Dec. 28, 1937. F. X. MALOCSAY 2,103,626

CIGAR LABELING AND WRAPPING MACHINE

Filed Jan. 24, 1935 6 Sheets-Sheet 1

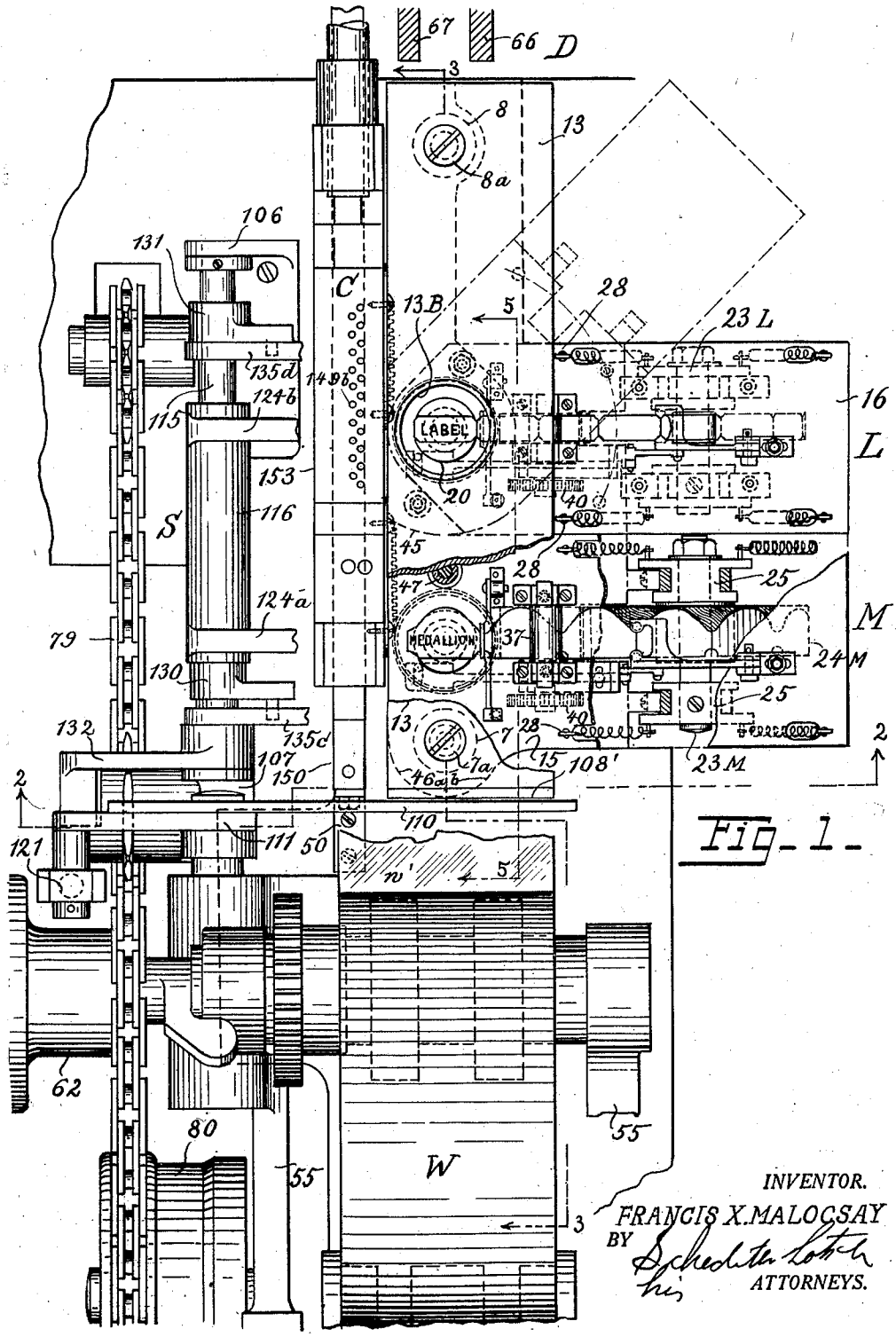
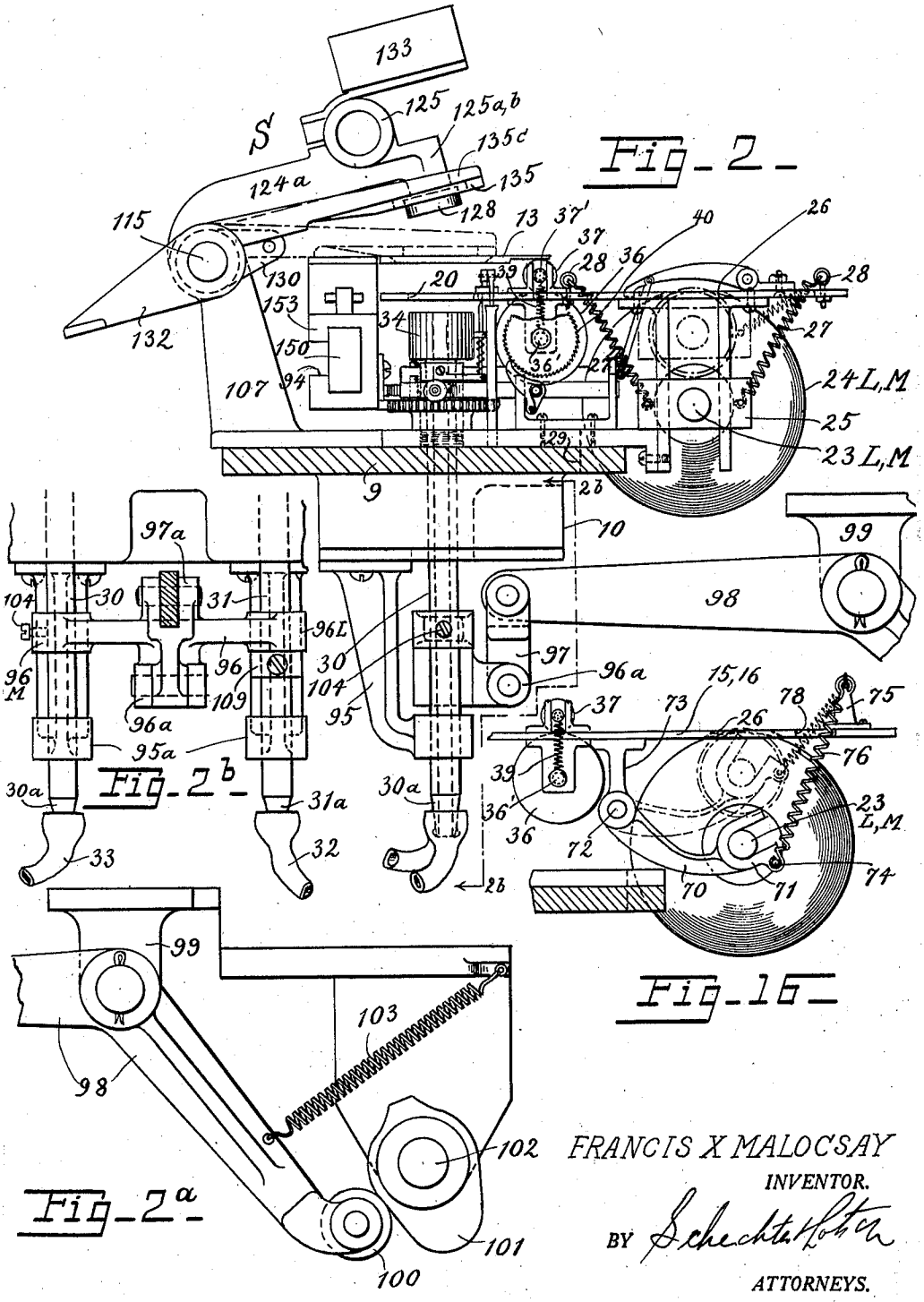


Fig. 1.

Dec. 28, 1937. F. X. MALOCSAY 2,103,626

CIGAR LABELING AND WRAPPING MACHINE

Filed Jan. 24, 1935 6 Sheets-Sheet 2



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Dec. 28, 1937. F. X. MALOCSAY 2,103,626

CIGAR LABELING AND WRAPPING MACHINE

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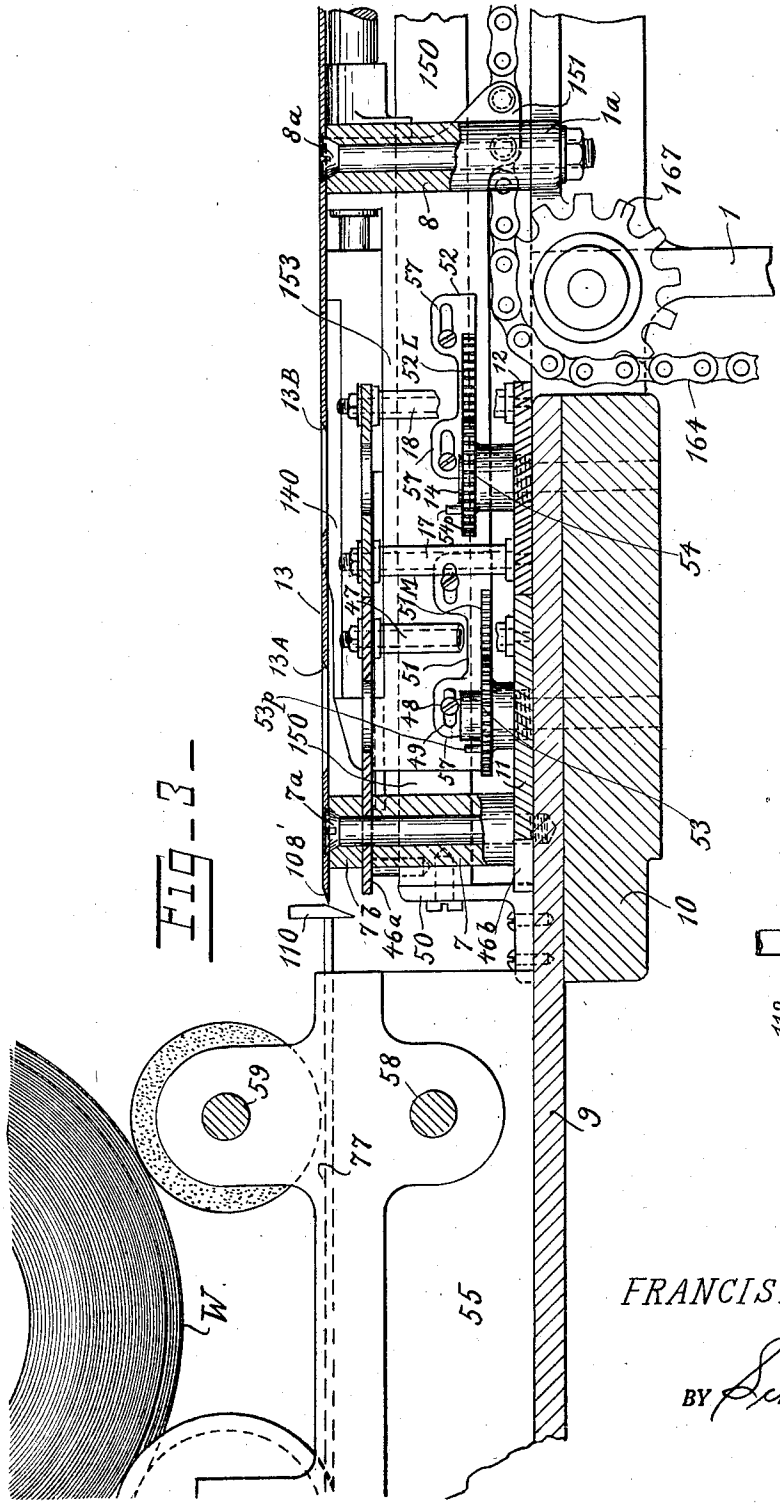


