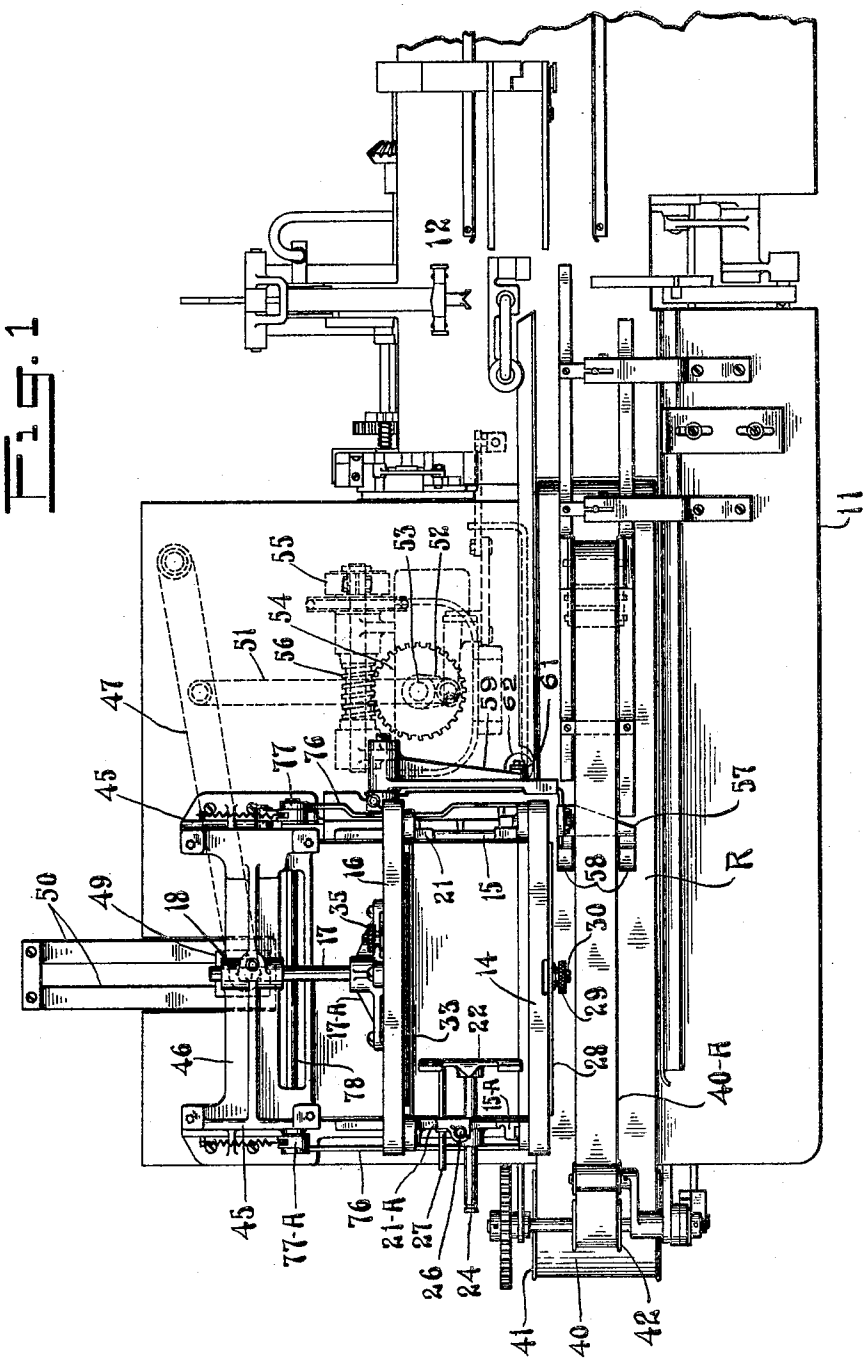
April 25, 1933. F. X. MALOCSAY 1,905,728

