

Jan. 6, 1948.

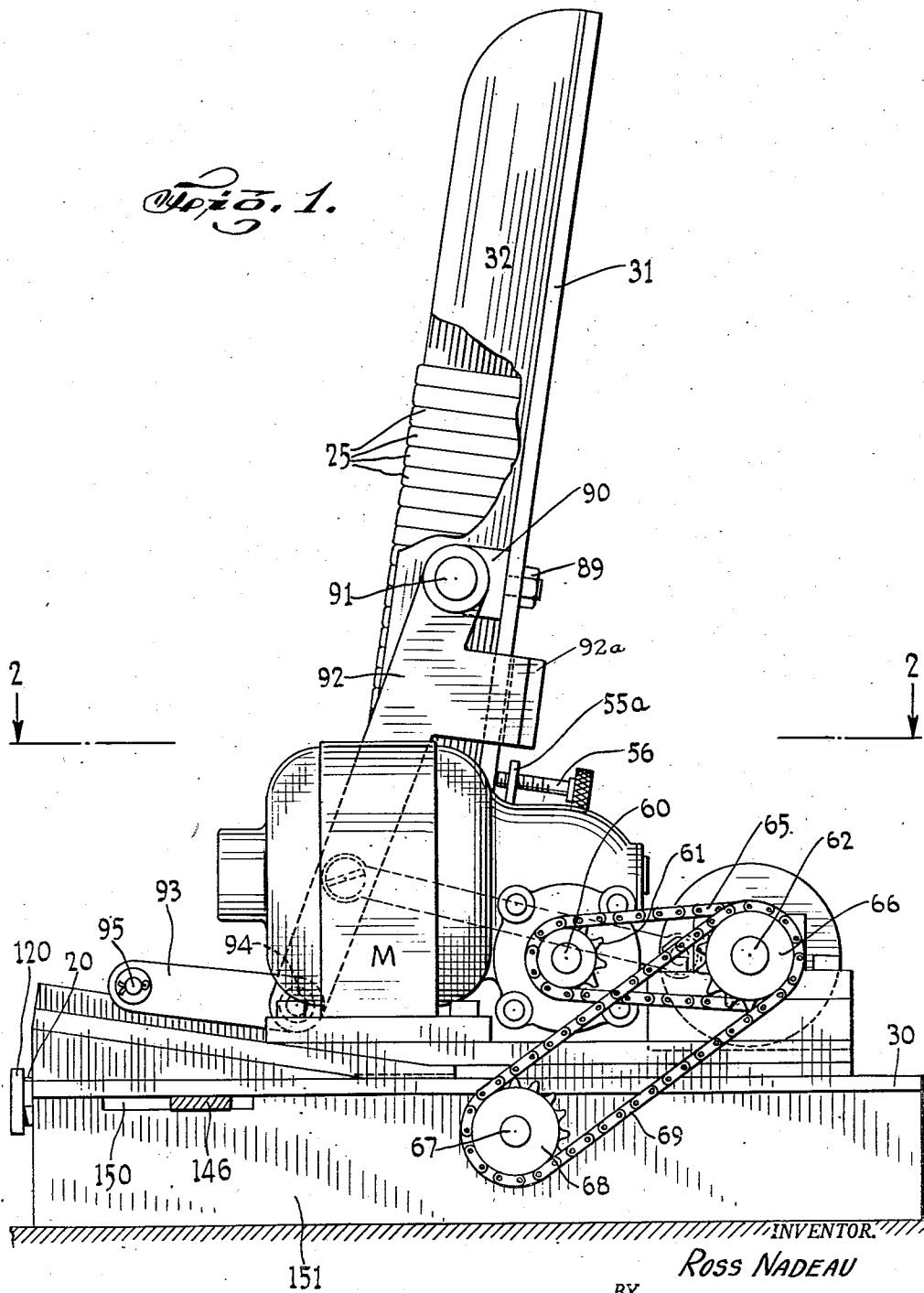
R. NADEAU

2,433,862

DISPLAY CARD FILLING APPARATUS

Filed April 19, 1943

7 Sheets-Sheet 1



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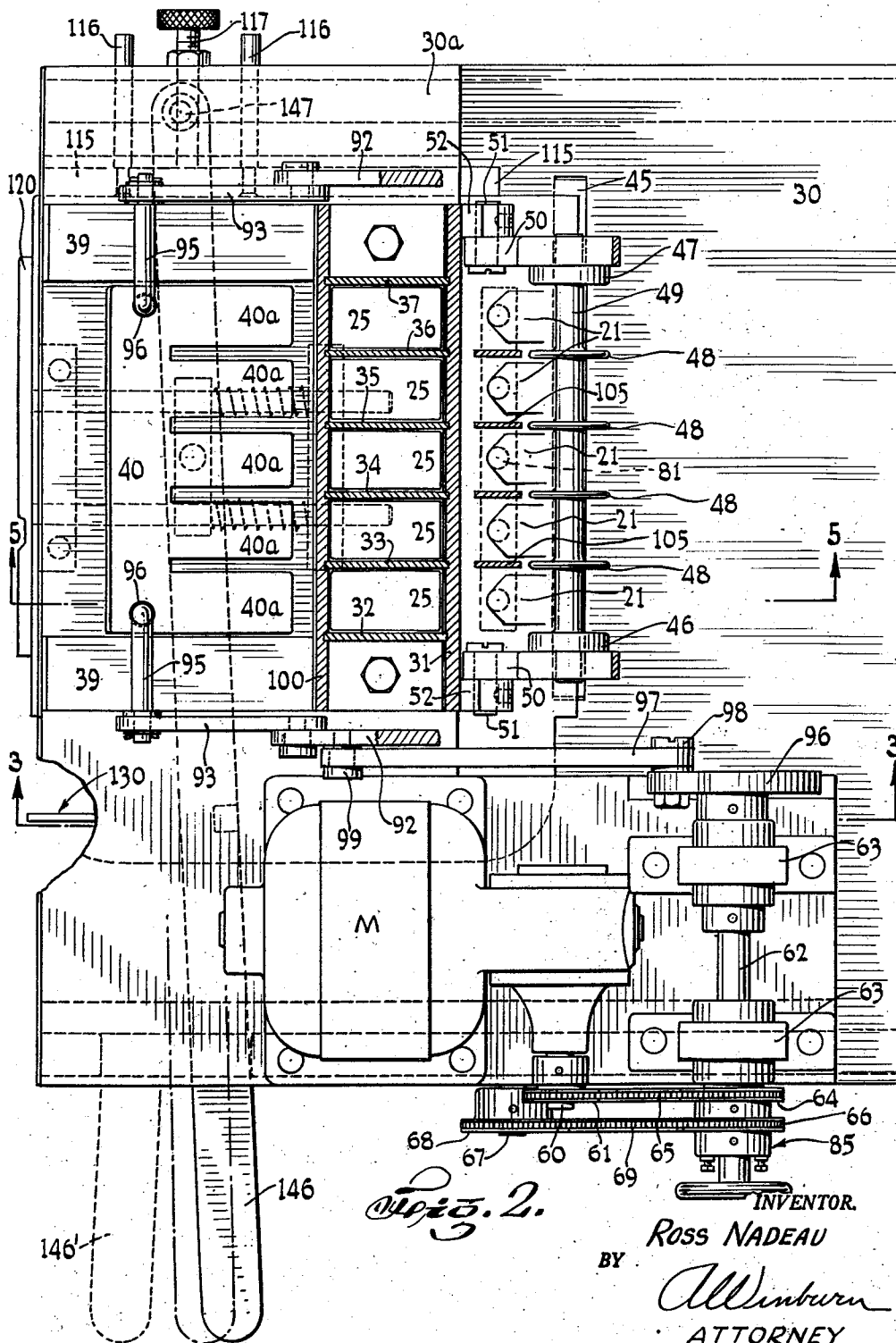
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Fig. 12.