FIG-13-

FIG-15-

FIG-14-

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Dec. 28, 1937. F. X. MALOCSAY 2,103,626

CIGAR LABELING AND WRAPPING MACHINE

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Fig. 4.

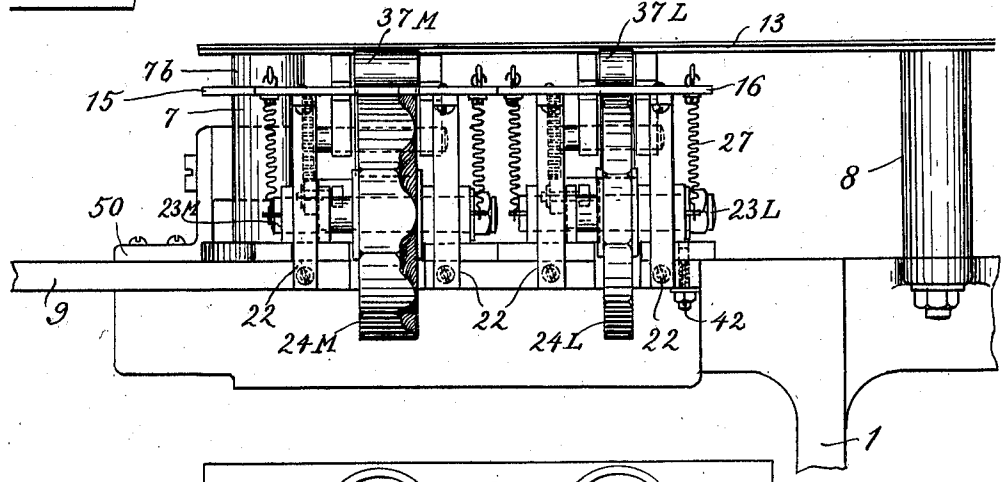


Fig. 6.

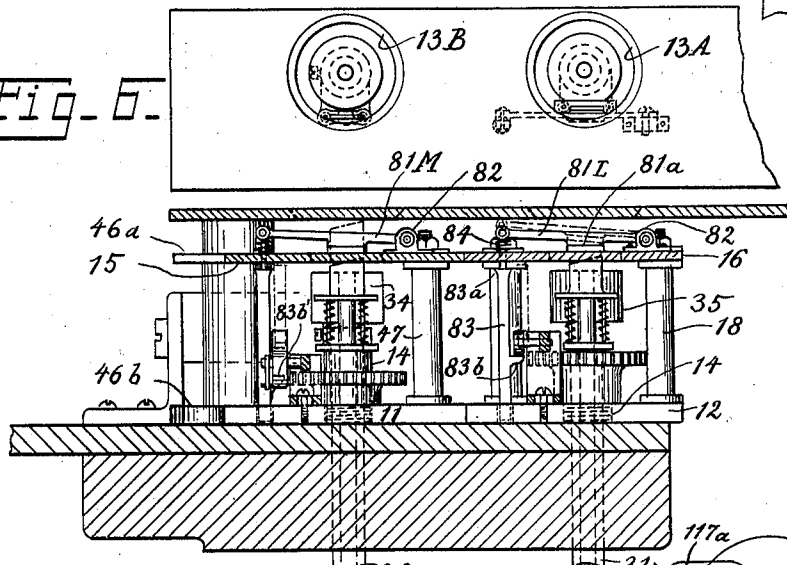


Fig. 5.

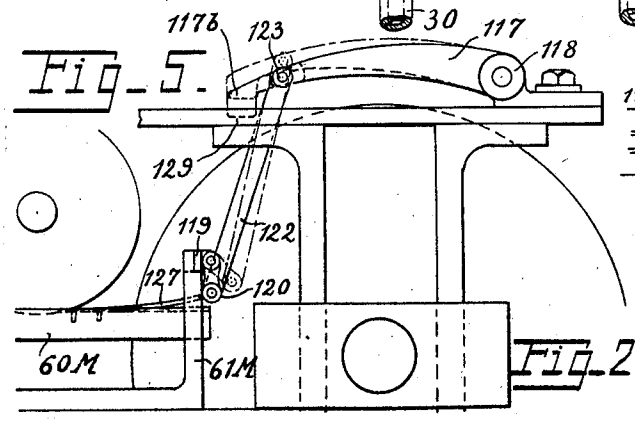


Fig. 20.

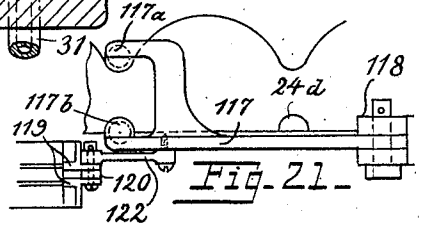


Fig. 21.

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CIGAR LABELING AND WRAPPING MACHINE

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Fig-7

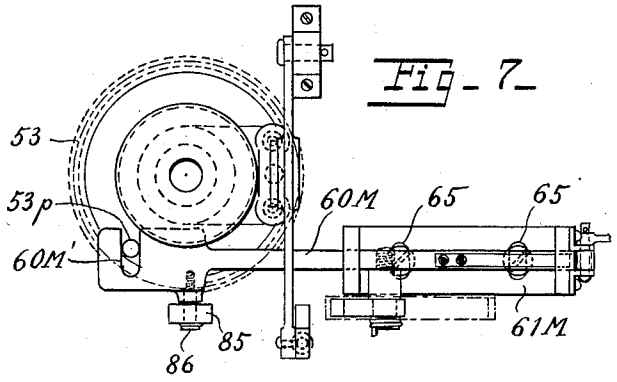
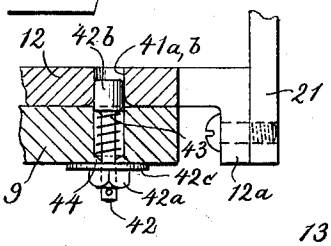


Fig-13



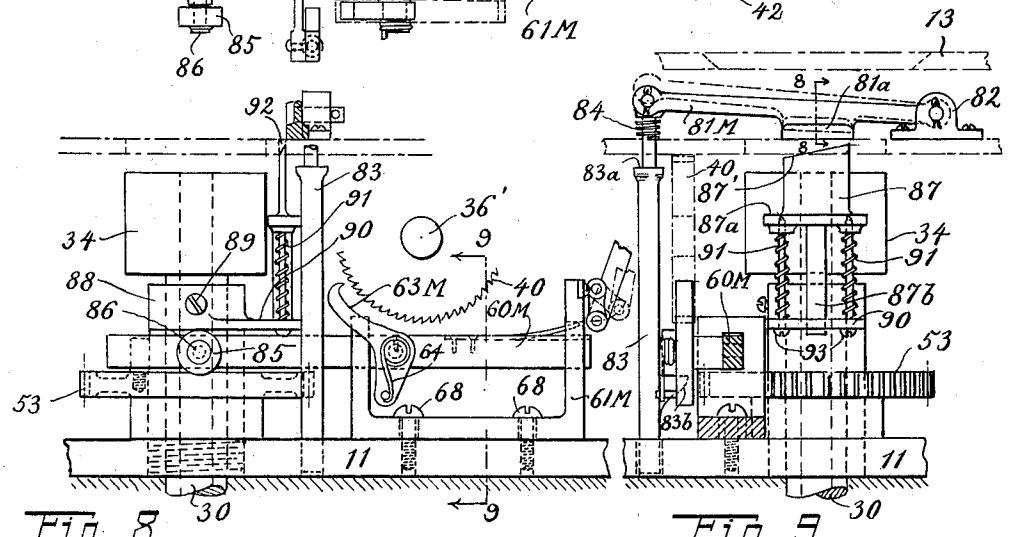


Fig-8

Fig-9

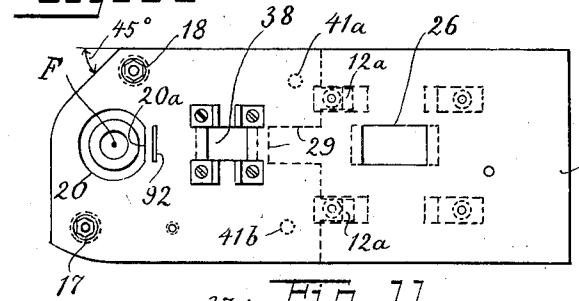


Fig-11

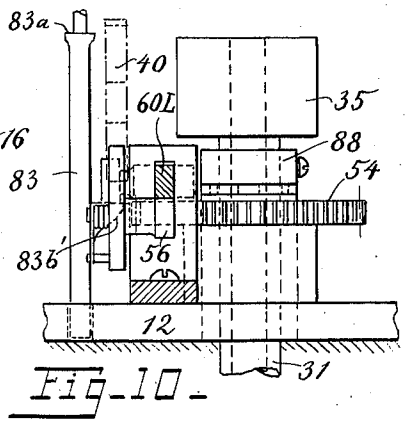


Fig-10

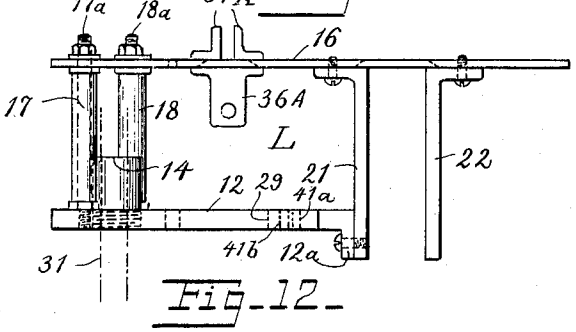


Fig-12

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Dec. 28, 1937. F. X. MALOCSAY 2,103,626

