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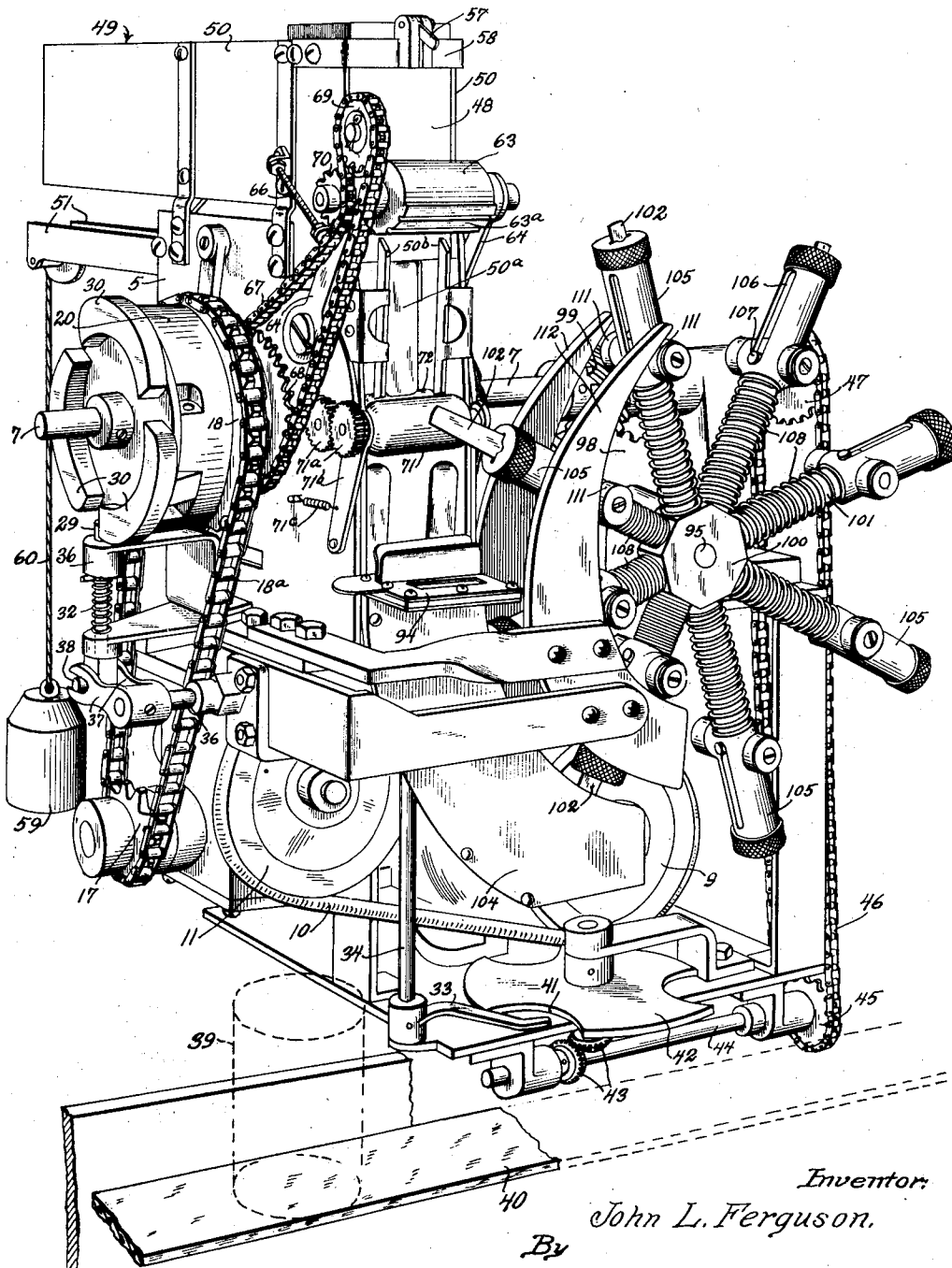
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1,909,050

