

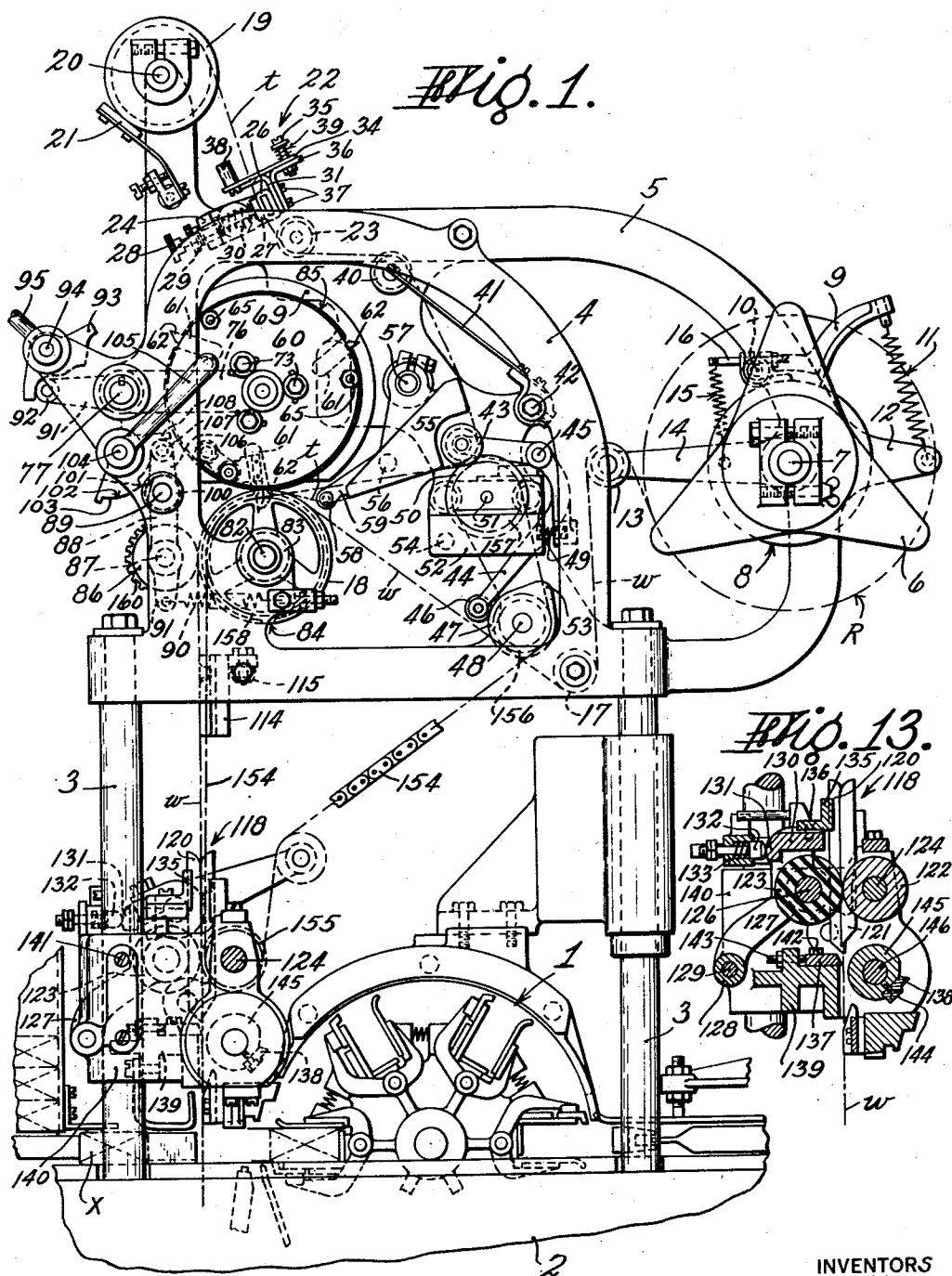
May 22, 1951

E. L. SMITH ET AL
MACHINE FOR FORMING PACKAGE WRAPPERS
PROVIDED WITH A TEARING STRIP

2,553,877

Filed July 22, 1948

6 Sheets-Sheet 1



