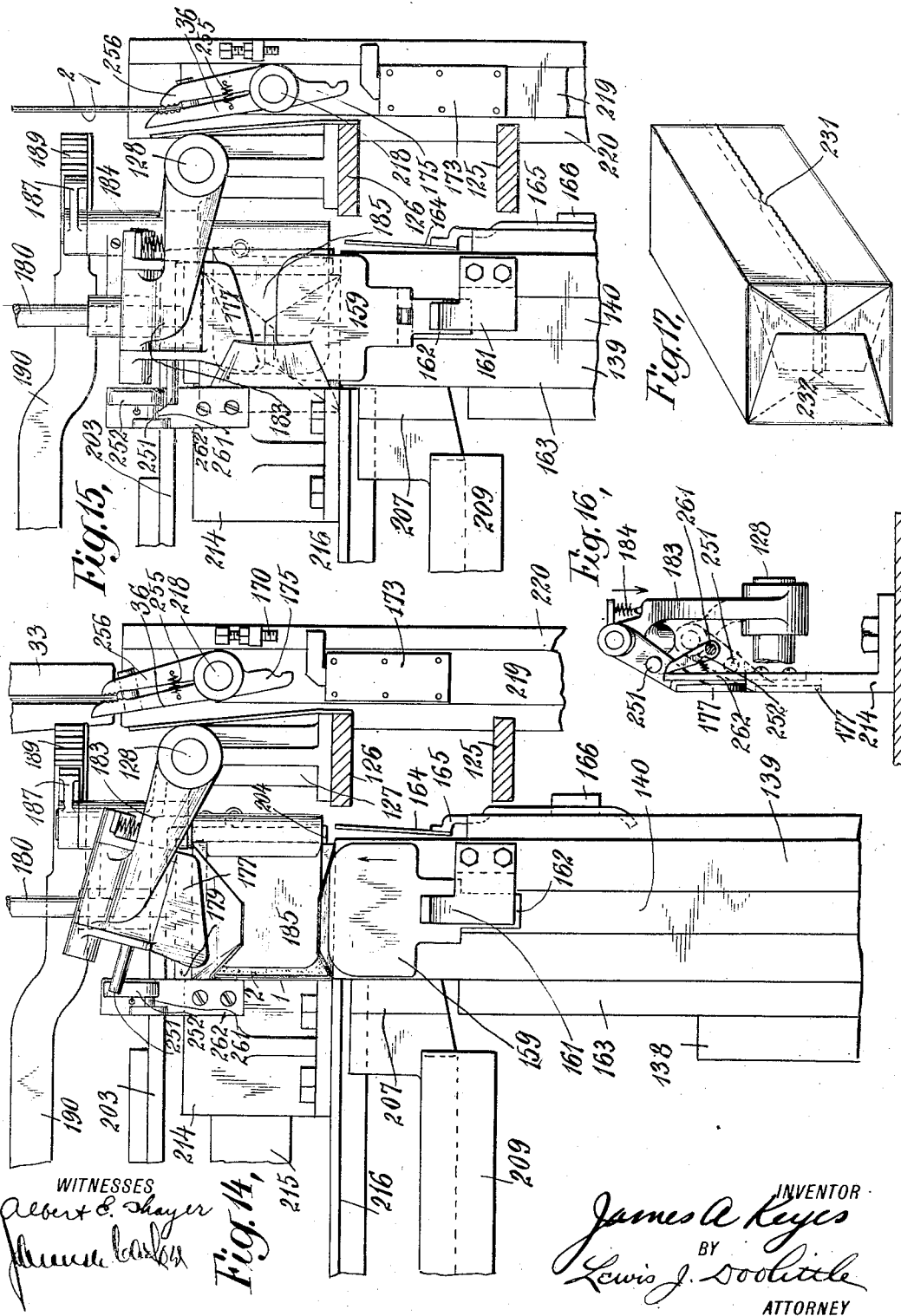
J. A. KEYES.
WRAPPING MACHINE.

APPLICATION FILED AUG. 21, 1911.

1,055,049.

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7 SHEETS—SHEET 7.



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Fig. 14,

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UNITED STATES PATENT OFFICE.

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WRAPPING-MACHINE.

1,055,049.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed August 21, 1911. Serial No. 645,211.

To all whom it may concern:

Be it known that I, JAMES A. KEYES, a citizen of the United States, and resident of the city, county, and State of New York, have made certain new and useful Inven-
5 tions Relating to Wrapping-Machines, of which the following is a specification, taken in connection with the accompanying draw-
ings, which form a part of the same.