CIGAR HANDLING MACHINE

Filed March 2, 1931 5 Sheets-Sheet 1

Fig. 1



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CIGAR HANDLING MACHINE

Filed March 2, 1931 5 Sheets-Sheet 2

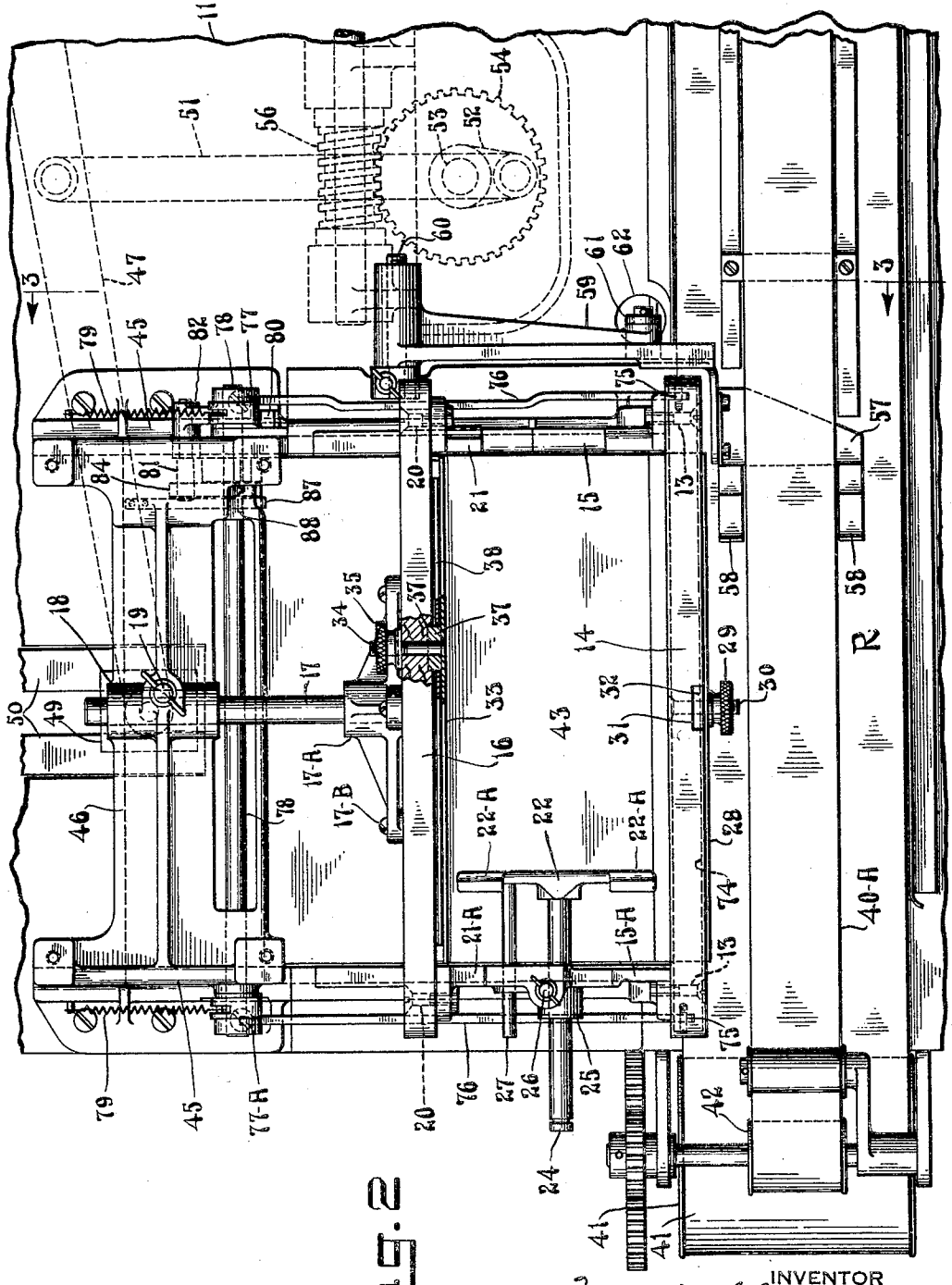


Fig. 2

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CIGAR HANDLING MACHINE

Filed March 2, 1931 5 Sheets-Sheet 3

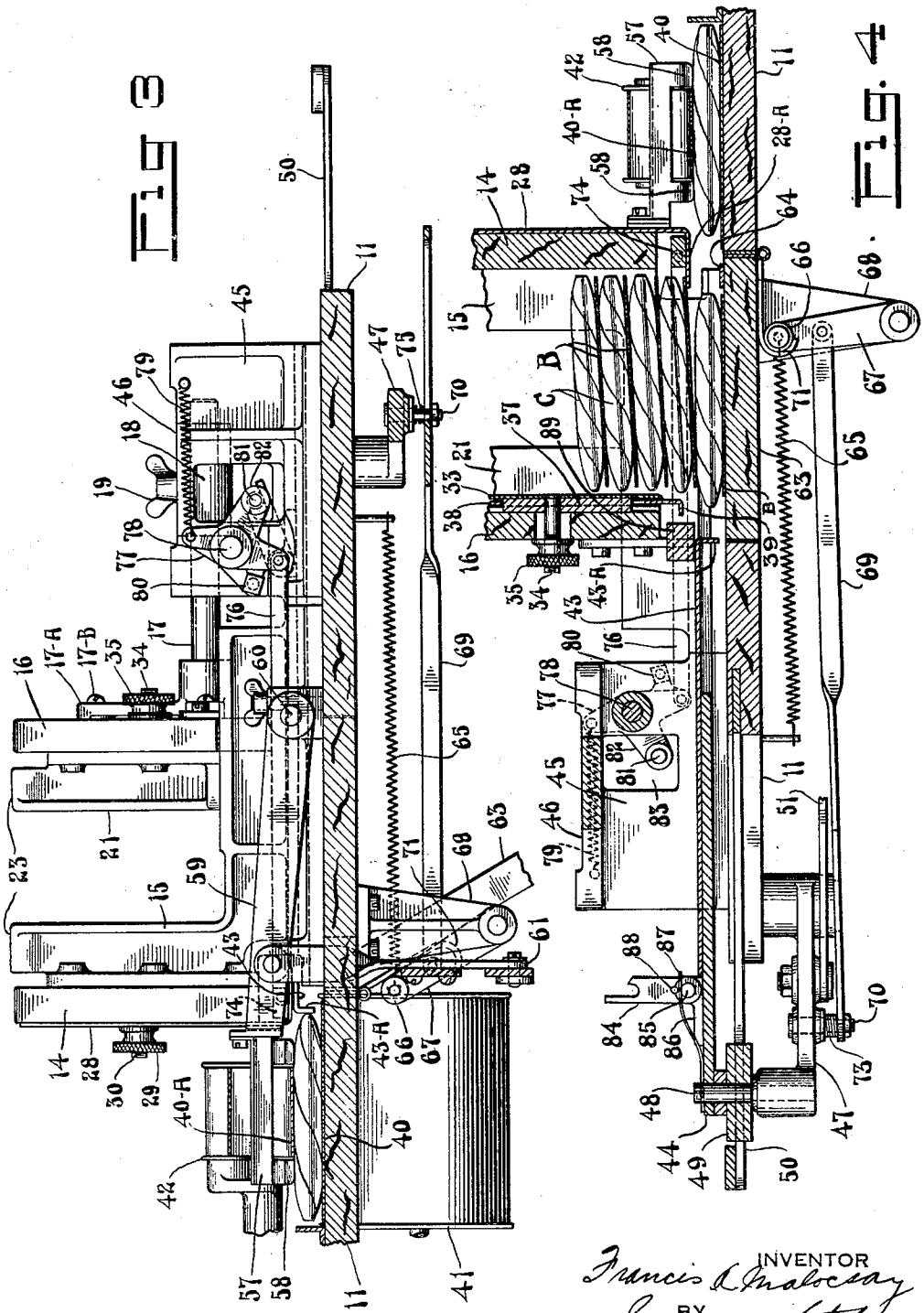


Fig. 3

Fig. 4

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CIGAR HANDLING MACHINE

Filed March 2, 1931 5 Sheets-Sheet 4

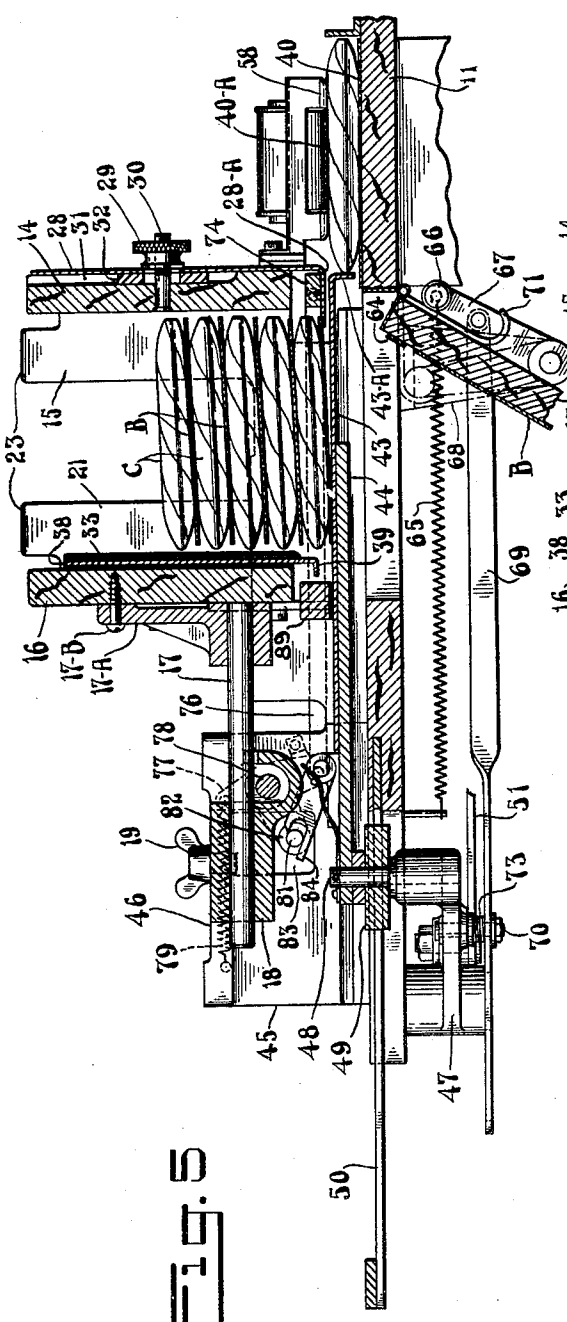


Fig. 5

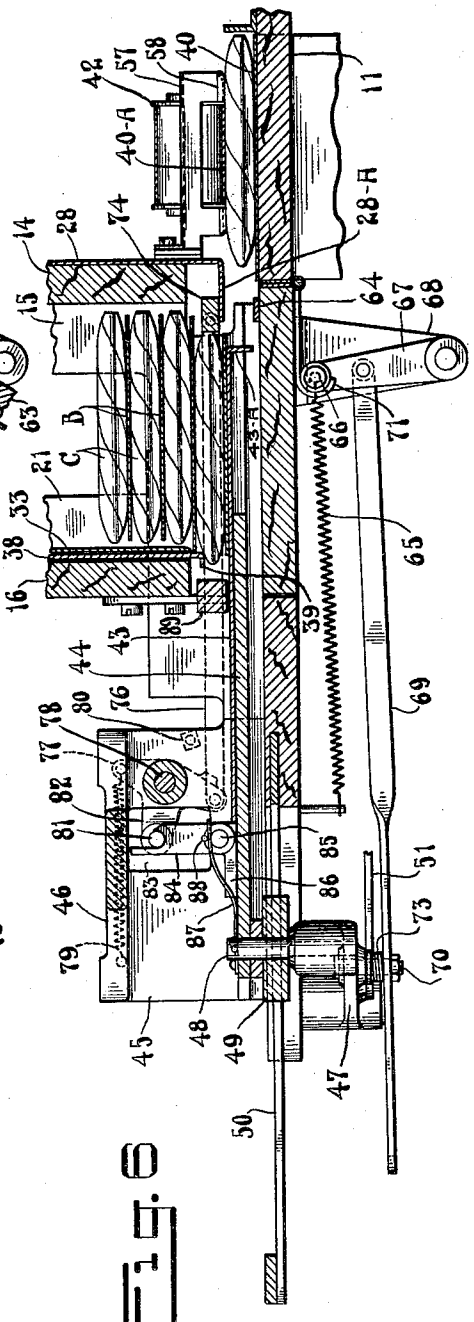


Fig. 6

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CIGAR HANDLING MACHINE

Filed March 2, 1931 5 Sheets-Sheet 5

Fig. 7

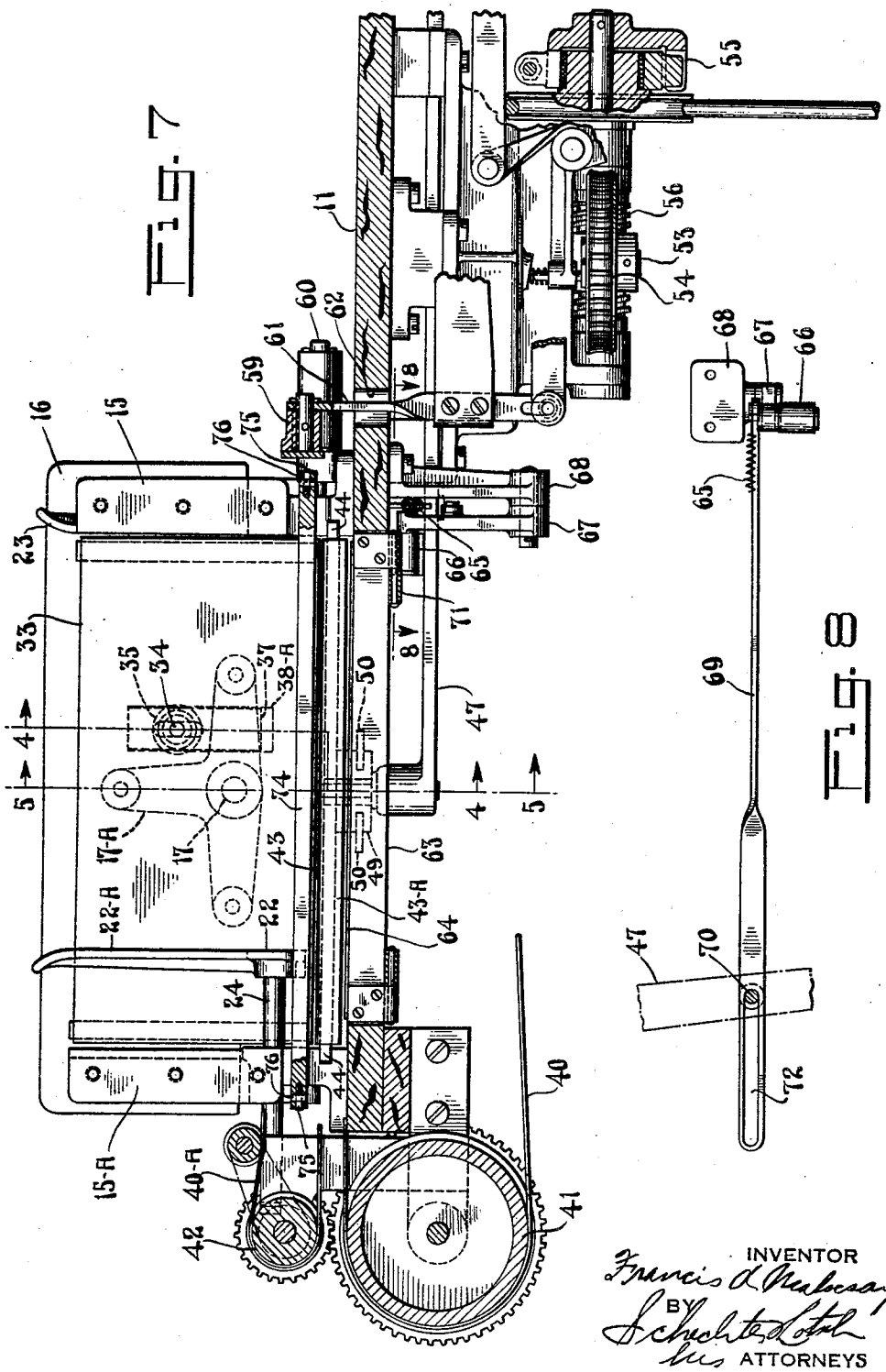


Fig. 8

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Patented Apr. 25, 1933 1,905,728

UNITED STATES PATENT OFFICE

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CIGAR HANDLING MACHINE

Application filed March 2, 1931. Serial No. 519,347.

It is among the general objects of the present invention to provide a machine embodying automatic means for supplying cigars from a hopper to a conveyor, and in which automatic hopper feed mechanism operates in response to the conveyor so that synchronism of their respective actions is established.

Another important object of the invention is to provide means whereby the cigars are capable of retention while in the hopper in proper conformation, this feature of the invention providing an important commercial improvement by avoiding the usual rounding of cigars by their manipulation in such machine.

A further object is to provide a handling machine which is adapted to feed cigars to a conveyer belt in rows from a stack of cigars, said machine being capable of adjustment to receive and discharge rows of cigars of various sizes and shapes, and also adjustable to receive and discharge rows of cigars varying in the number of individual cigars.