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6 Sheets-Sheet 2

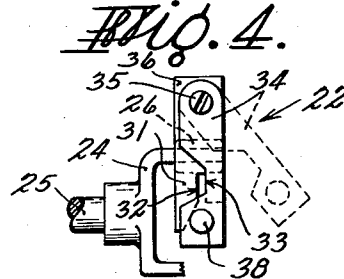
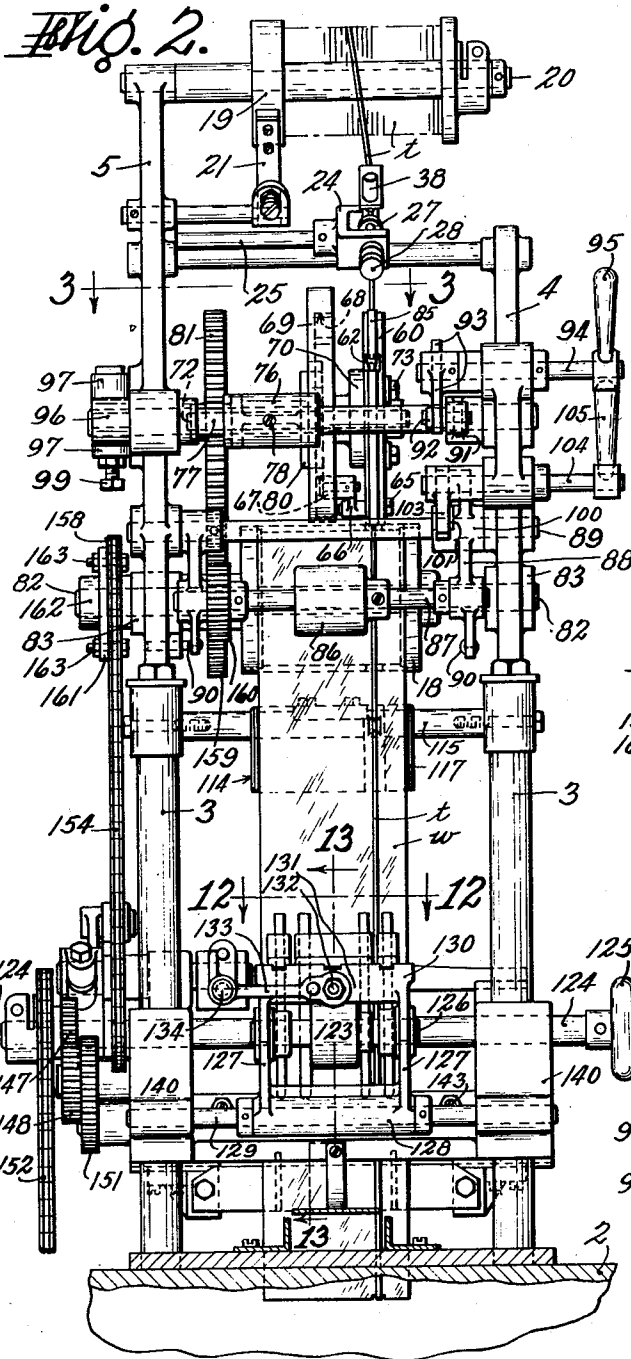


Fig. 3a.

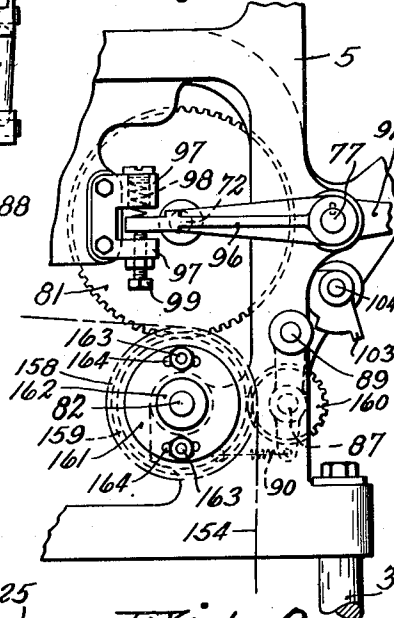
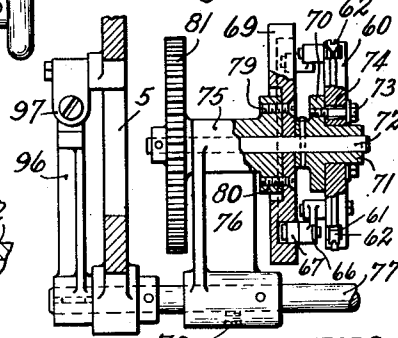