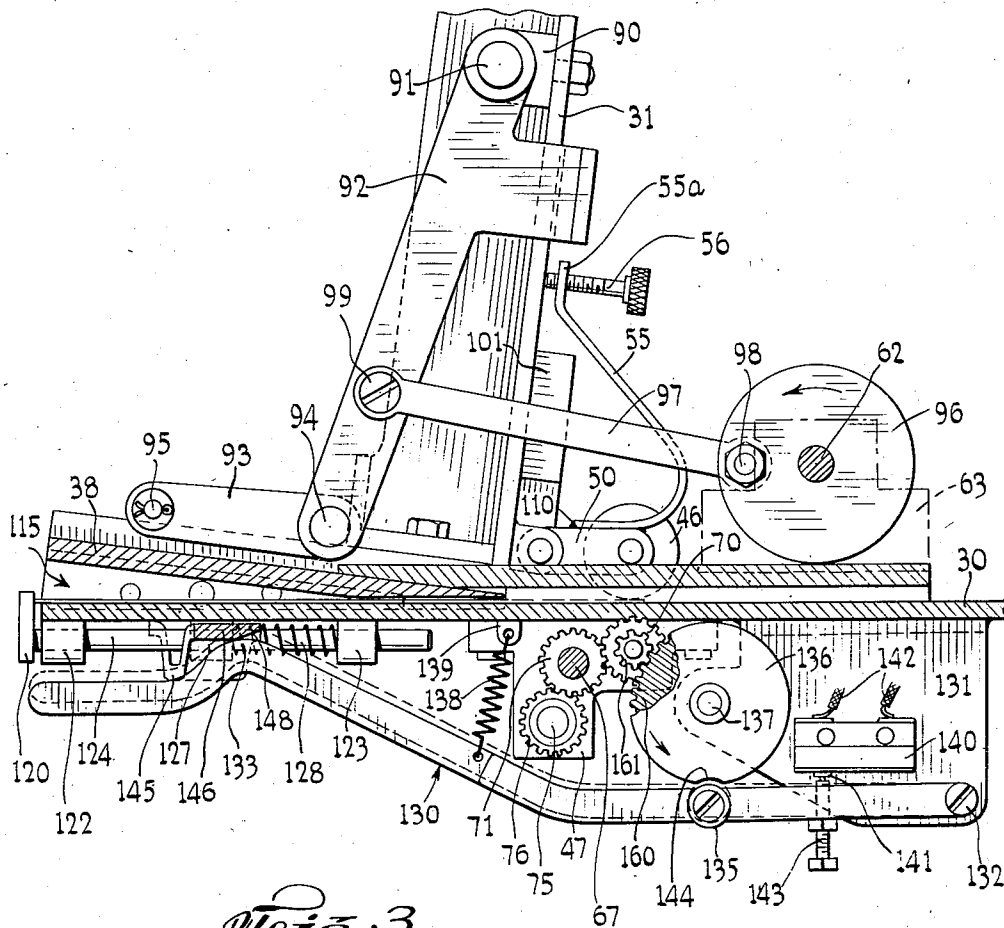
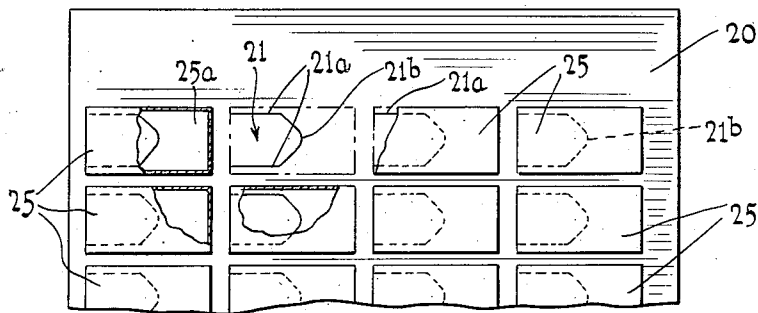


Fig. 3.