CIGAR LABELING AND WRAPPING MACHINE

Filed Jan. 24, 1935 6 Sheets-Sheet 6

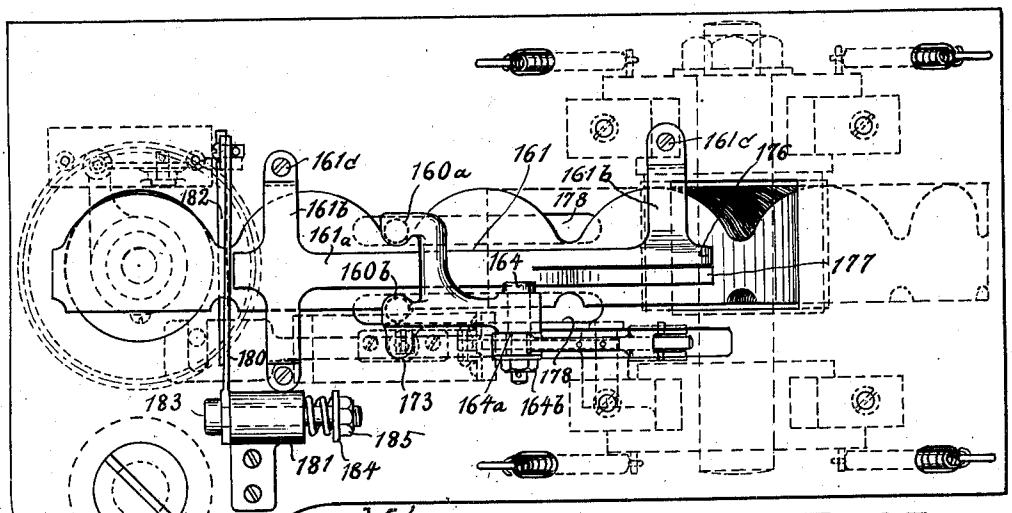


Fig_17_

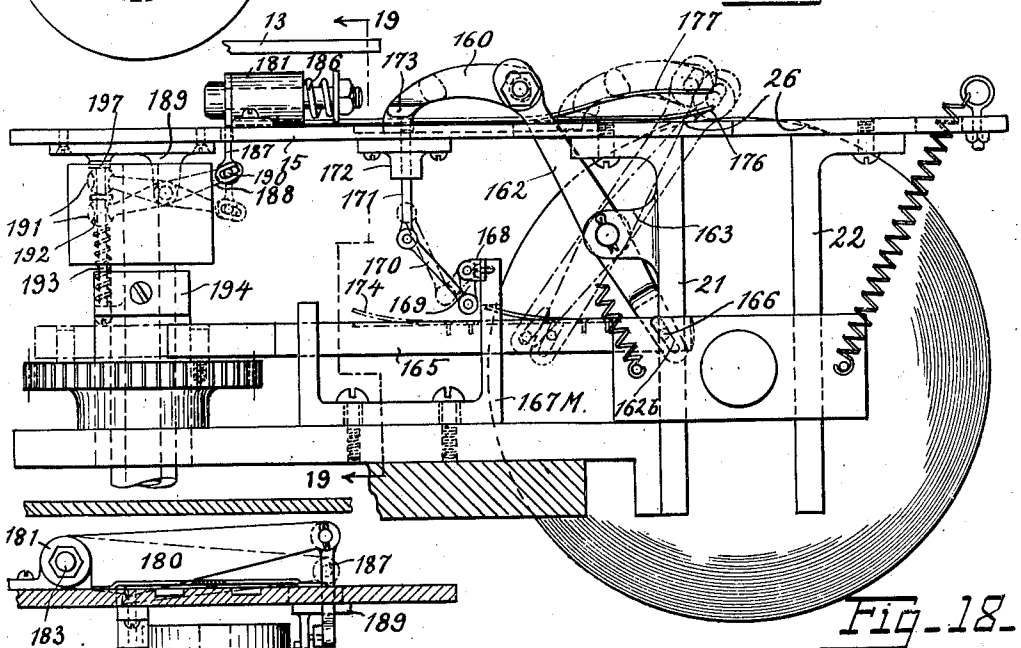


Fig_18_

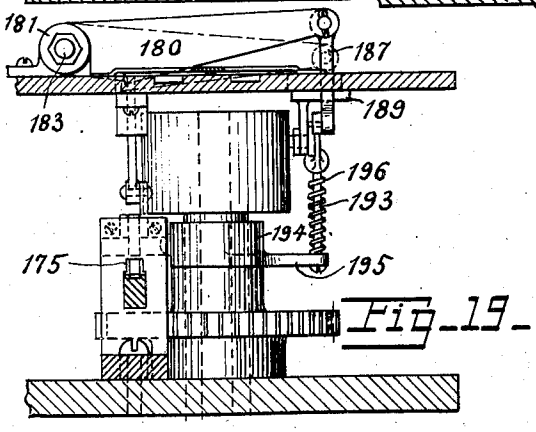


Fig_19_

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Patented Dec. 28, 1937 2,103,626

UNITED STATES PATENT OFFICE

2,103,626

CIGAR LABELING AND WRAPPING MACHINE

Francis X. Malocsay, Upper Saddle River, N. J., assignor to International Banding Machine Company, a corporation of New York

Application January 24, 1935, Serial No. 3,215

13 Claims. (Cl. 216—21)

This invention relates to the art of applying advertising indicia to cigars, or to be more exact, to the inside of transparent wrappers for cigars so that the advertising is visible therethrough.

More particularly considered, this invention is a modification of a mechanism of the kind described for which I filed an application for patent on August 11th, 1934, under Serial Number 739,363, which matured into Patent No. 2,076,378, April 6, 1937, and this specification may be considered a continuation in part of said previous specification. In fact, many elements and devices which are combined in cooperation to form the complete mechanism described in said former application, are again required and repeated in the present mechanism and as such will be shortly mentioned and characterized in the present description. For their detailed construction it will therefore be sufficient to refer to said previous application. Other elements, as will appear from the description, are omitted, as they are superseded by modified devices.

The modifications are not so much in the nature of results, as in the nature of means employed to achieve these results. On the other hand the modifications proposed do not refer to the formerly described mechanism as a whole or to all of its possible functions but only in so far as said mechanism can be used as a labeling machine or as one applying the center portion or medallion of the band alone to the wrapper, not so far as it is employed as a banding machine.

It is, however, feasible and entirely within the scope of the present invention to combine the formerly described mechanism and all its parts, as far as they are needed and adapted for the function of banding a cigar with the modified elements, presently to be described, as far as they are adapted for furnishing and applying a single label to a cigar wrapper. The manufacturing result in either case would be identical; i. e. the machine, constructed and assembled either in the previous form or in the modified form, will furnish a cigar, wrapped in a transparent wrapper (viz. consisting of regenerated cellulose, commonly known under the trade name "Cellophane"), with a medallion and a label attached to the inside of the wrapper, so as to be visible therethrough, or with a cigar band underneath the wrapper, surrounding the cigar and a label besides, firmly attached to the underside of the wrapper, both label and cigar band being visible through the wrapper.

The principal difference lies in the form in which the labels or the medallions are supplied to the machine. In the prior arrangement the advertising media, whether they were labels or medallions or bands, were all separate and piled up in guiding holders, so-called magazines, and by pneumatic means one after the other of the single labels, tags, medallions or bands were picked from the bottom of these piles and by the same means transmitted to the position wherein they were to be attached to the wrapper. In the new arrangement labels or medallions are furnished in the form of continuous and coherent ribbons or bands wound upon reels, from which they are unwound in succession and carried, still as a continuous band, toward the place of application to the wrapper. After reaching this destination, each individual label or medallion is severed by a reciprocating knife from the ribbon, whereupon a plunger, provided with suction means, gets hold of the severed piece and presses it against the underside of the individual wrapper which meanwhile has reached a position directly above said severed piece. The further fixation of the label or medallion to said wrapper and the rest of the manipulation; i. e., the transport of the united wrapper and label (or medallion) by a reciprocating pneumatic conveyor to a place above the cigar to be wrapped and the final wrapping manipulations do not differ from the previously described invention.

It is therefore among the objects of the present invention to provide a label feed arrangement, adapted to cooperate with a wrapper feed arrangement wherein a roll of labels or tags is operatively supported near the delivery path of the wrapper feeding device and is adapted to intermittently feed a continuous row of labels into said path, to be separated into single labels and to be conveyed along in unison with a separate cut-off wrapper.

Another object of my invention is to provide a similar medallion feed arrangement, adapted to cooperate with the same wrapper feed arrangement wherein a roll of medallions in a similar proximity to the wrapper delivery path is adapted to cooperate with the wrapper feed device in a similar way.

A further object of my invention is to provide means whereby said label feed and said medallion feed device are enabled to either function separately or in unison and synchronized action.

A further object of my invention is to provide a cutting device in either of the aforesaid propositions, adapted to separate a single label or medallion from the continuous strip as said label or medallion has reached an appropriate position

underneath the respective wrapper with which it is destined to be united.

Another object is to provide a reciprocating supporting or holding member adapted to temporarily support the cut-off label or medallion, as soon as it is cut off from the roll, and to lift the same into intimate contact with the under side of the wrapper.

A further object is to provide pneumatic suction means in conjunction with said supporting and lifting member, adapted to temporarily attach and support the medallion or label in a fixed position as soon as it is detached from the rest of the supply.

Another object, corollary to the last named, is to provide controlling means for the air ducts of said supporting and lifting member so that the alternating shut-offs and openings in the suction passage may be synchronized with the working phases of the whole feeding and wrapping operations.