Fig. 3.



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6 Sheets-Sheet 3

Fig. 5.

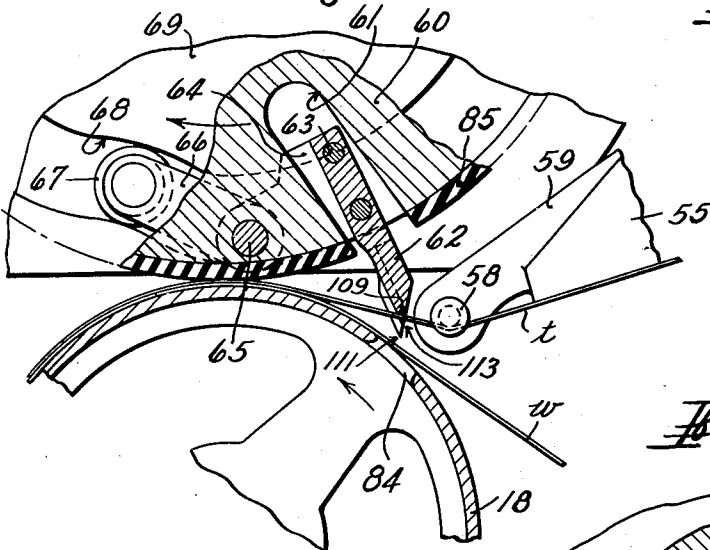


Fig. 10.

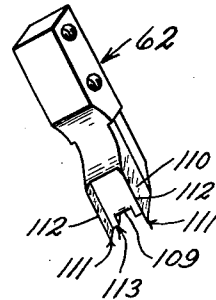


Fig. 6.

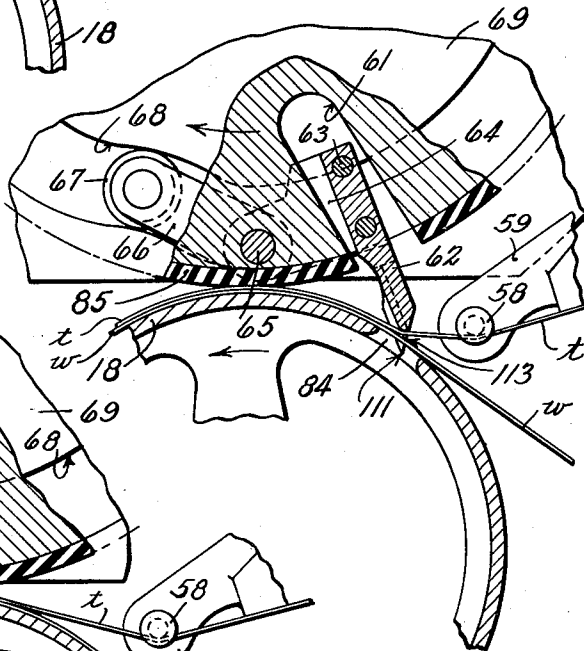
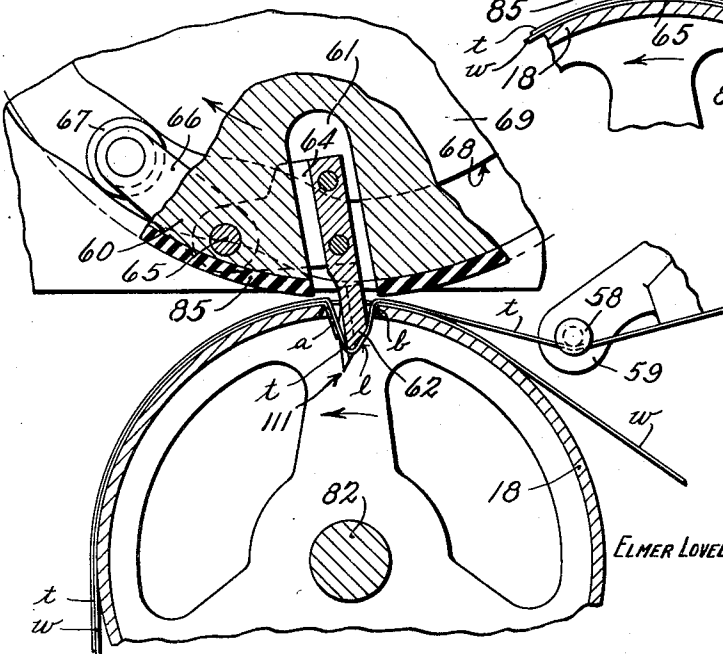