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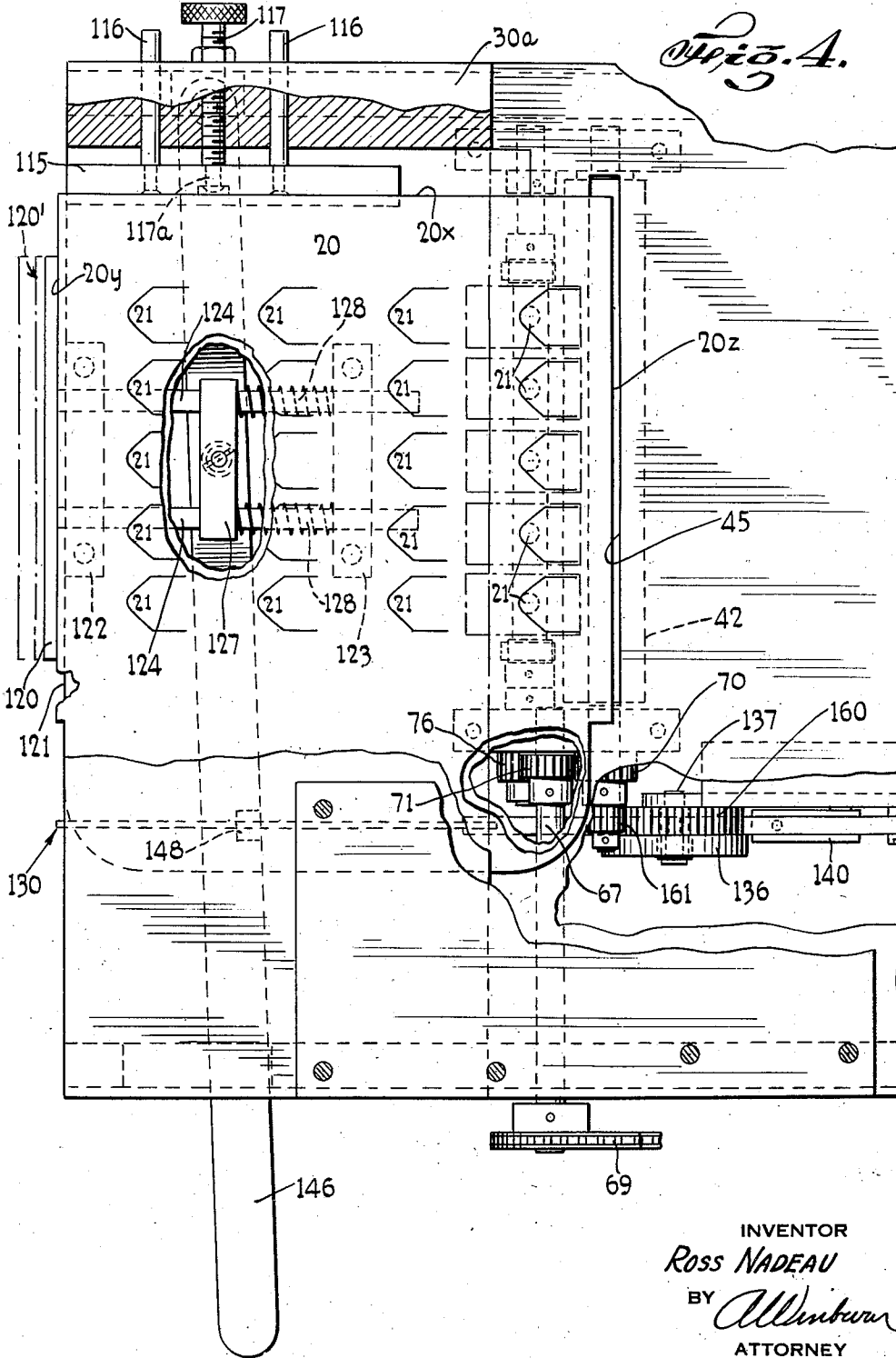
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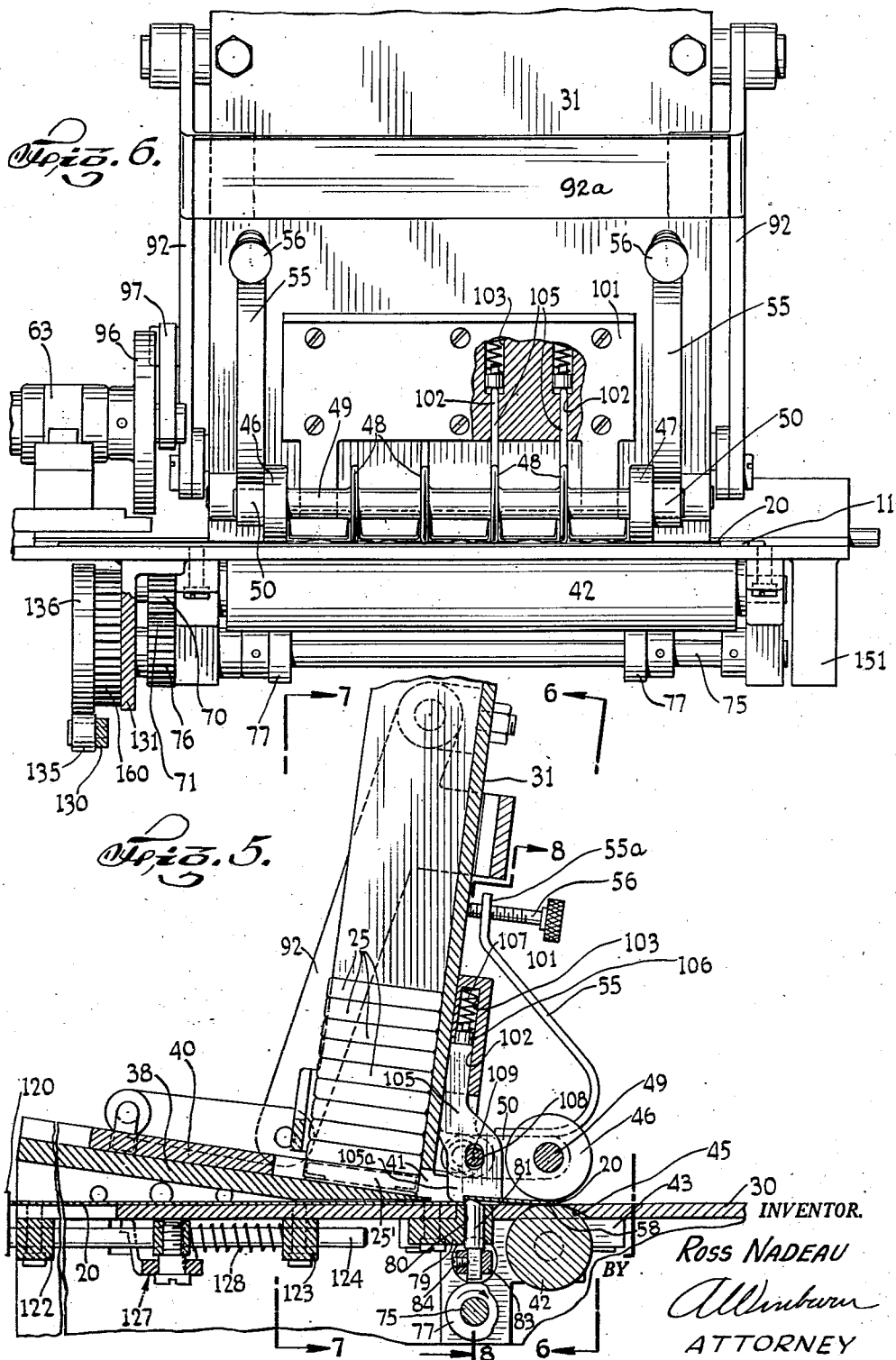
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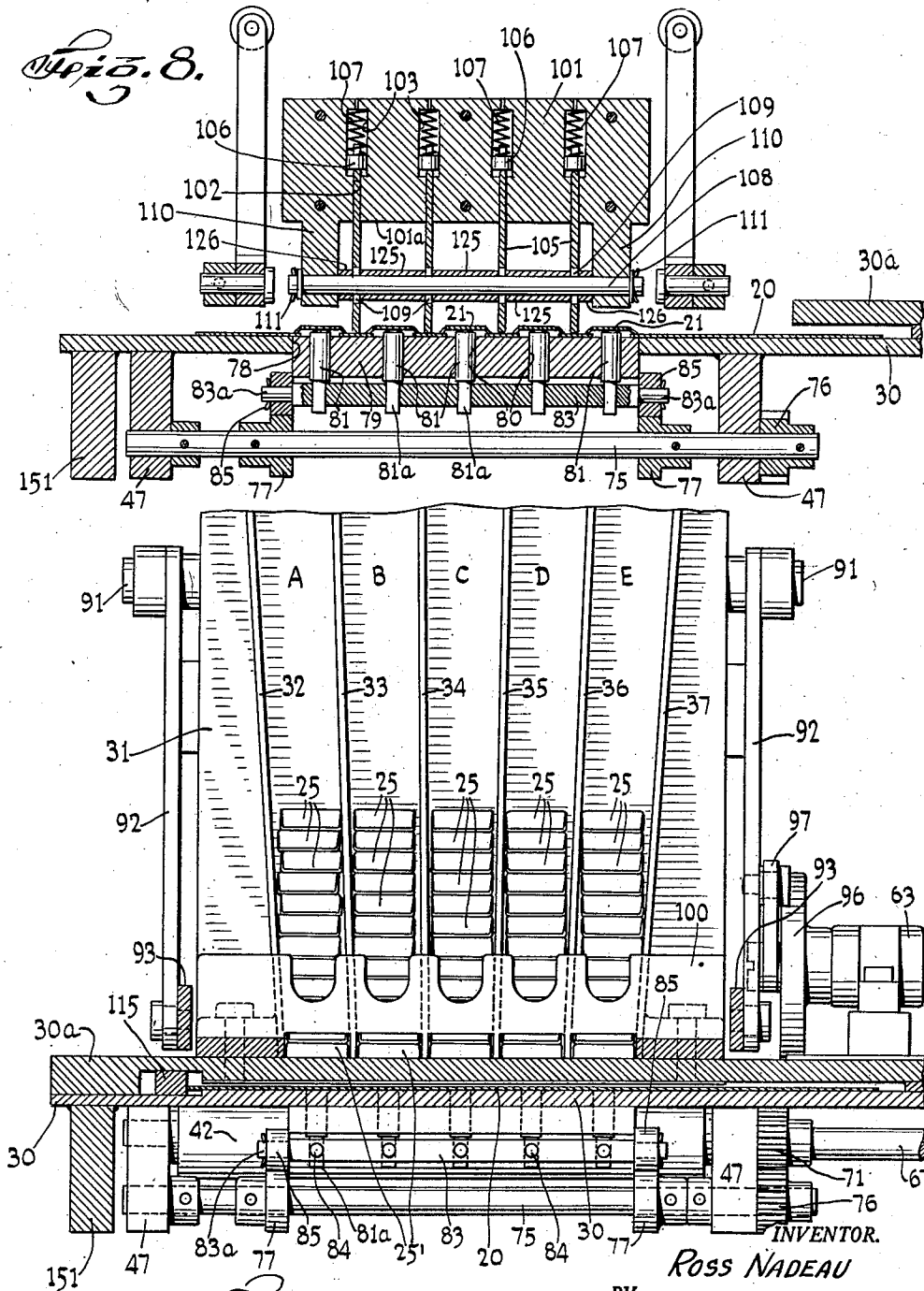
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DISPLAY CARD FILLING APPARATUS