COUPON FEEDING MACHINE

Filed March 29, 1930

6 Sheets-Sheet 1



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6 Sheets-Sheet 2

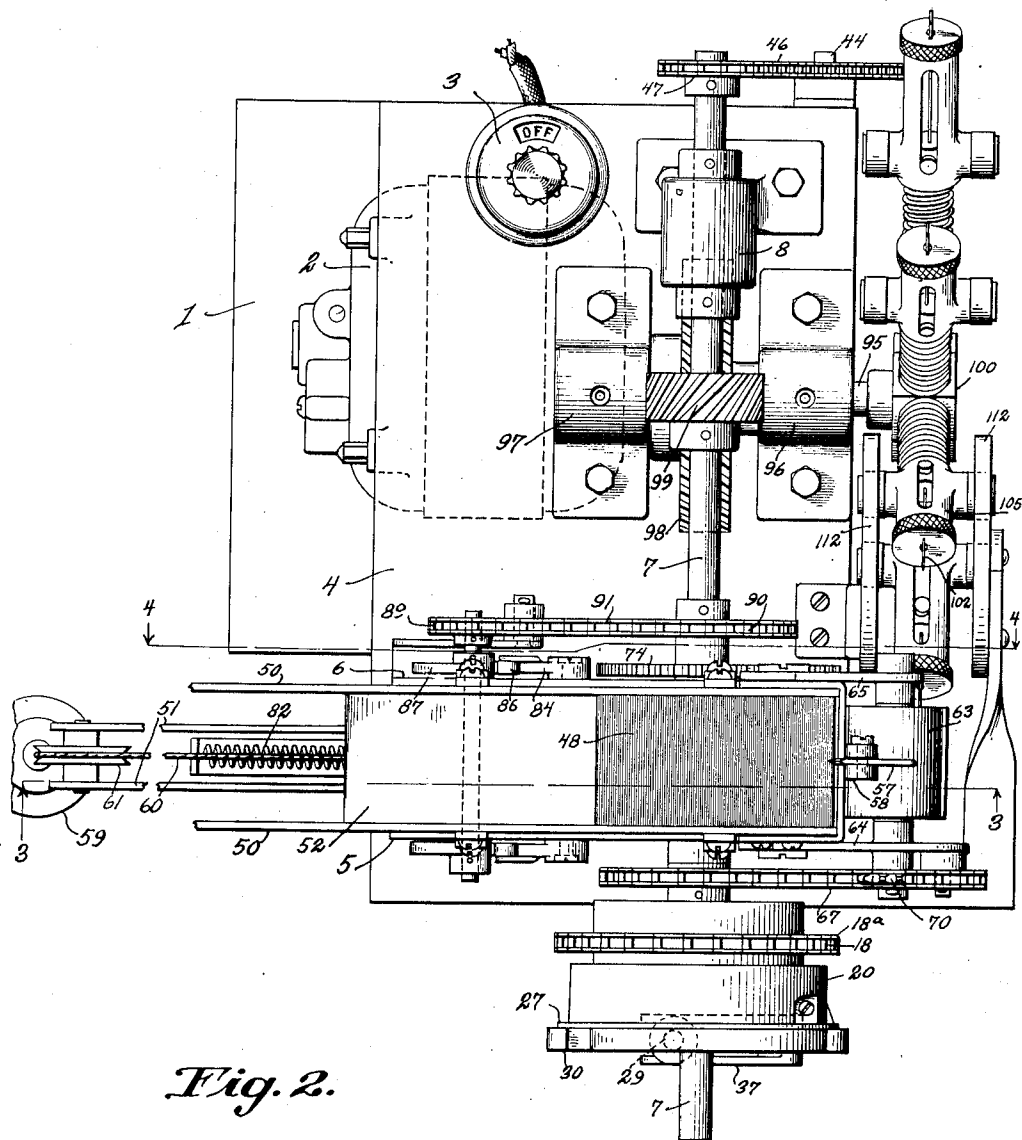


Fig. 2.

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6 Sheets-Sheet 4

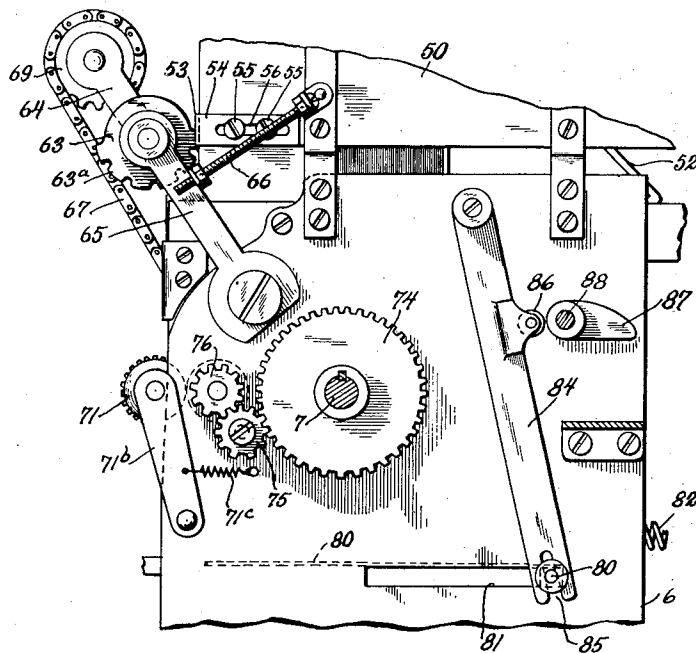


Fig. 4.

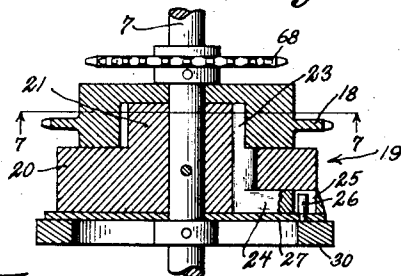


Fig. 6.

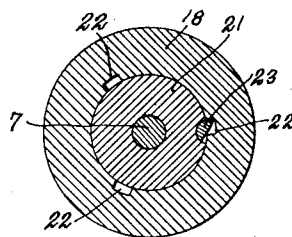


Fig. 7.