Fig. 7.



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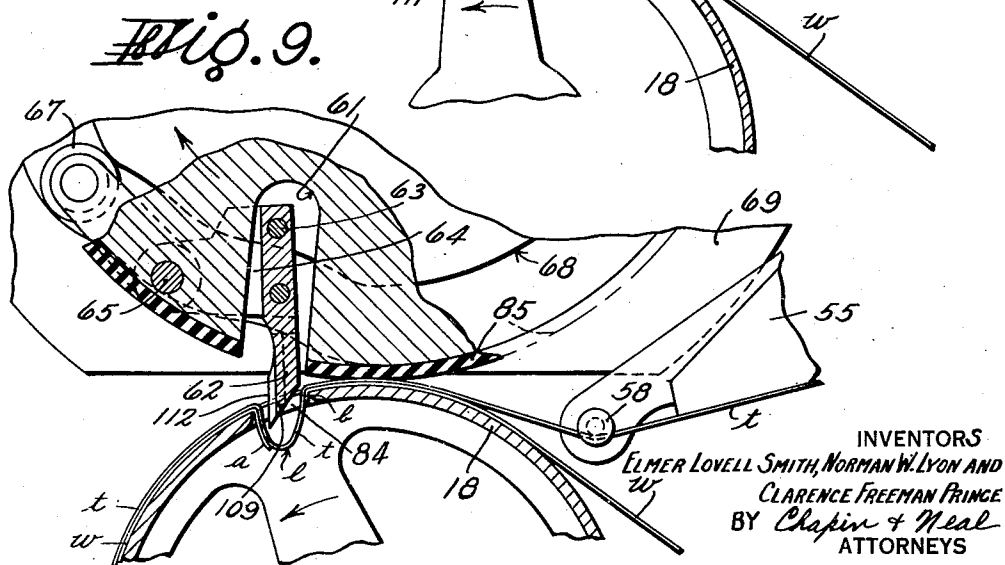
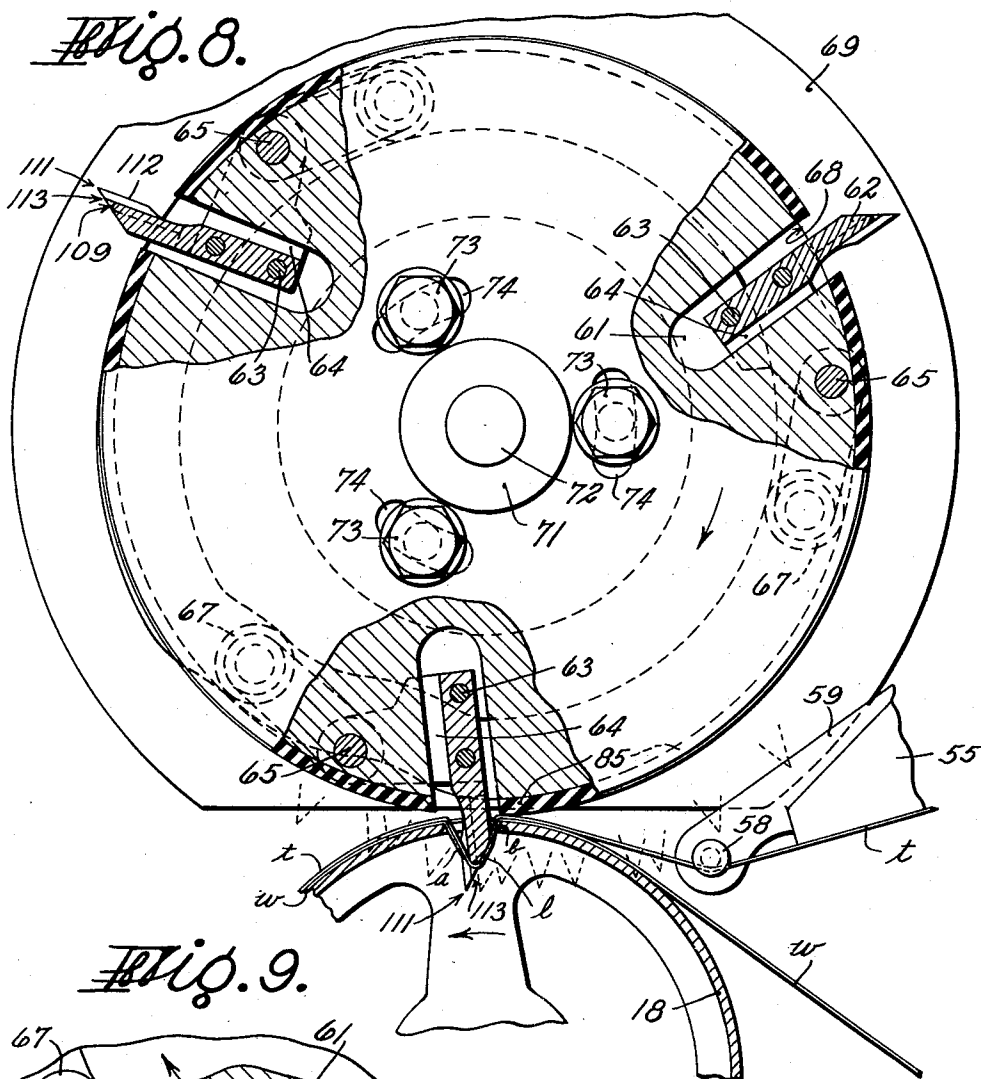
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2,553,877

