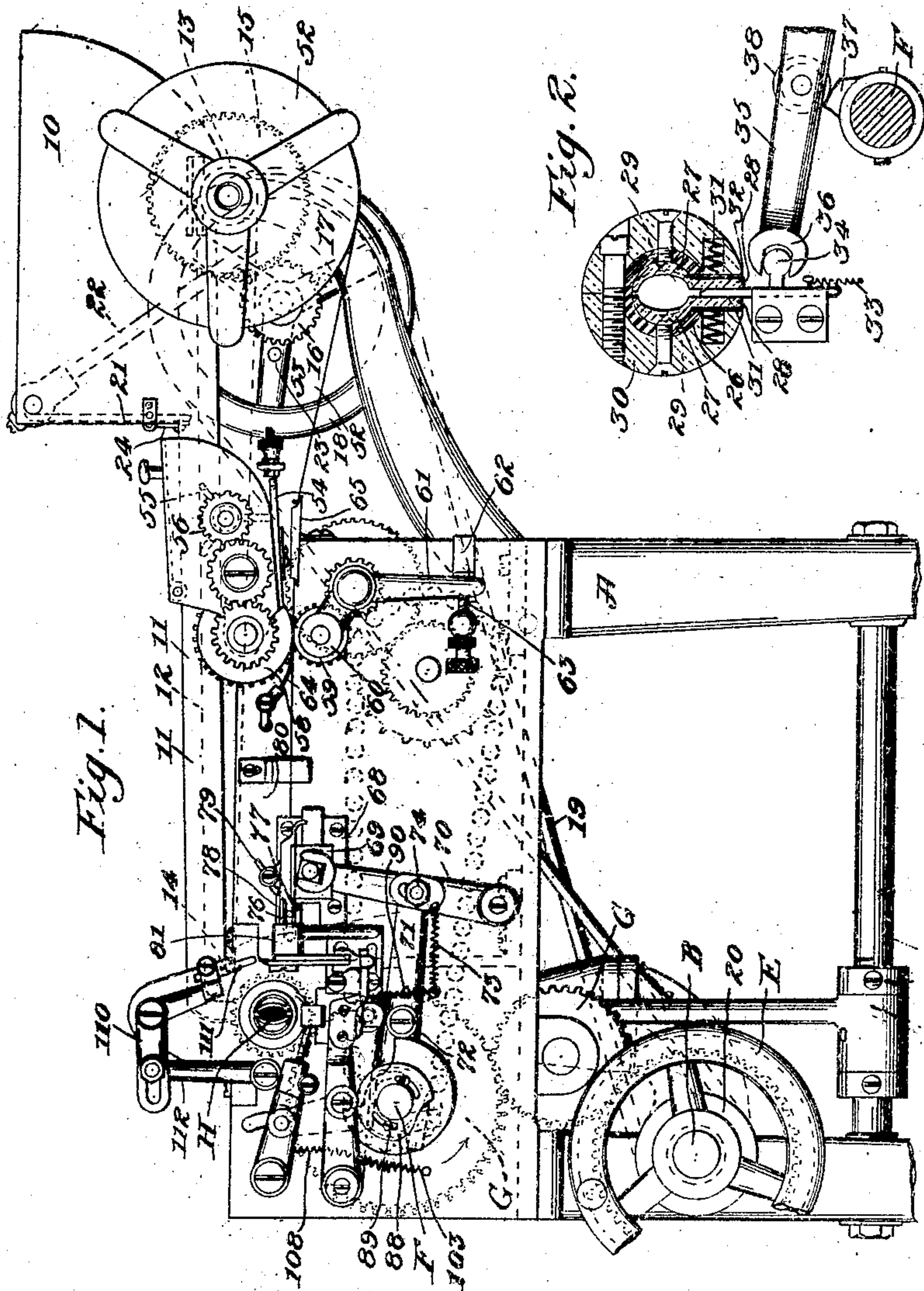


No. 869,394.

PATENTED OCT. 29, 1907.

S. RAGONA.  
CIGARETTE MACHINE.  
APPLICATION FILED JULY 14, 1906.

3 SHEETS—SHEET 1.



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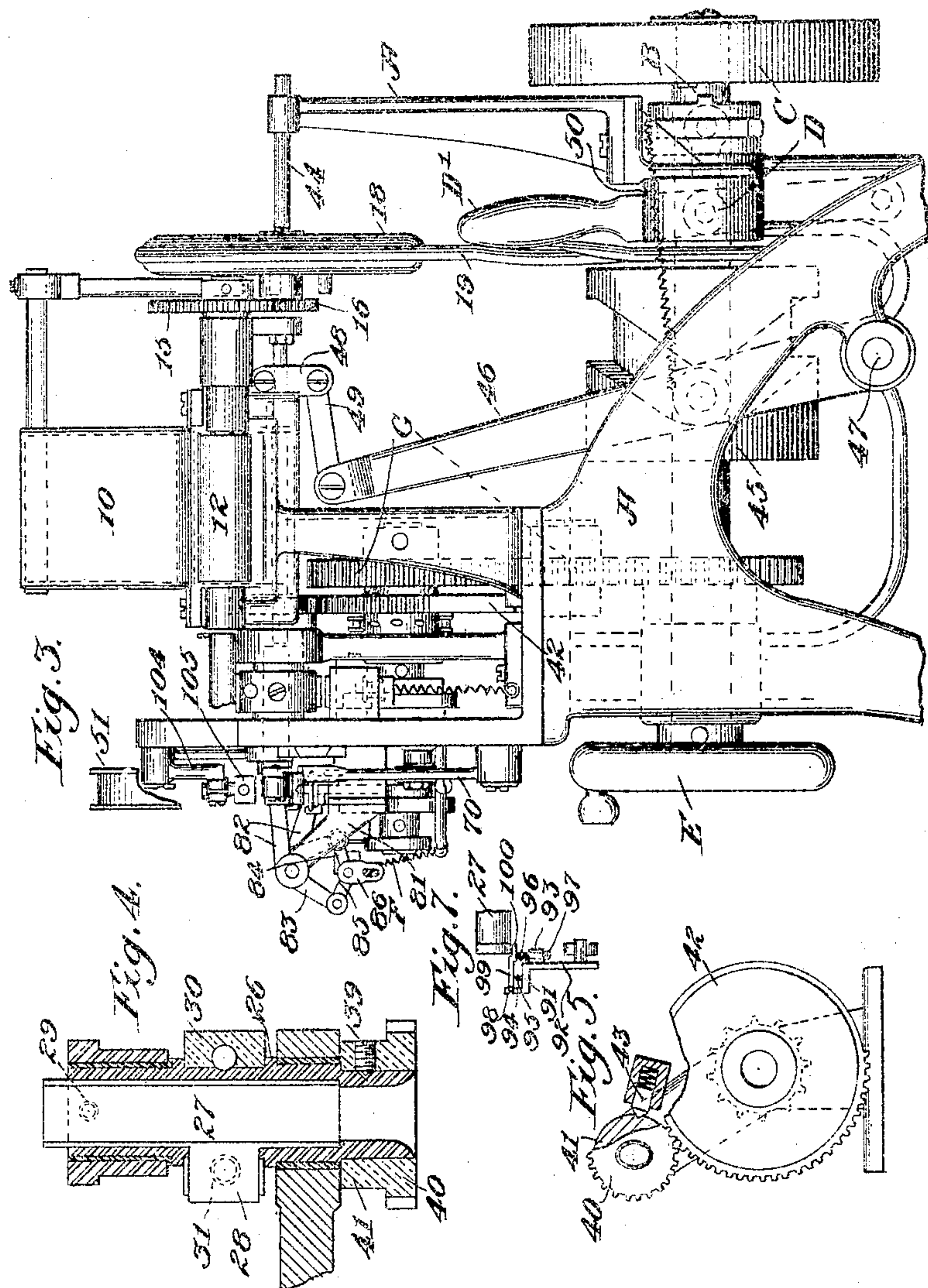
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his Attorneys

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3 SHEETS--SHEET 2.



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No. 869,394.