10 This invention relates to wrapping machines and relates especially to machines for wrapping cakes of soft or weak material such as compressed yeast and the like, al-
though of course, these machines may be
15 used for wrapping other articles.

In the accompanying drawings showing in a somewhat diagrammatic way, an illustrative embodiment of the invention, Figure 1 is a side elevation with the adjacent frame member removed, Fig. 2 is a similar view from the other side of the machine, Fig. 3 is an end view looking from the left in Fig. 1, Fig. 4 is the opposite end elevation, Fig. 5 is an enlarged sectional view of the paper
25 feed rolls, Figs. 6, 7 and 8 are enlarged detail views of the lifter devices, Fig. 9 is a top view showing the folding devices, Fig. 10 is an enlarged vertical sectional view of the folding plunger and associated devices,
30 Fig. 11 is a horizontal section thereof along the lines 11-11 of Fig. 10, Figs. 12 and 13 are enlarged transverse sectional views showing progressive folding operations, Figs. 14 and 15 are similar side elevations,
35 Fig. 16 is a detail view taken at right angles showing this end folder, and Fig. 17 is a perspective view showing the wrapped cake.

In the illustrative embodiment of this invention shown in the drawings one or more
40 wrappers of paper or the like, may be used to inclose the cake of yeast or other article and they may be in the form of continuous webs 1, 2, the inner web 2 being of waxed paper or the like if desired, and the outer
45 wrapper strip or web 1 being if desired, printed with suitable advertising matter and also perforated with alining apertures such as 231 indicated in Fig. 5 to regulate its alinement. The inner wrapper 2 may pass
50 over the guide roll 4 in the bearing brackets 3 and over the similarly adjustable guide roll 12 in the bearings 11 and then this inner wrapper may pass over the guide 13 provided if desired, with the fric-
55 tional gripping finger 14 indicated in Figs.

4 and 5, in order to maintain the proper tension in the web and prevent its moving backward when released. The outer or printed wrapper 1 may pass over the similar guide roll 5 in the bearing brackets 6 sup-
ported on the extensions 7 and then over
60 another guide roll 8 in the adjustable bearings 9 before passing over the feed board 16 and into the bite of the feeding and cutting
rolls 19, 20, indicated in Fig. 5.

The knife roll 19 on the shaft 17 may be provided with the transverse knife or cutter 25 mounted in suitable yielding material so that its edge projects from the periphery of the roll to the desired extent. The co-
operating roll 20 may have a recessed block of wood 26 to cooperate with the knife 25 and may be rotated by its shaft 18 in unison with the cutting roll so as to feed the paper strips between them and sever them at the
70 proper time. In order to allow strips of different length to be used in the machine it is desirable to form the knife roll with a flat releasing portion or face 23 on its pe-
riphery so that when this portion 23 comes
80 into engagement with the opposing roll the wrapper strips are not gripped but may be longitudinally adjusted to the desired extent. A suitable friction retarding device
85 may be used in connection with the outer wrapper strip and the frictional gripper 32 may be faced with rubber or other material to engage the wrapper with the desired ef-
fectiveness. This gripper may be mounted on the rock arm 31 connected by the link
90 30 with the rock lever 29 and the link 28 connected with this rock lever may carry at its lower portion, the cam roll 27, co-
operating with the cam 24 on the shaft of the cutter roll so that the gripper 32 is nor-
95 mally held in the raised inoperative position shown, but after the wrappers have been severed this gripper is released to en-
gage the wrapper strip. From the rolls the wrapper strips pass through the curved
100 guides 33 so as to be engaged by the gripper 36, which serves to aline the wrapper when the cylindrical paper aliner 254 is engaged by the remaining half of the circular per-
foration 231 in the end of the wrapper strip.
105 The gripper, after it has moved up and engaged the end of the wrapper strips, may then if desired, definitely aline them by pushing the wrapper back through the feed-
ing rolls which are then in their released 110

position until the succeeding alining aperture 231 is brought into engagement with the stationary aliner 21 on the end of the spring or plate 22 mounted at the upper end of the feed board, see Fig. 5. Also, if it is desired to use longer wrappers in the machine, the timing of the feed rolls and the gripper may be readily adjusted by appropriate changes in their driving devices so that a greater length of wrapper may be withdrawn and the gripper, instead of forcing the wrapper back into alinement after first engaging it, may withdraw a suitable additional length at any time in the travel of the gripper when the feed rolls are in disengaged position.

