

Nov. 29, 1938.

J. A. NEUMAIR

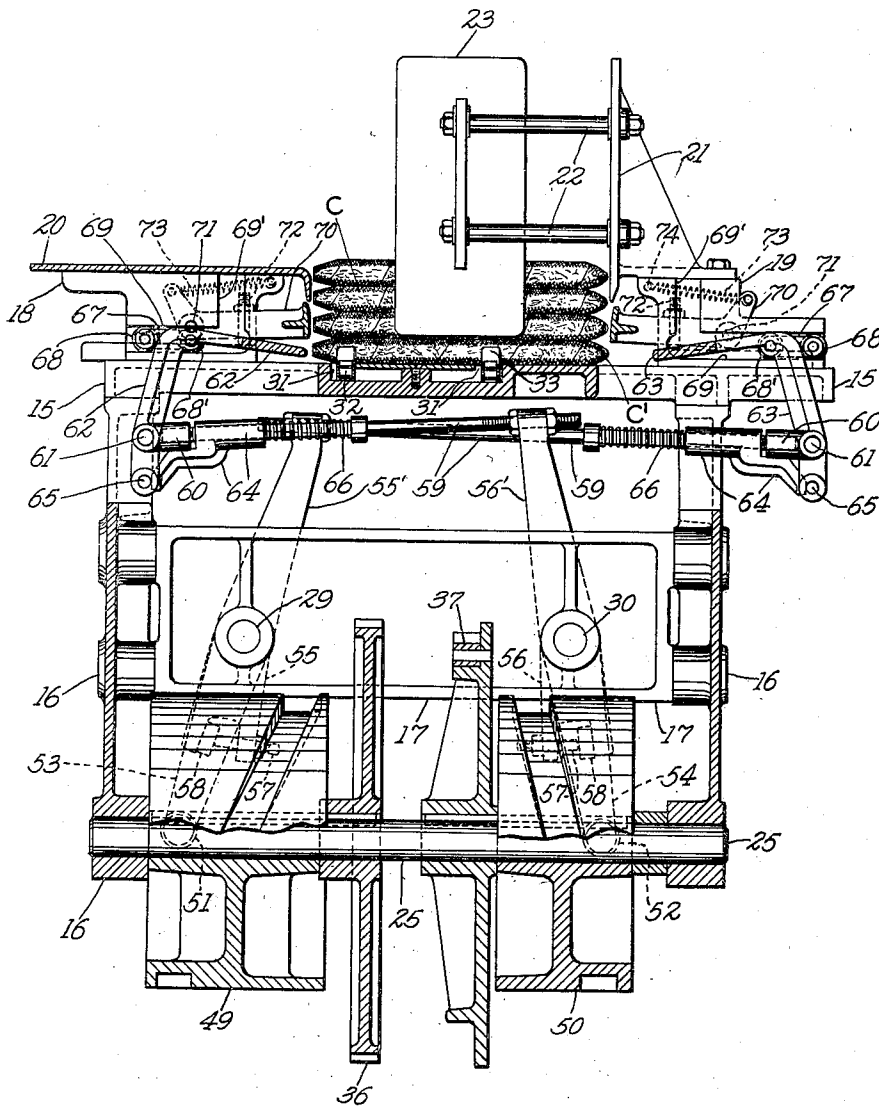
2,138,662

CIGAR FEED FOR CELLOPHANING AND BANDING MACHINES

Filed June 8, 1932

4 Sheets-Sheet 1

FIG. 1