Filed July 22, 1948

6 Sheets-Sheet 4

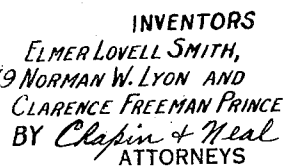


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PROVIDED WITH A TEARING STRIP

6 Sheets-Sheet 5



May 22, 1951

E. L. SMITH ET AL
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2,553,877

Filed July 22, 1948

6 Sheets-Sheet 6

Fig. 15.

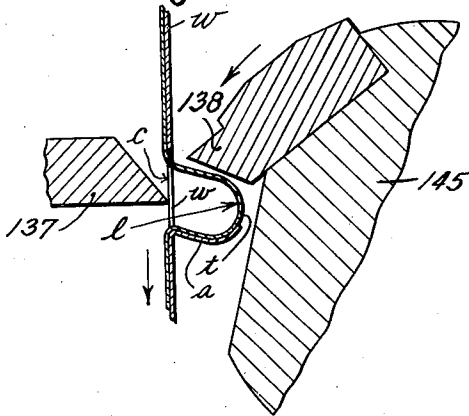


Fig. 16.

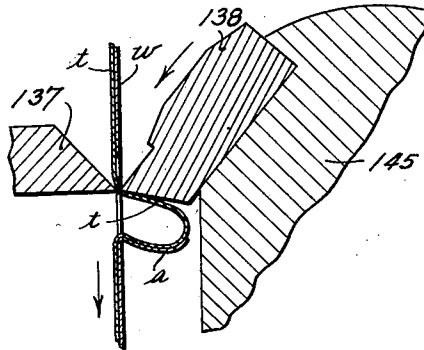


Fig. 17.