A further object of my invention is to provide adjusting means in conjunction with the label or medallion feeding device whereby the intermittent lengths fed toward the wrapper feed path can be varied so as to tally exactly with the predetermined and impressed length of the label or medallion design on the printed ribbon, thereby insuring an exact and fitting separation of the single printed units from each other.

A further object of my invention is to provide automatic controlling means, adapted to cooperate with the label or medallion feeding means, whereby the lengths of the several ribbons fed toward the wrapper feed path, when once properly adjusted, are strictly kept so as to tally with the actual lengths indicated on the printed ribbons.

Another object, corollary to the last named, is to provide means whereby the ribbons themselves, either for the labels or for the medallions, are adapted to cooperate with the mechanical controlling means, forming part of the mechanism, and in this way are rendered self adjusting.

A similar object, in compass with the last named, is to provide said ribbons with such suitable indentations, apertures or the like that mechanical gripper elements, provided for this purpose, are enabled to engage these ribbon features and in this way effect a positive control upon the feed.

Another object of my invention is to provide means whereby the direction of feeding the labels toward the wrapper can be optionally changed, so that the label may be ultimately attached to the wrapper either across the cigar, at right angles to the axis or in a slanting or diagonal position.

A further object, corollary with the last named is to provide means which after the manual adjustment and predetermination of the feeding direction will automatically lock the label feeding device in its exact and proper position.

A further object is to provide self-adjusting means for the label and medallion reels which will not only insure a smooth and unhampered unwinding of the ribbon with a minimum of friction but also, on the other hand, prevent an accidental slack in the ribbon, caused by a spontaneous unwinding of too much ribbon length from the reels.

Other objects, either of an auxiliary or supplementary nature which are necessary for completing the tasks of firmly attaching the labels or medallions to the underside of the wrapper, as for example the heat-sealing device, or for conveying the combined wrapper with the label or the medallion to the wrapping and banding apparatus, as for example the wrapper (and band) carrier with its pneumatic equipment, are identical with corresponding objects, listed in the former invention, and the devices for accomplishing these objects will not be claimed in this application as novel per se, except as far as their cooperative combination with the new mechanical features shown and described may warrant patent protection.

Other more specific objects and advantages of the novel combination and arrangement shown will appear as the nature of the improvements are better understood, the invention consisting substantially in the novel arrangement and correlation 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 disclosed may be separately applicable despite their cooperation herein shown.

The invention may be more fully understood from the following description in connection with the accompanying drawings, in which—

Fig. 1 is a top plan view of my improved label, medallion and wrapper feed arrangement, showing the wrapper feed mechanism W on the rear side of the machine, the medallion and label supplying mechanisms M and L next to it and indicating the clamping jaws of the cigar wrapping apparatus D on top of the figure. Parts of the platforms pertaining to the wrapper, medallion and label feed mechanisms are broken away to better show the underlying elements, and on the left side is fractionally indicated the heat-sealing device B, more fully shown in the next figure. Between the heat sealing device and the label and medallion supplying mechanisms is shown the pneumatic wrapper conveyor C near its wrapper receiving position.

Fig. 2 is a partly sectional end view of the medallion and band feeding mechanisms, viewed along the line **2—2** in the direction of the arrows, also indicating the end views of the pneumatic conveyor and of the heat-sealing device. Below the table is shown part of the plunger or lifting member, operating mechanism, partly broken off while the continuation of said mechanism is shown in Fig. 2*a* and a cross sectional view taken on line **2*b*—2*b*** of Fig. 2 is illustrated in Fig. 2*b*.

Fig. 3 is a longitudinal cross section taken along broken line **3—3** of Fig. 1, but indicating the wrapper feeding device only in a more or less diagrammatical way. The plungers for supporting the cut-off labels and medallions are omitted, and part of the conveyor operating mechanism is indicated at the lower right corner.

Fig. 4 is an end view on an enlarged scale of the medallion and band reel platforms, showing also the means for the automatic self-control of the reel shaft bearings.

Fig. 5 is a sectional view taken on line 5—5 of Fig. 1, illustrating the details of the cutting and ribbon clamping devices, also drawn to an enlarged scale.

Fig. 6 is a fragmentary top view of the wrapper table above the aforesaid devices and partially indicating their location underneath the table.

To avoid confusion, the clamping device on the medallion side is omitted and only the knife indicated.

Fig. 7 is a detail top view; Fig. 8 a side elevation, and Fig. 9 a partly sectional rear elevation of the actuating mechanism for the medallion feeding device, also showing the construction of the cutter and the ribbon clamping device, all to the same scale.

Fig. 10 shows in a partly sectional rear elevation the modifications required for the label feeding device.

Fig. 11 is a top view and Fig. 12 a side view of the movable and adjustable frame for the label feeding device with all operative attachments omitted, on the same scale as Fig. 1.

Fig. 13 is an enlarged detail view of the locking mechanism provided for said feeding device.

Fig. 14 is a detail view of the plunger, used for applying the label to the wrapper.

Fig. 15 is a top view of the same plunger.

Fig. 16 is a modification of the self-adjusting means, shown in Fig. 2 for the label or medallion reels.

Fig. 17 is a top view of a modified form of the medallion supplying mechanism.

Fig. 18 is a side view and Fig. 19 a sectional view along the line 19—19 of Fig. 18, of the modified device shown.

Fig. 20 is an enlarged detail of the automatic ribbon controlling means, shown in Fig. 2, and Fig. 21 a partial top view of the same, showing the gripper jaw.

Similar characters denote similar parts throughout the different views.

Referring more in detail to the figures listed, Fig. 1 shows a top plan view of the general assembly, similar to Fig. 1 of the co-pending application, Ser. No. 739,363, mentioned before. For the sake of easier comparison and clarity, parts identical to both assemblies are marked with the same numerals in both specifications, but new elements or details are given independent numbers, regardless whether the same occur in the other specification, designating other parts, or not.

Character W designates the wrapper roll from which the cellophane wrapper passes underneath the knife 110, actuated by the lever 111 and the cam-operated rod 121, over the trench 108' onto the wrapper table 13, partly broken away in Fig. 1, but shown more plainly in Figs. 2 and 3. Beyond the end of the wrapper table is indicated the wrapping and banding station D with the movable clamping jaws 66, 67, between which a cigar in a horizontal position is elevated by a reciprocating plunger so that it contacts a wrapper, carried by the pneumatic conveyor 153 underneath and across these jaws, from the underside, lifting and simultaneously folding the wrapper around its own top and sides while the jaws tightly clamp the cigar together with the wrapper as soon as the latter have reached a higher position where the wrapping and, eventually the banding, is performed while the cigar is held stationary.

Alongside the edge of the wrapper table 13 is provided a carriage 153 which is reciprocatingly and slidingly driven over the rail 150 by a chain drive 164 (Fig. 3) passing over gear 167 and attached to the carriage at 151. This drive and the details of the carriage 153 on which is mounted a suction chamber 140 are fully described in the copending application to which reference is made. If, as Fig. 1 shows, a wrapper section w' is transferred upon the portion of the table adjacent to the carriage, it is seen that its left hand edge, looking toward the wrapping station D, will overlap the suction holes 149b, and when, after the label and the medallion, respectively, are firmly attached to its under side, as will be described, the suction is turned on in the chamber 140, the carriage, driven forward over the rail 150, will take the wrapper together with the label and/or medallion along toward the wrapping station. The wrapper feed frame 55, spring drum 80, chain drive 79, clutch 62, and the heat sealing device S are described fully in detail and function in the former copending application.

Device S is best illustrated in Fig. 2, while Fig. 1 shows only a fractional part of it. Shortly described, it comprises the supports 106, 107, the rotatable shaft 115, on which is fixedly mounted the sleeve 116 which by means of two arms 124a and b carries the drum 125, encasing the electric heating element, and the counterweight 133.

At the extreme ends of the arms 124a, b are the die holders 125a, b, carrying the heating dies 128. Loosely hinged to the shaft 115 and operable by the lifting members 130, 131 are the two parallel arms 135c and 135d which carry the platen or pressure plate 135. To the shaft 115 of the heat-sealing device is imparted an intermittent rocking motion by the rearwardly extending arm 132, actuated by the knife operating lever 111 and the cam-operated rod 121.

So far the arrangement of the new labeling and wrapping machine does not deviate from the old device described in the copending application. The following parts and elements however are substantially new and deviate from the former construction and mode of operation.

Label and medallion feeders

While the frame 55 of the wrapper feed together with the label and medallion feed device is mounted, as in the former case, upon a common base plate 9, which in turn is supported by a bracket 10 which may form an integral or a bolted-on portion of the main frame 1 (see Fig. 3 of the present or Fig. 2 of the former application) the other arrangement of the several platforms and supports for the working elements is different. As there are no magazines required for label or medallion stacks or cigar bands, piled over each other, the former platform 6, supporting said magazines is also dispensed with, and the wrapper table 13, on a level with the wrapper feed plate 77 (Fig. 3) and the top of the suction chamber 149 of the conveyor forms the highest platform of the structure. Its shape and supporting means differ from the former ones. It is substantially a rectangular elongated plate, the left edge, looking toward station D, being closely adjacent to the conveyor carriage, provided the same is in the starting position, and the right edge in alignment with the outside edge of the widest cellophane wrapper roll considered. In the center line of the wrapper path—which is assumed to be also the center line of the wrapping and banding mechanism D—are provided two circular apertures 13B for the label plunger and 13A for the medallion plunger, with the rims chamfered off toward the top surface. Along the

same center line are provided as sole supports for the wrapper table two tubular columns 7 and 8 (Figs. 1 and 3), the first one extending between the table and the base plate 11 for the medallion feeder, and the second one, near the wrapping station D, extending between the table and a bracket or lug 1a of the main frame 1. Bolts 7a and 8a, with their heads countersunk in the smoothly finished and polished wrapper table, fasten the latter together with the columns securely to the bases, the first bolt passing through the plate 11 and tapped into the base plate 9, clamping also the medallion feeder plate 11 securely in fixed position.