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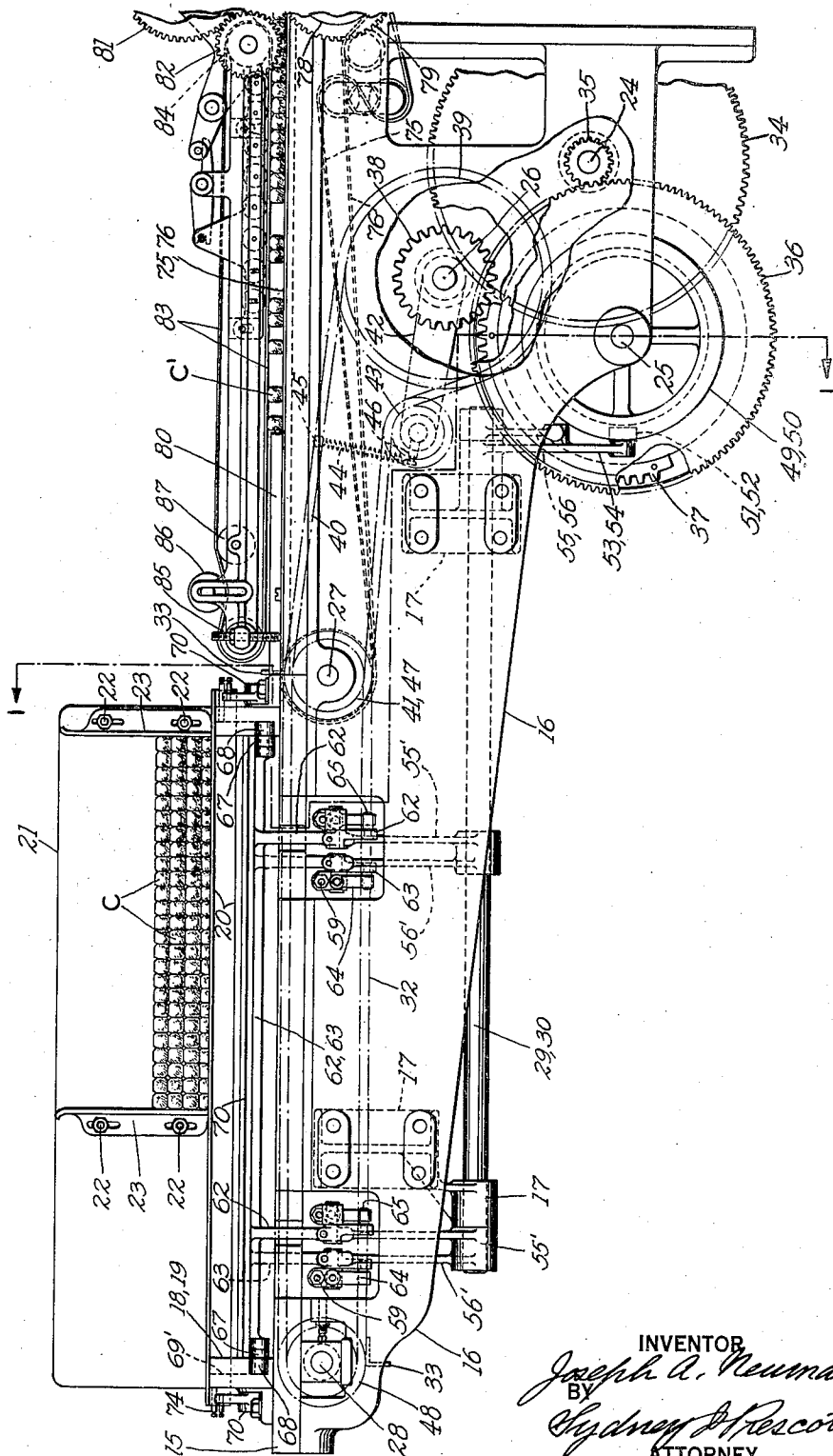
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CIGAR FEED FOR CELLOPHANING AND BANDING MACHINES