The heavy frame of the machine may be made of suitable side members such as 83 and 84 connected by suitable rigid braces and this frame may carry the supporting bracket 85 on which the paper feed plates 10, 15, may be mounted. The driving shaft 48 may be mounted in the machine frame in any desired way and may be operated by the pulley 222 or otherwise and may be turned over for adjustment by the hand wheel 221. This drive shaft may carry the gear 47 meshing with the idler gear 46 on the shaft 49, which also meshes with the gear 45 on the paper feeding shaft 44. The shaft 50 also carries a similar idler 51 meshing with the gear 47 and also meshing with the gear 52 on the cam shaft 55 so that all these shafts are operated in unison. The sprocket 225 on the paper feed shaft 44 operates a suitable sprocket chain 223 which engages the sprocket wheel 224 on the shaft 17 of the cutting roll, see Figs. 2 and 3. The shaft 18 of the cooperating feeding roll is driven by the meshing gears 228, 229 on these two shafts. The gripper 36 may, as indicated in Fig. 1, be mounted in a suitable slide 219 in the frame and may be operated by the link 38 through a stud 37 and pivoted at one end of the gripper lever 40 by a bolt 39 and which, as indicated in Fig. 2, oscillates about its pin 42. This gripper lever carries the cam roll 41 meshing with a suitable inclosed cam groove in the cam 43 on the shaft 44. The movable gripper jaw 256 is pivoted about the pin 218 shown in Figs. 12 and 13 and is normally swung toward the opposing stationary gripper jaw 36 by a suitable light spring 255. A suitable releaser 172 may be used to control the position of the movable gripper jaw and this releaser may be slidably mounted in the guide 173 on the gripper slide 219. As long as the releaser is in the position shown in Fig. 12, it forces the tail 175 of the gripper jaw into such position as to swing the connected movable gripper jaw 256 away from the cooperating jaw 36. As the gripper moves upward the releaser 172 engages the adjustable gripping stop 170 on the

slideway 220 and wedges this releaser downward into its guide so as to force it out of engagement with the gripper tail 175, thus allowing the gripper jaws to engage the wrappers. As the gripper is drawn downward together with the wrappers the releaser 172 finally comes into engagement with the adjustable releasing stop 171 so as to wedge the releaser up into engagement with the gripper tail 175 opening the gripper jaws and releasing the wrappers. The lower ends of the wrappers are thus left resting in the notches 253 of the adjustable paper stops 174 shown in detail in Fig. 13.

The cakes of material such as the large cakes of compressed yeast used by bakers require careful handling and for this reason it is desirable to have a readily controlled feeding device which may be of the four-motion type indicated in the drawings. The feed bracket 76 may be formed of two outer plates as indicated in Fig. 4, between which the feed raiser 73 may operate. This raiser as is indicated in Fig. 2, may be provided with two or more inclined cam portions which cooperate with similarly inclined stationary raising cams 74 on the bracket. The feed raiser is thus vertically raised as it is longitudinally reciprocated by any desired means, such as by the link 78 engaging the pin 75 on the raiser connected at its other end with the raiser lever 79 which is pivoted about the pin 82 as shown in Fig. 1. The follower 80 on this lever engages the closed cam groove 91 in the raising cam 81 on the shaft 55 so as to reciprocate this feed raiser at the proper time and cause a slight vertical movement of the raiser and the heavy plate feeder 71 supported thereby and guided laterally between the plates 76. This feeder may be reciprocated by a feed rod 61 pivotally or otherwise removably secured to the pin 69 in the bracket 70 on this feeder and having its other end loosely hooked over the crank and pin 60 mounted upon the aliner rod 59, as shown in Fig. 2. The operating arm 58 of this crank may be connected by the link 57 with a suitable yoke passing over the shaft 55 and supporting the follower 56 so that it cooperates with the closed cam groove 54 in the cam 53 so that the raiser is first raised slightly, carrying the feeder 71 and the cakes 72 clear of the feed table 257 and then the feeder is moved forward about the width of a cake before the raiser again lowers, leaving the cakes supported at either side of the table. It is desirable in feeding such friable material to have a safety device on the feeder to prevent over feeding and possible crushing of the articles. This may be conveniently effected by having a suitable relief connection in the feed rod 61 by securing the guide 62 on one end of the rod and interposing a suitable spring 67 between the pin 63 on this guide and the

pin 68 on the end of the other section of the feed rod. This limits the feeding pressure and a further desirable safety device may consist of the yielding aliner 108 in the path of the cakes as indicated in Figs. 6 to 8. This aliner is mounted on the aliner rod 59 supported in suitable brackets mounted upon the frame 84 and the aliner may be normally held in proper position by the alining spring 120 which allows the aliner to yield in case of excessive pressure of the cakes thereon so as to minimize breakage. The stop pin 114 is supported in the bracket 112, 113, in the frame and its head 118 is normally down out of the path of the feeder stop 119 on the feeder 71, as shown in Fig. 7. If, however, the aliner is tilted by excessive pressure of the cakes the collar 116 is correspondingly raised so as to exert through the spring 115 sufficient pressure on the stop pin 114 to raise its head into the path of the feeder stop. This thereupon prevents the further slight forward motion of the feeder so as to prevent injury to the forward cake in case it is slightly oversized or forced forward too much for other reasons.