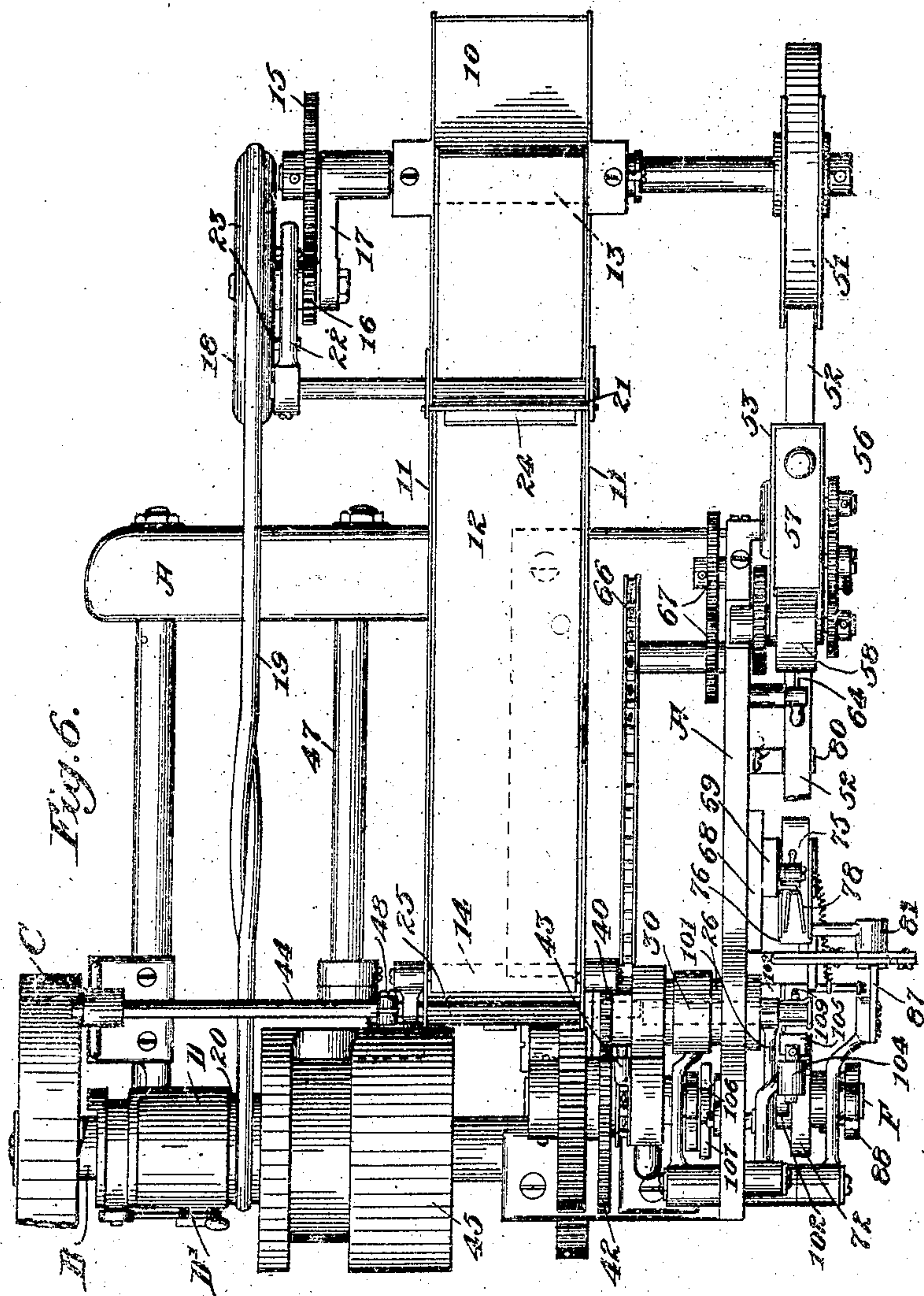
PATENTED OCT. 29, 1907.

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**CIGARETTE MACHINE.**

APPLICATION FILED JULY 14, 1908.

3 SHEETS--SHEET 3.



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# UNITED STATES PATENT OFFICE.

SALVADOR RAGONA, OF NEW YORK, N. Y.

## CIGARETTE-MACHINE.

No. 869,394.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed July 14, 1906. Serial No. 326,243.

*To all whom it may concern:*

Be it known that I, SALVADOR RAGONA, a citizen of the United States, residing at the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Cigarette-Machines, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

My invention relates to cigarette machines, and more particularly to a class thereof adapted to put a cork or similar tip upon paper cigarettes.

The main object of the invention is to provide a machine of this character which is capable of wrapping a small, narrow strip of cork or other material used as a tip for paper cigarettes, about one end of an otherwise finished cigarette and glue or paste the same thereto by a series of operations which will permit the machine being run at high speed without breaking or tearing the cigarettes or having a material number of seconds.

A further object is to provide a machine of this character wherein the cork or other tipping strip may be fed to the wrapping mechanism from a continuous web with the end thereof always under control and separated in short lengths after the free end thereof has been so attached as to avoid displacement.

A still further object is to provide such a machine wherein the tipping strip will be fed in part by paste spreading and feeding rollers operated in conjunction with a paste pot, and with an extent of feeding movement proportionate to the speed of operation of the wrapping mechanism.

A still further object is to provide means in connection with said paste spreading and strip feeding rolls, and said paste pot, whereby the quantity of adhesive fed by said rolls may be regulated and maintained at a substantially uniform quantity.

A still further object is to provide means regulating the pressure of the feeding and spreading rolls on the strip.

A still further object is to provide a feeding and spreading roll mechanism which will insure the strip being fed perfectly flat and smooth and in alinement with the wrapping mechanism.

A still further object is to provide a feeding and spreading mechanism which may be quickly thrown out of gear and taken down and apart for purposes of inspection, threading and cleaning.

A still further object is to provide means for stripping said cork or other strip from said feeding and spreading rolls.

A still further object is to provide a machine of this character embodying therein a strip feed clutch whereby the free end of the strip will be intermittently fed to the wrapping mechanism as required in a manner to

insure a reliable forward feed, and avoid a backward drag on the strip upon the return of the said clutch.

A still further object is to provide a machine of this character wherein the wrapping mechanism will paste and hold the strip upon the cigarette end at the intervals embracing the limit of the forward movement of the strip feed clutch and of the reversal of this movement in a manner to not only insure the disengagement of the clutch from the strip and prevent said strip being dragged back with the clutch, but to insure the seam or overlap of the strip being precisely and uniformly positioned on all cigarettes tipped, and permit the strip to be drawn taut so as to have the requisite length cut therefrom in a manner to insure a clean, straight edge to the severed or separated part.

A still further object is to provide a machine of this character wherein the quantity of feeding movement of the strip clutch may be regulated to adapt the machine to different sizes and styles of cigarettes.

A still further object is to provide a machine of this character wherein the interval at which the shears or cutters operate may be regulated to adjust the point at which the seam or overlap will appear on the cigarette; or to bring the shears into synchronism with the strip feed clutch in adapting the machines to different sizes or styles of cigarettes.

A still further object is to provide a machine wherein the separated or severed portion of the strip will be smoothly and evenly wrapped about the end of a cigarette and be caused to adhere thereto, without crushing or breaking the cigarette end.

A still further object is to provide a machine capable of being used with either a rotary or a stationary holder or chuck.

A still further object is to provide a machine wherein cigarettes will be successively fed to a holder or chuck having self closing and adjustable jaws, and be held therein with one end protruding therefrom and alined with the strip feed and wrapping mechanism so as to permit a severed or separated section of the strip to be wrapped thereabout with one end substantially flush with the open end of the cigarette.

A still further object is to provide a machine wherein cigarettes will be successively fed to a holder or chuck and be gaged and retarded in a manner during such feeding movement to prevent their being projected therefrom to a varying extent in different feeding movements through momentum, thus insuring the protruding end of each cigarette being alined with the strip feed and wrapping mechanisms so as to permit a severed or separated portion of the strip to be wrapped thereabout with one edge thereof substantially flush with the cigarette end.

A still further object is to provide a machine of this



character wherein the holder or chuck will be automatically opened and closed to permit the insertion and ejection of cigarettes and to hold them against rotation during the period when the strip is being wrapped thereabout.

A still further object is to provide a machine wherein the holder or chuck will be closed under light spring tensions thus insuring the automatic adjustment of the holder or chuck to each cigarette and avoiding such excessive or definite pressure as might tend to injure the cigarette.

A still further object is to provide a machine wherein the means opening said holder or chuck will be so positioned and arranged as to permit said holder or chuck to be rotated, if desired.

A still further object is to provide a machine of this character which may be used to put tips on the ordinary round cigarette, or on the oval or "Turkish" cigarette.

A still further object is to provide a machine of this character wherein the quantity of feed of the cigarette may be so regulated as to adjust the machine to adapt it to different lengths of cigarettes, or to bring it into synchronism with the wrapping mechanism.

A still further object is to provide a machine wherein the end of the strip will be brought into close juxtaposition to the protruding end of the cigarette and so supported throughout the operation of wrapping as to insure the smooth, even positioning of the tip on the cigarette irrespective of any irregularity in the shape of the cigarette, or a slight lack of uniformity in the operation of the respective mechanisms relative to each other, in this operation of wrapping.