Another object of the invention is to provide for the feeding of separated rows or layers of cigars from a hopper in which the rows or layers are segregated by shape-retaining boards or trays and which provides for the discharging of the boards or trays from the bottom of the hopper as an incident to the feeding of each row of cigars.

A further object of my invention is to provide a cigar handling mechanism from which segregated rows of cigars are discharged to a conveyer belt while its means of segregation is retained and discharged into another part of the mechanism; said mechanism also retaining the segregating means of the following row of cigars in its normal position in such a manner to prevent its being discharged with the previous row of cigars regardless of the thickness of said segregating means.

A further object of the invention is to provide automatic means which act to automatically supply a row of cigars to the conveyer belt after the last cigar of the previously supplied row has been discharged to the banding mechanism.

Another object of the invention is to provide a wholly coordinated and combined assembly by which the foregoing objects are carried out in a novel, simple and improved manner and thereby increase the production and reduce the cost of applying bands to the cigar.

Other more specific objects and advantages of the apparatus will appear as the nature of the improvements is better understood, the invention consisting substantially in the novel arrangement and corelation of instrumentalities herein fully described and illustrated in the accompanying drawings wherein similar reference characters are used to describe corresponding parts throughout the several views and then finally pointed out and specifically defined and indicated in the appended claims.

The disclosure made the basis of exemplifying the present inventive concept suggests a practical embodiment thereof, but the invention is not to be restricted to the exact details of this disclosure, and the latter, therefore, is to be understood from an illustrative, rather than a restrictive, standpoint. It will be understood that the various features of the invention may be separately applicable despite their cooperation herein shown.

The invention is adapted to be used in connection with a banding machine such as I have briefly illustrated at the right hand side of Fig. 1, but which is completely illustrated in my Patent No. 1,261,832, dated April 9th, 1918, in which cigars may be removed from the box in which they were originally packed, fed to the banding machine and returned to the box in the same order that they were originally boxed. In this connection a receptacle or hopper may be used for holding the cigars of the type illustrated in my Patent No. 1,653,641, dated December 27, 1927, which form of receptacle or hopper is adaptable for use in connection with my present invention.

In one embodiment of the invention as herein disclosed there is provided a hopper

in which rows of cigars may be placed, between which rows spacer boards or trays are used in order to retain the angular cross-section of the cigars. Under the hopper, a reciprocating pusher plate is mounted which discharges the bottom row of cigars from the hopper to the conveyor belt. The pusher assembly includes a pivoted door which acts to discharge from the bottom of the hopper the spacer boards or trays so that they are not supplied with the cigars to the conveyor belt, and further a special retainer which will prevent any accidental discharge movement of such spacers above the row of cigars being discharged.