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4 Sheets-Sheet 2

FIG. 2



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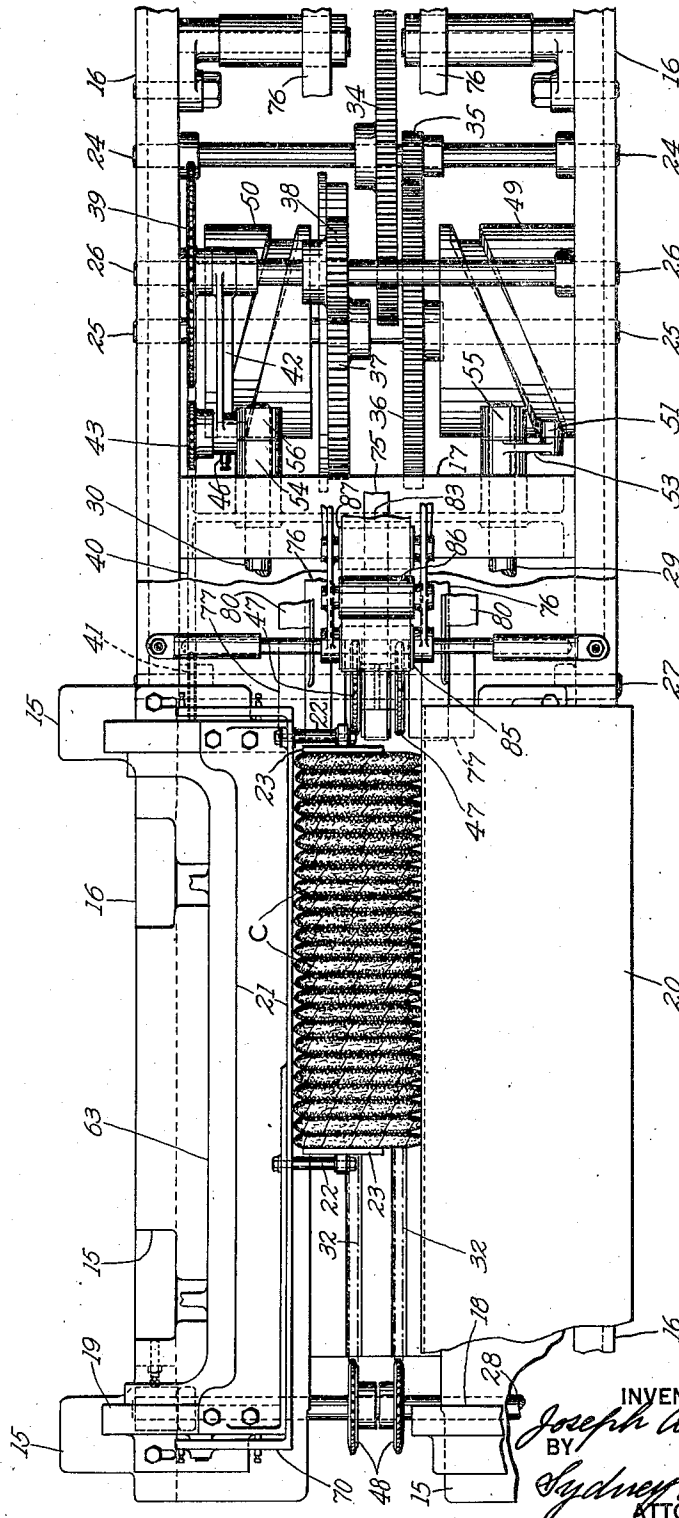
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CIGAR FEED FOR CELLOPHANING AND BANDING MACHINES