The forward cakes are transferred from the end of the feeder by a suitable lifter which as indicated in Figs. 7 and 8 may comprise the two lifter members 123 on each side of the feeder 71 and having curved arms 122 to avoid interference with the aliner rod and supported on the lifter slide 124 guided in the ways 121 as shown in Fig. 7. This lifter slide may be reciprocated by the link 136 connected to the pin 137 in the slide and pivoted at its lower end to the free end of the lifter lever 182 which is mounted on its pin 135. This lifter lever carries the follower 176 cooperating with a suitable cam groove in the cam 230 on the shaft 55 as shown in Figs. 1 and 4. It is also desirable to have a suitable disengager to positively disengage the aliner from the forward cake before the lifter members 123 on each side of the feeder raise the cake therefrom. This may be conveniently effected by providing the adjustable disengager 110 on the top of the lifter slide so that it engages the aliner tail 111 so as to swing the aliner out of engagement with the first cake before it is raised into the upper position shown in Fig. 12, where it is engaged and forced forward by the printing plunger 93 having the head 95. This printing plunger 93 may be mounted on the slide 90 and reciprocated at the proper time by the suitable link 89 connecting this slide to the upper end of the plunger lever 88 as shown in Fig. 1. This plunger lever may be pivoted about the pin 82 and carry the follower 87 cooperating with a suitable closed cam groove in the cam 86 on the shaft 55 as shown in Fig. 4 so as to force the cake forward, carrying therewith the

wrappers which have been previously supported behind it, as indicated by the dotted lines in Fig. 12, and simultaneously make the desired printing impression on the cake. It is also desirable to provide a suitable rear platen 207 on the slide 208 so as to move gradually back behind the cake in unison with the printing plunger to insure the proper printing action thereof. This rear platen slide 208 may be mounted in the guideway 209 shown in Figs. 1, 3 and 12 and reciprocated at the proper time by the connecting link 210 and the platen lever 211 pivoted about the pin 198 and having the follower 212 cooperating with the cam groove in the cam 213.

It is desirable with such soft friable material as yeast to insure the proper cleaning of the printing head or die after each impression and for this purpose a suitable cleaning brush may be mounted to cooperate with the printing plunger as shown in Figs. 6 to 8. This brush 97 may be mounted in the vertically moving brush frame 98 guided on the pins 99, 103, in the bracket 100. On the hollow stub shaft 266 of this brush a suitable brush pinion 102 may be mounted so as to cooperate with the stationary brush rack 101 and rotate the brush as it is raised and lowered. It is also desirable to change the angular position of this brush from time to time and this may be conveniently effected by providing a series of angularly spaced slots 104 in the hollow brush shaft 266 and having a pin 267 on the relatively movable brush stem 268 so that by withdrawing this brush stem against the pressure of the spring 105 by taking hold of the head 265 the pin 267 may be slipped into another of these notches. This brush is automatically raised by the lifter so as to be kept out of contact with the cakes and this may be effected by providing the lifter pin 107 so as to cooperate with the bracket 96 on the brush frame and thus carry the brush upward as the lifter is raised. Then, as the printing plunger 93 moves forward the guide 94 on the side of this plunger, as shown in Fig. 6, moves forward under the guide lug 250 on the brush frame so as to hold this brush up in the inoperative position shown until the plunger again withdraws, whereupon the brush falls down in front of the plunger face so as to clean it, the fall being cushioned by springs such as 106 on the guide rod 99.

As the cake 72 is forced by the printing plunger between the stationary folding bars 125 and 126, the wrappers are thereby folded around the cake so as to inclose it on three sides by the time the cake comes into position above the folding plunger 139. The lower side folder 164 on this plunger then moves upward forming the lower side fold and then the plunger moves bodily up-