A feeler shoe is provided which is associated with the conveyor belt. The movement of the feeler shoe is limited by the cigars and operates to drop when the supply of cigars to the belt is exhausted or when the last cigar of one row has passed thereunder. The shoe controls a clutch mechanism which operates the hopper pusher so that the feed of cigars to the belt is automatically controlled in response to the passage of the cigars through the banding assembly, regardless of the number of cigars in a row or the fact that some may have been removed from the row.

The invention also provides controlling means associated with the band supply of the associated banding mechanism in such manner as to stop the machine upon failure of band supply. The means is also arranged so that upon exhaustion of the cigars in the hopper, the clutch mechanism will be operated to stop the machine. Thus co-operated joint control of the mechanisms is maintained.

In connection with the features hereinafter specifically pointed out, it will be understood that the invention is also concerned with the specific mechanical means by which the advantageous functions are achieved, which features combine, cooperate and interrelate in synchronous manner to provide a wholly automatic, simple, inexpensive, rugged and durable apparatus.

The inventive idea involved is capable of receiving a variety of mechanical expressions, one of which for the purpose of illustration is shown in the accompanying drawings, in which—

Fig. 1 is a plan view of a machine embodying my invention showing the connection with a banding assembly;

Fig. 2 is an enlarged plan view partly broken away of the hopper mechanism;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 7 showing the pusher bar in the back position ready to eject a row of cigars, while the row above with its spacer or tray is retained in position;

Fig. 5 is a sectional view taken on line 5—5 of Fig. 7 showing the cigars moved forward on to the conveyer belt by the pusher with the trap door opened and a spacer or tray dropping from same; the lowermost row of cigars still being retained in the position illustrated in Fig. 5;

Fig. 6 is a sectional view similar to Fig. 4 showing the pusher in its normal position with the lower row of cigars pushed backward and off the retainer, from which position they will take the position illustrated in Fig. 4 when the backward movement of the pusher is continued;

Fig. 7 is a front view partly in section with the front wall of the hopper removed;

Fig. 8 is a plan view taken on line 8—8 of Fig. 7 of the trap door operating mechanism.

With particular reference to Fig. 1 of the drawings, it will be noted that the conventional operating means and banding assembly per se (partly broken away) are shown in lighter lines, whereas the novel features of the present invention are emphasized by the use of heavier lines. The band-applying assembly is mounted over the table 11 of the machine and is generally indicated by the numeral 12. The right hand end of the table is shown as continuing and may be suitably connected with associated apparatus not shown. The left hand end of the table is supported by a suitable support not shown and has mounted thereon the cigar hopper, feeding belts and feed control mechanism as will be hereinafter described in detail.

The hopper comprises the fixed front plate 14 which is fastened to the end frames 15 and 15—A by means of countersunk head screws 13 (Fig. 2). The end frames 15 and 15—A are secured to the table 11 by means of screws not shown in the drawings. The rear plate 16 is adjustable by the use of the rod 17 which is adjustably received within the clamping sleeve 18 carrying the thumb-screw 19 for the purpose of gripping the rod 17. The plate 16 and the rod 17 are secured to one another by means of the spider 17—A and the screws 17—B. Secured to the rear plate 16 at its outer extremities by means of the countersunk head-screws 20 are the vertical end plates 21 and 21—A which are in line with the end frames 15 and 15—A respectively. The lower ends of these end plates are in slidable contact with the upper surfaces of the end frames 15 and 15—A, which is most clearly illustrated in Figs. 2 and 3; the purpose of which is to prevent the rear plate 16 from tilting or swinging around its pivotal center which is the rod 17.

Adjustably mounted in the end frame 15—A is the end guide 22 having the vertical guide fingers 22—A which extend to the full height of the front and rear plates 14 and

16 respectively as illustrated in Fig. 7. The tops of these fingers 22—A are slightly curved outward to facilitate the insertion of the rows of cigars. The upper ends of the end frame 15 and the vertical end plate 21 are extended to equal the height of the fingers 22—A as at 23, (Figures 3, 5 and 7 of the drawings) and are also slightly curved outward to conform with the tops of the fingers 22—A. The end guide 22 is supported on the rod 24 which is slidably mounted in the boss 25 of the end frame 15—A and is secured in position by the thumb-screw 26 for that purpose. The end guide is prevented from swinging by means of the pin 27 which is fastened in the guide but free to slide in the end frame 15—A which is illustrated in Fig. 2.

Adjustably mounted on the outside of front plate 14 is the plate 28 integral with the inwardly extending flange 28—A, the purpose of which will be more fully described hereinafter. This plate 28 is held in its adjusted position by the knurled nut 29 which is carried by the screw 30 secured in the front plate 14; the screw passing through a rectangular aperture in the plate 28, (see Fig. 5 of the drawings) for the purpose of adjustment. Secured to the rear surface of the plate 28 and retained in the groove 31 is the slide block 32; the purpose of which is to prevent the plate 28 from swinging and to act as a guide when the plate is being adjusted.

The rear plate 16 has adjustably mounted thereon the plate 33 which is secured in its adjusted position by the screw 34 which passes through a rectangular aperture in the plate 16 (see Fig. 4) and the knurled nut 35. Secured to the rear surface of the plate 33 and engaging in a groove 36 is the rectangular guide block 37; the purpose of which is to prevent turning or twisting of the plate 33, and further, to act as a spacer and guide for the plate 38 integral with the short rearwardly extending flange 39, the purpose of which will be more fully described hereinafter. The plate 38 is free to slide vertically by means of the guide block 37 engaging in the rectangular aperture 38—A in said plate for that purpose. Reference is made to Fig. 7 of the drawings.

The foregoing is a detail description of those parts which constitute an adjustable rectangular hopper trough in which may be deposited stacked rows of cigars. The adjustment for the length of the cigars to be used is made by sliding the rear plate 16 backward or forward to suit the cigar, and the length of the row is taken care of by the adjustability of the end guide 22. The thickness or cross-section of the cigars is adjusted for by the plate 28 and its integral flange 28—A, the position or height of the flange 28—A above the top of the table 11 being such to allow the cigars to pass freely under it, which is most clearly illustrated in Fig. 4. This is only one of the uses of this flange 28—A; its other uses are more fully described hereinafter.