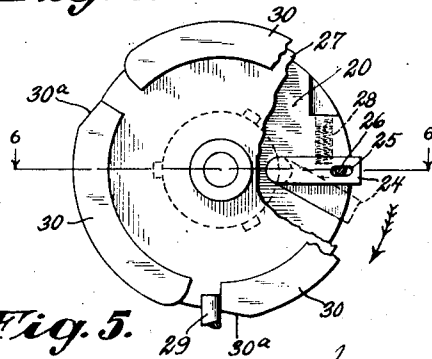


Fig. 5.

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6 Sheets-Sheet 5

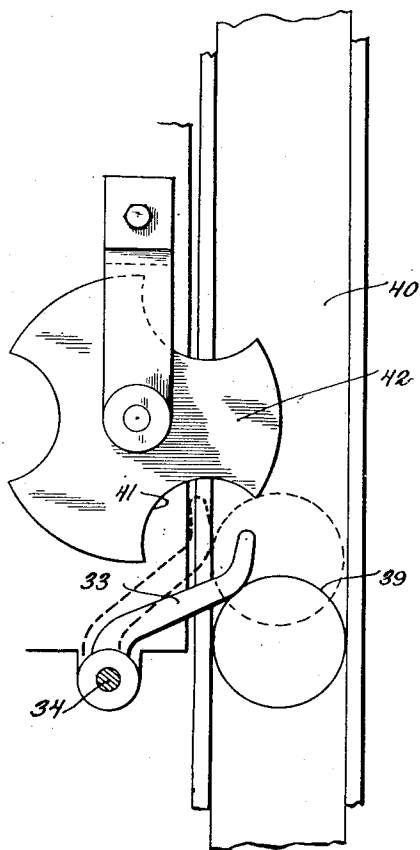


Fig. 8.

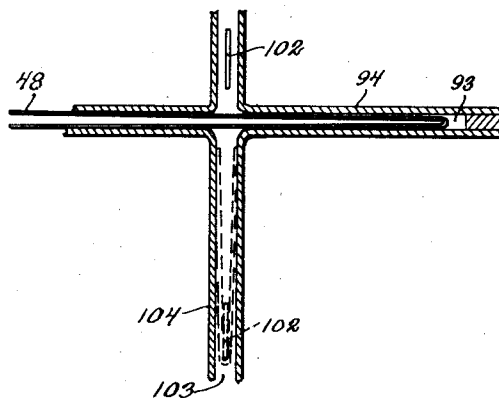


Fig. 9.

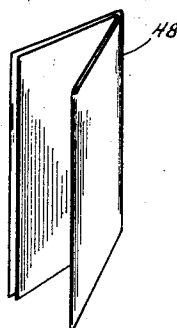


Fig. 10.

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6 Sheets-Sheet 6

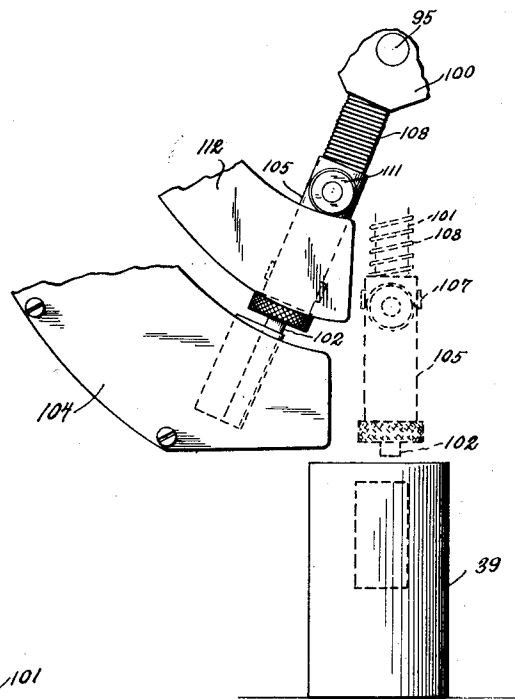


Fig. 11.

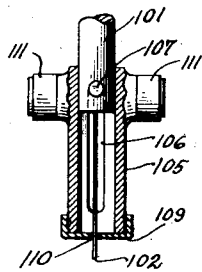


Fig. 12.

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UNITED STATES PATENT OFFICE

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COUPON FEEDING MACHINE

Application filed March 29, 1930. Serial No. 439,886.

My invention relates to coupon feeding devices and especially to devices in which coupons, or other relatively small paper sheets, are automatically folded and inserted in filled containers. It is often desired to insert coupons or other advertising matter in containers, especially in containers in which granulent material of various kinds is packed for the retail trade. If the coupon is inserted before the container is filled, it is crushed by the material and is not found by the customer until the container is empty. Other reasons connected with the automatic handling, filling and sealing of containers make it desirable to insert the coupon after filling.

The coupon should be inserted in such a manner that it will not be crushed or wrinkled, and so that it may be easily removed when the container is opened.

Such latter indicated easy removal of the coupon or circular is especially desirable because such a circular frequently bears recipes for the use of the material in the container. Accordingly, the circular should be so placed in the material that it can be readily grasped and withdrawn without unduly disturbing the material in the container. To this end, it is desirable that the coupon be imbedded in the material to a minimum depth, and preferably parallel to the axis of the container.