ward, carrying with it the cake and forming the upper side fold as the wrapper engages the rubber grippers 206 on the discharger. This folding plunger, as is indicated in Figs. 10 and 11, is vertically guided from a suitable bracket 138 which carries the dovetail guide 163 fitting in the plunger as is shown in Fig. 11. The plunger itself is vertically reciprocated by the bar 150 carrying the cam roll 154 fitting in the closed cam groove 149 of the cam 147 on the shaft 48. The lower side folder 164 is pivoted on the folder slide 141 mounted in a suitable guideway 142 in the plunger, see Figs. 11 and 12, so as to be vertically reciprocated by the bar 143 carrying the cam roll 144 cooperating with the closed cam groove 148 in the cam 145. This side folder is normally pressed inward in line with the plunger by a suitable spring 167, but the relatively movable cam 166 secured to the plunger holds this folder out in the inoperative position shown in Fig. 12 when it is in its lowered position indicated. In this way as this folder is moved upward it engages the lower lap of the wrappers some little distance away from the cake so as to more readily fold the wrappers around it and then when the folder has moved out of engagement with the cam, as shown in Fig. 13, this folder snaps in into close engagement with the cake so as to hold the wrapper tightly against the same. When this has occurred the folding plunger 139 moves upward, carrying with it the cake and wrappers which are frictionally engaged by the pivoted grippers 206 faced with rubber or similar material and having their supports 204 pivoted about the pin 205 in the discharger arm 203. This additional frictional engagement on the free end of the wrapper folds it tightly around the cake so as to take up any slack, which is also assisted by the top platens 179 which finally come into engagement with the top of the cake. These top plates may be supported on the platen rods 180 in suitable guide brackets so that the weight of these platens and rods brings them into engagement with the upper portion of the wrapper so as to hold the same down firmly against the cake and assist the positioning of the wrapper around the same. At this time the rear end folders 185, 186, are swung around into engagement with the wrapper ends to make the first end folds therein. These end folders are pivoted in suitable brackets 191, 192, supported from the stationary folding bar 126 and the folders carry at their upper ends the geared folder sectors 187, 188, meshing with the folder racks 189 on the rack slide 190, see Figs. 9 and 15. As is seen in Fig. 1, this rack slide 190 is secured to the plunger 193 which is reciprocated by the link 194 and rack lever 195 pivoted about the pin 198. This rack

lever carries the follower 196 engaging a suitable closed cam groove in the cam 197 on the shaft 44 as shown in Fig. 3. When these rear end folders have operated the bottom end folders 158, 159, are actuated by the support 156 and slide 155 and connected roll 153, shown in Fig. 10, as cooperating with the groove 152 in the cam 151. This forces these folders 158, 159 upward so as to engage the overlapping wrapper ends at some distance from the cake and then, after having partly formed the fold the ends 162 of these pivoted folders move out from under the stationary cams 160, 161 on the folding plungers so that the folders snap down into firm engagement with the cake and set the folds. The top end folders 177, 178, then operate to form the top end folds and close them down into holding engagement with the folds beneath. These folders are pivotally mounted in the folder arms 181, 183 on the folder shaft 128 and are provided with suitable light springs 184 normally tending to oscillate these folders in toward the cake. As the folders are brought down toward the cake and wrapper the pins 251 connected with these pivoted folders engage the cams 252 so as to rock the lower edges of the folders out slightly and facilitate starting of the folds. Then, when these pins 251 ride past the lower ends of these cams the springs throw the folders inward against the ends of the cake so as to complete and set the folds. The cam pins 251 on the upward movement of the folders ride against the stationary cam surface 262 and move past the pivoted cams 252 which are normally held in the position indicated in Fig. 16 by the light springs shown. The folder shaft 128 is oscillated at the proper time by the arm 129 shown in Fig. 2, connected thereto and pivoted to the cam rod 130 having a guide yoke at its lower end to embrace the drive shaft 48 and hold the cam follower 131 in engagement with the cam groove 133 in the cam 134 on this shaft. The discharger plate 204 is then moved forward by the discharger arm 203 shown in Figs. 9 and 12 so as to carry the cake forward between the stationary end folders to form the final end folds in the wrappers, as is indicated in Fig. 15. This discharger arm is reciprocated by the link 202 pivoted to the discharger lever 201, carrying the cam roll 199 cooperating with the cam 200 on the shaft 44, as shown in Figs. 1 and 3. The completely wrapped cake 232 shown in Fig. 17, is thus intermittently fed forward along the discharge table 216, shown in Fig. 2, between the side guides 215 which hold the end folds of the wrapper in proper position until the wrapped cakes are taken from this table for packing.

Having described this invention in connection with an illustrative embodiment

thereof, to the details of which disclosure the invention is not, of course, to be limited, what is claimed as new and what is desired to be secured by Letters Patent is set forth in the appended claims.