The cigars identified by the letter C are positioned within the hopper in rows parallel to the end plates 15, 21 and 22. Spacer boards B of cardboard or the like are used between the rows of cigars to retain them in individual tiers to facilitate handling and against deformation from their preferred angular cross-section. The spacer boards B may be substituted by individual trays such as are used in the original manufacture of cigars and in either case the apparatus will accommodate their discharge.

Parallel to the hopper a cigar runway R extends toward the banding assembly. The runway is provided with a wide lower conveyer belt 40 over which lies a narrower conveyer belt 40—A. These belts are synchronously propelled by respective geared pulley wheels 41 and 42, which are operated in any desired manner preferably in synchronism and thus in joint control with the remainder or associated apparatus. For instance, the arrangement may be such that synchronous drive of the belts with the banding assembly is maintained.

When the rows of cigars with their spacers are in position in the hopper, the bottom row and its spacer take the position illustrated in Fig. 5; the forward end of the spacer resting upon the flange 28—A and its rear end resting upon the pusher plate 43 integral with the downwardly extending flange 43—A mounted upon the reciprocating bed 44. This bed is slidably mounted at its sides in parallel grooves machined in the inside surfaces of the end frames 15 and 15—A (see Fig. 7) and the inside surfaces of the legs 45 of the bracket 46 which is secured to the top of the table 11, its legs 45 abutting and in alignment with the end frames 15 and 15—A. The pusher plate and its bed receive their reciprocating motion from the lever 47 at timed intervals in accordance with the rate at which the cigars are moved from in front of the hopper by the belts 40 and 40—A, and also in accordance with the discharge of cigars from the banding assembly. The lever 47 is connected to the pusher bed 44 by the pin 48 and the slide block 49 mounted between the guides 50; the pin being free to slightly allow for the swing of the lever. The lever 47 is moved backward and forward by the connecting link 51 intermediately connected to it and a crank 52 mounted on the shaft 53 to which is secured a worm wheel 54; the rotation of which is controlled by the clutch 55 through the medium of the worm 56. The clutch 55 is actuated by the banding assembly and by the rows of cigars passing between the belts 40

and 40—A, and under the feeler shoe 57 (see Figs. 1, 2, 3, 4 and 6) which rides between the belt 40—A and has the fingers 58 which ride across the top of the cigars. The feeler shoe is secured to the lever 59 (see Fig. 7) which is supported by the pin 60. Intermediately connected to the lever 59 is the link 61 which extends downward through the aperture 62 cut in the table 11; the lower end of this link has secured thereto the means of actuating the clutch 55 which are only shown in part in Fig. 7 but which are fully described in my application on cigar banding machines, Serial No. 492,437, filed October 31, 1930.

The table includes a hinged trap door 63 under the hopper, forming the bottom thereof when the pusher 43 is in the back position as illustrated in Fig. 4. Near the hinged edge of the door it carries a stop 64. As the cigars are moved forward by the pusher 43, the forward edge of the board B or equivalent tray strikes the stop 64 and is thus held on the trap door 63 while the pusher moves over it to eject the cigars C to their position between the belts. The top of the door is normally held flush with the top of the table by a spring 65 and by a roller 66 (see Figs. 4 and 6) carried by the end of an arm 67 pivoted to a bracket 68 secured to the table 11. The arm 67 is actuated by a link 69 having a lost motion slot connection with the pusher operating bolt 70 carried by the pusher lever 47, and the roller 66 engages the hook 71 secured to the underside of the door. At the end of the forward movement of the pusher 43, the bolt reaches the forward end of the lost motion aperture 72 (see Fig. 8) and thus moves the arm 67 forward against the tension of spring 65 thereby releasing the hook 71, permitting the door to be moved to open position as shown in Fig. 5. Thus discharging of the spacer board B is effected by dropping by gravity through the table.

During the backward movement of the pusher to the position illustrated in Fig. 6, the tension of the spring 65 pulls the arm 67 backward causing the trap door to be swung upward into its original closed position as shown. When the door is in this position, the roller 66 has engaged the hook 71, which holds the arm 67 in this position against the tension of the spring 65. This position of the arm and roller creates a lock to prevent the trap door from swinging downward when the weight of the stack of cigars is placed upon it when the pusher moves backward to the position illustrated in Fig. 4. During this movement of the pusher, the link 69 remains fixed while the pusher operating bolt 70 slides in the lost motion aperture 72 for that purpose. The coil spring 73 interposed on the bolt 70 between the link 69 and the pusher lever 47 allows for flexibility at this point when the link is moved upward and downward as it operates the arm 67.

An important feature of the invention which helps to prevent the accidental feeding of the spacer B above the lowermost row of cigars is the stop plate 38 adjustably and slidably carried by the rear plate 16 which has already been described herein. Cooperating with stop plate 38, but independently operated, is the pusher bar 74 (see Figs. 4, 5, 6 and 7) which rests in slidable contact upon the flange 28—A of the adjustable plate 28 carried by the front plate 14 of the hopper. The width of the pusher bar 74 is slightly less than the thickness of the front plate 14 to allow the front end of the cigars and spacers to rest upon the flange 28—A without interference as illustrated in Figs. 4 and 5. The ends of the pusher bar 74 extend beyond the end frames 15 and 15—A of the hopper (see Figs. 2 and 7) at which points it has hinged to it at 75 the connecting links 76. The rear ends of these links are pivotly connected to the bell cranks 77 and 77—A (see Fig. 2) which are secured upon the ends of the shaft 78 which is mounted in suitable bearings integral with the bracket 46. The pusher bar 74 is normally held in its forward inoperative position by the tension of the coil springs 79 which are fastened to the upper arms of the bell cranks 77 and 77—A an anchored to the sides of the bracket 46. The forward movement of the pusher bar is limited by the stop 80 which is adjusted to prevent the bar striking the plate 28 while allowing it to clear the inner surface of the front plate. The rearward movement of the pusher is actuated by the inwardly extending pin 81 carried by the arm 82 of the bell crank 77, which passes through the aperture 83 to engage the pawl 84; pivoted at 85 to the butt 86 secured to the top of the pusher bed 44 (see Fig. 7). The flat spring 87, which is also secured to the pusher bed, holds the pawl 84 in a normal vertical position as illustrated in Fig. 4 by exerting a pressure under the centrally located pin 88.