In my invention I have incorporated and combined the necessary elements to accomplish the above desirable results in a machine capable of receiving the coupons in bulk and automatically feeding, folding and inserting them in filled containers, the latter, for purposes of illustration only hereinafter being referred to as containing granulent material. Moreover, the machine hereinafter described is a device for folding coupons and propelling them into moving containers, either filled or unfilled, and is capable of folding, delivering and imbedding coupons in the material in filled containers during the normal movement of the containers on an ordinary conveyor. Another object of the invention is to provide a comparatively slow running coupon folding and inserting ma-

chine which will insert a relatively large number of coupons per unit of time.

Further objects will be apparent from the specifications and claims.

In the drawings:

Figure 1 is an elevational perspective view of the complete machine, the particular embodiment shown being arranged for use with round containers similar to baking powder cans, one of the containers being shown in dotted lines and said container being moved on and by an ordinary belt conveyor.

Fig. 2 is a top plan view of the complete machine, the driving motor being shown in dotted lines;

Fig. 3 is a vertical sectional view taken on a line corresponding to line 3—3 of Fig. 2, the transmission housing being broken away to disclose a portion of the drive-transmission mechanism;

Fig. 4 is a detailed view taken on a line corresponding to line 4—4 of Fig. 2, and illustrates a portion of the folder driving mechanism, and the means for driving the folder feed rolls;

Fig. 5 is a detail view of the clutch in disengaged position, a portion being broken away better to disclose the mechanism, the clutch pawl being shown in disengaged position;

Fig. 6 is a sectional view through the clutch and taken on a line corresponding to line 6—6 of Fig. 5;

Fig. 7 is a sectional view through a portion of the clutch substantially on line 7—7 of Fig. 6, with the clutch pawl shown in engaged position.

Fig. 8 is a detail plan view of the tripping lever illustrated in its relation to one of the containers, the conveyor, and the container timing disc;

Fig. 9 is an enlarged detail section through the coupon guide and folding means as shown in Fig. 3, one of the coupons being shown in position after the first folding operation, the second folded position being shown by dotted lines;

Fig. 10 is a perspective view of one of the coupons removed from the machine after the folding operation has been completed;

Fig. 11 is a front elevation of one of the projecting arms and associated means for projecting a coupon into a container, the position of the projecting mechanism and coupon after projection being shown by dotted lines; and

Fig. 12 is a detail view of one of the coupon-projecting arms and the folder blade, a portion being broken away to better illustrate the construction.

Referring now to the drawings in detail, in the embodiment illustrated I have disclosed a coupon folding and inserting machine, including a motor providing a constant drive means, an intermittently driven main shaft, together with a clutch for intermittently connecting the shaft with the driving means. Other means are provided, all of which are driven from the main shaft, for feeding the coupons from a suitable magazine, folding them as shown in Fig. 10, and then projecting each of them into a filled container as the containers pass the machine on a suitable conveyor. The movement of the container provides the power to operate a suitable tripping means to cause the operation of the clutch to drive the main shaft and cooperating mechanisms.

The entire mechanism is supported by a suitable frame including a base 1 having mounted thereon a motor 2 controllable by a switch 3. A shelf 4 on suitable brackets supports the side walls 5 and 6 which enclose a part of the coupon folding mechanism and through which extends a transverse main drive shaft 7 which is mounted in a bearing 8 and suitable bearings in the side walls. This shaft may be driven intermittently or continuously from the motor through a suitable transmission including a clutch. The actuation of the clutch, by a means to be later described, controls the operation of the shaft 7.

The transmission means between the motor and the shaft 7 comprises a pulley 9 on the motor shaft, a belt 10 and a pulley 11 on a shaft 12. The shaft 12 is mounted in a housing 13 and forms a part of a power transmission unit which also includes spiral gears 14 and 15 for driving a stub shaft 16 on which is secured a sprocket 17.

A sprocket 18 is loosely mounted on the transverse main drive shaft 7, as indicated in Fig. 6, and is driven from the sprocket 17 by a chain 18a. A sprocket 18 forms the driving member of a clutch mechanism 19 which is mounted on the shaft and arranged to operatively engage the sprocket 18 so that the shaft 7 may be driven thereby during the coupon folding and inserting operation.

A clutch 19 comprises a driven member 20, rigidly secured to the shaft, and having a reduced cylindrical portion 21 extending into a suitable concentric bore in the body of the sprocket 18. The sprocket 18 is the clutch

driving member and the bore is machined for a running fit on the cylindrical portion 21 and is provided with radially disposed longitudinal slots 22 arranged to be engaged by a clutch pawl 23 to lock the sprocket and clutch body together to drive the shaft 7.

The clutch pawl is oscillatably mounted in the clutch body 20, an outwardly extending pawl arm 24 having a slot 25 therein in which is engaged a pin 26 on a stop disc 27 which latter is loosely mounted on the shaft 7. A spring 28 tends to force the pawl into the engaged position shown by dotted lines in Fig. 5, but is normally prevented from doing so by a stop rod 29 in engagement with one of the stops 30 on the disc 27.