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4 Sheets-Sheet 3

FIG. 3



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4 Sheets-Sheet 4

FIG. 4

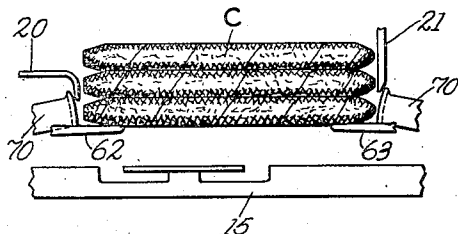


FIG. 7

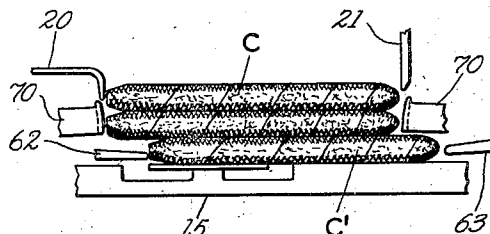


FIG. 5

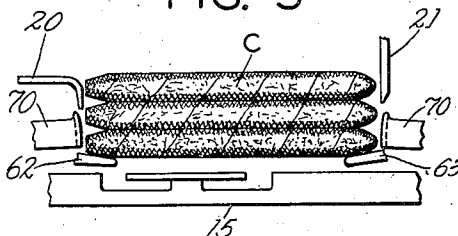


FIG. 8

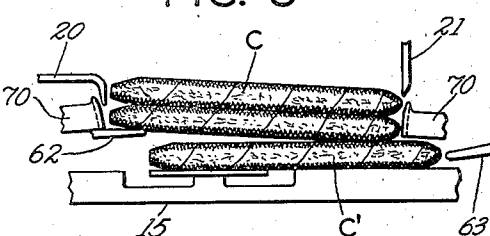


FIG. 6

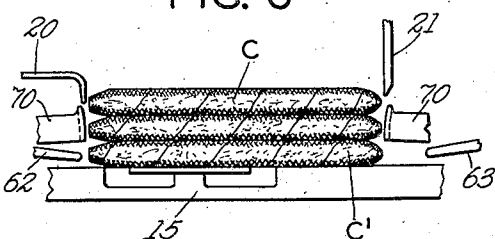


FIG. 9

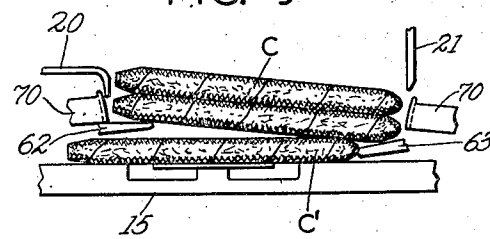
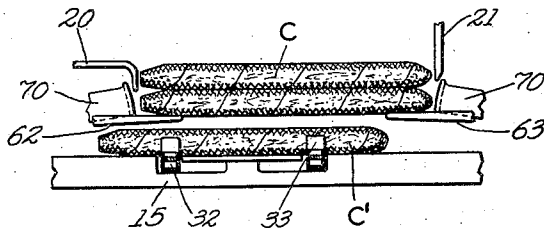


FIG. 10



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2,138,662

CIGAR FEED FOR CELLOPHANING AND
BANDING MACHINES

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Application June 8, 1932, Serial No. 616,109

19 Claims. (Cl. 131—39)

This invention relates to cigar feeds for cigar enveloping and banding machines, its main object being to automatically deliver cigars layer by layer from the bottom of a magazine in which the cigars are stacked in tiers. A further object is to provide an improved cigar feed capable of operating at higher speeds than are possible with any known cigar feeds and operating efficiently on ball headed or blunt ended cigars. With these and other objects not specifically mentioned in view, the invention consists in certain constructions and combinations hereinafter fully described and then specifically set forth in the claims hereunto appended.

In the accompanying drawings which form a part of this specification and in which like characters of reference indicate the same or like parts:

Fig. 1 is a sectional end elevation of the automatic cigar feed, taken on line I—I of Fig. 2;

Fig. 2 is a side elevation of the automatic cigar feed; and

Fig. 3 is a plan view of the same; and

Figs. 4 to 10 are end elevations of the operating parts in different positions, showing the successive steps in the operation of the improved cigar feed.

In carrying the invention into effect there is provided a magazine containing a plurality of stacked layers of cigars, a table underlying said magazine, devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine. In the best forms of construction contemplated said devices are operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars to release and permit the latter to be forwarded along said table by said means, and preferably include swingable plates pivotally supported on arms fixed on a pair of rock shafts and means for swinging said arms to cause the plates to lower the cigars, axially displace the bottom layer of cigars on said table, lift one end of the remaining mass of cigars, push the bottom layer back axially, and then lift the other end of the remaining mass of cigars to free the bottom layer. In the best forms of construction contemplated, also, the magazine includes an end plate and side walls supported from said plate, and the magazine is provided with a platform opposite said plate and pivoted arms underlying said platform and plate and having extensions adapted to guide the ends of the cigars in said magazine. The forwarding means preferably includes conveyor chains provided with spaced

pushers and disposed in grooves in said table. These various means and parts may be widely varied in construction within the scope of the claims, for the particular machine selected to illustrate the invention is but one of many possible concrete embodiments of the same. The invention, therefore, is not to be restricted to the specific construction shown and described.

Referring to Figs. 1, 2 and 3, the cigar feed mechanism is mounted on a table 15 supported by side frames 16 held together by tie frames 17. The table 15 carries support blocks 18 and 19, the blocks 18 supporting a platform 20 and the blocks 19 supporting an end plate 21 which carries horizontal rods 22 attached to which are side plates 23, the plates 21 and 23 forming the walls of a magazine for stacking the cigars to be fed to the machine. The side frames 16 support the drive shafts 24, 25, 26, 27 and 28, and the frames 17 carry the rock shafts 29 and 30.