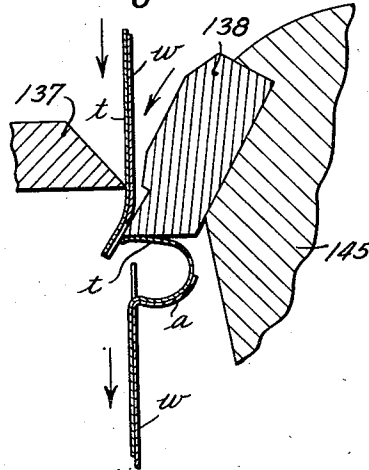


Fig. 18.

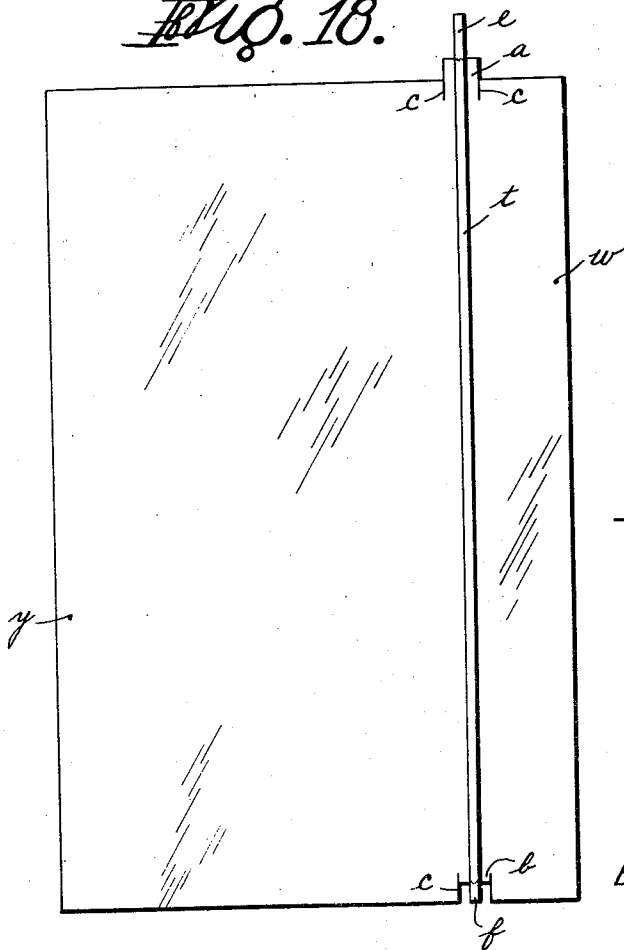
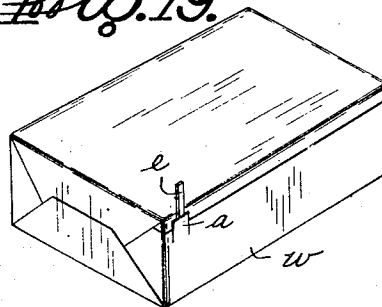


Fig. 19.



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UNITED STATES PATENT OFFICE

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MACHINE FOR FORMING PACKAGE WRAPPERS PROVIDED WITH A TEARING STRIP

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Application July 22, 1948, Serial No. 40,148

6 Claims. (Cl. 93—1)

1

This invention relates to machines for producing wrapped articles having a tearing strip and more particularly to means for associating the tearing strip with a wrapper in which articles are wrapped.

The usual function of the tearing strip is to facilitate removal of a portion of the wrapper to give easy access to the contents of the package, tearing strips for this purpose in the form of a length of narrow tape or cord have had extensive use in connection with the wrappings of such articles as cigarettes, gum, bottled goods, magazines and the like. One of the fields of greatest use is in cigarette packages which are commonly enclosed in an outer wrapping of cellulosic sheeting or similar transparent material. These materials are relatively tough and resistant which while increasing the desirability of a tearing strip impose certain recognized problems in combining the tearing strip to the wrapper. Such materials for example are relatively resistant to die cutting, requiring that die cutters be kept sharp while at the same time the toughness of the material tends to a rapid dulling of the blades. One advantageous property of these materials, of which the present invention as later pointed out, takes novel advantage, is the comparative ease with which a tear once initiated is propagated in the line of an applied force. In common practice that edge of the wrapper from which the gripping end of the tearing strip extends is provided with short cuts, one at each side of the tearing strip, and extending parallel with the edges of the tape. The initiation of the tearing of the wrapper is thus facilitated when a tearing force is applied to the tape.