The engaging portion of the pawl extends into the recess adjacent the wall thereof and is cut away on a radius substantially equal to the radius of the cylindrical portion 20 of the driven member so that when the pawl is in the position shown in Figs. 5 and 6 it will not engage in any of the slots 22 in the sprocket and the shaft 7 will not be rotated, but when the stop rod 29 is removed from engagement with the stop 30, by means to be later described, the spring 28 will tend to rotate the pawl relative to the driven member, and it will be rotated to engaged position as soon as one of the slots 22 moves into alignment with the engaging portion. The engaged position is shown by dotted lines in Fig. 5 and by full lines in Fig. 7.

The rotation of the sprocket 18 is in the direction of the arrow in Fig. 5, and it is obvious that if the stop rod 29 is removed from engagement with the stops, the pawl will be free to engage in one of the slots 22 and the shaft 7 will be rotated thereby.

The stop rod 29 is movably supported by a bracket 31 (Fig. 1), and normally held in engagement with one of the stops 30, by a spring 32, and is released by means of a trip lever 33 on a vertical shaft 34 (Figs. 1 and 3). The lever 33 is operated by the pressure of moving containers carried on a suitable conveyor, the movement of the lever being transmitted to the stop rod through a vertical shaft 34, bevel gears 35 and a horizontal shaft 36, the latter being provided with arms 37 having suitable slots therein in which are engaged pins 38 on the stop rod 29.

The containers, one of which is indicated by dotted lines as 39, are carried on a conveyor 40 and in a position to engage and operate the trip arm 33 and to be engaged in the arcuate openings 41 in a synchronizing disc 42, which latter is rotatably mounted on the base 1 and driven through bevel gears 43 operatively connecting the disc 42 with a shaft 44, a sprocket 45, chain 46 and a sprocket 47 on the main shaft 7. The purpose of the disc 42 is to synchronize the movement of the cam with the operation of the coupon-

inserting mechanism which will be later described.

The clutch stop members 30 are provided with comparatively steep cam surfaces 30a so that as soon as the container has moved the lever 33 sufficiently, to release the stop rod 29, the spring 28 will rotate the clutch pawl and stop disc 27 to clutch-engaged position and the cam surface 30a will force the stop rod quickly downward and release the tripping lever 33 from frictional contact with the container. The outer surface of the stops 30 cooperating with the stop rod 29, holds the trip lever 33 in the position just described until the stop rod is released by the rotation of the clutch, to be engaged by another of the stops 30. The arrangement just described is desirable in that it prevents the lever 33 from scratching the can and also allows the frictional contact of only a single container on the conveyor to be sufficient to release the clutch pawl, the increasing pressure of the spring 32 being overcome by the cam surface 30a.

If containers are closely following each other on the conveyor, the trip lever 33 will be pressed against each successive container when the stop rod 29 is released for re-engagement with a succeeding stop. However, the engagement of the lever 33 with the container will prevent the complete engaging movement of the stop rod and the end of the rod will engage the cam surface 30a on the succeeding stop and the lever 33 will again be removed from contact with the container.

It will be noted that if the containers are sufficiently close together in their passage on the conveyor the clutch will remain in engaged position and the operation of the machine will be continuous, and if the containers are separated on the conveyors, the operation will be intermittent.

The coupons 48 are supported in bulk in a magazine 49, which may be of any suitable length, and comprises side guide plates 50, supported above the walls 5 and 6, and spaced bars 51 on which the coupons are supported. A follower 52 tends to push the coupons against the intumed ends 53 of suitable stop members 54 (Figs. 3 and 4), which latter are adjustably supported on the side guide plates 50 by screws 55 in slots 56. The upper ends of the coupons are supported against the point of a knife-edged member 57 which is mounted on bracket 58. This arrangement tends to allow the easy removal of the exposed coupon while retaining the rest in the magazine. A weight 59 is secured to the follower 52 by a cable 60, which extends over the pulleys 61 and 62, and causes the follower to exert an even and constant pressure to feed the remaining coupons forward as the exposed ones are removed from the magazine.