Directly underneath the circular apertures 13A and B, and concentric therewith, the base plate 9 and the bracket 10 are drilled to provide a sliding fit for the reciprocating plunger 30 for the medallion feeder and 31 for the label feeder. These plungers are substantially long tubular members with a tapered lower nozzle end 30a or 31a respectively, the extreme edge of which is beaded so that it will retain a rubber hose 32 or 33 when the latter is slipped over it, as Figs. 2 and 2b indicate. These hoses lead to a pneumatic suction valve, not shown, and it is evident that when a vacuum is created in the tubular member that any label or medallion laid across the top orifice will be strongly attracted and held in position as long as the vacuum is maintained. The upper ends of these plungers are enlarged to form cylindrical dies 34 and 35 on which the labels or medallions can rest, after they are separated from the reel. (See Fig. 5.)

The frames for the medallion and label feeders form two stage shelves; that is, each shelf consists of two horizontal plates, spaced apart and braced by certain vertical members yet to be described. The shelf M for the medallion feeder is mounted in a fixed and unchangeable position while the shelf L for the label feeder can be swung about its fulcrum 45°, as indicated by dot and dash lines in Fig. 1. This results in applying the label, fed thereby, diagonally to the wrapper. Shelf L is shown in detail in Figs. 11 and 12, and shelf M does not principally differ therefrom in construction. It will therefore be expedient to describe the shelf L first in detail and subsequently point out the differences that will be found in shelf M. The upper horizontal plate 16 is substantially an oblong rectangle. As this rectangular plate has to be swung about the center F of the label feed plunger through 45°, as said before, and in doing so must clear the carriage 153 as well as the adjacent plate 15 of the medallion feed shelf, its inner corners have to be suitably trimmed, as shown in Fig. 11, and as will be better understood from a study of Fig. 1. The lower left hand corner is formed by a short arc, drawn from F as center and ending tangentially in the lower lateral edge, while the upper left hand corner starts with an arc from the left hand edge around center F and ends into a line drawn at 45° to the upper lateral edge. The lower horizontal plate 12 has the same width as the top plate and at its inner end is shaped and trimmed in conformity with the upper plate, as described, but it is much shorter and its outer end is furthermore cut out and recessed, as will be described afterwards. The two equal inner ends of plates 12 and 16 are spaced apart and solidly braced by two tubular columns or separators 17 and 18 through which bolts 17a and 18a are tapped into the lower plate 12. Furthermore, in a circular aperture concentrical with the center F and directly underneath it, is provided a bushing 14, threaded with its bottom end into the plate 12 and forming a guide bearing for the plunger 31. In the upper plate 16 is provided a circular aperture 20, with F as center, for the passage of the plunger, and for reasons explained later the contour of the aperture is not entirely circular, but is flattened by a short segmental line 20a, as shown. From the upper plate 16 depend two pairs of rectangular brackets 21 and 22, oppositely arranged and forming sliding guides for flanged adjustable bearings 25 (see Fig. 2 and Fig. 1). In these bearings is fixedly mounted by means of a set screw or otherwise a spindle 23L and on this spindle can loosely rotate the reel 24L, containing the labels. Above the center of the reel and in alignment with its lateral edges is provided a rectangular window 26 through which the label ribbon is drawn from the top of the reel to travel along the surface of plate 16. The cross edges of the window aperture are chamfered toward the underside of the plate. Two lateral light spiral springs 27, extended between the flanges of the bearings and an eyebolt 28 fastened on the top of the plate always tend to draw the bearings together with the spindle and the reel upwards, so that the upper side of the reel always contacts the window edges with enough friction to prevent an accidental or spontaneous unwinding, regardless of what amount of labels is remaining on the reel. The reel, when almost emptied, is indicated in dotted lines in Fig. 2. The two inner brackets 21 at their lower ends are fixedly attached to the flanged extensions 12a of the lower plate 12, thereby forming another pair of braces for the shelfs and the lower plates 9 and 12 are furthermore recessed at 29 to clear the reel 24.

When the label ribbon, unwinding from the reel, has passed through the window 26 onto the upper surface of the top shelf 16, it passes between a pair of friction rollers 36 and 37 toward the plunger opening 20. These rollers are best illustrated in Figs. 1 and 2, the lower friction roller 36 having the larger diameter and being installed underneath the plate 16, while the smaller roller 37 is located in vertical alignment therewith above the plate, both resiliently contacting each other through a square aperture 38 in the plate. At least the small roller 37 ought to be made of a yielding resilient material or be covered with such, as for instance with a piece of (preferredly corrugated) rubber hose, to insure sufficient friction. The upper roller is rotatably mounted upon an extended shaft 37', the latter being slidably journalled between a pair of short rectangular guide brackets 37A, while the larger and lower roller is fixedly mounted upon an extended shaft 36', the latter being rotatably journalled in two drop hangers 36A. The flanks of the upper more or less stationary shaft can advantageously be flattened to a sliding fit between the brackets, and, near their bearings the shafts are coupled together by light springs 39 to increase the frictional contact of the rollers. While the upper end of the springs is simply hooked over the stationary shaft, the lower ends are attached to a little collar (not especially detailed) which is adapted to glide around the rotating shaft 36'.

At one outer end, looking toward the rear of the machine where the wrapper supply roll is located, the shaft 36' has fixedly keyed or other-

wise attached on it a ratchet wheel **40** whose function will be explained later.

As said before, the whole shelf frame for the label feeder can be swung around the center F for 45 degrees and a locking device is provided to secure the frame in either end position. This lock is shown in Fig. 13 and consists in a little spring-tensioned plunger, seated in the base plate **9** and adapted to engage either of two holes **41***a* or **41***b* in the lower shelf **12** of the frame.

The lock comprises the shanked piston **42**, threaded on the end of the shank to receive the nut **42***a* and a washer **42***c*. The hole through plate **9** is not completely drilled through, leaving a conical offset **44**, to retain the spring **43** which surrounds the shank underneath the somewhat rounded off head **42***b*.

If one intends to change the angle at which the label feeding shelf is positioned, one must push the plunger head downward against the tension of the spring with a stick or rod until one can shift the movable shelf **12** sidewards over the compressed plunger. If turned through a complete arc of 45°, the shelf will be locked again automatically in the other position, the spring-actuated plunger head entering the corresponding other hole **41***a* or **41***b*, as the case may be. See also Fig. 1 and Fig. 4.

Comparing now the stationary immovable frame for the medallion feeder with the adjustable frame for the label feeder, just described, the first difference exists in the shape of the two superimposed shelves **15** and **11**. The ends adjacent to the carriage path have no trimmed off corners like the shelf **16**; on the contrary, while the corners near plates **16** and **12** are extended at **45** (Fig. 1) to fill out the gaps that otherwise would be created by the rounded off corners in plates **16** and **12**, the opposite corners near the knife **110** are extended to form perforated ears or lobes **46***a* and *b* which are held fixedly by the column **7**. (See Figs. 1, 3, 4, 5). While this column is mounted with its base upon the lobe **46***b* through which the bolt **7***a* is tapped into the plate **9**, the upper lobe **46***a* is clamped between the main lower portion of the column and an upper annular ring **7***b*.

Instead of two separators (**17** and **18**) only one, **47**, Fig. 1 is needed. The other elements are all analogous to the ones described in connection with the label feeder, except that the reel **24M** is wider than reel **24L** and spindle **23M** correspondingly longer.

Modification of label or medallion reels

In Fig. 16 is shown a modification and simplification of the self-adjusting means for either of the label or medallion reels. Accordingly, the spindles **23L** or M of the reels are journalled loosely in the forked ends **71** of swinging arms **70**, which are fulcrumed at **72** by a pin which may pass through both bearings of hangers **73**, suspended by bolts or otherwise from the plates **16** or **15** respectively. Fastened to an eyelet **74** at the extreme end of each arm **70** at one end and to a stand **75** on top of the plates **16** or **15** at the other end and passing through a suitable opening **78** in the plate is provided a tension coil spring **76**, which has the tendency to pull the reel towards the window **26** through which the reels unwind. Thus it is seen that the identical function of the self-adjusting and spring-actuated bearings **25**, described above, can be executed in a simplified manner.

Modified form of medallion supplying mechanism

In Fig. 17, a top view of a modified form of the medallion supplying mechanism, called M^1, is shown. This differs from the one called M and shown in Fig. 1, principally in that the automatic controlling means, engaging the indentations on the medallion ribbon, simultaneously serve as the ribbon feeding means. This arrangement therefore dispenses with the ribbon feed rolls, shown and illustrated in Figs. 1, 2, and 8. It should be understood that an analogous modification, quite similar in details to the one shown in this and the following figure for the medallion supplying device, could also be employed for the label-supplying device, the differences being mainly in the form of the ribbon and the gripper jaws.

Operating mechanism for feeders

The operation of the label, as well as that of the medallion feeder, is actuated by the reciprocating movement of the pneumatic carriage.

Looking at Fig. 3 one sees the outer wall of the pneumatic carriage frame **153** which travels over the rectangular bar or rail **150**. An end view of this carriage and bar is shown in Fig. 2. Comparing this with the former construction of the copending application, Ser. No. 739,363, especially as shown in Figs. 3 and 6, one observes an important change inasmuch as the longitudinal slot which clears the rail pin of the bracket **154** is omitted. Instead of it, the frame **153** could entirely surround the rail, and for the former lateral bracket **154** is substituted an end bracket **50** (Figs. 1 and 3), which supports the end of bar **150**, leaving the side of the carriage frame entirely unobstructed. However, in order to facilitate a close sliding fit of the inside of the frame, the opposite side wall of the frame is slotted at **94** so that a planing tool is enabled to enter (see Fig. 2).

On the smooth solid side wall are adjustably fastened two racks, **51**, for the medallion feeder, and **52** for the label feeder. They are substantially flat elongated plates or bars with a row of upstanding teeth at the lower rim and a pair of horizontally slotted ears on the upper side. The rows of teeth, **51M** and **52L** are staggered in relation to each other, as they each must engage separate spur gears **53** and **54** while they are reciprocatingly carried back and forth and, if in alignment, would interfere with each other's action. These rack plates are suspended on the carriage wall from tap bolts **48** which pass through the horizontal slots **49** in the ears **57**, extending from the upper edge of both rack plates. The slots facilitate the adjustment of the racks in any position along the side of the carriage.