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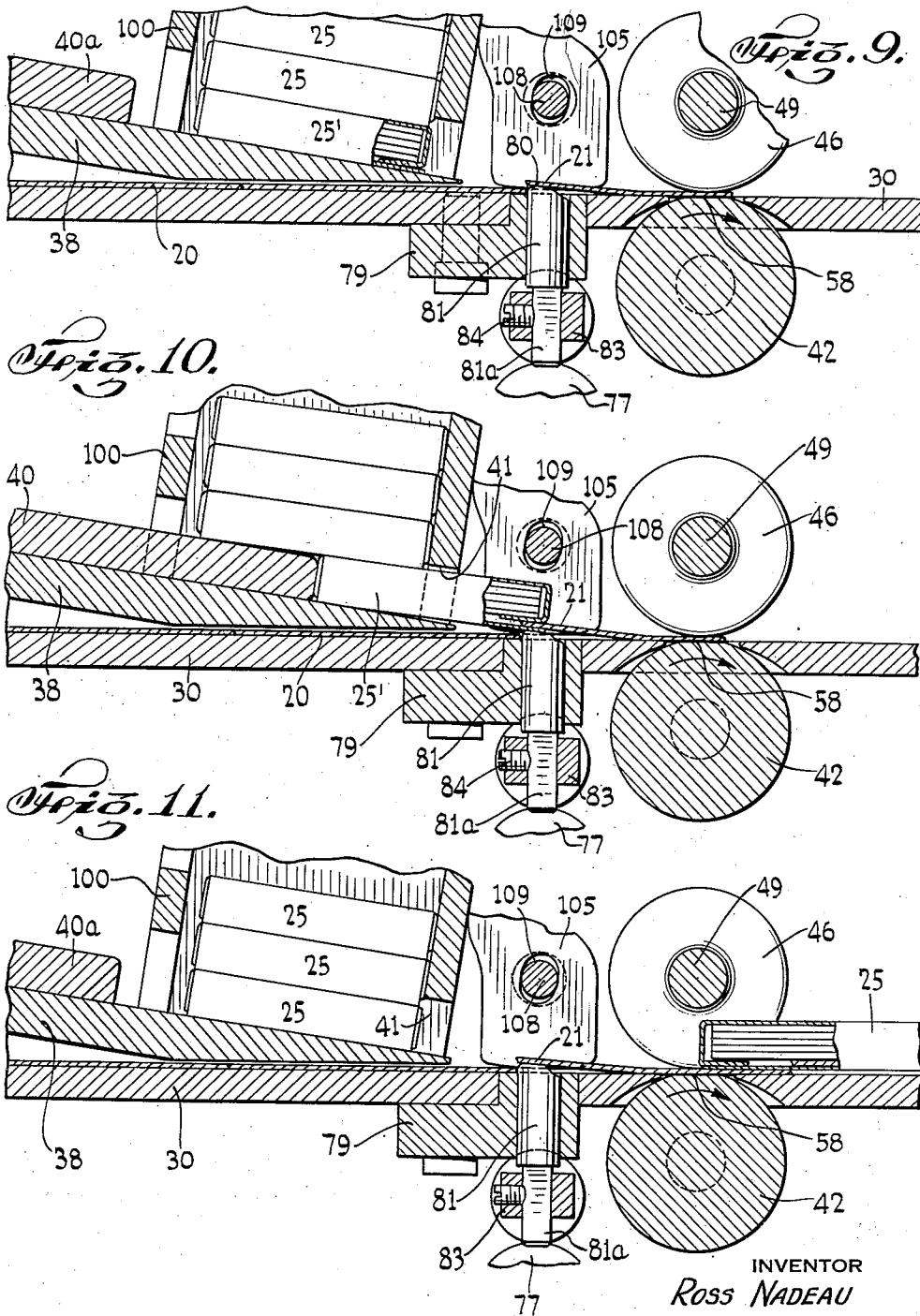
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DISPLAY CARD FILLING APPARATUS

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7 Sheets-Sheet 7



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2,433,862

DISPLAY CARD FILLING APPARATUS

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Application April 19, 1943, Serial No. 483,671

10 Claims. (Cl. 93—1)

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This invention relates to methods and apparatus for mounting articles of merchandise on display cards. More particularly my invention is directed to a novel and improved method and apparatus for mounting upon or filling a display card with packages or cartons each of which is designed to contain a number of individually wrapped safety razor blades.

One of the objects of my invention is to provide a novel and highly improved method and apparatus of the class described for filling display cards with razor blade packages which shall greatly speed up the production of such filled display cards and which shall accomplish such production with a minimum of damage to the cards and to the packages, thereby effecting a relatively large saving in the cost of merchandising.

Another object of my invention is to provide a novel and highly improved method and means of the class described for filling display cards with razor blade packages which shall be characterized by the fact that when a display card is properly positioned with respect to the said apparatus, and the apparatus rendered effective, the said display card will be automatically filled with the predetermined desired number of packages irrespective of the skill of the operator.

Still another object of my invention is to provide a novel and highly improved method and means of the class described for filling display cards with razor blade packages which shall represent a distinct advance in the art.

Other objects of my invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of steps, elements and arrangements of parts which will be exemplified in the construction hereinafter described and of which the scope of application will be indicated in the claims.