Desirably the tearing strip extends from one end of the wrapper to the other, is adhered to the wrapper substantially throughout its length of contact with the wrapper, and extends at its outer or gripping end an adequate distance beyond the wrapper edge to render it easily grasped by the user. It is equally desirable that the tearing strip be placed accurately in relation to the body of the wrapper so that when the wrapper is applied to an article and the tearing strip is subsequently operated the portion of the wrapper thereby removed bears a desired relation to that left on the package. It is further desirable that the short cuts previously mentioned from which the tearing of the wrapper is propagated by the tearing strip, shall be parallel to, and equally spaced from, the side edges of the tape. It is still further desirable that the instrumentalities by which the assembly of the

2

tape and wrapper is accomplished shall operate to secure the above mentioned features and shall at the same time be capable of operating at high speed over long periods without the necessity of servicing or repair. It is also desirable that the length of the extension of the tearing strip beyond the outer edge of the paper be subject to easy adjustment.

As far as is known none of the prior art machines heretofore available are capable of securing all of the features above mentioned as desirable and it is the general object of the present invention to provide a combination of instrumentalities which will provide all of the enumerated advantages. Other and more specific objects will be made apparent in the following specification and claims.

In the accompanying drawings:

Fig. 1 is a side elevation of a machine embodying the present invention;

Fig. 2 is an elevational view looking from the left in Fig. 1;

Fig. 3 is a detail sectional view substantially in line 3—3 of Fig. 2, parts being broken away;

Fig. 3a is a detail elevational view showing the means for securing certain adjustments of the wrapper feed;

Fig. 4 is a detail plan view on a larger scale of one of the tape guides;

Figs. 5 to 9 inclusive are substantially full scale detail views showing successive steps in the operation of the tape looping lance;

Fig. 10 is a generally perspective detail view of the tape looping lance;

Fig. 11 is a detail elevational view of the gearing for driving the wrapper cutter;

Fig. 12 is a sectional view substantially on line 12—12 of Fig. 2;

Fig. 12a is a detail plan view of a guide for the assembled wrapper and tape webs;

Fig. 13 is a detail sectional view substantially on line 13—13 of Fig. 2;

Fig. 14 is a fragmentary perspective view of a portion of the assembled wrapper and tape webs;

Figs. 15, 16 and 17 are detail diagrammatic views showing the manner of severing the assembled webs into wrappers;

Fig. 18 is a view of a severed and completed wrapper; and

Fig. 19 is a generally perspective view of an article enclosed in the wrapper of Fig. 18.

Referring to the drawings, a portion of a wrapping machine is generally indicated at 1, part of the wrapping machine frame being indicated at 2. Four posts 3 rising from frame 2 support side

frame members 4 and 5 which carry the wrapper and tape feeds and the mechanisms for assembling the tape and wrapper together.

As shown in Fig. 1 a web *w* of wrapping material such as transparent cellulosic sheeting or similar material is supplied from a roll indicated at R. The roll R is carried by a suitable reel 6 rotatably mounted on a cantilever shaft 7 supported from side frame 5.

The reel carries a brake drum 8 which is engaged by a brake shoe 9 pivoted at 10 to frame 5. The shoe 9 is urged into frictional engagement with drum 8, to prevent overrunning of the reel, by a spring 11 connected between the shoe and an extension 12 of frame member 5. As the web leaves the reel 6 it passes over a roll 13 carried by an arm 14 pivoted on the end of shaft 7. A spring 15 connects arm 14 to a pin 16 extending from shoe 9 on the opposite side of pivot 10 from the shoe. Spring 11 is stronger than spring 15 but in the event of an increase in the resistance of the reel the arm 14 will be drawn downwardly thus increasing the pull of spring 15 and decreasing the pressure of brake shoe 9 on the brake drum 8. From roll 13 the wrapper web passes around a guide roll 17 to the stitching drum 18, later described.