The cigars C to be fed into a cigar enveloping or a banding machine are taken by an operator from trays placed on the platform 20, into which trays they have previously been pressed to assume the more or less square shape of cigars in a packed box, and are placed in bulk into the magazine formed by the walls 21 and 23 upon feed table 15, in grooves 31 of which run conveyor chains 32 having pushers 33 attached at spaced intervals to a number of their links.

The shaft 24 carries a gear 34 meshing with a drive gear, not shown, and also a gear 35 engaging with a gear 36 fastened to shaft 25, a gear segment 37 carried by shaft 25 meshing with a gear 38 mounted on shaft 26. In this manner, intermittent motion is imparted to the shaft 26 which carries a sprocket 39 driving, by means of a chain 40, a sprocket 41 fastened to shaft 27. An arm 42 loosely mounted on shaft 26 supports a chain tightener sprocket 43 holding the chain 40 taut by means of a tension spring 44, one end of which is anchored to a stud 45 carried by the side frame 16 and the other end fastened to a stud 46 carried by the floating arm 42. The shaft 27 carries a pair of sprockets 47 driving the conveyor chains 32 running over sprockets 48.

Mounted on shaft 25 are drum cams 49 and 50, Fig. 1, engaging with cam rollers 51 and 52, respectively, carried by levers 53 and 54 loosely mounted on shafts 29 and 30 on which are fixed arms 55 and 56 having forked ends with set screws 57. The loose levers 53 and 54 have projecting fingers 58 extending into the forks of the respective fixed arms, the adjusting screws 57

engaging with the fingers 58 and thereby turning the levers 55 and 56 after a predetermined amount of lost motion of the shafts 29 and 30; due to this adjustable feature, the displacement of the bottom layer of cigars may be varied and also various lengths of cigars in successive runs may be operated on.

To the ends of arms 55' and 56' fixedly mounted on shafts 29 and 30 are adjustably fastened rods 59 carrying heads 60 having studs 61 on which are pivoted arms depending from plates or arms 62 and 63, respectively, these plates being permanently held in tension by guide arms 64 slidably mounted on the rods 59 and pressed against stop pins 65 in the arms on plates 62 and 63 by coil springs 66 on rods 59. Each of the plates 62 and 63, on a swingable arm 67 pivoted thereon, carries a pair of rollers 68, 68' traveling in a horizontal track 69 and in a vertical track 69' in blocks 18 and 19, respectively, thereby guiding the arms 62 and 63 as they are moved toward and away from the cigar C by the rods 59, the free ends of plates 62 and 63, which extend laterally across the spaces between the side walls 23 of the magazine, being raised at the end of their stroke towards the cigars and lowered at the beginning of their back stroke. While being raised the plates 62 and 63 engage with lateral extensions of arms 70 pivoted on studs 71 carried by the blocks 18 and 19 and resting on a surface of the blocks by means of a set screw 72, thereby lifting the said plates against the tension of springs 73 anchored on posts 74 in blocks 18 and 19.

The operation of this device is as follows: The cigars C, Fig. 4, when placed from platform 20 into the magazine formed by the end wall 21 and the side walls 23 rest on the plates 62 and 63 with the guides 70 in their up-position into which they have been lifted by the arms 62 and 63, the vertical side extensions of the arms 70 in this position forming gap-closing bridges above the extensions of arms 62 and 63, keeping the cigars in vertical alignment. When the plates 62 and 63 are then lowered by the outward movement of levers 55' and 56' into the position shown in Fig. 5, the arms 70 are returned to their down-position by the springs 73. The continued outward movement of the levers 55' and 56', which produces a corresponding outward travel of the guide rollers 68, 68' in the tracks 69, then moves the plates 62 and 63 outward until, in their end position shown in Fig. 6, the cigars C are discharged from the same, the bottom layer C' now resting on the table 15. The cam 49 controlling the motion of arm 63 is wider than cam 50, giving to arm 63 a greater stroke so that, in the end position, arm 63 is some distance from the cigars C'. The arm 63 now dwells in this position while cam 50 causes the arm 62 to move inwardly into the position shown in Fig. 7, thereby pushing the cigars in the bottom layer C' towards the arm 63. In this position of arm 62, the inner guide rollers 68', Fig. 1, encounters the end of the horizontal track 69 in block 18 so that, upon the continued inward motion of lever 56', the roller 68' is compelled to enter the vertical track 69' while the outer roller 68 continues in track 69, thereby raising the arm 62 and lifting one end of the cigars C from the bottom layer C', as shown in Fig. 8. The arm 63 now is moved inwardly by cam 49, thereby pushing the cigars C' into the position shown in Fig. 9, with the low end of the second layer resting on arm 63. In this position, the roller 68' of arm 63 is at the end of track 69 in block 19, and the con-