Having thus described my invention in detail, I will now describe its operation.

As the last cigar of the row previously ejected passes beneath the fingers 53 of the feeler shoe 57, the shoe will drop and actuate the clutch 55, which, through its cooperating mechanism pushes the lever 47 rearward. At the start of this movement the various parts are in the position illustrated in Fig. 5 and as the lever moves to the position illustrated in Fig. 6, the trap door 63 has been closed, the pusher 43 has been moved approximately one quarter of its full travel, and the hooked portion of the pawl 84 has caused the bell crank 77 to be rotated in

a clockwise direction to pull the pusher bar 74 backward. Before describing the action that took place in connection with bottom row of cigars, I will explain the action of the pawl 84. Referring to Fig. 5 it will be seen that the coil spring 79 is exerting a downward pressure on the pawl 84 through the pin 81, the pull of said coil spring being greater than the force exerted by the flat spring 87. As the pusher bed 44 starts to move rearward, the pin 81 slides into the hook of the pawl and the continued movement of the bed causes the pawl to push the pin upward, turning the bell crank 77 in a clockwise direction against the action of the coil spring 79 while the pawl itself swings upward on its pivot 85 to the vertical position illustrated in Fig. 6. As the bed continues rearward, the pawl will swing downward toward the right (not shown in the drawings) as it passes the dead center. The pin 81 continues to remain in engagement with the hook of the pawl until the pawl has been forced down to take a position directly opposite to that illustrated in Fig. 5. During this time the pusher bar 74 has been pulled forward and pushed back again to its normal position. As the bed continues rearward the hook of the pawl disengages from the pin 81 and immediately swings upward in a counter-clockwise direction to take the vertical position illustrated in Fig. 4. When the pusher bed is caused to move forward again, the pin 81 is brought into contact with the edge of the pawl, upon which edge it rides, forcing the pawl to swing downward to the left in a counter-clockwise direction until said pin has slipped off the edge of the pawl and into the hooked portion, returning to the position illustrated in Fig. 5.

Referring again to Fig. 5, and more generally to the bottom row of cigars and its spacer, it will be readily seen that the front end of the spacer is resting upon the edge of the flange 28—A, supporting the bottom row of cigars at this point, and its rear end is resting upon the pusher 43. When the pusher started rearward and actuated the bar 74, as already described in the foregoing paragraph, the bar came into contact with the front edge of the card and the cigars. This movement pushed the cigars and the spacer backward and off the flange 28—A as illustrated in Fig. 6. During the rearward movement of the cigars, their rear ends were brought into contact with the flange 39 of the plate 38. This contact causes the rounded end of the cigars to push the plate upward as shown. The purpose of this plate is to prevent the spacer above the cigars from sliding backward under the rear plate 16 due to friction between itself and the cigars. It is readily seen, that if this second spacer were allowed to slide too far backward, it would not fall upon the flange 28—A. As the pusher 43 continues its rearward movement, the cigars drop down upon the trap door 63 as illustrated in Fig. 4. During this part of the pusher movement, the spacer that is in contact with it usually remains in the position illustrated in Figs. 4, 5 and 6, but should the friction between the pusher and the spacer be greater than that between the cigar and the spacer, the spacer will slide backward with the pusher; and to insure its dropping down upon the trap door with the cigars, the bar 89 is interposed between the bottom of the rear plate 16 and the pusher 43 for that purpose; the bottom of the bar barely clearing the surface of the pusher to prevent the spacers from passing or becoming wedged underneath it.

The bottom row of cigars and the spacer have now taken the position illustrated in Fig. 4. The pusher then moves forward and pushes the cigars in front of it by means of the flange 43—A. They pass under the flange 28—A and are deposited between the belts as illustrated in Fig. 5. During this movement of the cigars the spacer on the trap door slides with the cigars until it strikes against the stop 64 which arrests its travel, and when about three quarters of the length of the cigars has passed under the flange 28—A, the pusher being in the position shown in Fig. 6, the trap door starts to open, and when it is fully open as shown in Fig. 5, the spacer slides off of its own weight to be discarded into a receiver which is not shown in the drawings as it does not constitute a part of my invention.

It will be understood that the machine is applicable for use with either board spaced rows of cigars, trays of cigars, or with merely loose cigars; in the latter case the connecting link may be detached from the trap door and the door will not be moved but will merely act as a support for the cigars before being ejected.

From this consideration of the hopper to belt feeding mechanism, it will be seen that the machine automatically performs the required insertion under the belt of an unmutilated row of cigars from the bottom of the hopper and that the machine discharges as an incident to such feedings the spacer board or tray. It will be seen that the cigar supply is automatically co-ordinated with movement of the cigars by the belt and that an overfeeding of cigars from the hopper is impossible as the cigar feed is directly controlled by the passage of the last cigar from under the feeler fingers. The invention will thus clearly be seen to avoid the necessity of manual control of the hopper cigar supply and will automatically conform to the speed at which the cigars are being banded and discharged from the apparatus. While this portion of the invention is disclosed in con-

nection with one preferred structural embodiment thereof, it will be clearly understood that various changes in the mechanical construction and a full use of equivalents may be resorted to throughout without departing from the spirit of the invention.

In accordance with the provisions of the patent statute, I have described my invention, but I desire it understood that it is not confined to the particular form shown and described, the same being merely illustrative, and that the invention can be carried out in other ways without departing from the spirit of my invention, and therefore, I claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claims, and by means of which objects of my invention are attained and new results accomplished; as it is obvious that the particular embodiments herein shown and described are only some of many that can be employed to attain these objects and accomplish these results.