A still further object is to provide a machine of this character wherein the cigarette as it is fed to the holder or chuck, will serve as an ejector for the preceding cigarette, which had previously thereto had a tip applied to it.

A still further object is to provide a machine of this character wherein the cigarettes irrespective of the type, may be fed to said holder or chuck in a definite position, thus insuring uniformity in the positioning of the seam or overlap of the tip.

A still further object is to provide a machine of this character which may be fed by an endless belt, thus insuring a constant feed and permitting the machine, if desired, to be applied directly to a cigarette making machine, the two machines being run at substantially the same speed, and also allowing sufficient time for an operator to change the position of any cigarette which does not feed in the proper position.

A still further object is to provide a machine wherein cigarettes may be fed from a hopper in a manner to insure a regular, even feed and avoid the clogging of the outlet of the hopper, or the feeding of more than a single row of cigarettes.

A still further object is to provide a machine of this character which when the holder or chuck is a rotary one, will have the strip feeding and cutting mechanism, the wrapping mechanism, the feeding mechanism and the holder or chuck mechanism so synchronized that each will become operative only at the proper instant, thus permitting the machine to be speeded up to give it large capacity.

A still further object is to provide a machine of this

character wherein the quantity of movement of the respective elements will be so limited as to avoid undue wear and a resultant disarrangement of the machine.

A still further object is to so construct and arrange the various elements that there can be no looseness such as would permit any part to so lag as to cause a collision with resultant damage to the machine.

A still further object is to provide a machine wherein dust, dirt and fragments of tobacco cannot accumulate about the working parts of the machine in a manner to interfere with the operation of the machine, or to require the shutting down of the machine to remove same.

A still further object is to provide a small compact machine for putting tips on cigarettes, the size and capacity of which will be economical of factory space, and a still further object is to provide a machine of this character wherein the various mechanisms will be positively operated either under or against spring tensions thus insuring that instantaneous initial actuation or reversal of the movement of the several parts, requisite to a high speed machine.

The invention consists in the novel features of construction and combination of parts hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings: Figure 1 is a front elevation of a machine embodying my invention; Fig. 2 is an enlarged cross section of the holder or chuck and its operating mechanism; Fig. 3 is an end elevation of said machine; Fig. 4 is an enlarged sectional longitudinal view of the holder or chuck; Fig. 5 is a detail view of the gears driving said holder or chuck; Fig. 6 is a plan view of said machine, and Fig. 7 is a detail view of the strip carrier or support.

Like numerals refer to like parts throughout the several views.

The machine illustrated in the accompanying drawings was designed to have a capacity of from fifteen to twenty thousand tips per hour, and as the operations of the various parts must be initiated in such rapid succession as not to be clearly distinguishable, and their movement throughout the greater part of their respective operations is simultaneous, I have in the following description held the mechanisms incidental to the separate steps, apart from each other to more clearly explain the same, and in the description of the operation of the entire machine, I have explained the coöperation between these mechanisms. With this scheme in view, the machine may be considered as consisting of a "cigarette feed and holder mechanism"; "a strip feed and cutter mechanism", and a "wrapping mechanism".

In the embodiment of my invention shown in the accompanying drawings, the frame of the machine is indicated at A and the main power shaft at B. C indicates an ordinary belt pulley loosely mounted on the shaft B and adapted to transmit power thereto through a sliding clutch member D adapted to rotate with said shaft and to be thrown into and out of mesh with the pulley C by a handle D'. A hand wheel E is mounted on the other end of said shaft for the purpose of providing convenient means for slowly operating the machine for purposes of adjustment, cleaning or preparing for a run.



The machine shown in the drawings is designed to draw its supply of cigarettes from a hopper 10, having a bottom open toward the front thereof and having a trough 11 open at top and bottom leading therefrom to a point adjacent to, above and to one side of the wrapping mechanism. The bottom of this hopper and its trough is closed by an endless conveyer belt 12 which is driven by a roller 13 at the end thereof within the hopper 10, and runs about a second roller 14 adjacent to the holder or chuck mechanism. To insure the delivery of oval or "Turkish" cigarettes from the conveying belt without a rolling movement thereof, I make the roller 14 of small diameter. The roller 13 is driven through a gear 15 mounted thereon and in mesh with a smaller gear 16 carried on a shaft mounted in an arm 17 pivotally mounted on the shaft of the said roller, and adapted to rotate about said shaft as an axis. The gear 16 is driven by a pulley 18 and a belt 19 extending therefrom to a pulley 20 on the main power shaft B. The pivotal arm 17 is used to permit the gear 16 and pulley 18 to have such movement about the axis of the gear 15 as to automatically adjust this driving mechanism to any variance in the length of the belt or rope 19. The diameters of the various pulleys and gears are so proportioned as to so reduce the speed of the roller 13 as to impart a conveying movement to the belt 12 approximating the width of a single cigarette to each rotation of the shaft B.

Between the conveying belt 12 and the lower edge of the front plate of the hopper 10 is a space considerably higher than the thickness of a cigarette, and to prevent more than a single cigarette being fed therethrough at a time, I mount a shaft adjacent to said plate and above said opening carrying a pendant pusher plate 21 extending to a point slightly above the belt 12, and key to said shaft a rod 22 adapted to be engaged by tappets 23 on the pulley 18 so as to rock said plate 21 in a manner to push the contents of the hopper above the height of the greatest thickness of a cigarette, away from said outlet. There is a tendency of the cigarettes in passing through said outlet, to become skewed slightly and to ride on one edge and thus be fed on the belt 12 in an oblique line and not perfectly flat and straight as required; to overcome which I hinge a pivotal weighted flap 24 beyond said outlet, the weight of which is sufficient to resist the passage of a cigarette except when the latter contacts therewith throughout its entire length, and to roll it over in case it is on one edge.

The belt 12 at about the horizontal diameter of the roller 14, feeds into a narrow chute 25 formed of a continuous strip of metal bent to form a bottom loop substantially the width of the narrow dimension of a cigarette, and with its top edges respectively bent in a curve toward the roller 14, and on a line substantially concentric therewith as shown in dotted lines in Fig. 1, so as to receive each cigarette as it passes from the belt on the roller without permitting it to turn in its descent in the chute.

Mounted opposite one open end of the chute 25 and aligned therewith is a cigarette holder or chuck consisting of a hollow shaft 26 mounted in suitable bearings and having the forward end cylindrical and the rear end oval and provided with a bell mouth, (see Fig. 4) adjoining the bottom of said chute, and having mounted therein and capable of lateral movement relative there-

to and to each other, oppositely disposed spring pressed jaws 27. Each of these jaws is shaped interiorly so as to conform to the cigarette to be tipped, and is hemicylindrical on its outside so as to permit that slight circular movement which is incidental to the opening and closing of these jaws. One end of these jaws protrudes beyond the shaft 26 and is shaped to conform with the cigarette contained in the jaws, the purpose of which will appear hereinafter. The machine may be adapted to different sizes and styles of cigarettes by the substitution of jaws designed to conform to any particular size or type of cigarette.

Each jaw 27 comprises a holding part adapted to have lateral movement within the shaft 26 and a pendent lug 28 extending through an opening in said shaft. Mounted or seated in a socket within said shaft 26 and bearing upon the jaw adjacent to the front end thereof is a light tensioned spring as 29 (shown in dotted lines in Figs. 2 and 4) which spring serves to both center the jaws in the shaft and aid in closing them. About said shaft adjacent to the lugs 28, a split collar 30 having an opening for said lugs and sockets on opposite sides thereof for the springs 31 bearing on the lower part of said lugs, is keyed to said shaft so as to be substantially integral therewith. It will thus be observed that the jaws 27 are normally pressed together by the springs 29-31 and that these springs being of light tension, there is insufficient pressure to crush a cigarette. It will also be observed that said jaws are self closing and are capable of a movement so self limiting as to adjust the holder or chuck to different sizes of cigarettes. This feature assumes great importance, as the variance in the quantity of filler in cigarettes made on the same machine is sufficient to cause such a considerable difference in the dimensions of the cigarettes as to make the waste or number of "seconds" or spoiled cigarettes appreciable, when the jaws are closed with a positive movement. The lugs 28 prevent all movement of said jaws relative to the shaft 26, other than that requisite to open and close same.

Mounted in ways below the shaft 26 is a reciprocating wedge 32 adapted to pass between the lugs 28 and open the jaws 27 against the tension of the springs 29-31 the edges of said lugs and said wedge being suitably rounded or beveled to facilitate the entrance of the latter between the former and the latter preferably having a reduced shank in order that the springs 31 will rock the jaws about the head of said wedge in a manner to open the jaws at both the top and the bottom. The wedge is normally retracted by a spring 33 and has a cylindrical projection 34 thereon by means of which it is actuated by a lever arm 35 mounted on the frame of the machine and having a forked end 36 straddling said projection 34.