I claim—

1. In a wrapping machine, adapted to wrap cakes of material, a wrapper feeding device, a cake feeding device, means for operating said feeding devices a yielding aliner in the path of said cakes and a feeder stop controlled by said aliner to stop the further movement of said feeder, a lifter coöperating with said feeder to receive and transfer the cakes fed thereby, a disengager on said lifter to disengage said aliner from said cakes, a printing plunger to engage and feed forward the cake on said lifter and the wrappers therefor between folding bars and simultaneously print an impression on said cake, a supporting rear platen simultaneously moving behind said cake and wrappers, a cleaning brush coöperating with said printing plunger and mounted in a movable brush frame, means on said lifter to raise said brush and frame and means on said plunger to hold the same in raised inoperative position, means to rotate said brush as it moves past said plunger, folding grippers and coöperating top platens, a folding plunger to engage said cake and wrappers and force the same past said folding grippers and into engagement with said top platens, a relatively movable lower side folder mounted on said plunger to preliminarily engage and fold said wrapper, lower end folders mounted on said plunger, swinging rear and top end folders to engage and form the corresponding end folds in said wrappers, stationary folding guides, and a discharger arm and plate to force said cake and wrappers transversely from said folding plunger and between said folding guides on the discharge table.

2. In a wrapping machine adapted to wrap cakes of material, a wrapper feeding device, a cake feeding device, means for operating said feeding devices, a yielding aliner in the path of said cakes and a feeder stop controlled by said aliner to stop the further movement of said feeder, a lifter coöperating with said feeder to receive and transfer the cakes fed thereby, a disengager on said lifter to disengage said aliner from said cakes, a printing plunger to engage and feed forward the cake on said lifter and force the wrappers therefor between folding devices and simultaneously print an impression on said cake, a cleaning device for said printing plunger and a folding plunger having relatively movable folders thereon.

3. In wrapping machines, wrapper feeding devices, a four-motion feed device comprising a slotted feed table and a plate feeder operating in said slot to intermit-

tently rise into engagement with the cakes on said table and feed the same forward, an automatic stop device to prevent excessive feeding action of said feeder, a lifter coöperating with said feeder to receive the cakes fed thereby, a printing plunger to engage and feed forward the cake on said lifter and simultaneously print an impression on said cake, a cleaning device for said printing plunger and folding devices to fold the wrappers around said cakes.

4. In wrapping machines adapted to wrap cakes of yeast and the like, wrapper feeding devices, a feed device comprising a feed table and a feeder to engage and feed forward the cakes supplied to said table, an aliner in the path of said cakes, a lifter coöperating with said feeder to receive and transfer the cakes fed thereby, a printing plunger to engage and feed forward the cake on said lifter and simultaneously print an impression thereon, and folding devices to fold the wrappers around said cakes.

5. In wrapping machines adapted for wrapping cakes of yeast and the like, wrapper feeding devices, a feed device for said cakes comprising a table and a feeder to engage and feed forward the cakes supplied to said table, a yielding aliner in the path of said cakes and a feeder stop controlled by said aliner to stop the excessive movement of said feeder, a lifter coöperating with said feeder to receive and transfer the cakes fed thereby, means to print impressions on said cakes, and means to fold said wrappers around said cakes.

6. In wrapping machines adapted for wrapping cakes of yeast and the like, a feed device comprising a feed table, a feeder mounted to engage and feed forward cakes supplied to said table, a yielding aliner in the path of said cakes, a feeder stop controlled by said aliner to stop the further movement of said feeder when said aliner is actuated, a lifter coöperating with said feeder to receive and transfer the cakes fed thereby, and a disengager on said lifter to disengage said aliner from said cakes when said lifter comes into engagement therewith.

7. In wrapping machines for wrapping cakes of yeast and the like, a four-motion feed device for the cakes comprising a feed table, a feeder mounted in said table to intermittently engage and feed forward the cakes supplied to said table, a feeder operating device having a relief connection, a yielding aliner in the path of said cakes and a feeder stop controlled by said aliner to stop the further movement of said feeder when said aliner is actuated, and a lifter coöperating with said feeder to receive and transfer the cakes fed thereby and simultaneously release said aliner.

8. In wrapping machines for wrapping cakes of yeast and the like, a four-motion de-

vice comprising a slotted feed table, a plate feeder operating in said slot to intermittently engage and feed forward cakes supplied to said table, a feeder rod having a relief spring connection to reciprocate said feeder, a yielding aliner in the path of said cakes and a feeder stop controlled by said aliner to stop the further movement of said feeder when said aliner is actuated, and a lifter cooperating with said feeder to receive and transfer the cakes fed thereby and simultaneously disengage said aliner therefrom.

9. In wrapping machines adapted for wrapping cakes of yeast and the like, a four-motion feed device comprising a slotted table, a feeder operating in the slot in said table to intermittently engage and feed forward cakes supplied to said table, a feeder rod having a yielding connection to reciprocate said feeder, a yielding aliner in the path of said cakes and a feeder stop controlled by said aliner to stop the further movement of said feeder when said aliner is actuated.