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

1. In a cigar handling machine, a cigar hopper adapted to receive rows of cigars and intervening spacers, means for discharging individual rows of cigars from the hopper and means for individually discharging the spacers from the hopper.

2. In a cigar handling machine, a cigar hopper adapted to receive rows of cigars and intervening spacers, means for discharging individual rows of cigars from the hopper and means for individually discharging the spacers from the hopper, said last mentioned means including a trap door and a spacer stop mounted thereon to prevent movement of the spacer from the hopper with the cigars.

3. In a cigar handling machine, a cigar hopper adapted to receive rows of cigars and intervening spacers, means for discharging individual rows of cigars from the hopper, means for individually discharging the spacers from the hopper and cooperative means including a bar for moving a row of cigars into isolated position for subsequent forward discharging movement.

4. In a machine of the class described, a cigar hopper adapted to receive cigars and spacers therefor, and means for moving said cigars forwardly from the hopper independently of their associated spacers.

5. In a machine of the class described, a cigar hopper adapted to receive cigars and spacers therefor, means for moving said cigars forwardly from the hopper independently of their associated spacers, and means for independently discharging the spacers.

6. In a cigar hopper, a retaining plate for cigars and spacers, means for disengaging a row of cigars and a spacer from the retaining plate, and means for subsequently discharging the cigars and spacers from the hopper.

7. In a cigar hopper, a retaining plate for cigars and spacers, means for disengaging a row of cigars and a spacer from the retaining plate, and means for subsequently discharging the cigars and spacers respectively from the hopper in separate directions and at different times.

8. In a cigar hopper, a retaining plate for cigars and spacers, means for disengaging a row of cigars and a spacer from the retaining plate, means for subsequently discharging the cigars and spacers from the hopper, and means for positively preventing discharge of the spacers with the cigars.

9. In a cigar hopper and discharge means therefor, a cigar and spacer retainer, a discharge platform under the retainer, means for releasing a row of cigars and a spacer from the retainer to the platform, and means for moving cigars from the platform, said platform including a spacer retainer.

10. In a cigar hopper and discharge means therefor, a cigar and spacer retainer, a discharge platform under the retainer, means for releasing a row of cigars and a spacer from the retainer to the platform, and means for moving cigars from the platform, said platform including a spacer retainer and being movable after discharge of cigars therefrom to separately discharge the spacer.

11. In a cigar hopper and discharge means therefor, a cigar and spacer retainer, a discharge platform under the retainer, means for releasing a row of cigars and a spacer from the retainer to the platform and means for moving cigars from the platform, both of said means being operated by a single operator.

12. In a cigar hopper and discharge means therefor, a cigar and spacer retainer, a discharge platform under the retainer, means for releasing a row of cigars and a spacer from the retainer to the platform and means for moving cigars from the platform, one of said means being operated by movement of the other means.

13. In a cigar hopper and discharge means therefor, a cigar and spacer retainer, a discharge platform under the retainer, means for releasing a row of cigars and a spacer from the retainer to the platform and means for moving cigars from the platform, said means being inter-engageable to be moved in sequence.

14. In a cigar handling device, a hopper for rows of cigars and spacer boards, a retainer at the bottom of the hopper, a bar for moving one row of cigars and one spacer free of the retainer, and a pusher plate for

moving a row of released cigars from the hopper.

15. In a cigar handling device, a hopper for rows of cigars and spacer boards, a retainer at the bottom of the hopper, a bar for moving one row of cigars and one spacer free of the retainer, and a pusher plate for moving a row of released cigars from the hopper, said plate and bar being arranged for cooperative action.

16. In a cigar handling device, a hopper for rows of cigars and spacer boards, a retainer at the bottom of the hopper, a bar for moving one row of cigars and one spacer free of the retainer, and a pusher plate for moving a row of released cigars from the hopper, said plate and bar being arranged for cooperative action through the engagement of one with the operating means of the other.

17. In a cigar handling device, a hopper for rows of cigars and spacer boards, a retainer at the bottom of the hopper, a bar for moving one row of cigars and one spacer free of the retainer, and a pusher plate for moving a row of released cigars from the hopper, said plate and bar being arranged for cooperative action through the engagement of one with the operating means of the other, the bottom of the hopper being formed to prevent movement of the spacer board by the pusher.

18. In a cigar handling machine, a cigar hopper adapted to receive rows of cigars and intervening spacers, means for discharging individual rows of cigars from the hopper, means for individually discharging the spacers from the hopper and means to prevent movement of the spacer from the hopper with the cigars.

19. In a cigar handling machine, a cigar hopper adapted to receive rows of cigars and intervening spacers, means for discharging individual rows of cigars from the hopper, means for individually discharging the spacers from the hopper, and a spacer stop to prevent movement of the spacer from the hopper with the cigars.

20. In a cigar machine hopper for cigars and spacers, the combination with one wall thereof of a vertically adjustable arrester plate, a ledge projecting below the bottom of the hopper wall into the path of the cigars so as to be engageable temporarily by the spacers of the cigars in their gravity-actuated movement and of means to prevent the simultaneous movement of the spacers with such cigars when the latter are discharged from underneath the ledge of the arrester plate.

21. In a cigar machine hopper for cigars and spacers, the combination with one wall thereof of a vertically adjustable arrester plate, a ledge projecting below the bottom of the hopper wall into the path of the cigars so as to be engageable temporarily by the spacers of the cigars in their gravity-actuated movement and of means to prevent the simultaneous movement of the spacers with such cigars when the latter are discharged from underneath the ledge of the arrester plate, said hopper including a pusher element extending below said arrester and having a downwardly turned flange adapted to abut one end of the cigars to move them forwardly and away from the plane of the arrester.

22. In a cigar handling machine, a cigar hopper adapted to receive rows of cigars and intervening spacers, means including a reciprocatingly slidable plate for discharging individual rows of cigars from the hopper, means for individually discharging the spacers from the hopper, means cooperating with the reciprocatingly slidable plate and including an associated plate for initially moving the cigars in preparation for discharge thereof by the reciprocatingly slidable plate.

This specification signed this 27th day of February, 1931.

FRANCIS X. MALOCSAY.