A cam 37 mounted on a shaft F parallel to the shaft B and driven therefrom through the intermeshing intermediate gears G operates said lever arm 35 through the antifriction roller 38 carried thereby and adapted to engage said cam. The projection on said cam is so arranged as to raise said wedge and open said jaws during the interval when one cigarette is being ejected from and another is being fed to the holder, the jaws being permitted to close under the tension of the springs 29-31 when the cigarette has been so fed.

The hollow shaft 26 has keyed thereto by means of a set screw 39, a gear 40 having a hub 41 with a shallow socket therein as shown in Fig. 5. The gear 40 is ac-



tuated through the segmental or intermittent gear 42 mounted on the shaft F. Excess movement of the gear 40 is prevented by a spring pressed bolt 43 mounted adjacent to the hub 41 and adapted to enter the socket 5 therein. The end of the bolt 43 is beveled or rounded so as to be disengaged from said socket through a positive movement of the hub 41, while offering sufficient resistance to the rotation of the hub to prevent any movement thereof otherwise. This bolt or its equivalent is necessary to insure the proper positioning of the jaws 27 relative to the wrapping mechanism, and of the gear 40 relative to the gear 42 to insure the proper engagement of these gears. The set screw 39 is used so that the gear 40 may be made to run as an idler in case 15 it is desired to run with a non-rotary holder.

Mounted in alinement with the hollow shaft 26 and the loop of the chute 25, is a pusher rod 44 which pushes the lowermost cigarette from the chute 25 into the shaft 26 and the jaws 27 thereof. This pusher is preferably 20 of a cross section approximating one diameter of a cigarette so as to avoid packing the tobacco therein during the feeding movement thereof, and is of the same dimensions throughout to avoid the mutilation on its return, of cigarettes contained in the chute 25.

25 Mounted on the shaft B is a drum cam 45 which actuates an arm 46, one end of which is mounted on a shaft 47 below said drum and the other end of which is connected to the rod 44 by means of a clamp 48 and a pivotal link 49 which compensates for the arc described by the end of said arm 46, thus permitting a horizontal movement of the pusher rod. The clamp 48 is used in order that the rod 44 may be adjusted toward or from the shaft 26 so as to control the quantity of feed imparted to each cigarette without varying the throw of 35 the cam 45.

The arm 46 acts against the tension of the spring 50 which serves to take up any slack between the roller of said arm and its cam, thus insuring positive movement of the lever at all times.

40 Operating substantially simultaneously with the cigarette feed and holder mechanism above described, is a feed and cutting mechanism for the continuous strip of cork or other material for the tips of the cigarettes. This strip is mounted on a reel 51 positioned adjacent to 45 the hopper 10 which reel is free to turn, as distinguished from a driven reel. I have indicated the strip itself at 52.

Mounted on the frame of the machine between the reel 51 and the wrapping mechanism, is a paste pot 50 53, which is removably attached to said frame so as to be readily removed for cleansing. The forward bottom end of this pot has an opening therein the size of which may be regulated by a sliding bottom plate 54. Mounted in the pot 53 is an agitator 55, which is so 55 driven by the gearing 56 as to constantly force the paste or other adhesive toward the opening in the pot. Said pot is closed by a cap 57 which is hinged at one end thereof to the pot and serves the twofold function of excluding dust and dirt from the pot, and as a weight 60 to force the paste or other adhesive within the field of the agitator.

Closing the opening in said paste pot is a distributing and feeding roller 58 which is driven through a gear thereon in mesh with a gear on a lower feeding

and distributing roller 59, by which arrangement the 65 peripheral travel of said rollers is equal.

The roller 59 is carried on a bearing 60 having a pivotal arm 61 one end of which is positioned between a spring 62 and an adjustable screw contact 63, thus permitting the regulation of the pressure on the strip 70 while between said rollers 58—59 and, in conjunction with the sliding plate 54, of the quantity of adhesive spread on the strip. The arm 61 by removing the spring 62 by a lateral swinging movement, may be so swung as to drop the roller 59 away from the roller 58 75 to facilitate the removal of the paste pot, the threading of the strip, or the cleansing of the roller 58.

A stripper 64 bears constantly on the roller 58 in a manner to separate the strip 52 therefrom.

Mounted between the rollers 58—59 and the reel 51 80 is an elongated trough or channel plate, 65 which serves to support the strip and feed it to the rollers perfectly flat and straight.

The rollers 58—59 are driven from the shaft F by a chain and sprocket wheel mechanism 66, and a gear 85 system 67 driven thereby. The sprocket and the various gears are so proportioned that with each revolution of the shaft F the peripheral travel of the rollers 58—59 will equal the length of the strip required for a single tip. 90

Mounted in ways 68 on the frame of the machine and between the rollers 58—59 and the wrapping mechanism, is a reciprocating clutch by means of which the gummed or pasted strip is fed in relation to said mechanism. This clutch comprises a traveler 95 block 69 mounted in said ways and reciprocated by a lever 70 actuated through a pusher 71, and a cam 72 mounted on the shaft F. Said lever acts under the tension of a spring 73. The contact face of the cam 72 has a gradual fall from its highest point for approximately two thirds of its periphery and then an abrupt fall, a short circular section and an abrupt rise to said highest point, thus insuring a gradual feed of the strip toward the wrapping mechanism during the greater part of each revolution, a rapid feed when the strip is 105 positioned relative to said wrapping mechanism, a brief stage of inactivity and a rapid return movement. Such movements are required in that by a rapid reciprocation throughout, the material of the strip being light, would have a tendency to fly out of true and 110 become entangled and twisted.

The pusher 71 is connected to the lever 73 by a set nut 74 passed through an elongated slot in said lever, thus permitting a regulation of the throw of said lever. This construction permits the adjustment of the machine to different sizes and styles of cigarettes, and also the regulation of the seam on each cigarette. 115

Mounted on the block 69 is a channel plate 75 which serves to retain the strip in true with the wrapping mechanism. Extending forwardly from this plate 120 and hinged thereto is a flap 76 which is held normally flush with said plate by a light spring 77 thereunder.

The side webs of the plate 75 have journaled therein forked, spring pressed clutch fingers 78 having two downwardly and forwardly presented points. I employ points as described because said clutch member must engage the gummed or pasted surface of the strip, and by minimizing the gripping area of the clutch 125



there is no tendency of the strip to adhere thereto. These points bear against the flap 76 through an interposed strip and the strength of the grip of the former is limited by the tension of the spring acting on said clutch member 78 and the spring 77. The drag of the strip between the clutch and the feed rollers being very small and the fingers 78 being required to automatically release themselves during each return stroke, these tensions are very light. I employ a spring pressing down the fingers 78 because at high speed there is a tendency of said fingers to fly away from the flap 76.

I provide the fingers 78 beyond their pivot, with a thumb piece 79 by means of which the said fingers may be raised in "threading" the strip.

Between the ways 68 and the rollers 58—59, is a loop 80 adapted to receive the strip and prevent its becoming entangled or twisted.

Mounted on an arm 81 positioned at a point to one side of the ways 68 and between them and the shaft 26, are the cutters or shears. These shears consist of oppositely disposed pivotal blades 82 having downwardly diverging integral actuating arms 83 pivotally connected respectively to the opposite levers 84—85 of a toggle lever. The arms 84—85 are pivotally connected to a pitman 86 which receives a reciprocating movement from a lever 87 and a cam 88 mounted on the shaft F through a plate keyed to said shaft and set screws 89 passing through segmental slots (see Fig. 1) in said cam and securing said cam to said plate. This cam is a true circle throughout the greater part of its periphery, having a graduated depression therein at one point with a rapid rise to the circular periphery at the end thereof. The set screws 89 and the segmental slots are used to permit the regulation of the point of rotation of the shaft F when the shears will become operative, which regulation is desirable as facilitating that adjustment of the shears necessary to synchronize their operation with the feeding movement of the clutch and also to regulate the length of strip end protruding beyond the fingers 78 which will determine the location of the seam or overlap of the tip on the cigarette. A spring 90 holds the lever 87 on the cam 88 and takes up any slack therein as well as aids in the closing of the shears. The shears 82 extend across the path of the clutch which passes therebetween with each feeding movement. The arm 81 is adjustably secured on the machine as shown to facilitate the assembling of the machine and the substitution of sharpened shears for dulled ones.

The term wrapping mechanism is used to indicate all those elements which aid in applying the end of the strip 52 to and fastening it about, the end of a cigarette, and embraces only those elements which are applied directly to the strip itself irrespective of other mechanisms which by their action on the holder may aid in this result.