In the accompanying drawing, in which is shown a possible embodiment of my invention:

Fig. 1 is a side elevational view, partly in section, of a display card filling apparatus constructed and arranged in accordance with my invention;

Fig. 2 is a cross-sectional view taken substantially along the line 2—2 of Fig. 1;

Fig. 3 is a cross-sectional view taken substantially along the line 3—3 of Fig. 2;

Fig. 4 is a top plan view of the apparatus shown in Fig. 1, but with certain parts thereof broken away to disclose the interior construction thereof;

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Fig. 5 is a cross-sectional view taken substantially along the line 5—5 of Fig. 2;

Fig. 6 is an elevational view of the apparatus shown in Fig. 5 and as viewed along the line 6—6 thereof with certain wall portions broken away to disclose the interior construction thereof;

Figs. 7 and 8 are cross-sectional views taken substantially along the lines 7—7 and 8—8 respectively of Fig. 5;

Fig. 9 is an enlarged detail view of a portion of the apparatus shown in Fig. 5 to more clearly illustrate a step in the operation thereof;

Figs. 10 and 11 are views similar to Fig. 9, but illustrating further steps in the operation of my apparatus; and

Fig. 12 is an elevational view of a portion of a filled display card of the type with which my invention is concerned and showing the razor blade packages mounted thereon in accordance with my invention.

Referring now in detail to the drawings I have illustrated therein an apparatus constructed and arranged in accordance with my invention, for filling display cards with packages adapted to contain a predetermined number of razor blades ready for use.

While my invention is applicable to all sizes and shapes of display cards, I have shown, in Fig. 12, for the purpose of illustrating the invention, a customary type of display card 20 which it is desired to fill with razor blade packages 25. This display card 20 is provided with horizontal and vertical rows of tongue portions 21 integral with the body of the display card and each being formed by a pair of parallel through slits 21a and a slitted pointed edge 21b. The tongues 21 slidably receive thereon the packages 25, the said tongues 21 being received between the flap of the box and the bottom wall thereof, so that the top wall of the box with its advertising matter displayed thereon will be visible to the purchaser. Heretofore the task of mounting the packages 25 on the tongues 21 of the display card was performed by hand, each package 25 being individually slidably positioned on a tongue 21. This consumed a large amount of time and required a certain degree of skill on the part of the operator in order to make any headway and in order to prevent damage to the cards or packages and to the fingers of the operators.

In accordance with my invention, I have provided the following apparatus for automatically effecting the task of mounting razor blade packages on display cards.

55 Supported on a horizontal flat bed portion 30,

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in any suitable manner, is an upright back wall 31, which may be tilted slightly rearwardly, as shown in Figs. 1, 3 and 5. Disposed in planes at right angles to that of the wall 31 and substantially coextensive therewith are a plurality of walls 32, 33, 34, 35, 36 and 37, forming five guideways A, B, C, D and E, each being adapted to receive therein a stack comprising the packages 25, which it is desired to mount upon the display cards 20. There is preferably provided one stack for each row of tongues 21. As noted in Fig. 5, the lowermost package 25' of each stack of packages is adapted to normally rest upon a platform member 38 which is angularly disposed with respect to the bed 30 and suitably supported thereby. It is noted that I have disposed the platform 38 substantially at right angles to the back wall 31 of the stacking unit.

Slidably mounted on the platform 38 between a pair of guides 39 is a pusher member 40 (see Figs. 2 and 5) having a plurality of forwardly projecting finger portions 40a, there being one finger portion 40a for each corresponding stack of packages 25 and in alignment therewith. The said finger portions 40a of the pusher member 40 are of a thickness not exceeding the depth of one package 25, so that when the pusher member 40 is slidably moved forwardly, in a manner soon to be described, the fingers 40a thereof will push the lowermost package 25' out from under each stack, in a direction rearwardly of the wall 31 and out through notched areas 41 (Fig. 5) in the said wall 31 to be mounted on the display card 20 which has been suitably positioned on the flat bed 30.

The following means are provided for positioning and feeding the display card 20 in proper synchronism so that an entire vertical row of tongues 21 will automatically and simultaneously receive thereon corresponding packages 25 from the stacks in the guideways A to E.

As noted in Figs. 2, 5 and 6, there is provided a shaft or drum 42 journaled in the brackets 43 and 44 attached to the bed 31. It is noted that the said shaft 42 is arranged so that a portion of the circumference thereof will project through a slotted opening 45 in the bed 30 so that the said projecting portion of the shaft 42 will be substantially flush with the upper surface of the bed 30. Cooperating with the shaft 42 are a pair of end rollers 46 and 47 and intermediate spaced roller members 48. The rollers 46, 47 and 48 are mounted on a shaft 49 for rotation therewith, the said shaft 49 being, in turn, journaled in the bracket members 50. The said bracket members 50 are pivotally mounted, at one end thereof to the wall 31 by means of the pivots 51 and the members 52 (see Fig. 2).

The rollers 46, 47 and 48 are held in frictional engagement with the shaft or drum 42 by a pair of resilient spring members 55, one end of each of which is fixed to a bracket 50 leaving the other end 55a, which is bent around to lie adjacent the wall 31, free and unattached. Tension on the rollers 46, 47 and 48 is obtained by providing set screws 56 passing through the end portions 55a of the springs 55 and abutting the said wall 31, as clearly shown in Fig. 5. The tension may be altered by merely turning the set screws 56.

In accordance with my invention the display card 20 is designed to be received between the drum 42 and the rollers 46, 47 and 48 and gripped thereby and fed therethrough.

For properly synchronizing the movement of the display card 20 and insure its proper start-

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ing position for feeding through the rollers, the drum 42 is provided with a flat area 58. In Figs. 4, 5, 9 and 10 the said flat area 58 of the drum 42 is shown in its top or normal starting position which permits the forcing in between the gripping rollers of the starting edge of the display card, so that, when the apparatus is rendered effective in the manner hereinafter to be described, the display card will be fed in proper timed relationship with respect to the operation of the pusher member 40 and other mechanisms forming a part of my invention.

The following means are provided for driving the drum 42 which in turn causes the advance movement of the display card 20 when properly positioned on the bed 30 with the leading edge thereof received between the said drum 42 and friction rollers 46, 47 and 48.

As clearly shown in Figs. 1, 2 and 3 there is suitably supported, on an extension of the bed 30, an electric motor M connected to a source of supply (not shown). Mounted on the motor shaft 60 for rotation therewith is a sprocket wheel 61. Mounted on a shaft 62, journaled in the brackets 63, is a sprocket wheel 64. A chain 65 interconnecting the sprocket wheels 61 and 64 causes rotation of the shaft 62 when the motor M is started. Mounted on the shaft 62 for rotation therewith is a second sprocket wheel 66. Journaled in the bracket 43 is a shaft 67 on which there is mounted a sprocket wheel 68 for rotation therewith. A chain 69 interconnecting the sprocket wheels 66 and 68 causes the simultaneous rotation of the shaft 67 with the shafts 66 and 62.

Mounted on reduced portions of the shaft 42, and for rotation therewith, is a gear 70. Also mounted on the shaft 67 for rotation therewith is a gear 71 in mesh with the gear 70.