10. In wrapping machines for wrapping cakes of yeast and the like, a four-motion feed device comprising a slotted feed table, a plate feeder operating in the slot in said table, means to intermittently raise said feeder into engagement with the cakes supplied to said table, a yielding feeder connection to reciprocate said feeder as it is raised and lowered, and an aliner in the path of said cakes to stop the excessive feeding movement of said feeder.

11. In machines adapted to handle cakes of yeast and the like, a four-motion feed device comprising a slotted feed table, a plate feeder operating in the slot in said table, means to intermittently raise said feeder into engagement with cakes supplied to said table, yielding means to reciprocate said feeder, a yielding aliner in the path of said cakes, and a stop device controlled by said aliner to stop the further movement of said feeder when said aliner is actuated.

12. In machines for handling cakes of yeast and the like, a four-motion feed device comprising a feed table, a reciprocating feed raiser mounted in said table and cam devices to vertically raise the same as it is reciprocated, a feeder mounted on said raiser and operating in a slot in said table to intermittently engage and feed forward cakes supplied to said table, yielding means to reciprocate said feeder, a yielding aliner in the path of said cakes, and a feeder stop device controlled by said aliner to stop the further movement of said feeder when said aliner is actuated.

13. In machines for handling cakes of yeast and the like, a four-motion feed device comprising a feed table, a reciprocating feed raiser mounted in said table and means

to vertically raise the same as it is reciprocated, a feeder removably mounted in said table on said raiser and projecting through openings in said table to intermittently engage and feed forward cakes supplied to said table, a feeder rod disengageably connected with said feeder to yieldably reciprocate the same, a yielding aliner in the path of said cakes, and feeding stop device controlled by said aliner to stop the further movement of said feeder when said aliner is actuated.

14. In machines for handling cakes of yeast and the like, a feeder to engage and feed forward the cakes, a yielding aliner in the path of said cakes and operated by them, a lifter cooperating with said feeder to receive and transfer the cakes fed thereby and simultaneously disengage said aliner from said cakes.

15. In machines for handling cakes of yeast and the like, a feeder to engage and feed forward the cakes, a yielding pivoted aliner mounted in the path of said cakes, a lifter cooperating with said feeder to receive and transfer the cakes fed thereby, and a disengager on said lifter cooperating therewith to disengage said aliner from said cakes before said lifter raises the cake therefrom.

16. In machines for handling cakes of yeast and the like, a feeder to engage and feed forward the cakes, a yielding aliner in the path of the cakes, a lifter cooperating with said feeder to engage and transfer the cakes fed thereby, a disengager on said lifter to disengage said aliner from said cakes, and a printing plunger to engage the cakes on said lifter and print impressions thereon.

17. In machines for handling cakes of yeast and the like, a feeder to engage and feed forward the cakes, yielding operating means for said feeder, a yielding aliner in the path of said cakes, a lifter cooperating with said feeder to engage and transfer the cakes fed thereby and simultaneously disengage said aliner therefrom, a printing plunger to engage the cakes on said lifter and print impressions thereon, and a cleaning device cooperating with said printing plunger.

18. In machines for handling cakes of yeast and the like, a feeder to engage and feed forward the cakes, a yielding aliner in the path of said cakes, a lifter cooperating with said feeder to engage and transfer the cakes fed thereby and simultaneously disengage said aliner therefrom, a printing plunger to engage and print impressions on the cakes on said lifter, a cleaning device cooperating with said printing plunger and means on said lifter to cooperate with said cleaning device and move the same into inoperative position when said lifter transfers said cakes to said plunger.

19. In machines for handling cakes of yeast and the like, a feeder to engage and feed forward the cakes, a yielding aliner in the path of said cakes, a lifter cooperating with said feeder to engage and transfer the cakes fed thereby and simultaneously disengage said aliner therefrom, a printing plunger cooperating with said lifter to engage and print an impression on the cakes transferred thereby, a cleaning brush cooperating with said printing plunger, a movable brush frame in which said brush is mounted, means to operate said brush as said frame is moved, and means on said lifter to raise said brush frame and brush into inoperative position as said lifter transfers the cakes to said printing plunger.

20. In machines for handling cakes of yeast and the like, a feeder to engage and feed forward the cakes, a lifter cooperating with said feeder to engage and transfer the cakes supplied by said feeder, a printing plunger cooperating with said lifter to engage and feed forward the cake on said lifter and simultaneously print an impression on said cake, a cleaning brush cooperating with said printing plunger, a movable brush frame in which said brush is mounted, means on said lifter to raise said brush and frame into inoperative position as the cakes are transferred to said printing plunger to hold said brush and frame in inoperative position as said printing plunger moves forward.