The parts of this mechanism which act on the strip are centered about the front end of the jaws 27 being alined with the strip feeding clutch, and so proportioned as to act substantially the full length of the protruding end of the cigarette.

Mounted in ways below the shaft 26 and forwardly thereof is a reciprocating carrier 91 which serves as an end gage to limit the extent of projection of a cigarette from the jaws 27, and as a guide to the strip as it is

wrapped about the cigarette, to keep it straight and smooth. This carrier has a shank 92 having a vertical socket 93 on the inner side thereof, and an end gage 94 projecting upwardly from the outer edge thereof. Mounted on this carrier 91 by means of springs 95—96, a stem 97 seated in the socket 93 [and held therein by a suitable pin passed through said stem below said socket], and side guides as 98 passing on each side of the end gage 94, is a depressible plate 99. This plate 99 is adapted to bring the strip into such close juxtaposition to the cigarette end as to insure the strip being wrapped thereon perfectly straight and even. The inner end of this plate has a depressed portion 100 adapted to engage the protruding ends of the jaws 27, the extent of this depression being slightly greater than the thickness of the ends of said jaws. The plate 99 under normal conditions will exert no pressure, or no material pressure on the cigarette end, the construction above described being designed to bring the strip into such close juxtaposition to the cigarette end as to cause it to be put on the cigarette perfectly straight and without wrinkling to compensate for any minute lack of uniformity in the rise and fall of the carrier in accordance with a variance in the dimensions of the ends of the jaws 27 and to bring the end gage 94 into operation.

The carrier 91 receives a vertical movement from a lever 101 actuated by a cam 102 mounted on the shaft F, a spring 103 holding said lever upon said cam.

The cam 102 is so shaped as to impart a quick rise and fall to the carrier 91 to interpose the end gage 94 in the path of the cigarette as it is fed to the jaws 27, and leave a clear field to the strip clutch, a second rise and fall to hold the strip close to the cigarette while it is being attached thereto, and to permit the withdrawal of the said clutch, and then a rapid rise and such further reciprocations as may be necessary to have the depressed portion 100 follow any irregularity in the configuration of the jaws 27, which may exist by reason of the mechanical impossibilities of securing exact uniformity of the cam with the irregularities of said jaws, or by reason of the variance in the dimensions presented by said jaws due to their being more or less tightly closed through a lack of uniformity of the cigarettes therein.

Mounted to one side of the shaft 26 and forwardly thereof, is a pivotal arm 104 carrying a flexible wiper 105 in the end thereof which wiper is preferably of soft rubber and extends forwardly of the arm to an extent to pass the jaws 27 and engage a cigarette protruding therefrom at a point slightly to one side of the horizontal diameter or dimension thereof. This arm is actuated through a pusher 106 actuated by a cam 107 so shaped that the wiper will have the following movements, to wit: upward to about the horizontal diameter of the jaws 27 where it remains substantially stationary during the interval when one cigarette is being ejected from said jaws and another is being fed thereto; downward to leave a clear field above it for the strip as it is fed by the reciprocating clutch; upward to about the horizontal diameter of said jaws with the strip end, where it will remain stationary during the interval when said clutch is being returned and the strip end is being severed or separated; upward above said jaws to leave a clear field for the completion of the wrapping



of the tip about the cigarette, and downward to press the overlapped end of the tip upon the cigarette and bring it to position for the succeeding cycle. A spring 108 acts on said pusher to take any slack up and insure the quick response thereof to the movement of the cam.

I also provide an attachment by which the holder or chuck 26 may be maintained stationary if desired, which consists of a tongue 109 carried by the plate 99 so as to fold one end of the severed strip upward along one side of said holder or chuck, and a bell crank 110 mounted above the said holder or chuck, the arms of which respectively are provided with a flexible wiper 111 and connected to the arm 103 by a pivotal link 112, suitable play being provided to cause a vertical movement of the arm 104 to give a rapid lateral oscillation to the wiper 111.

It is to be observed that all of the mechanical parts centered about the cigarette, excepting the pusher rod 44, are actuated from the same shaft F, thus insuring the perfect timing of the movements of each operation.

The operation of the machine will be described with relation to placing the cigarette tip on a single cigarette, this operation being repeated with great rapidity and accuracy, thus giving great capacity to the machine. In describing the operation it will be assumed that the cigarettes are fed to the hopper 10 in quantities, although the operation would be the same or substantially so, if the belt 12 were also to serve as the discharge belt of the ordinary cigarette machine.

Before starting the machine, the spring 62 is swung away from the arm 61 and the roller 59 dropped away from the roller 58. The strip 52 is then drawn from the reel and placed in the channel plate 65, and one end thereof placed against the roller 58, and the roller 59 restored to place. The hand wheel E is then turned until the end of the web is fed sufficiently to permit its being passed through the keeper 80 and placed in the channel plate 75 between the fingers 78 and the flap 76, the thumb piece 79 being used to raise said fingers. The end of said strip may then be drawn forward until a gummed or pasted part thereof projects beyond the flap 76. The machine is now threaded and ready for the start.

The roller 59 may then be again thrown out of gear and the clutch D thrown into mesh with the pulley C, thus starting all the mechanisms, except the rollers 58—59. The conveying movement of the belt 12 will bring the cigarettes thereon within the hopper 12, toward the opening in the front plate thereof, the tappets 23 swinging the plate 21 through the rod 22 backward and forward in a manner to give a single row of cigarettes a clear field adjacent to the opening in said plate. As each cigarette contacts with the weighted flap 24, it is positioned in a line paralleling the axes of the rollers 13 and 14 and if it be an oval or "Turkish" cigarette, it is placed on its flattened side. In this position it is fed throughout the entire distance between the rollers 13 and 14, the length of the belt 12 allowing time for the operator to turn any cigarette not positioned thereon with the seam upward. As the first cigarette approaches the roller 14, the roller 59 is again raised to position to initiate the feeding of the strip 52 by said rollers.

Each oval or "Turkish" cigarette as it passes from the belt 12 at the vertical diameter of the roller 14, is dropped edgewise down the chute 25, the small diameter of said roller not allowing sufficient space for the cigarette to roll in its descent, thus positioning the seam or overlap of each cigarette fed to the said chute on the side away from the strip feed mechanism.

The pusher 44 is then advanced by the cam 45 and the lever 46, and engaging the end of the lowermost cigarette in the chute 25, feeds it toward the bell mouthed opening of the shaft 26.

Substantially simultaneously with the initiation of the feeding movement of the cigarette, shown at H, in the several views, the lever 35 is raised by the cam 37, thus forcing the wedge 32 between the lugs 28 of the jaws 27 and opening these jaws, holding them in this position until the cigarette has been fed to the full extent with relation thereto. The wedge in passing between said lugs opens the jaws upon the tops thereof as a fulcrum, with a slight lateral rolling movement, the slight enlargement of the top of said wedge when past the springs 31, permitting said springs to open said jaws at the top by oscillating the lugs about said enlargement. This enlargement is only a few thousandths of an inch, but sufficient to accomplish this purpose.

During the passage of the cigarette between the jaws 27, the arm 104 is raised so as to cause the wiper 105 thereon to press against the side of the cigarette as it passes beyond the protruding end of said jaws, and act as a brake thereon to prevent its acquiring any momentum, and the carrier 91 is raised so as to project the end gage 94 into the path of the cigarette and limit the extent of its projection from said jaws. As the depressed portion 100 of the plate 99 contacts with the protruding end of the jaws, said plate is forced downwardly against the tension of the springs 95 and 96, leaving a clear unobstructed field between the said jaws and the end gage 94. At substantially this instant the wedge 32 is withdrawn from between the lugs 28 permitting the jaws 27 to close upon the cigarette under the tension of the springs 29—31. It will be observed that the quantity of closing movement of said jaws will be controlled entirely by the size of the cigarette contained within them, the jaws automatically adjusting themselves to cigarettes varying in their shape and in the quantity of their filler, and holding them with a grip so light as to avoid crushing or breaking them. While the cigarette is being so positioned in the jaws the channel plate 75 and its appurtenances, is moving relatively slowly toward the wrapping mechanism, bringing the end of the strip 52 with it. The construction and arrangement of the fingers 78 and the flap 76 are such as to prevent any drag of the strip disengaging the jaws from the strip, any such drag merely resulting in pressing said fingers more firmly upon the strip, the flap 76 giving sufficiently to prevent the fingers sinking thereinto. The strip is fed with the gummed or pasted side up.

As the jaws 27 close upon the cigarette, the arm 104 and its wiper 105, and the carrier 91 drop to a plane below the path of the plate 75 and the said plate is advanced rapidly, coming to rest when the end of the flap 76 is directly beneath the vertical diameter of the cigarette, said carrier passing between the jaws 82 of



the shears and positioning the free end of the strip across the plate 99 and above the wiper 105.