It is therefore seen from the above described construction that when the motor M is energized by the closing of a suitable switch the drum 42 will be caused to rotate in a clockwise direction by means of the sprocket wheels and chains 66, 68 and 69 respectively, which in turn are driven by the sprocket wheels and chains 61, 66 and 65 respectively. Since the rollers 46, 47 and 48 are in frictional contact with the drum 42, they will also be caused to rotate in a counterclockwise direction to feed the display card therethrough.

In accordance with my invention I have provided the following mechanism, properly synchronized with the feeding of the display card 20 between the drum 42 and rollers 46, 47 and 48, and with a pusher mechanism for feeding the packages 25 to be mounted on the card, (soon to be described) for automatically lifting the free ends 21b of a row of tongues 21 to facilitate the mounting of the said packages 25 thereon.

Journaled between the brackets 47 is a shaft 75 having mounted thereon, for rotation therewith, a gear 76, in mesh with the gear 71 mounted on the shaft 67. Fixed to the shaft 75 for rotation therewith are a pair of cam wheels 77, spaced from each other a predetermined distance along the said shaft 75.

The bed 30 is provided with an opening 78 into which there is suitably mounted a block 79 having a portion thereof extending beneath the said bed 30. The block 79 is provided with a plurality of vertically disposed through openings 80 in each of which there is freely slidably mounted a pin 81 having a cammed top edge and a reduced diameter portion 81a adjacent its lower edge. The said portions 81a of the pins 81 are received in

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corresponding openings 82 in a bar 83, the said bar pins 81 being held in attachment with the bar 83 by means of set screws 84 as clearly shown in Fig. 5. Rotatably mounted on reduced portions 83a of the bar 83 are a pair of rollers 85, each of said rollers 85 being so positioned that it will frictionally rest upon a corresponding cam wheel 77.

It is thus seen from the above described construction that when the motor M is energized to cause rotation of the shaft 67, as hereinbefore described, the shaft 75 will be caused to rotate simultaneously with the shaft 67, due to the meshing gears 71 and 76. The cams 77 being fixed to the shaft 75 will rotate therewith and thereby cause the rollers 85 to move the bar 83 upwardly and downwardly in accordance with the designed contour of the cams 77. The upward movement of the bar 83 will cause the simultaneous elevation of all the pins 81. Since the pins 81 are so arranged that there will be a corresponding pin 81 disposed directly underneath a tongue 21, each of the tongues 21 in a vertical row of tongues will be slightly raised to the positions shown in Figs. 5 and 8, which position is the desired one for slidably inserting thereon the lowermost package 25 from each stack of packages in the guideways A to E.

The apparatus of my invention as shown in the drawings is so designed that when the display card 20 is positioned with its leading edge overlying the flat portion 53 of the drum 42 the pins 81 will be in proper alignment to lift the first vertical row of tongues 21. It is also noted that the diameter of the drum 42 is such that upon one complete revolution thereof, so that the flat portion thereof 53 will be again positioned at the top as shown in Fig. 5, the display card 20 will have advanced to a position where the second vertical row of tongues 21 will overlie the pins 81 and be raised thereby so that another batch of packages 25 may be slidably mounted thereon, and so on for the third and fourth vertical rows of tongues 21.

It is within the contemplation of my invention to so arrange the apparatus, as above described, that when a display card is positioned as indicated and the motor started, the card will be automatically fed through until all the transverse rows of tongues are provided with razor blade packages, after which the motor will be automatically stopped. To accomplish this, it is necessary, to cause the card to be held stationary during the time that the package is being mounted thereon and I have therefore provided a slip clutch device of any standard type, well known to the art, on the shaft 62 and acting between the sprockets 68, 66 and chain 69. Therefore, it is noted, that when the pins 81 are in their raised position as shown in, for example, Fig. 9, each pin 81 will abut the wall of one of the openings in the display card 20 caused by the cutting out of the tongues 21 and thus hold the card against advancing movement between the drum 42 and rollers 46, 47 and 48 until the cam 77 is rotated to that portion of its rim surface thereof which causes the pins 81 to be lowered, after which the clutch mechanism will become effective again to advance display card to its next effective position. It is during the time that the display card is held against movement that the slip clutch will permit the continuous running of the motor M.

The following means are provided, properly synchronized with above described means for holding of the display card 21 against movement by the pins 81, for mounting a package 25 on a

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corresponding tongue 21, at properly timed intervals.

Fixedly attached to the back wall 31 of the package guideways unit, at opposite lateral edges thereof by the bolts 89 are a pair of brackets 90. Pivotaly mounted on each bracket 90, by means of a pivot shaft 91, is a lever 92.

A second lever 93 is pivotally interconnected at one end thereof with the lever 92 by means of the pivot shaft 94 located at the opposite end of the lever 92 from that of the pivot 91. The opposite end of the lever 93 from that of the pivot 94 is pivotally connected to a rigid angular bar member 95 having its free end freely received in a corresponding opening 96 in the pusher member 40.

It is thus seen that when the levers 92 are caused to rotate in a counter-clockwise direction, the pusher member 40 will be caused to slidably move forwardly. When this occurs each finger 40a of the pusher member 40 will contactively engage and push the lowermost package 25' from each stack of packages 25 in the guideways A to E, out through the notched areas 41 and slidably forced on to the already properly positioned raised tongue 21, the said tongue being received between the folded in portion of the flap f and the bottom wall of the package.

In Fig. 9, I have shown the relationship of the pusher member 40, with respect to the stack of packages 25 and the properly positioned display card 20 and raised tongues 21 before the said pusher member 40 has been rendered effective. In Fig. 10, the pusher member 40 is shown in effective action, with the lowermost package 25' being ushered out from under its stack and showing the same slidably being mounted on the raised tongue 21.

In Fig. 11, I have shown the subsequent action where the package 25 has been mounted on the tongue and where the display card has been advanced to the second vertical row of tongues 21, with the pins 81 in raised position and with the pusher member 40 restored to its ineffective position, ready to be again brought forward to once more push out from under the stack of packages and on to the waiting tongues the lowermost package of each stack, and so on until the display card is filled.

The following means are employed for causing the automatic oscillatory movement of the levers 92 to cause effective operation of the pusher member 40 in synchronism with the operation of the pins 81, the drum 42 and rollers 46, 47 and 48.

Referring particularly to Figs. 2 and 3 it is seen that there is mounted on the shaft 62 for rotation therewith, a disc member 96. A pitman arm 97 is pivotally connected at one end to the disc 96 by the pivot 98 and at the opposite end thereof to the lever 92 by the pivot 99. It is thus seen that when the motor M is energized to rotate the shaft 62, in a counter-clockwise direction the disc 96 will also rotate in a counter-clockwise direction to cause oscillation of the arm 92, which in turn will actuate the pusher member 40 in synchronism with the movement of the display card 20.

The levers 92 are interconnected by the bar 92a so that they will operate as a unit when actuated by the pitman arm 97.

A front guard member 100 may be employed to prevent the stacks of packages from becoming disaligned as the said packages approach the

lowermost position to be acted upon by the pusher member 40.