tinued inward motion of lever 55' therefore causes the arm 63 to be raised by virtue of the vertical cam track 69' in block 19, thus lifting the other end of the cigars C from the bottom layer C' as shown in Fig. 10. The layer C' now being entirely clear on table 15, is carried away by the pushers 33 on the chains 32.

The cigars C' are delivered by the conveyor 32 onto belts 75 and 76, Figs. 2 and 3, running over idler pulleys 77 on shaft 27 and over pulleys 78 intermittently driven by a gear 79 mounted on a rock shaft through a ball-clutch which permits the gear 79 to turn in one direction only. On entering the belt 75, 76, the cigars are kept in alignment by guides 80 fastened to the frame of the cigar feed. The gear 79, through an intermediate gear, not shown, drives a gear 81 which meshes with a gear 82, thereby intermittently driving a top guide belt 83 running over a pulley 84 and over idler rollers 85, 86 and 87. The belts 75, 76 and 83 run faster than the conveyor 32, so that the cigars C' are separated when being discharged from the latter. The cigar enveloping machine takes the cigars from the delivery belts at a speed corresponding to that of the conveyor 32, hence the cigars again accumulate in solid formation at the delivery point thus preventing any possible missing in feeding the machine.

What is claimed is:

1. In a cigar feed, the combination with a magazine adapted to contain a plurality of stacked layers of cigars, of a table underlying said magazine, devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine, and means for forwarding cigars on said table away from said magazine, said devices being operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars to release and permit the latter to be forwarded along said table by said means.

2. In a cigar feed, the combination with a magazine adapted to contain a plurality of stacked layers of cigars, of a table underlying said magazine, devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine, and means for forwarding cigars on said table away from said magazine, said devices being operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars to release and permit the latter to be forwarded along said table by said means, said magazine including an end plate and side walls supported from said plate, and said magazine being provided with a platform opposite said plate and pivoted arms underlying said platform and plate and having extensions adapted to guide the ends of the cigars in said magazine.

3. In a cigar feed, the combination with a magazine adapted to contain a plurality of stacked layers of cigars, of a table underlying said magazine, devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine, and means for forwarding cigars on said table away from said magazine, said devices being operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars to release and permit the latter to be forwarded along said table by said means, said table being provided with grooves, and said means including conveyor chains disposed in said grooves and provided with spaced pushers.

4. In a cigar feed, the combination with a magazine adapted to contain a plurality of stacked layers of cigars, of a table underlying said magazine, devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine, and means for forwarding cigars on said table away from said magazine, said devices being operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars to release and permit the latter to be forwarded along said table by said means, said devices including a pair of rock shafts, arms fixed on said rock shafts, swingable plates pivotally supported from said arms and means for swinging said arms and plates to cause said plates to lower the cigars, axially displace the bottom layer of cigars on said table, lift one end of the remaining mass of cigars, push the bottom layer of cigars back axially, and then lift the other end of the remaining mass of cigars to free the bottom layer.

5. The combination with a magazine adapted to contain a plurality of stacked layers of cigars, of a table underlying said magazine, and devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine, said devices being operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars.

6. The combination with a magazine adapted to contain a plurality of stacked layers of cigars, of a table underlying said magazine, and devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine, said devices being operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars, and said devices including a pair of rock shafts, arms fixed on said rock shafts, swinging plates pivotally supported from said arms, and means for swinging said arms and plates to cause said plates to lower the cigars, axially displace the bottom layer of cigars on said table, lift one end of the remaining mass of cigars, push the bottom layer of cigars back axially, and then lift the other end of the remaining mass of cigars to free the bottom layer.

7. The combination with a magazine adapted to contain a plurality of stacked layers of cigars, of devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine, said devices being operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars.