As the plate 75 comes to rest, the plate 99 again rises forcing the flap 76 and fingers 78 upward until the strip is forced into contact with the cigarette, the springs 95—96 giving sufficiently to avoid such pressure as would break the cigarette, and substantially simultaneously therewith, the arm 104 is swung upwards, its wiper 105 carrying the free end of the strip with it and pasting it to the side of the cigarette, remaining in contact therewith at about the horizontal diameter of the cigarette. The carrier 91 then drops sufficiently to permit the return movement of the strip clutch, and when the flap 76 has cleared the plate 99, the carrier 91 again advances said plate until the depressed portion 100 thereof barely contacts with the protruding end of the jaws 27 without placing the springs 95—96 under material tension or raising the gage 94 so that it contacts with the cigarette end, thus holding the strip 52 in substantial contact with the cigarette and without exerting pressure thereon. If the cigarette extends slightly beyond the inner face of the jaws 27, the plate 99 will be depressed slightly thereby independently of the carrier 91, the resultant pressure on the cigarette however, being slight.

The strip clutch is then rapidly withdrawn, the wiper 105 holding the strip against any backward movement therewith, and the fingers 78 being forced upward to allow sufficient clearance for the strip, through the direction of the drag thereon. As the flap 76 passes between the shears 82, they are actuated through the lowering of the link 86 by the spring 90 which through the levers 84—85 draws the arms 83 together, thus simultaneously moving both shear blades. The drag on the strip 52 is sufficient to hold it perfectly taut between the fingers 78 and the cigarette, thus causing the shears to make a clean, sharp cut leaving clean edges. It has been heretofore described how the period of the actuation of said shears may be regulated. It will be observed that this period controls the amount of the end which projects beyond the flap 76 and hence the length of the severed portion of the strip and the location of the overlap or seam. This adjustment ordinarily will be employed only to bring the operation of the shears into synchronism with the quantity of feed of the strip clutch, the arm 81 being also adjustable to aid in this purpose. It will be observed that the strip end is thus always under control, the portion for each tip being severed or separated after the end is secured in place on the cigarette. The portion of the strip for the tip having been thus severed or separated, the arm 104 is raised so that its wiper 105 is raised above the cigarette and the shaft 26 and the jaws 27 with the cigarette therein, is caused to make one complete rotation through the gear 40 thereon and the segmental or intermittent gear 42. During this rotation, the carrier 91 is raised and lowered by the cam 102 with the variance in the diameter of the shaped protruding ends of the jaws 27, such ends of said jaws acting against the depressed portion 100 of the plate 99, in a manner to cause a movement of said plate on the springs 95—96 independently of the said carrier thus compensating for any variance in the contour of said jaws through differences in the sizes of cigarettes held therein, which will not conform to the throw of

the cam actuating said carrier. The plate 99 will always be supported by the springs 95—96 under the same or substantially the same tension, and will move with a vertical movement only, thus insuring an equal pressure on the cigarette throughout the entire rotation, when any such is present, and the smooth even placing of the strip on the cigarette. It will be observed that the depressible plate also permits the end gage 94 to be brought into action when the cigarette is fed to the holder or chuck only, and causes it to be below the cigarette end during this rotation thereof, thus avoiding a breaking or tearing of the cigarette end. The gear 40 at the completion of this rotation comes to rest, the bolt 43 insuring the proper positioning of the holder or chuck relative to the chute 25 and the cigarette feeding mechanism, and the wedge 32.

As the cigarette is brought to rest, the overlap of the tip will be downward, and the arm 104 and its wiper 105 is then caused to descend, forcing said overlap upon the other end of the tip portion and causing it to adhere firmly thereto. In the meanwhile, the carrier 91 has been lowered to leave a clear field for the ejection of the completed cigarette, and the pusher 44 had been restored to its former position, allowing another cigarette to drop in the chute 25 into alignment with the opening in the shaft 26. While this pusher rubs against this succeeding cigarette, its shape prevents its tearing the wrapper thereof.

The operation as above described is then repeated, the arm 104 and its wiper acting as a brake or retard on the completed cigarette, which is ejected by the cigarette fed to the holder or chuck by the succeeding feeding operation through the same movement by which it is caused to act similarly on the cigarette being fed to said jaws.

The chain and sprocket mechanism 66 and the gear system 67 causes a quantity of feeding movement of the strip 52 with each rotation of the shaft F equaling the length severed for each tip, thus causing sufficient slack in said strip to avoid a material backward drag on the fingers 78. The operator by watching this strip as it leaves the rollers 58—59 may judge whether or not the quantity of paste being fed thereto is right, and by varying the width of the opening in the paste pot through the bottom slide 54 and the pressure exerted by the roller 59, by means of the set screw 63, may regulate such.

When the holder or chuck is rotated, the tongue 109, the bell crank 110 and its wiper 111, are inoperative to aid in wrapping the tip about the cigarette. If it be desired to operate the machine with a stationary holder or chuck, however, it is merely necessary to release the set screw 39 thus disconnecting the gear 40 from the shaft 26.

The operation of the other parts of the machine will be as heretofore described, the difference being merely in that the rear end of the severed portion of the strip is raised upwardly by the carrier 91 and the tongue 109 into the path of the wiper 111 which, as the wiper 105 is raised after holding the strip end on the cigarette, will with a relatively more rapid movement, be oscillated carrying said rear end across the cigarette and below the wiper 105 so that the latter upon its descent will carry this end downward and lap it upon the forward end, previously pasted to the cigarette by said wiper.

It will be observed that under no circumstances is



the cigarette subjected to any pressure or rubbing contacts which would tend to wrinkle or tear the paper wrapping thereof, or break the end of the cigarette, and that any pressure thereon from the plate 99 by reason of the jaws 27 compressing an unusually soft cigarette slightly, will be under a substantially uniform light spring tension and that said plate is thus capable of being depressed by the cigarette end alone without likelihood of the end being broken. It will also be observed that the open end of the cigarette when being fed comes into contact with the end gage 94, but that said gage is withdrawn below the cigarette when the holder is rotated and the cigarette is being ejected, thus preventing a twisting strain on the protruding end of the cigarette, and leaving a clear field for the ejection thereof. Said gage 94, however, when coming to position for each succeeding feeding movement, contacts with the latter end of the ejected cigarette, but only after the end thereof has been cleared from the jaws 27.

It will also be observed that the paste or glue is fed to the strip in only such quantities as may be required to cause it to adhere and that the interval between the feeding and spreading of the adhesive and the application of the strip end to a cigarette will tend to allow some of the moisture in said adhesive to either be absorbed by the strip or evaporate so as to reduce to a minimum any tendency of the adhesive to so dampen the cigarette wrapper as to injure the cigarette or interfere with the operation of the machine.

By regulating the length of strip severed with each operation of the shears 82 and the length of end extending beyond and forwardly of the flap 76, the position of the seam or overlap on an oval or "Turkish" cigarette may be so accurately controlled that this seam may be brought to coincide exactly with the overlap of the paper wrapper.

Through the unavoidable differences in the packing of cigarettes there is a tendency of the strip end to wind upon the cigarette in other than a perfectly straight line, but the absence of material pressure in applying the strip end to the cigarette, and a material drag to the unwrapped portion of the strip end after being severed and before as well, and the accuracy and precision with which the strip end may be placed and held through the severance of the end after it has been fastened to the cigarette, minimize this tendency and limit it to a degree which avoids the discarding of a cigarette as a second even when the strip end does not wind perfectly straight.

The quantity of movement of all parts of this machine is comparatively small, the greatest being that of the pusher 44 which is approximately two and three quarter inches. The accuracy and precision and rapidity of movement of most of these mechanisms is increased by the cam and lever movements described, and the small movement of the bearings of the various levers serves to minimize wear thereon. The various mechanisms, excepting the pusher 44, being all operated from the same shaft F also insures a perfect timing of their operations, irrespective of wear on this shaft or its transmission gearing.

It is not my intention to limit the invention to the precise details of construction heretofore described and shown in the accompanying drawings, it being appar-

ent that such may be varied without departing from the spirit and scope of the invention.

Having described the invention, what I claim as new and desire to have protected by Letters Patent is:

1. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby the forward free end of said strip is applied to said protruding end, shears adapted to sever a portion from said strip end, means actuating said shears whereby said portion will be severed after the strip end has been so applied, and means wrapping said severed portion about said cigarette.