To prevent undesired portions of the display card 20 from being lifted when the pins 81 are raised to lift the tongues 21, I have provided the following mechanism:

Fastened to the back wall 31, at the rear surface thereof, is a housing block 101, provided with a plurality of openings 102 extending from a bottom wall 101a of the block 101 to an enlarged chamber 103. Slidably mounted in each opening 102 is a relatively flat rigid pressure member 105 having an offset and enlarged bottom end portion 105a, the bottom edge of which is adapted to normally rest upon the bed 30, or the display card 20 positioned thereon. The members 105 are so positioned that they will contactively engage the display card at those portions which are located between adjacent tongues 21 in the same vertical row of tongues. This will permit the free movement of the packages 25 as they are pushed forward and on to the raised tongues. At this point it is noted that the rollers 48 are aligned with the members 105 for the similar purpose of permitting the already mounted packages to freely pass as the display card is advanced. The top portions of the members 102 which extend into the chambers 103 are provided with abutment shoulders 106. Springs 107 in the chambers 103 compressed between the top walls of the said chambers 103 and the abutment shoulders 106 resiliently urge the members 105 into frictional contact with the display card 20. To prevent lateral displacement or distortion of the members 105, there is provided a horizontally disposed bar 108 passing through slotted openings 109 in the said members 105. The bar 108 is supported in a pair of depending portions 110, integral with the block 101 and held in position by cotter pins 111. The slotted openings 109 in the members 105 permit the self-adjusting movement of the members 105 when varying thickness of material of the display card 20 is encountered, or when display cards of different thicknesses are used. Spacer members 125 and 126, surrounding the bar 108 and interposed between the members 105 and portions 110 serve to prevent lateral disalignment of the said members 105.

As shown in Figs. 4 and 7, I have provided the following gauging means whereby the display card 20 may always be positioned so that the vertical rows of tongues 21 will be in proper aligned position to receive the packages 25 thereon.

Slidably mounted on the bed 30 adjacent one lateral end thereof is a bar 115, which is maintained in proper constant angular relationship with respect to a lateral edge of the display card 20 by means of a pair of pins 116, one end of each of which is fixedly attached to the bar 115, in any suitable manner, such as, for example, by riveting. The free ends of the pins 116 freely slidably pass through an auxiliary portion 30a of the base 30. A set screw 117 threadedly passing through the base portion 30a and having its inner end 117a rotatably attached to the gauge bar 115, permits the adjustable positioning of the bar in accordance with the lateral edge of the display card.

To facilitate the proper positioning of the display card there is provided a carriage device cooperating with the gauge bar 115 and comprising a bar 120, projecting slightly above the top surface of the bed 30 and mounted for sliding movement toward and away from the front edge 121

of the said bed 30, as shown in Figs. 3 and 4. The bar 120 is supported in the following manner:

A pair of spaced plates 122 and 123 is provided with a pair of spaced apertures, the corresponding apertures in each bar being in alignment. Through each pair of such aligned apertures there is freely slidably arranged a pin 124 having one end thereof free and the opposite end fixedly attached to the bar 120. By the foregoing description it is noted that the parallelism of the bar 120 with respect to the bed edge 121 will be maintained at all times during the movement of the said bar 120. Rigidly fixed to the two pins 124 and at a predetermined distance between the bars 122 and 123, and for movement therewith is a transverse clamp member 127 and interposed between the said clamp member 127 and the bar 123 are springs 128 normally urging the movement of the bar 120 away from the bed edge 121, such as for example to the dotted line position 120', as clearly shown in Fig. 4.

It is thus seen from the above described apparatus that to insure the effective positioning of the display card 20 so that it will properly be fed and filled with packages 25, it is merely necessary to rest the said display card 20 on the bed 30 with one edge 20x thereof abutting the gauge bar 115 and with the rear edge 20y of the display card 20 up against the bar 120. The bar 120 is then manually slidably moved forwardly against the action of the springs 128 until the leading edge 20z of the display card is gripped between the flat portion 58 of the drum and the rollers 46, 47 and 48, after which the motor M may be energized and the bar 120 released so that it will be restored to its dotted line position 120' by the action of the springs 128.

In accordance with my invention I have provided the following means whereby when the display card 20 is properly positioned as above described, the motor M will be automatically energized to actuate the mechanism, to fill the display card with packages 25, after which the motor M will be automatically deenergized to stop the operation of the apparatus, to be automatically started again when a new display card is again effectively positioned, as above described.

Referring particularly to Figs. 3 and 4, it is noted that I provide a lever 130 pivotally mounted at one end thereof on the bracket 131 by the pivot 132, the said bracket 131 being in turn fixedly mounted on the bed 30. The said lever 130 is provided with an offset portion extending to a point slightly beyond the front edge 121 of the bed 30. At a predetermined spaced position from the front end of the lever for cooperative action with the clamp 127 the said lever 130 is provided with a cammed portion 133 extending upwardly toward a position adjacent the said clamp 127. Rotatably mounted on the lever 130 at a predetermined position thereon is a roller 135 adapted to frictionally engage the rim of a disc 136. The said disc 136 is mounted on a shaft 137 which, in turn, is journaled in the bracket 131. A spring 138 having one end thereof fixed to the lever 130 and the other end thereof fixed to a lug 139 on the bed 30, normally maintains the roller 135 in frictional engagement with the rim of the disc 136. Suitably supported on the bracket 131 is a switch device 140, which may be of any well known type for the purposes intended, such as for example that referred to as a micro-switch and having a contact making and breaking member 141. A pair of lead wires 142 connect the

micro-switch in the circuit with the motor M, which includes a suitable source of power (not shown). Mounted on the lever 130 for movement therewith is a contact actuating member 143 adapted to effectively open and close the switch 140.

The contact members 141 and 143 are so arranged with respect to the switch 140 that when the roller 135 rides against the rim of the disc 136, the switch 140 will be closed to energize the motor M, to operate the apparatus. However, the rim of the disc 136 is provided, at one point on the circumference thereof, with a notched or depressed portion 144 into which the roller 135 is designed to fall when the said notch 144 reaches the position adjacent the roller 135. It is in such position with the roller in the notch that the lever 130 will move to its dotted line position, to cause the members 143 and 141 to effectively open the switch and thus break the circuit to stop the motor M and the operation of the apparatus.

My apparatus is synchronized so that the disc 136 is normally positioned with the notch 144 in its lowermost position with the roller 135 received therein. In other words the apparatus normally is not in operation. However, it is now seen from the above described construction that when the lever 130 is rotated on its pivot 132 in a counterclockwise direction the apparatus will be automatically started in its operation. Accordingly therefore, I have provided the clamp 121, which travels with the pins 124, with a cam portion 145 which is adapted to engage and pivotally move a lever arm 146, pivoted to the bed 30 by means of the pivot 147 and suitably supported in a slotted opening 150 between the bed 30 and one of the legs or cleats 151 (see Fig. 1) supporting the bed 30. At a predetermined area of the lever arm 146, a cam portion 148 is provided so that upon pivotal movement of the arm 146 it will engage the cammed part 133 of the lever 130 and cause the counter-clockwise rotational movement of the said lever 130 to start the operation of the apparatus.