The spur gear **53** for the medallion feeder and **54** for the label feeder are loosely mounted on the bushings **14** which are fixedly threaded into the bottom plates **11** and **12** respectively. By having hubs of different length, their planes of gearing are also staggered in relation to each other, so that the gear rim of spur wheel **53** is adapted to get in mesh with rack **51** while that of spur wheel **54** gets in mesh with rack **52**. It is now evident that if the carriage **153** approaches the terminal position near the wrapper feeding device and the cutter **110**, the racks bolted to its side wall will engage the two spur gears **53** and **54** and rotate them in a counterclockwise direction (Figs. 1 and 3) while on the return trip toward the wrapping station the carriage will cause the spur gears to rotate in a clockwise direction. It

is also evident that though the rotation in a counterclockwise direction may start at different moments, just according to how the slots of the rack plates and therewith the first teeth for an engagement are adjusted, the rotation on both wheels must stop at the same time, as soon as the carriage reaches its terminal position, after the suction chamber of the carriage has come to a stop a moment previously, as explained explicitly in the copending application. On the return trip, however, the clockwise rotation of both wheels will start simultaneously but may for one spur wheel last a little longer than for the other. Accordingly, the two spur wheels will turn through two different arcs.

On the upper face these spur wheels have each an upright pin **53***p* and **54***p* respectively which engages a lateral slot of the push bar **60M** or **60L** respectively (see Figs. 3, 7, 8, and 9). These push bars are rectangular bars with an enlarged and laterally slotted head **60M'** or **60L'**. Their shank is slidably supported in two aligned bearings or slots of a sledge guide **61M** or **61L**. The latter are U-shaped brackets mounted with their bases upon the shelf **11** or **12** respectively and two slots cut in their upright legs in which the push bars slidably fit. On one outer side of the push bar, between its two bearings, it is provided with a pivoted pawl **63M** or L, positioned so that it is aligned with the under side of the ratchet gear **40**. This pawl is spring-actuated in well-known manner at **64** and so arranged that when the push bar is pushed toward the reels **24M** or L, it will rotate the ratchet gear in a counter-clockwise direction while, when the bar is returned the pawl will slide idly over the ratchet teeth. As the ratchets are fixedly mounted upon the shafts **36'** of the medallion feeder and the label feeder respectively, it will be understood that by their intermittent rotation always a certain length of the ribbons—which can be adjusted to the width of the printed medallion or label—is fed forwardly between the friction guide rollers.

Although adjusting means are provided for the actuating racks on the reciprocating carriage, as described before, there is an auxiliary means furnished for the sake of still closer adjustment, so as to make the division of the fine ratchet teeth coincide with the start and stop of the travel which may be imparted to the push bars **60M** or L. This means consists in providing two oval slots **65** in the base of the sledge **61M**, L and fastening the base to the plates **11** or **12** by means of tap screws **68** which pass through these slots. It is then evident that the sledge casting together with the push bars guided therein can be moved parallel to itself, nearer to or further away from the center line of the feed path for the ribbons. Simultaneously the pins **53***p* or **54***p* will occupy a position deeper or less deep in the slotted heads **60M'** or L'. But while this does not change the arc through which the spur gears **53** or **54** travel or their pins move, it changes the length of travel for the push bars by a trifle one way or the other. In this way very accurate adjustment is made possible.

Comparing the operative parts of the medallion and the label feeder, especially as illustrated in Figs. 8, 9 and 10, one will perceive that, due to the difference in the height of the hubs for the spur wheels **53** and **54**, certain differences in the proportions of operative elements are necessary, to wit: the sledge for guiding the push bar **60L** (Fig. 10) has higher upright legs than that for push bar **60M** (Fig. 9). Furthermore, as the location of the ratchet wheels **40** is at the same height in both feeder devices, the pawl **63** for the label feeder cannot be pivoted directly to the side of the push bar, as it is shown in Figs. 8 and 9 which illustrate the medallion feeder, but must be pivoted to a depending lug **56**, integral with the push bar (or otherwise attached) so that the pawl is in proper engaging position.

Automatic control for length of ribbon feed

Though there is provided a double control for adjusting the feed of the ribbons (either for the labels or the medallions) to the exact length required, experience has shown that no matter how closely the manual adjustment be made, an accidental shift of say one thousandth of an inch would in the course of operation amount to enough to advance the cut of the knife to the middle of the medallion or the label, as the case may be. An additional corrective control is therefore required.

This is provided by an automatic locking device, shown in Fig. 2, Figs. 20 and 21 representing an alternately released and engaging stop, interlocking with the indentations, provided on the borders of the label or medallion ribbons, so as to check on any excessive advance or retardation of the ribbon feed. For this purpose the ribbons, bearing the imprints of the labels or medallions, are not made in the form of plain tapes of even width throughout but the longitudinal edges are indented between adjoining facsimiles, as indicated at **24***d*, or, if preferred, the ribbon may be perforated otherwise, either by full apertures or semi-circular cuts which provide depressible tongues without actually cutting away any material. At any rate some incisions are made at regular spaces corresponding to the length of the printed units so that a mechanical gripper device can engage them in regular sequence and thus check their steady advance, exerting if necessary either a slight pull forward or backward upon the reel. This gripper device may be a one-armed pawl **117** (Figs. 20, 21) fulcrumed in a forked bearing **118**, and at its free end terminating in two prongs **117***a* and *b*, adapted to engage the lateral indentations **24***d* of the ribbon, or otherwise shaped according to requirements. The plate **15** or **16** is provided with a pair of recesses or pockets **129** into which the prongs **117***a*, *b*, loosely fit.

The rear leg of the sledge guides **61M** or L through which the push bar **60M** or L slides, has an upward extension which carries a forked bearing **119** into which a short dependent arm **120** is linked. To the dependent free end of the latter is pivoted a connecting bar **122** which in turn is pivotally linked at **123** to the front end of the pawl **117**. On top of the push bar **60M** or L is provided a flat spring **127**, so arranged, that when the push bar moves toward the reel, the end of the spring, suitably guided through the slotted leg **61M**, L, pushes against the dependent arm **120**, swinging the latter upwardly until it can pass underneath it, thereby imparting a short uplifting motion to the pawl **117** through the connecting link **122**, thus releasing the pawl from engagement with the indentations **24***d*.

The total travel of the push bar is so adjusted that the pawl **117** is lifted out of engagement just before the ratchet wheel pawl **63M** engages the wheel **40** and the ribbon therefore begins to move forwardly. As soon as the spring **127** has passed the link **120**, pawl **117** drops upon the

ribbon, which glides along underneath the prongs 117*a*, *b* until the latter drop into the next indentations, thereby checking any further progress of the ribbon which, due to the preliminary adjustment of the racks 51 and 52 respectively besides the adjustment of the sledge guide 61, mentioned before, reaches the end of its travel at about the same moment. The pawl therefore exerts only an eventual slight correction upon the advance of the ribbon, the actual feed being produced by the friction rollers 36, 37. On the return trip of the push bar, the spring itself is depressed by the arm 120, until, after passing, it snaps back into unstrained position, while the pawl 117 is not affected.

Modification of reel feeding devices

It is, however, feasible and in some cases desirable to effect the forward feed of the ribbon, both for the medallion and the label directly through pawl which engages the indentations provided on the ribbon tape, and Figs. 17, 18 and 19 illustrate this modified arrangement. As the gripping pawl 160 itself intermittently propels the ribbon 24 toward the wrapper path, the friction rollers 36 and 37 can be dispensed with and only stationary guiding means in the shape of a top plate or bar 161, to be described in detail hereafter, is provided to conduct the ribbon towards the knife and the plunger.

The pawl 160 can be shaped similarly to the above described pawl 117, but instead of being pivoted to a stationary forked bearing, like 118, it is in this case pivotally linked to the upper end of a vertically mounted double-armed rocking lever 162. The latter is fulcrumed to a bracket 163, forming an integral part of the reel brackets 21. The connection with the pawl is made adjustable by well known means, i. e. by using a clamping bolt 164, having an offset at 164*a* against which the end of the lever arm, provided with a slot, is clamped by means of a hexagonal nut 164*b*. It is evident that thereby the arc through which the fulcrum point and therewith the prong ends 160*a*, *b* can be swung, may be varied and be made to closely tally with the required distance from end to end of label or medallion, as the case may be. The lower end of the rocking lever is fork-shaped and straddles the rear end of the push bar 165. This end is provided with a through pin 166, fixedly mounted therein and slidably operating within two opposite slots 162*b* of the forked lever end. On the extended rear leg of the sledge 167M is provided a pawl-lifting device, similar in principle to the one, described for Fig. 20, but reversed in arrangement and applied to the return stroke of the push bar 165. Into the forked bearing 168, fixedly attached to the top of the sledge leg is linked the arm 169, dependent on the inside of the leg and by a connecting bar 170 this is linked to a plunger bar 171, guided vertically in the bracket 172, attached to the underside of the table 15 or 16. The upper end of the plunger bar is adapted to push against a lateral boss 173, integral with the pronged end of the pawl 160. On top of the push bar, normally between the legs of the sledge 167 is provided a flat spring 174, but pointing in a direction, opposite to the formerly described spring 127, which otherwise it resembles in shape and function. It is evident now that when the push bar travels backwards, thereby advancing the ribbon propelling pawl 160, the spring passes underneath the dependent arm 169, its resilient end being depressed thereby, but without imparting any movement to the arm or the pawl-lifting lever. When the push bar reaches its extreme rearward position and the pawl consequently has attained its maximum forward swing, the spring end, having passed through the slot 175 of the sledge leg, best illustrated in Fig. 19, has snapped upward again and is now ready for action. As soon as the push bar begins its return trip, the spring end pushes the depending arm 169 out of the way, thereby lifting the plunger bar 171 and the prongs 160*a*, *b*. The gripping pawl, being redrawn, is released from the tip end of bar 171 and drops down upon the borders of the ribbon, which is stationary while the pawl rides back into its starting position. There is, however, other auxiliary guiding means for the pawl provided. The conducting plate 161, mentioned before, consists principally of a middle bar 161*a* with lateral extensions 161*b*, which fasten it to the top surface of plate 15 (16) by means of screws 161*c*, and at the same time raise it just sufficiently above it, so that the ribbon of the medallions (or labels) can slide forward between them. The rear or receiving end of the middle bar 161*a* which extends just over the window 26 through which the ribbon is unwound, is split lengthwise, as shown in Figs. 17 and 18. One half of the split end, 176, is slightly bent upward so as to facilitate the entrance of the ribbon, the other half 177 is however substantially raised, though with a gradual start, above the surface of plate 15, 16, and forms a cam which the pawl 160 straddles saddle-like. It is thus seen that by giving this end an appropriate curvature, the pawl 160 whose backward travel somewhat exceeds the longitudinal extent of the label or medallion, is lifted out of engagement with the indentations for this excess length. When the pawl travels forward again, it slides down over the cam 177, engages the indentations and pushes the ribbon along by travelling inside the grooves 178, provided in the plate 15 or 16. In addition the conducting plate 161 with its upwardly bent ends may be made adjustable in an axial direction by having the fastening screws 161*c* for the extensions pass through slots (not especially shown).