2. In a machine of the class described, the combination of a holder comprising a hollow shaft and a plurality of jaws mounted therein, springs adapted to normally close said jaws, means whereby said jaws are intermittently opened against the tension of said springs, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby a portion of the end of said strip is severed therefrom as required, and means applying the end of said strip to and wrapping the severed portion thereof about said cigarette.

3. In a machine of the class described, the combination of a holder comprising a hollow shaft and a plurality of jaws mounted therein, lugs thereon projecting through said shaft, springs acting toward the front of each said jaw, and on each said lug, a movable wedge adapted to pass between said lugs and open said jaws against the tension of said springs, means whereby cigarettes are successively fed to said jaws with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby a portion of the end of said strip is severed therefrom as required, and means applying the end of said strip to and wrapping the severed portion thereof about said cigarette.

4. In a machine of the class described, the combination of a holder comprising a hollow shaft having a bell shaped mouth adapted to receive and guide a cigarette, and a plurality of jaws mounted therein, lugs thereon projecting through said shaft, springs acting toward the front of each jaw and on each said lug, a movable wedge adapted to pass between said lugs and open said jaws against the tension of said springs, means whereby cigarettes are successively fed to said jaws with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby a portion of said end of said strip is severed as required, and means applying the end of said strip to and wrapping the severed portion thereof about said cigarette.

5. In a machine of the class described, the combination of a holder comprising a hollow shaft having a bell mouth adapted to receive and guide a cigarette, and a plurality of jaws mounted therein, lugs thereon projecting through said shaft, springs acting toward the front of each jaw and on each said lug, a movable wedge adapted to pass between said lugs and open said jaws against the tension of said springs, a gear mounted on said shaft and means intermittently actuating said gear, means whereby cigarettes are successively fed to said jaws with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby a portion of said strip end is severed as required and means applying the end of said strip to and wrapping the severed portion thereof about said cigarette.



6. In a machine of the class described, the combination of a holder comprising a hollow shaft having a bell mouth adapted to receive and guide a cigarette, and a plurality of jaws mounted therein, lugs thereon projecting through said shaft, springs acting toward the front of each jaw and on each said lug, a movable wedge adapted to pass between said lugs and open said jaws against the tension of said springs, a gear mounted on said shaft, means whereby said gear may be secured to said shaft or rendered inoperative relative thereto, and means intermittently actuating said gear, means whereby cigarettes are successively fed to said jaws with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby a portion of said strip end is severed as required and means applying the end of said strip to and wrapping the severed portion thereof about said cigarette.

7. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, fingers thereon adapted to engage the end of said strip, means reciprocating said plate, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end, shears adapted to sever said portion of said strip end, means actuating said shears whereby said portion will be severed after said end has been so applied, and forwardly of said plate, and means wrapping said severed portion about said cigarette.

8. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, fingers thereon adapted to engage the end of said strip, means reciprocating said plate, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end, a cam having a graduated portion, a sudden depression, a circular portion and a sudden rise, connections between said cam and said plate whereby said plate is gradually advanced with a rapid movement at the end of the direct feed, is stationary and is rapidly fed in the reverse direction, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end, shears adapted to sever a portion of said strip end, means actuating said shears whereby said portion will be severed after said end has been so applied, and forwardly of said plate, and means wrapping said severed portion about said cigarette.

9. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed relative thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, a spring supported pivotal flap on the forward edge thereof, fingers on said plate adapted to engage the end of said strip, means reciprocating said plate, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end, shears adapted to sever a portion of said end, means actuating said shears whereby said portion will be severed after said end has been so applied, and forwardly of said flap, and means wrapping said severed portion about said cigarette.

10. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed relative thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, a spring supported pivotal flap on the forward edge thereof, spring pressed fingers on said plate adapted to engage the end of said strip, means reciprocating said plate, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end, shears adapted to sever a portion of said end, means actuating said shears whereby said portion will be severed after said end has been applied, and forwardly of said flap, and means wrapping said severed portion about said cigarette.

11. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a channel plate, a spring supported pivotal flap on the forward edge thereof, spring pressed fingers on said plate adapted to engage the end of said strip, means reciprocating said plate, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end, shears adapted to sever a portion of said end, means actuating said shears whereby said portion will be severed after said end has been so applied, and forwardly of said flap, and means wrapping said severed portion about said cigarette.

12. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, fingers thereon adapted to engage the end of said strip, a cam and levers whereby said plate is reciprocated, means carried by said levers whereby the amount of movement of said plate may be regulated independently of the cam, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end, shears adapted to sever a portion of said strip end, means actuating said shears whereby said portion will be severed after said end has been so applied, and forwardly of said plate, and means wrapping said severed portion about said cigarette.

13. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, fingers thereon adapted to engage the end of said strip, a cam and levers whereby said plate is reciprocated, means carried by said levers whereby the amount of movement of said plate may be regulated independently of the cam, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end, shears adapted to sever a portion of said strip end, means actuating said shears whereby said portion will be severed after said end has been so applied and forwardly of said plate, means regulating the interval at which said last mentioned means will be actuated, and means wrapping said severed portion about said cigarette.

14. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, fingers thereon adapted to engage the end of said strip, means reciprocating said plate, a paste pot between said strip support and said plate having a discharge opening, parallel rollers one of which partially closes said opening, a stripper bearing on said last mentioned roller, means rotating said rollers whereby the strip will be fed thereby substantially in the same quantity as severed from the end thereof for each tip, means whereby the end of said strip is applied to said protruding end, shears adapted to sever a portion of said strip end, means actuating said shears whereby said portion will be severed as required, and forwardly of said plate, and means wrapping said severed portion about said cigarette.

15. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, fingers thereon adapted to engage the end of said strip, means reciprocating said plate, a paste pot between said strip support and said plate having a discharge opening, parallel rollers one of which partially closes said opening, a rotary agitator within said pot forcing the paste toward said roller, a stripper bearing on said last mentioned roller, means rotating said rollers whereby the strip will be fed thereby substantially in the same quantity as severed from the end thereof for each tip, means whereby the end of said strip is applied to said protruding end, shears



adapted to sever a portion of said strip end, means actuating said shears whereby said portion will be severed as required, and forwardly of said plate, and means wrapping said severed portion about said cigarette.

5 16. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, 10 a plate, fingers thereon adapted to engage the end of said strip, means reciprocating said plate, a paste pot between said strip support and said plate having a discharge opening, parallel rollers, one of which partially closes said opening, a stripper bearing on said last mentioned roller, 15 a pivotal arm carrying the other and lower of said rollers, a spring normally holding said rollers in engagement with each other through said arm, means acting on said arm whereby said arm may be regulated to control such pressure, means rotating said rollers whereby the strip will 20 be fed thereby substantially in the same quantity as severed from the end thereof for each tip, means whereby the end of said strip is applied to said protruding end, shears adapted to sever a portion of said strip end, means actuating said shears whereby said portion will be severed as 25 required, and forwardly of said plate, and means wrapping said severed portion about said cigarette.

17. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto 30 with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, fingers thereon adapted to engage the end of said strip, means reciprocating said plate, a paste pot between said strip support and said plate having a discharge opening, parallel rollers one of which partially closes said 35 opening, a stripper bearing on said last mentioned roller, a pivotal arm carrying the other and lower of said rollers, a pivotal spring normally holding said rollers in engagement through said arm and adapted to permit the separation of said rollers, means acting on said arm whereby 40 said arm may be adjusted to control such pressure, means rotating said rollers whereby the strip will be fed thereby substantially in the same quantity as severed from the end thereof for each tip, means whereby the end of said strip 45 is applied to said protruding end, shears adapted to sever a portion of said strip end, means actuating said shears whereby said portion will be severed as required, and forwardly of said plate, and means wrapping said severed portion about the cigarette.

50 18. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, 55 a plate, fingers thereon adapted to engage the end of said strip, means reciprocating said plate, a paste pot between said strip support and said plate having a discharge opening, a slidable bottom plate regulating the size of said opening, parallel rollers one of which partially closes said 60 opening, a stripper bearing on said last mentioned roller, means rotating said rollers whereby the strip will be fed thereby substantially in the same quantity as severed from the end thereof for each tip, means whereby the end of said strip is applied to said protruding end, shears adapted 65 to sever a portion of said strip end, means actuating said shears whereby said portion will be severed as required, and forwardly of said plate, and means wrapping said severed portion about said cigarette.