8. The combination with a magazine adapted to contain a plurality of stacked layers of cigars, of devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine, said devices being operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars, said magazine including an end plate and side walls supported from said plate, and said magazine being provided with a platform opposite said plate and pivoted arms underlying said platform and plate and having extensions adapted to guide the ends of the cigars in said magazine.

9. The combination with a magazine adapted to contain a plurality of stacked layers of cigars, of devices for engaging both ends of the bottom layer of cigars to support the mass of cigars in said magazine, said devices being operative to lower the cigars in said magazine and lift the mass of cigars clear of the bottom layer of cigars, said devices including a pair of rock shafts, arms fixed on said rock shafts, swinging plates piv-

otally supported from said arms, and means for swinging said arms and plates to cause said plates to lower the cigars and lift the mass of cigars clear of the bottom layer of cigars.

10. The combination with a table, of a magazine supported on said table and adapted to contain a plurality of stacked layers of cigars, said magazine including an end plate supported on said table and side plates supported from said plate, and said magazine being provided with a platform opposite said plate and arms pivotally supported from said table and having extensions underlying said platform and plate and adapted to guide the ends of the cigars in said magazine.

11. In a cigar handling machine, a hopper, a pair of stack supporting members associated with said hopper, and mechanism for pivotally moving said members to segregate one row of cigars from the bottom of the stack, said members being the sole means to cause segregation.

12. In a cigar handling machine, a hopper, a pair of stack supporting members associated with said hopper, means for pivotally moving said members to segregate one row of cigars from the bottom of the stack, and means for vertically moving said members to bodily move the stack.

13. In a cigar handling machine, a hopper, a pair of stack supporting members associated with said hopper, and means for pivotally moving said members to segregate one row of cigars from the bottom of the stack, the pivotal movement of said members being adapted to move the row of cigars after their segregation.

14. In a cigar feed, the combination with a magazine adapted to contain a stack of cigar layers, of means for displacing lengthwise the bottom layer of cigars in said stack and raising the remaining mass of cigars within said magazine to release said displaced layer, mechanism for removing said displaced layer after it has been released, said means including a member adapted to engage underneath the end of the next overlying cigar layer exposed during the displacement of the bottom layer, and mechanism for actuating said member to engage under said exposed end of the next cigar layer and raise the same.

15. In a cigar feed, the combination with a magazine adapted to contain a stack of cigar layers, of means for displacing lengthwise the bottom layer of cigars in said stack and raising the remaining mass of cigars within said magazine to release said displaced layer, said means including members successively operating to displace the bottom layer of cigars lengthwise in opposite directions sufficiently to permit said members to engage underneath the ends of the next layer of cigars overlying the bottom layer, and mechanism for actuating said members to displace the bottom layer and raise them against the ends of the next layer so exposed and thereby lift the mass of cigars clear of the bottom layer.

16. In a cigar feed, the combination with a magazine adapted in successive runs to contain stacks of cigar layers of various lengths, of means for displacing the bottom layer of cigars in said stack lengthwise and engaging underneath the end so exposed of the next layer of cigars and thereby raising the same, said means being adjustable to vary the displacement of the bottom layer of cigars so that the bottom layer may be displaced sufficiently in the case of various cigar lengths to expose one end of the next layer of cigars sufficiently to permit the same to be engaged and raised.

17. In a cigar feed, the combination with a magazine adapted to contain a stack of cigar layers, of means for displacing lengthwise the bottom layer of cigars in said stack and raising the remaining mass of cigars within said magazine to release said displaced layer, mechanism for removing said displaced layer after it has been released, said means including a member adapted to engage and displace said bottom layer and raise the remaining mass of cigars, and mechanism for actuating said member to effect said displacement and raise the remaining mass of cigars in said stack by engaging the overhanging portion of the next layer overlying said displaced layer.

18. In a cigar feed, the combination with a

magazine adapted to contain a stack of cigar layers, of supporting means for a layer of cigars for displacing the bottom layer of cigars in said stack lengthwise successively in one direction and then in the other, said means being adjustable to vary the displacement of the bottom layer of cigars.

19. In a cigar handling machine, a hopper constructed to contain a stack of box rows of cigars, a pair of stack supporting members associated with said hopper and having a width sufficient to support a row of cigars by their ends, and means for pivotally moving said members whereby said members are the sole means to segregate one row of cigars from the bottom of the stack.

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