A feed roller 63 is rotatably mounted in

suitable bearings on adjustable bracket arms 64 and 65 which are pivotally mounted on the side walls 5 and 6, respectively. Bracket-adjusting screws 66 are provided with lock nuts to secure the feed roller in operative position with relation to the coupons. A chain 67 is supported on a sprocket 68 secured to the drive shaft 7, and an idler sprocket 69 on the bracket 64, and is arranged to drive the feed roller 63 by engagement with a sprocket 70 on the feed roller bearing shaft. The above sprocket and chain arrangement is for the purpose of obtaining the desired directional movement of the feed roller, which is preferably made of rubberlike material. The ratio of the sprockets is relative to the number of clutch stops and it is therefore obvious that there will be one revolution of the feed roller 63 for each operation of the container trip lever 33. It is also obvious that with each one-third revolution of the shaft 7 the feed roller will be rotated and the projecting gripping surfaces 63a thereon will engage an exposed coupon, which will be moved downwardly from the magazine and suspended between the guide members 50a and 50b, as shown in Fig. 3. The next revolution of the feed roller 63 will cause the coupon to be released, and it will be directed between timing feed rollers 71 and 72 mounted in the side walls and operatively connected by the gears 71a (Fig. 1). These gears are driven from the main shaft 7 by a gear 74 (Fig. 4) secured thereto, an idler 75, and a pinion 76 secured to the shaft of the roller 72. In order to obtain perfect contact alignment of the rollers 71 and 72, the roller 71 is supported by a pair of movable brackets 71b pivoted to the side walls and held in operative position by springs 71c. After passing between the rollers 71 and 72, the coupon is dropped in a pocket 77, which in the present instance is formed of sheet metal and supported between the side walls. The coupon is then in the position shown by dotted lines in Fig. 3 and ready for the first folding operation, which is accomplished by means of a folder blade 78, supported in a guide bar 79 and secured to a cross bar 80 which latter extends through and is guided in slots 81 in the side walls. A spring 82 tends to hold the blade in the retracted position shown, and a rubber bumper 83 is supported in a position to absorb the shock of a quick return from a forward position.

The blade 78 is moved forward, to perform the folding operation, by a pair of levers 84, one end of each lever being pivoted to one of the side walls, their opposite ends being provided with slots 85 in which are engaged the ends of the bar 80 as shown in Figs. 3 and 4. The levers 84 are each provided with rollers 86 arranged to be en-

gaged by cams 87 secured to the shaft 88, which latter is mounted in suitable bearings in the side walls. A sprocket 89 is secured to the cam shaft 88 and is driven from the main shaft 7 by a sprocket 90 and chain 91.

It is obvious that a partial rotation of the main shaft 7 will cause the cams 87 to be rotated and the associated levers 84 will move the folder blade 78 forward through an opening 92 in the pocket 77, and it will be returned to the normal position shown, by the spring 82. During the forward movement of the folder blade the coupon will be engaged and folded by being forced into the channel 93 in the outwardly extending guide member 94 in which latter it will remain in the folded position shown in Fig. 9, while the folder blade is withdrawn. The coupon is now in position for the second folding operation, and the mechanism for accomplishing this operation and for projecting the folded coupon into the container comprises a shaft 95 mounted in bearings 96 and 97 on the shelf 4, the shaft 95 being driven from the shaft 7 through a spiral gear pinion 98 thereon, and a spiral gear 99 on the shaft 95. A member 100 is secured to the shaft 95 and provided with a plurality of radially extending arms 101 from the ends of which extend the folder blades 102. These blades are in alignment with a channel 103 in a vertically disposed arcuate coupon-folding guide member 104. It is evident that during the successive movements of the shaft 95 each of the folder blades 102 will in turn pass through the channel 103 in the arcuate guide member 104 and engage its respective previously folded coupon and fold it a second time by forcing it into the channel and into the folded position shown by dotted lines in Fig. 9. The consecutive movements of each blade 102 will carry one of the coupons through the arcuate guide member 104 and into alignment with one of the containers. The movement of each of the containers is synchronized with the movement of one of the arms by means of the disc 42 and associated driving mechanism.

In order to project the folded coupons from the blades 102 and into the containers with sufficient force perpendicularly to imbed the coupons in the granulent material therein, I provide each of the arms with a tubular telescopic member 105, having slots 106 therein, in which are engaged retaining stop pins 107 on the arms. These pins limit the outward movement of the telescopic members which are normally pressed outwardly by springs 108, to a point adjacent the ends of the blades 102. The outer ends of the members 105 are closed by suitable caps 109 having openings 110 therethrough and through which the blades 102 extend.

In order to retract the telescopic members 105 and expose the blades 102 for entrance

into the coupon-folding arcuate guide member 104, a pair of rollers 111 are mounted on the telescopic members and arranged to be engaged by cams 112, which latter are mounted on suitable brackets and positioned to retract the telescopic members and retain them in retracted position during the movement of the blades 102 into and through the arcuate guide member 104.

The cams 112 are so shaped and relatively positioned with relation to the guide member 102, as shown in Fig. 11, that the rollers 111 are released simultaneously with the release of the coupon from the channel 103, and the energy stored in the spring 108 forces the telescopic member 105 to a position substantially corresponding to that shown by dotted lines, causing the folded coupon to be projected from the blade with sufficient force to imbed it in the material in the container, the movement of the containers being synchronized with the consecutive movements of the arms 101 as previously described. It will be noted that the disc 42 will synchronize the movement of the containers with the operation of the machine regardless of the speed of the conveyor, and that all of the operations of the machine are synchronized so that the operations follow each other in consecutive order as described.

It is obvious that the embodiment shown may be varied within the limits of the appended claims without departing from the spirit of the invention, and I desire it to be understood that the construction herein shown and described is to be taken as illustrative and not in a limited sense.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a device of the character described, means for placing filled containers in predetermined positions, and means for feeding coupons into the material in said containers.
2. In a device of the character described, means for folding coupons, and means for feeding the folded coupons into the material in filled containers.
3. In a device of the character described, means for withdrawing coupons one by one from a stock of the same, means for folding said withdrawn coupons, and means for forcibly propelling said folded coupons into containers.
4. In a device of the character described, means for conveying folded coupons into proximity with containers, means for storing up coupon-propelling energy during said conveyance, and means for causing said energy to act to propel said coupon into a container when adjacent thereto.
5. The method of placing coupons in cans comprising applying a propelling force to each coupon and forcibly propelling the same into the cans.