Cutting off device for reel ribbons

When the ribbon of the label or the medallion reel has passed underneath plate 161*b*, as in the present modification, or, as before explained between the friction feed rollers 36 and 37, the feed movement initiated by the pawl and ratchet, afore-described, is yet sufficient to pass the front end of the ribbon across the opening 20 either in the plate 15 or 16. Then it has to be severed accurately from the rest of the ribbon by a shearing action, while the uncut portion of the medallion or label ribbon is momentarily pressed firmly upon the feeding plate.

To accomplish the latter function, there is provided right in front of the severing line, if one looks from the reel toward the opening 20, a clamping arm 81M for the medallion feeder and 81L for the label feeder. See Figs. 5, 6, and 9. Each consists of a one-arm lever, fulcrumed in a little bearing bracket 82, and pivoted at the free end to a plunger 83 which passes through the plate 15 or 16 respectively and partly also through the base plate 11 or 12 respectively. The lever 81M, L has an enlargement 81*a* approximately in its middle length, in the form of a flattened pad which, when the lever is pressed down, covers the portion of the ribbon which lies im-

mediately in front of the severing line. The plunger **83** has a little offset or shoulder at **83***a* underneath the upper shelf plate, which limits the upward movement of the plunger and of the one-armed lever and pad, so that only enough clearance is provided for the ribbon to pass freely when the arm is up. A little spiral spring **84** wound around the upper portion of the plunger, between the top plate and the pivot connection of the arm, tends to normally keep the clamping arm out of contact with the plate. In the lower portion, each plunger is provided with a lateral protrusion or lug **83***b*, positioned at such height above the base shelf **11** or **12**, that when a roller **85** (see also Figs. 7 and 8) which is provided on a lateral stud **86**, tapped into the outer side of the pusher head **60M'** or **60L'**, strikes said lug, it will depress the plunger far enough by partly passing over the lug **83***b* so that the pad **81***a* firmly clamps the ribbon down upon the plate **15** or **16**, against the tension of spring **84**.

Due to the differences in proportion of operative parts for the medallion and the label feeder, caused by the different height at which the spur wheels **53** and **54** are positioned and therefore also the push bars **60M** or L, the lug **83***b'* on the plunger **83** for the label feeder (see Fig. 10) is somewhat higher located than the lug **83***b* for the medallion feeder (Fig. 9). The bottom end of the plunger must not quite touch the base plate **9** when the roller **85** draws the plunger down, on the other hand it must not leave the hole in plate **11** or **12** when the tension on the plunger is released.

The knife for cutting off the label or medallion lying across the apertures **20** in plate **15** or **16** consists of a short broad blade **87** with a slanting cutting edge **87'**, a flanged middle portion **87***a* and a round shank **87***b*, forming one integral piece. On the plunger shank **30**, between the die **34** and the hub of the spur gear **53**, and similarly on the shank **31** between die **35** and hub of spur gear **54**, is provided a collar **88**, fastened to a plunger by a set screw **89** and having a lateral extension plate **90**. This extension has three perforations, one in the center for letting the knife shank **87***b* pass through and two on the sides for letting the stems of two long studs **93** pass which on their top ends are tapped securely or welded into the flanged middle portion of the knife. Both studs, between said flanged portion and the extension **90** of the collar are surrounded by a compression coil spring **91**. The knife blade, when in its highest position, is still partly guided by a slot **92** in the upper shelf plate **15** or **16**, and if the plunger which thus supports the knife device, as described, travels upwards, the slanting knife blade, which closely fits into the slot **92**, makes a straight vertical shearing cut in combination with the clamping pad **81***a*.

The coil springs **91** are strong enough to push the knife through the paper ribbons, but when the upward movement of the knife is stopped by the flanged portion **87***a* striking the upper shelf plate **15** or **16**, which will happen just before the knife point touches the wrapper table **13**, and the plunger continues to rise until the top of the die **34** (or **35**) touches the cellophane wrapper lying across the table, extension plate **90** compresses the spring **91** while the shank **87***b* and the studs **93** protrude through the apertures in said extension plate. When the plunger descends again, it releases the knife springs and takes the knife along which disappears below the slot **92**. At the same time about, the pneumatic conveyor, carrying away the wrapper with the label and the medallion attached to it by heat-sealing, reverses the rotation of the spur gears by means of the racks. This simultaneously moves the push bars together with the rollers **85** out of engagement with the plungers **83** which actuate the clamping arms **81M**, L and the forward ends of the ribbons are released, as the springs **84** raise the arms and lift the pads **81***a*.

It is to be noticed that while the plunger head or die for the medallion feeder can be circular, the length of some labels may be so short that there would not be enough guidance left in the plate **16** (Fig. 11) for the knife blade between the plunger opening and the slot **92**. In such a case it is practical to flatten the die on the side facing the knife and to cut out the plate **15** or **16** in the manner shown, as has been mentioned before. While in the case of the medallion plunger this might be an alteration, necessitated by circumstances, it is nevertheless a feature which in the case of the label plunger is always advantageous for a reason which will be explained later.

Modification of cutting-off device

It is, however, feasible and may be required in certain cases to cut off the medallions or labels by a downward stroke of a knife. How this may be accomplished is shown also in the modified arrangement, illustrated in Figs. 17 to 19. The knife blade **180** forms a one-armed lever, fulcrumed in a little pillow block **181** positioned on top of the plate **15** or **16**, at one side of the ribbon path. A slot **182** in the plate is provided at the exact place where the medallion or label has to be cut. The knife blade, however, is not in exact alignment with the slot but is very slightly bent in such a way that while it normally engages the slot with its rear end only, its edge is gradually drawn into it while the blade descends, thus exerting a shearlike action with the edge of the slot. At the fulcrum point the blade is fixedly attached to a pin **183**, protruding beyond the pillow block in which it is journalled, threaded at the end and provided with a washer **184**, hexagonal nut **185** and a rather strong coil spring **186**. The axis of the pin, which fits rather closely into the bearing, runs at a slightly acute angle to the operative portion of the knife blade, so that when the knife descends into the slot **182** it exerts a compressive strain upon the spring, forcing the pin slightly outward against the tension of the spring. To the free end of the knife is pivotally attached a depending rod **187**, passing through an opening in the plate **15** and linked underneath it to a double arm rocking lever **188**. Said lever is fulcrumed to a hanger **189** which is fastened with its base to the underside of the platform **15** (16), at one end which is linked to the rod **187**, it is forked and slotted, embracing a pin **190**, traversing said rod, and the other end forms a bulb **191**, perforated by a conical bore **192** contracted in the center and flaring out at both ends in such a way that a vertical plunger **193** can be guided through the bulb with sufficient clearance and still contacting the wall of the bore, while the lever is rocked through an arc of about 30°. The collar **194** on the plunger **30** (or **31**) which corresponds to the formerly described collar **88** (see Fig. 8) has a lateral extension **195** for the bottom support of the plunger **193**. Said plunger is formed by a bolt which slidably passes through the extension **195**, carries a coil spring **196** between the extension and the underside of the bulb **191** and is threaded at

the end where it emerges from the bulb, into a stop 197, or is otherwise fixedly attached to it. The action of the knife then is as follows:

When the ribbon has advanced so far that a new medallion or label is placed across the apertures 19 or 20, the plungers 30 (31) begin to rise, taking the collar 194 and the plunger 193 with them and rocking the levers 188. The free end of these levers causes the knife to descend, completing a cut and severing a medallion or label from the ribbon. But while the movement of the knife is stopped, as soon as the stop 197 reaches the base of the hanger 189 (see Fig. 18) the upward motion of the plunger 30 (31) continues, compressing the spring 196, as the plunger bolt 193 no longer follows the movement. The plunger carries the detached medallion or label toward the upper plate 13 and through the holes 13A, B against the wrapper where it is attached by the heat sealing device as formerly described. On descending again, the extension 195 of the collar releases the spring 196 first and then pulls down the stop 197, attached to the plunger 193. This reverses the motion of the rocker arm and carries the knife upward into its starting position, without, however, entirely detaching the rear end of the knife blade from the slot 182.

Driving means for feeder plungers

In comparison with the action of the band and label pickers, described in the copending application, the function of the medallion and label pickers, required for the present device, is extremely simplified and direct-acting. The two pickers or plungers 30 and 31 have only a reciprocating vertical motion. When their upper ends or dies approach the shelves 15 and 16 respectively, the knife blades, rising in unison with them, shear off the first unit of the medallion and the label ribbons and the cut-off pieces are immediately taken up by the rising plungers in which the suction is turned on by the air valve, as mentioned before. When the plungers, holding the cut-off label and medallion by force of pneumatic attraction, have reached through the apertures 13A, B, the underside of the wrapper which meanwhile has been conveyed into the proper position on top of the table 13, the pressure plate 135 (Fig. 2) drops down upon the wrapper, clamping it to the table, and the heat-sealing drum 125 with the dies 128 is pressed down against the plunger heads, softening the adhesive compound with which the labels or medallions are impregnated and combining it fixedly with the waterproofing film on the under surface of the wrapper. Thus the paper tags are firmly attached to the wrapper, the suction in the plungers is cut off again, while the pneumatic conveyor in which the suction meanwhile has been initiated, can carry off the whole wrapper with the tags. The plungers simultaneously have started their downward movement.

The alternating phases in the operation of the two-way air valve, controlling the suction, and the synchronization of the pneumatic means in the wrapper conveyor with those in the medallion and band pickers is therefore analogous to that described in the copending application, aforementioned.