It is therefore seen from the above description that when the display card is placed in position on the bed 30 and the bar 120 slidably moved from its dotted line position 120' inwardly, at the point when the leading edge 20z of the display card 20 is engaged between the flat area 53 of the drum 42 and the rollers 46, 47 and 48, the cammed portion 148 of the arm 146 will strike the portion 133 of the lever 130 to automatically start the operation of the apparatus. If desired, the lever arm 146 may be extended to project beyond one side of the bed 30, as clearly shown in Figs. 2 and 4, so that the operation of the apparatus may be effectively started by manually moving the handle or arm 146 from its dotted line position 146' to its full line position as illustrated in Fig. 2.

The apparatus of my invention is also designed to automatically stop the operation of the apparatus when a display card has been completely filled. To this end, I provide a gear 160 (see Fig. 3) which is fixed to the shaft 137 for rotation therewith and which is, at the same time, in mesh with a pinion 161 fixed to the shaft or drum 42 for rotation therewith.

It is now seen that when the drum 42 is caused to rotate in a clockwise direction due to the meshing gears 71 and 70, as hereinbefore explained, the pinion 161 traveling in the same direction as the drum 42 will cause counterclockwise rotation of the gear 160 and disc 136. In other words, as soon as the apparatus is automatically started,

the disc will begin to rotate. The ratio between the pinion 161 and gear 160 is such that when the disc makes one complete revolution the display card will have been completely filled with packages 25 and will have completely passed between the drum 42 and rollers 46, 47 and 48 to be stacked. After one such revolution of the gear 160 and disc 136, the notched area will again receive the roller 135 therein to automatically open the switch to stop operation of the apparatus until another display card is properly positioned, or until the lever arm 146 is manually operated to close the switch 140.

In accordance with my invention, I have found that I obtain satisfactory results when the slits 21a and 21b which form the tongues 21 in the display cards, are blanked out from the back toward the face of the card, so that I obtain thereby a rounded edge which is presented to the leading edge of the bottom wall 25a of the package 25 when the said package is slidably urged on the tongue 21.

In accordance with the provisions of the patent statutes, I have herein described the principle and operation of my invention, together with construction which I now consider to represent the best embodiment thereof, but I desire to have it understood that the construction shown is only illustrative and that the invention can be carried out by other means. Also, while it is designed to use the various features and elements in the combination and relations described, some of these may be altered and others omitted without interfering with the more general results outlined, and the invention extends to such use.

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

1. For use with a display card having a plurality of spaced tongue portions arranged one behind the other with their longitudinal axes in the same straight line and adapted to receive and hold packages or similar articles thereon, a display card filling apparatus of the class described comprising means for supporting a display card, means for supporting a stack of said packages to be mounted on said display card, means for advancing said display card so that it will be temporarily halted at each successive tongue portion and means for causing one of the said packages from said stack to be mounted on a tongue portion, the effective operation of said last named means being synchronized with those periods when the display card is at rest.

2. For use with a display card having a plurality of rows of tongue portions arranged in longitudinal and transverse alignment and adapted to receive and hold packages or similar articles thereon, a display card filling apparatus of the class described comprising means for supporting a display card, means for supporting a plurality of stacks of said packages, there being preferably one of said stacks for each longitudinal row of tongue portions, means for advancing said display card for a relatively short distance of its length so that it will be temporarily halted at successive transverse rows of tongue portions and means for causing one package from each of said stacks to be mounted on a corresponding tongue portion of one of said rows of tongue portions, the effective operation of said last named means being synchronized with those periods when the display card has been temporarily halted.

3. For use with a display card having a plurality of rows of tongue portions arranged one behind the other with their longitudinal axes in the

same straight line and adapted to receive and hold packages or similar articles thereon, a display card filling apparatus of the class described comprising means for supporting a display card, means for supporting a plurality of stacks of said packages, there being preferably one of said stacks for each row of tongue portions, means for normally continuously advancing said display card, means for causing one package from each of said stacks to be mounted on a corresponding tongue portion of one of said rows of tongue portions and means for temporarily holding said display card against movement each time a successive row of tongue portions is properly positioned for receiving the packages, the effective operation of said last named means being synchronized with the effective operation of the said means for causing the packages to be mounted on the tongue portions.

4. For use with a display card having a plurality of rows of tongue portions arranged one behind the other with their longitudinal axes in the same straight line and adapted to receive and hold packages or similar articles thereon, a display card filling apparatus of the class described comprising means for supporting a display card, means for supporting a plurality of stacks of said packages, there being preferably one of said stacks for each row of tongue portions, means for normally continuously advancing said display card, means for causing one package from each of said stacks to be mounted on a corresponding tongue portion of one of said rows of tongue portions, and means for temporarily holding said display card against movement each time a successive row of tongue portions is properly positioned for receiving the packages, the effective operation of said last named means being synchronized with the effective operation of the said means for causing the packages to be mounted on the tongue portions, the said means for temporarily holding the display card against movement including means for lifting said tongue portions away from the plane of said display card to facilitate the mounting of said packages thereon.

5. A display card filling apparatus according to claim 4 in which the means for normally continuously advancing said display card comprises a rotatably mounted drum, a roller frictionally cooperating therewith, the said display card being adapted to pass between said drum and roller, and means for rotating said drum.

6. A display card filling apparatus according to claim 4 in which the means for normally continuously advancing said display card comprises a rotatably mounted drum, a roller frictionally cooperating therewith, the said display card being adapted to pass between the said drum and roller and means for rotating said drum, said drum having a portion of its surface flattened to facilitate the initial positioning of the leading edge portion of the said display card between the drum and roller by resting the said leading edge portion of the display card directly on said flattened surface, the diameter of said drum being such

that when the said flattened surface has made one complete revolution the display card will have completely passed between the drum and roller.

7. A display card filling apparatus according to claim 4 in which the means for normally continuously advancing said display card comprises a rotatably mounted drum, a roller frictionally cooperating therewith, the said display card being adapted to pass between said drum and roller, and means for rotating said drum, the diameter of said drum being such that one revolution thereof will cause the said display card to advance between said rows of tongue portions.

8. A display card filling apparatus according to claim 1 in which means, comprising a gauge member, are provided for positioning said display card on said display card supporting means for effective operation with respect to said stock of packages and said tongue portions.

9. A display card filling apparatus according to claim 4 in which the means for normally continuously advancing said display card comprises a rotatably mounted drum, a plurality of rollers frictionally cooperating therewith, the said display card being adapted to pass between the drum and rollers, the said rollers being spaced from each other a sufficient distance to permit the free passage therebetween of the packages mounted on the tongue portions.

10. A method for mounting packages on a display card having cut out tongues arranged one behind the other with their longitudinal axes in a straight line, comprising, first causing said display card to be laterally moved a predetermined distance of its length to a position where the first tongue is ready to receive a package, then holding said display card against movement, lifting said first tongue with respect to the plane of said display card while the latter is being held against movement, then mounting a package on said lifted first tongue, then again causing said display card to be moved forwardly from its last position for another predetermined distance of its length to a position where the second tongue is ready to receive a package, then holding said display card against movement, lifting said second tongue with respect to the plane of the display card while the latter is being held against movement, then mounting a second package on said second tongue while said display card is being held against movement.

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