6. The method of feeding coupons into filled containers to be embedded in the material therein, comprising forming said coupons into missiles, and propelling the same forcibly into the material in said containers.

7. The method of feeding coupons into filled containers to be embedded in the material therein, comprising forming said coupons into projectiles, and applying propelling force thereto sufficient to propel the projectile longitudinally into the material in said containers.

8. The method of imbedding coupons in pulverulent material in filled containers, comprising folding said coupons into projectile form and thereafter applying an impelling force to said folded coupons with sufficient energy to cause them to be imbedded in the pulverulent material.

9. In a device of the character described, means for moving containers, means for folding coupons, and means for forcing the folded coupons into the containers, the operations of all of said means being synchronized to cause a folded coupon to be forced into each of the containers.

10. A device for projecting coupons from a folding machine into moving containers comprising means for extracting folded coupons from said machine, and a projection means associated with said extracting means for projecting extracted coupons into the moving containers.

11. A device for projecting coupons from a folding machine into moving containers, comprising means for extracting folded coupons from said machine, a projection means associated with said extracting means for projecting extracted coupons into the moving containers, and means cooperating with the moving containers to control the operation of the machine.

12. A device of the character described comprising a coupon feeding means, a coupon folding means, a coupon projecting means, the operations of all of said means being synchronized for cooperative operation, and means operated by moving cartons for controlling said operation.

13. A device for embedding folded coupons in the material in moving containers, comprising moving means for engaging a coupon, means for synchronizing the movement of said engaging means with the movement of a container, and means for projecting said coupon from said engaging means with sufficient force to imbed the coupon in said material.

14. A device of the character described comprising means for removing individual coupons from a stock of the same, means for folding the coupon, means for projecting the folded coupon into a moving container, all of said means being synchronized for consecutive operation, and means actuated by the

container for controlling the operation of the device.

15. A device for projecting coupons into moving containers comprising means for engaging a coupon, means for forcibly impelling the coupon from the engaging means, and means for synchronizing the movement of the container and the impelling means to cause the impelled coupon to enter the container.

16. A coupon projecting device comprising a plurality of coupon projecting means, means for causing the consecutive operation of said projecting means, and automatically operated means for controlling the operation of said projecting means to cause the coupons to be projected consecutively into consecutive moving containers.

17. A device of the character described comprising a rotary coupon projecting means, means for feeding coupons to said projecting means for projection into containers, and cooperative means between said containers and said rotary projecting means to cause the projection of each consecutive coupon into corresponding consecutively moving containers.

18. A device of the character described comprising means for folding coupons, means for engaging a folded coupon, means for projecting the engaged coupon into a container, and means for storing energy during said engaging operation for operating said projecting means.

19. A device of the character described comprising means for holding a folded coupon, means for removing said coupon from said holding means, means for projecting said coupon from said removing means, and means for storing energy during the operation of said removing means, for operating said projecting means.

20. In a device of the character described, a coupon holding magazine, means for removing coupons one by one, a plurality of coupon folding means, means for moving the folded coupons into a position to be projected, and a plurality of projecting means for projecting the folded coupons consecutively into consecutive moving containers.

21. A device for projecting coupons into moving containers comprising a rotary member having a plurality of coupon engaging means, means for positioning coupons to be consecutively engaged by said engaging means, and means associated with each engaging means for projecting the engaged coupon into a container.

22. A device for projecting coupons into moving containers comprising a rotary member having a plurality of coupon engaging means, means for positioning coupons to be consecutively engaged by said engaging means, means associated with each engaging means for projecting the engaged coupon into

a container, and spring means for operating said projecting means.

23. A coupon folding and inserting machine comprising a magazine for holding a stock of coupons, means for removing a coupon from said magazine means for folding the coupon, means for placing said folded coupon in alignment with a container, and means for projecting the coupon into said container.

24. A machine for imbedding coupons in granulent material, comprising means for folding the coupons, means for placing the folded coupons in a vertical position relative to the surface of the material, and means for forcibly imbedding the coupons vertically in the material.

25. A machine for imbedding coupons in granulent material, comprising means for folding the coupons into projectile form, and means for longitudinally propelling the projectile into the material.

26. A machine for imbedding coupons in granulent material in moving containers, comprising means for folding the coupons into projectile form, means for longitudinally propelling the projectiles into the material in the containers, and means cooperating with the containers for controlling the operation of the machine.

27. A machine for imbedding coupons in granulent material in moving containers, comprising means for extracting coupons successively from a coupon supply, means for folding the coupons into projectile form, means for forcibly propelling the coupons into the material in the containers, and means for engaging and synchronizing the movement of the containers to cause a coupon to be imbedded in the material in each successive container.