Below the bracket 10 are provided hangers 95, adapted to guide the lower hose-carrying ends of the plungers in slide bearings 95*a*. Both plunger ends, between the bracket 10 and the guide bearings are coupled together by a cross brace 96 which at the bottom of the center has a forked lateral extension 96*a* into which an upright intermediate member 97 is pivoted which is likewise forked on its upper end 97*a* where one arm of a long bell crank 98 is pivotally connected. This bell crank is fulcrumed in the hanger 99, bolted on the main frame, and its free end carries a roller 100. This roller is actuated by a cam 101 on a shaft 102 which is assumed to be located near the hopper end of the machine (Fig. 2*a*). This, however, may vary, depending upon the general arrangement of the wrapping machine. Also this shaft may either be the main cam shaft or a countershaft driven by transmission therefrom. By the rotation of the cam the bellcrank is rocked, and the arm, linked to the intermediate member 97 is raised, thereby lifting the brace carrying the two plungers 30 and 31.

The return of the plungers and the bell crank arm to the lower position is effected partly by their own weights and partly by the tension of the spring 103, drawing the roller carrying arm of the bell crank toward the cam.

The general structure of the plungers has been described heretofore, the plunger for the label feeder however differs from that of the medallion feeder in the way it is mounted, as will be presently described.

Figs. 14 and 15 show a detail of the label feeder plunger, and Fig. 2*b* illustrates how the cross brace 96 is attached to both plungers. While the medallion feeder plunger 30 has a smooth shank of even diameter, as Fig. 2 shows, and the side bearing 96M is fixedly attached to the shank by the set screw 104, the label feeder plunger, as Fig. 14 shows has an offset on the shank at 105 and the lower and thinner end of the shank can turn freely in the side bearing of the cross brace 96. A collar 109, fastened to the lower portion of the shank below the side bearing by the setscrew 112, keeps the plunger in place in vertical relation to the cross brace, and it is seen therefore that the only means which keeps the plunger from turning around its axis spontaneously is the flattened surface 113 of the die, as far as it may be guided by the corresponding aperture in the plate 16 of the shelf frame, described before, the knife blade, guided in its slot, and the friction in the bearing at 105 which should not be too loose and may be regulated by the setting of the collar 109.

If one intends now to change the setting of the label feeder frame by turning it 45° one way or the other, the first step should be to advance the driving mechanism for the plungers to the point where the plungers are entering the apertures in the plates 15 and 16. If one then turns the frame of the label feeder around, the aperture 20 in combination with the knife blade which has fully passed through its slot will turn the plunger around with it into the proper position. This preliminary step is important, as otherwise an enforced turning of the frame might snap the knife point in the slot.

Thus all the enumerated objects of the invention are obtained in an efficient, economical and simple manner and all the mechanical devices described are coordinated to automatically and synchronously perform the functions required.

In accordance with the provisions of the patent statutes, 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 wrapping and labeling machine, comprising a wrapper feeding device, a reel, adapted to carry a roll of serially connected labels, adjustable means to intermittently feed predetermined lengths of said roll across the underside of a cigar wrapper, a plunger, reciprocatingly activated in a vertical direction and adapted to support the wound-off front end of said roll, clamping means to fixedly hold the unsupported portion of the wound-off roll, cutting means, cooperatively connected with said plunger, to sever the portion supported by the plunger from the clamped portion of the roll, means to elevate the plunger supporting the detached end into contact with the wrapper and means to fixedly attach said end to the underside of the wrapper.

2. In a wrapping and labeling machine of the class described, comprising a reel for carrying a roll of labels, a reciprocating conveyor adapted to carry a cigar wrapper across the path of the unwound end of said roll, mechanical means cooperatively connected with and actuated by the reciprocating conveyor to intermittently feed predetermined lengths of said roll toward and across the wrapper, and cooperating means to fixedly attach said predetermined lengths to said wrapper.

3. In a wrapping and labeling machine of the class described, comprising a reel for carrying a roll of labels, a reciprocating conveyor adapted to carry a cigar wrapper across the path of the unwound end of said roll, mechanical means cooperatively connected with and actuated by the reciprocating conveyor to intermittently feed predetermined lengths of said roll toward and across the wrapper, a reciprocating vertical plunger, adapted to support the first predetermined length of said roll, as unwound therefrom, cutting means cooperatively connected with said plunger to sever said first predetermined length, means, synchronized with the conveyor to elevate the plunger into contact with the cut off end of the roll and to carry it into contact with the wrapper and means to fixedly attach said end to said wrapper.

4. In a wrapping and labeling machine, comprising a reel for carrying a roll of labels, a reciprocating conveyor adapted to carry a cigar wrapper by means of pneumatic attraction across the path of the unwound end of said roll, mechanical means, actuated by the reciprocating movement of said pneumatic conveyor to intermittently feed predetermined lengths from said roll toward and across the wrapper, means to sever said lengths successively as they cross the path of the wrappers, a reciprocating plunger, cooperatively connected with said severing means, adapted to pick up each severed length by pneumatic suction and to carry it into contact with the wrapper and heat-sealing means to fixedly attach the severed length to the wrapper, substantially as described.

5. In a wrapping and labeling machine, comprising a reel for carrying a roll of labels, a reciprocating conveyor adapted to carry a cigar wrapper by means of pneumatic attraction across the path of the unwound end of said roll, adjustable means, actuated by the reciprocating movement of said pneumatic conveyor to intermittently feed predetermined lengths from said roll toward and across the wrapper, clamping means to fixedly hold the unwound end of the roll outside of the wrapper path, means to sever said lengths successively as they cross the path of the wrappers, a reciprocating plunger, cooperatively connected with said severing means, adapted to pick up each severed length by pneumatic suction and to carry it into contact with the wrapper and heat-sealing means to fixedly attach the severed length to the wrapper, substantially as described.

6. In a machine of the class described, a conveyor, adapted to carry a series of wrappers toward a wrapping and labeling position, a turntable, having its fulcrum aligned with the centerline of the wrapper path, a reel at the outstanding end of the turntable for carrying a roll of labels and adapted to feed them along the turntable toward the wrapper path, mechanical means to adjust the turntable at an optional angle relative to the wrapper path, means to sever the label crossing said path from the roll and means to attach said label to the wrapper at the adjusted angle.

7. In a machine of the class described, a conveyor, adapted to carry a series of wrappers toward a wrapping and labeling position, a turntable, having its fulcrum aligned with the centerline of the wrapper path, a reel at the outstanding end of the turntable for carrying a roll of labels and adapted to feed them along the turntable toward the wrapper path, mechanical means to adjust the turntable at an optional angle relative to the wrapper path, automatic means to lock the turntable in the adjusted position, means to sever the label crossing said path from the roll and means to attach said label to the wrapper at the adjusted angle.

8. In a wrapping and labeling machine, a reciprocating carriage, adapted to convey a wrapper with a label attached to it, toward a wrapping and labeling position, a reel adapted to carry a tape, on which labels are impressed in series, separated from each other by indentations in the margin of said tape, a reciprocating bar, means to operate said bar by said reciprocating carriage; frictional means, actuated by said bar and adapted to unwind and propel said tape intermittently from the reel in the direction toward the reciprocating wrapper carriage, controlling means, adapted to arrest the advance of the tape at predetermined points by engaging said indentations, said controlling means likewise operated by said reciprocating bar and means for severing said advertising indicia from the tape at predetermined points before they are attached to the wrapper.

9. In a wrapping and labeling machine, a reciprocating carriage, adapted to convey a wrapper with a label attached to it, toward a wrapping and labeling position, a reel, adapted to carry a tape, on which labels are impressed in series, separated from each other by indentations in the lateral margins of said tape, a reciprocating bar, means to operate said bar by said reciprocating carriage; a bifurcated reciprocating pawl, adapted to intermittently propel said tape by engaging said marginal indentations, said pawl being operated by said reciprocating bar, and means, likewise actuated by

said bar to temporarily release the pawl from engagement with the indentations after each propulsion of the tape.

10. In a wrapping and labeling machine of the class described, a reel adapted to carry a roll of labels, a reciprocating conveyor adapted to carry a cigar wrapper across the path of the unwound end of said roll, mechanical means, cooperatively connected with and actuated by said reciprocating conveyor to intermittently feed predetermined lengths of said roll toward and across the wrapper, a reciprocating vertical plunger, adapted to support the first predetermined length of said roll, as unwound therefrom, a knife, separately mounted on said plunger and across the path of said roll, means operatively connected with said plunger to activate said knife, so as to cut off a predetermined length from said roll, means to limit the stroke of the knife irrespective of the travel of said plunger, means, synchronized with the conveyor to elevate the plunger into contact with the cut off end of the roll and to carry it into contact with the wrapper and means, operatively connected with the plunger to return the knife into its initial position when the plunger descends again.

11. In a wrapping and labeling machine a reciprocating carriage, adapted to convey a wrapper toward a wrapping and labeling position, a reel, adapted to carry a tape, on which advertising indicia are impressed in series, propelling means, adapted to engage the tape, unwinding from the reel and to propel it toward the wrapper carriage, motion-transmitting means, comprising a reciprocating bar, operatively interconnected between the reciprocating carriage and said propelling means and adapted to intermittently actuate the latter and means for severing said advertising indicia in predetermined lengths before they are attached to the wrapper.

12. In a wrapping and labeling machine a reciprocating carriage, adapted to convey a wrapper toward a wrapping and labeling position, a reel, adapted to carry a tape on which advertising indicia are impressed in series, separated from each other by marginal indentations of the tape, propelling means, comprising a frictional roll, adapted to engage the tape, as it unwinds from the reel and to advance it toward the wrapper carriage, and a pawl, fulcrumed at a fixed point, and controlling the advance of the tape by successively engaging the marginal indentations, motion-transmitting means, comprising a reciprocating bar, operatively interconnected between said reciprocating carriage and said frictional roll and adapted to intermittently actuate the pawl by releasing it temporarily from engagement with said marginal indentations, as soon as the frictional roll commences to propel the tape, means for severing the latter in predetermined lengths and means to attach them successively to the wrapper.

13. In a wrapping and labeling machine a reciprocating carriage, adapted to convey a wrapper toward a wrapping and labeling position, a reel, adapted to carry a tape on which advertising indicia are impressed in series, separated from each other by marginal indentations of the tape, propelling means, comprising a bifurcated pawl, linked to the arm of a swinging lever and adapted to intermittently propel said tape by successively engaging said marginal indentations, motion-transmitting means, comprising a reciprocating bar, operatively interconnected between said reciprocating carriage and said pawl, means, likewise actuated by said bar to temporarily release the pawl from engagement with the indentation after each propulsion of the tape, means for severing the latter in predetermined lengths and means to attach said tape lengths successively to the advancing wrapper.

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