21. In machines for handling cakes of yeast and the like, a feeder to engage and feed forward the cakes, a lifter cooperating with said feeder to engage and transfer said cakes supplied by said feeder, a printing plunger cooperating with said lifter to feed forward the cakes on said lifter and simultaneously print impressions thereon, a supporting rear platen simultaneously moving behind said cakes while said printing plunger is acting thereon, and a brush cooperating with said printing plunger.

22. In wrapping machines adapted for wrapping cakes of yeast and the like, a feeder to engage and feed forward the cakes, a lifter cooperating with said feeder to engage and transfer the cakes fed thereby, a printing plunger cooperating with said lifter to feed forward the cake on said lifter and simultaneously print an impression thereon and thereby force said cake into engagement with its wrapper and fold the same around said cake, and a cooperating rear platen to engage said cake and wrapper while said printing plunger is in engagement therewith and adapted to be moved forward with the cake and wrapper by the plunger.

23. In wrapping machines adapted to wrap cakes of yeast and the like, wrapper feeding devices, a feeder to engage and

feed forward the cakes, a yielding aliner in the path of said feeder, a lifter cooperating with said feeder to engage and transfer the cakes fed thereby and simultaneously disengage said aliner therefrom, folding devices, and a plunger cooperating with said folding devices and with said lifter to force the cakes on said lifter into engagement with said wrappers and into cooperation with said folding devices to fold said wrappers around the same.

24. In wrapping machines adapted to wrap cakes of yeast and the like, wrapper feeding devices, a feeder to engage and feed forward the cakes, a yielding aliner in the path of the cakes, a lifter cooperating with said feeder to engage and transfer the cakes fed thereby and means to simultaneously disengage said aliner therefrom, folding devices comprising a folding plunger having folders mounted thereon to engage and feed the cakes on said lifter into engagement with the wrappers and into cooperation with said folding devices to fold the wrappers around the same.

25. In wrapping machines, means to feed wrappers and cakes into engagement and folding devices comprising folding bars through which said wrappers and cakes are fed and a cooperating folding plunger having relatively movable side and end folders thereon, a discharge arm and plate cooperating with said plunger, relatively movable platens and grippers mounted on said discharger plate and stationary and movable folders cooperating with said discharger plate to form the folds in said wrappers.

26. In wrapping machines, means to feed articles and wrappers into engagement and cooperating folding devices comprising a folding plunger carrying relatively movable cam operated folders thereon and oppositely positioned stationary folders and a discharge plate between which said articles and wrappers are forced by said plunger, and yielding gripping means on said discharge plate to engage the moving wrappers.

27. In wrapping machines, means to feed articles and wrappers into engagement and cooperating folding devices comprising a folding plunger, and a relatively movable side folder mounted on said plunger and operated by fixed cams, a plate against which the articles and wrappers are fed by said plunger and gripping devices on said plate to engage the moving wrappers and form the said folds therein.

28. In wrapping machines, means to feed articles into engagement with wrappers and cooperating folding devices comprising a folding plunger, a movable side folder cooperating with said plunger, a plate against which the articles and wrappers are fed by said plunger, a platen adjacent said plate

against which the wrappers and articles are fed to flatten the wrappers and gripping means on said plate to tighten the moving wrappers about said articles.

- 5 29. In wrapping machines, means to feed articles into engagement with wrappers and cooperating folding devices comprising a folding plunger having relatively movable folders mounted thereon, stationary folders.
10 and an opposing discharge plate between which the articles and wrappers are fed by said plunger to fold the wrappers around said articles and means to operate said discharge plate to force the articles between
15 the opposing folders and form folds in the wrappers.

30. In wrapping machines, means to feed articles into engagement with wrappers and cooperating folding devices comprising a
20 folding plunger and relatively movable folders mounted thereon operated by fixed cams, a discharge plate against which the

articles and wrappers are fed by said plunger, and folding devices cooperating with said discharge plate to form folds in said 25 wrappers.

31. In wrapping machines, means to feed articles into engagement with wrappers and cooperating folding devices comprising a
folding plunger having relatively movable 30 folders mounted thereon and operated by stationary cams, a discharger plate against which the articles and wrappers are fed by said plunger and stationary and swinging
end folders cooperating with said discharger 35 plate to fold said wrappers.

Signed at New York, in the county and State of New York, this 14th day of August, 1911.

JAMES A. KEYES.

Witnesses:

W. V. BREMER,

GEORGE A. WARD.