28. A coupon propelling device comprising a blade for engaging a coupon, a coupon propelling means associated with said blade, and energy supplying means for operating said propelling means.

29. A coupon propelling device comprising a blade for engaging a coupon, a telescopic propelling means associated with said blade, and energy supplying means for operating said propelling means.

30. A coupon propelling device, comprising a moving coupon engaging means, means for folding a coupon in the path of said engaging means, means for forcibly propelling a coupon from said engaging means, means for storing energy for operating said propelling means, and means for releasing the stored energy to propel the coupon from said blade during the movement of said blade.

31. A coupon propelling device, comprising a rotarily movable member having a plurality of coupon-engaging means, means for placing coupons in position to be engaged, means for forcibly propelling the coupons

from said engaging means, means for storing energy for operating said propelling means, and means for releasing the stored energy.

32. A coupon folding device, comprising a plurality of coupon guiding channels, means for delivering coupons to said channels, and a rotary means having arms moving in said channels to fold said coupons.

33. A coupon folding device, comprising a plurality of coupon guiding channels, means for delivering coupons consecutively to said channels, means cooperating with one of said channels for folding said coupons, and a plurality of consecutively movable means cooperating consecutively with another of said channels for further folding said coupons.

34. A coupon handling machine, comprising a coupon magazine, a coupon folding means, means for delivering a coupon from said magazine to said folding device, means for moving said coupon into alignment with a moving container, means for synchronizing the movement of said container with said moving means, all of said means being synchronously controlled from a single driving means, a source of power for said driving means, and means operable by the container for controlling the effective operation of said driving means.

35. A machine for inserting coupons in filled containers, comprising a means for removing coupons consecutively from a stack of the same, an oscillatable coupon-folding means, means for delivering a coupon to said folding means, a channel for receiving the folded coupon, a plurality of coupon engaging and folding means operable transversely through said channel, means for moving containers adjacent said machine at substantially the same speed as the engaging means, and means for propelling the coupons from the engaging means into the containers.

36. In a device of the character described, means for folding and refolding a coupon, and means for placing said folded coupon in the material in a container.

37. In a device of the character described, means for folding and refolding a coupon, means for placing said folded coupon in a container, and means for forcing said folded coupon into the material in a filled container.

38. A device of the character described for projecting coupons into moving containers, comprising a rotary member having a plurality of coupon engaging means, means for positioning coupons to be consecutively engaged by said engaging means, means associated with each engaging means for projecting the engaged coupon into a container, spring means for operating said projecting means, and means for consecutively making each spring means effective for projecting purposes.

39. In a device of the character described,

the combination with a source of power, of a mechanism for removing coupons one by one from a stack of the same, a mechanism for forcing said coupons one by one into consecutively moving filled containers, and means between said power and said mechanisms and cooperating with consecutive containers for synchronizing the movement of the containers and said mechanisms.

40. A device of the character described comprising means for ejecting coupons from a stack of the same, means for engaging the ejected coupon, means for inserting said coupon in a container, and means for storing energy during said engaging operation for operating said inserting means.

41. A device of the character described comprising movable projector arms, and means for placing a coupon in the path of each consecutively moving arm for projection into consecutive moving containers, said arms being arranged to cause said coupons to travel in the same direction as said containers at the time of projection.

42. A device of the character described comprising means for moving containers containing pulverulent material consecutively, means for moving coupons consecutively in the same direction as said containers, and means for discharging said coupons consecutively into the material in said containers.

43. In a device of the character described, the combination with a movable inserter for inserting coupons into the material in filled containers, of means for projecting coupons one by one from a stack of the same to a position to be engaged by said inserter, means to cause said inserter to engage said coupon, and means to cause said inserter to move said coupon into the material in a filled container.

44. The method of placing coupons in a can containing material which consists in distorting said coupons to increase their stiffness and thereafter forcing said stiffened coupons into said material.

45. The method of placing coupons in a can containing material which consists in bending said coupons to increase their stiffness and thereafter forcing said stiffened coupons into said material.

46. The method of placing flat coupons edgewise in a can containing material which consists in deforming said coupons to increase their stiffness and thereafter forcing said stiffened coupons into said material.

47. In a machine for inserting coupons in containers having material therein, means for supporting a stack of coupons, means for withdrawing said coupons from said stack, and means for embedding the distorted coupons in said material.

48. In a machine for inserting flat coupons in containers having material therein, means supporting a stack of coupons, means for

withdrawing said coupons from said stack and curving or bending them, and means to embed them edgewise in said material.

49. In a machine for inserting coupons in containers having material therein, means supporting a stack of coupons, means for transferring said coupons from said stack and embedding them in the material in said containers, and means associated with the transfer means for so distorting the coupons that they may be so stiffened to be thus embedded.

50. The method of placing coupons in the material in a can by propulsion of the coupons therinto which consists in deforming said coupons in the direction of propulsion and thereafter propelling said deformed coupons into the material in the cans.

51. The method of putting coupons into the material in cans containing said material which consists in imparting projectibility to the coupons and thereafter propelling them into the material in the cans.

In witness whereof, I have hereunto subscribed my name.

JOHN L. FERGUSON.