70 19. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means supporting a continuous strip of tipping material, a plate, fingers thereon adapted to engage the end of said 75 strip, means reciprocating said plate, a paste pot between said strip support and said plate having a discharge opening, parallel rollers one of which partially closes said opening, a stripper bearing on said last mentioned roller, means rotating said rollers whereby the strip will be fed 80 thereby substantially in the same quantity as severed

from the end thereof for each tip, a channel plate between said support and said paste pot, a keeper between said rollers and said reciprocating plate, means whereby the end of said strip is applied to said protruding end, shears adapted to sever a portion of said strip end, means actuating said shears whereby said portion will be severed as required, and forwardly of said plate, and means wrapping said severed portion about the cigarette. 85

20. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, a chute alined with said holder, a conveyer whereby cigarettes are successively fed to said chute, means whereby cigarettes are successively fed from said chute to said holder with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a 90 continuous strip is applied to said protruding end, means making said strip adhesive, shears adapted to sever a portion from the end of said strip as required, means actuating said shears, and means wrapping the said severed portion about said cigarette. 95 100

21. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, a chute alined with said holder, an endless belt discharging into said chute, whereby cigarettes are delivered to said chute from a source of supply, means whereby cigarettes 105 are successively fed from said chute to said holder with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is applied to said protruding end, means making said strip adhesive, shears adapted to sever a portion from the end of said strip as required, means actuating said shears, and means wrapping the said portion severed from said strip end about a cigarette. 110

22. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, a chute alined with said holder, a conveyer whereby cigarettes are delivered from a source of supply to said chute, means whereby cigarettes are successively fed from said chute to said holder with one end protruding therefrom, means limiting the cigarettes on said conveyer to a single 120 row, a strip feed mechanism whereby the end of a continuous strip is applied to said protruding end, means making said strip adhesive, shears adapted to sever a portion from the end of said strip as required, means actuating said shears, and means wrapping the said severed portion about the cigarette. 125

23. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, a chute alined with said holder, a conveyer whereby cigarettes are delivered from a source of supply to said chute, means whereby cigarettes are successively fed from said chute to said holder with one end thereof protruding therefrom, and ejected therefrom, means limiting the cigarettes on said conveyer to a single row, a weighted 130 flap between said means and said chute whereby cigarettes are straightened and turned over on said conveyer, a strip feed mechanism whereby the end of a continuous strip is applied to said protruding end, means making said strip adhesive, shears adapted to sever a portion of said strip from the end thereof as required, means actuating said shears, and means wrapping the said severed portion about a cigarette. 135 140

24. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, a chute alined with said holder, a hopper having an open 145 bottom, a conveyer closing said bottom whereby cigarettes are delivered from said hopper to said chute, a plate mounted on the forward end of said hopper above a discharge opening therein and partially closing same, means rocking said plate, a weighted pivotal flap beyond said discharge opening, means whereby cigarettes are successively fed to said holder with one end thereof protruding therefrom, from said chute, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is applied to said protruding end, means making 150 said strip adhesive, shears adapted to sever a portion of said strip from the end thereof as required, means actuating said shears, and means wrapping the said severed portion about a cigarette.

25. In a machine of the class described, the combination 160



of a holder adapted to receive and retain a cigarette, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is fed relative to said protruding end, means making said strip adhesive, a reciprocating carrier whereby the end of said strip is brought and held in close juxtaposition to said protruding end, means whereby the forward free end of the strip is applied to a cigarette, shears adapted to sever a portion of said end, means actuating said shears whereby a portion of the strip will be severed after the end has been applied to the cigarette and means wrapping the ends of said severed portion about a cigarette.

26. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is fed relative to said protruding end, means making said strip adhesive, a reciprocating carrier, an end gage thereon, a depressible plate thereon whereby the end of said strip is brought and held in close juxtaposition to said protruding end, shears adapted to sever a portion of said end, and means wrapping the ends of said severed portion about a cigarette.

27. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is fed relative to said protruding end, means making said strip adhesive, a reciprocating carrier, an end gage thereon, a plate thereon whereby the end of said strip is brought and held in close juxtaposition to said protruding end, springs supporting said plate, shears adapted to sever a portion of said end, and means wrapping the ends of said severed portion about a cigarette.

28. In a machine of the class described, the combination of a holder comprising a hollow shaft and a plurality of jaws mounted therein, and having one end thereof projecting therefrom and shaped to correspond to the style of cigarette to be held therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means rotating said jaws intermittently, a strip feed mechanism whereby the end of a continuous strip is fed relative to said protruding end, means making said strip adhesive, a reciprocating carrier, an end gage thereon, a plate having a depressed portion adapted to engage said shaped end of said jaws whereby the end of said strip is brought and held in close juxtaposition to said protruding end, springs supporting said plate, shears adapted to sever a portion of said end, and means wrapping the ends of said severed portion about a cigarette.

29. In a machine of the class described, the combination of a holder comprising a hollow shaft and a plurality of jaws mounted therein, and having one end thereof projecting therefrom and shaped to correspond to the style of cigarette to be held therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means rotating said jaws intermittently, a strip feed mechanism whereby the end of a continuous strip is fed relative to said protruding end, means making said strip adhesive, a reciprocating carrier, an end gage thereon, a plate having a depressed portion adapted to engage said shaped end of said jaws whereby the end of said strip is brought and held in close juxtaposition to said protruding end, springs supporting said plate, means limiting the movement of said plate from one horizontal plane to another, shears adapted to sever a portion of said end, and means wrapping the ends of said severed portion about a cigarette.

30. In a machine of the class described, the combination of a holder comprising a hollow shaft and a plurality of jaws mounted therein, and having one end thereof projecting therefrom and shaped to correspond to the style of cigarette to be held therein, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, means rotating said jaws intermittently, a strip feed mechanism whereby the end of a continuous strip is fed relative to said protruding

end, means making said strip adhesive, a carrier, an end gage thereon, a plate having a depressed portion adapted to engage said shaped end of said jaws whereby the end of said strip is brought and held in close juxtaposition to said protruding end, springs supporting said plate, means limiting the movement of said plate from one horizontal plane to another, means reciprocating said carrier in conformity to variances in the contour of said shaped ends of said jaws, shears adapted to sever a portion of said end, and means wrapping the ends of said severed portion about a cigarette.

31. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end comprising a carrier adapted to bring and hold the strip end into close juxtaposition to said protruding end, and an oscillatory wiper adapted to apply the forward end of said strip end to one side of the cigarette, means severing the end portion of said strip after the forward free end has been applied to the cigarette, and means wrapping the remaining portion of said severed portion about said cigarette.

32. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end comprising a carrier adapted to bring and hold the strip end into close juxtaposition to said protruding end, and an oscillatory flexible wiper adapted to apply the edge of said strip end to one side of the cigarette, means severing the end portion of said strip, and means wrapping the remaining portion about said cigarette.

33. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end comprising a carrier adapted to bring and hold the strip end into close juxtaposition to said protruding end, and an oscillatory wiper adapted to apply the edge of said strip end to one side of the cigarette, and means whereby said wiper is raised to act as a retarding means on the cigarettes being respectively ejected from and fed to said holder, lowered to permit the strip end to be positioned between it and the protruding end of the cigarette, raised to affix the edge thereof to the cigarette, held stationary in contact with said edge while the strip feeding mechanism is being withdrawn, raised to permit the other end of the strip to be wrapped about the cigarette, and lowered to press the overlap on the cigarette, means severing the end portion of said strip and means wrapping the remainder of said severed portion about said cigarette.

34. In a machine of the class described, the combination of a holder adapted to receive and retain a cigarette, means whereby said holder may be rotated, or permitted to remain stationary, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom, a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end comprising a carrier adapted to bring and hold the strip into close juxtaposition to said protruding end, a tongue on said carrier adapted to raise the rear end of said severed portion, a laterally oscillatory wiper and a vertically oscillatory wiper adapted respectively to apply the rear and the front edges of said severed portion to said protruding end, and means severing the end portion of said strip.

35. In a machine of the class described, the combination



of a holder adapted to receive and retain a cigarette, means whereby said holder may be rotated, or permitted to remain stationary, means whereby cigarettes are successively fed thereto with one end protruding therefrom, and ejected therefrom a strip feed mechanism whereby the end of a continuous strip is intermittently fed relative to said protruding end, means making said strip adhesive, means whereby the end of said strip is applied to said protruding end comprising a carrier adapted to bring and hold the strip into close juxtaposition to said protruding end, a tongue on said carrier adapted to raise the rear end of a severed portion, a bell crank mounted above said holder, a wiper carried by one arm thereof, a vertically oscillatory wiper, a link connection between said last

mentioned wiper and the other arm of said bell crank whereby a vertical movement of said wiper will impart a lateral movement to said first mentioned wiper whereby the two ends of a severed portion of the strip is wrapped about a cigarette, and means severing the end portion of said strip.

In witness whereof, I have hereunto affixed my signature, this 12th day of July, 1906, in the presence of two witnesses.

SALVADOR RAGONA.

Witnesses:

F. T. WENTWORTH,  
LEWIS V. HULSE.