The narrow tape *t* which is also preferably formed from a cellulosic sheeting is supplied from a spool 19 rotatably mounted on a cantilever shaft 20 carried by side frame 5. An adjustable spring brake member 21 engages the flange of the spool to prevent overrunning. From the spool the tape passes through a guide and tensioning device 22 and around a flanged guide roll 23. The device 22 as best shown in Figs. 1, 2 and 4, comprises a fork 24 carried at the end of a rod 25 secured to side frame 5. One arm of the fork is covered with a strip of felt 26 or other suitable frictional material against which the tape is pressed by a shoe 27 secured to the end of a stem 28 slidably mounted in a sleeve 29 which is threaded in the opposite arm of fork 24. A spring 30 surrounding stem 28 is engaged between shoe 27 and sleeve 29 to press the shoe against the tape and against the felt 26. The sleeve 29 is threaded into the fork 24 and the pressure exerted by spring 30 can therefore be adjusted. The tape can be released from the pressure of shoe 27 for threading purposes and the like by manually retracting stem 28. The tape is fed from spool 19 to the brake shoe 27 through a guide comprising an angle member 31 cut away at 32 to form half of the guide, the other half being formed by a cut 33 in a bar 34 pivoted at 35 to an angle 36. The angles 31 and 36 are secured by screws 37 to the felt carrying arm of fork 24. The free end of bar 34 carries an operating handle 38 by which the bar 34 may be swung to the open position shown in dotted lines in Fig. 4. A spring 39 acts on the pivot 35 to maintain the bar in the position to which it is moved by the handle 38.

From the guide roll 23 the tape passes over a flange guide roll 40 (Fig. 1) carried by the free end of a spring arm 41, the other end of which is adjustably clamped to a rod 42 extending between the side frames. Beyond the guide roll 40 the tape passes around a flanged guide roll 43 carried by an arm 44 pivoted at 45. The opposite end of arm 44 carries a cam roll 46 engaging a cam 47 mounted on a shaft 48, the roll 46 being held in engagement with the cam by a spring 49. During the travel of the cam roll 46 over the low portion of cam 47 the tape pass-

ing around roll 43 is engaged by an adhesive applying disc 50 carried by a shaft 51. The lower portion of disc 50 runs in an adhesive reservoir 52 from which adhesive is transferred to the tape by the disc. Periodically the cam roll 46 is engaged by the high portion 53 of cam 47 thereby raising roll 43 to move the tape out of contact with the disc 50 thereby providing spaced lengths on the tape which are free of adhesive. As roll 43 is lifted, spring arm 41 and the guide roll 40 take up the resulting slack in the tape thereby keeping the tape in contact with the guide roll 43. The adhesive in reservoir 52 may be maintained at a predetermined temperature as by an electrical heating element indicated at 54.

From guide roll 43 the tape passes along and in contact with the under surface of a member 55, which is heated in any suitable manner as by an electrical heating element indicated at 56, and is adjustably supported from a rod 57 carried by the side frame 5. As the tape leaves the heated surface of member 55 it passes beneath a flanged guide pin 58 extending from a bracket 59 carried by the member 55.

From pin 58 the tape travels, as best shown in Fig. 5, in superposed relation with the web *w* to the stitching drum 18 and between the latter and the surface of a needle carrying drum 60. The drum 60 is provided with a plurality of recesses 61 in each of which is mounted a needle 62 secured by screws 63 to a block member 64 secured to a pivot shaft 65 journaled in the drum. The several shafts 65 extend outwardly of the drum and carry arms 66 provided on their free ends with rolls 67 engaging in a cam groove 68 of a stationary face cam 69.

As best shown in Figs. 1, 2 and 3 the drum 60 is adjustably bolted to the flange 70 of a hub 71 secured to a short shaft 72. The drum is secured to flange 70 by bolts 73 passing through arcuate slots 74 in the drum so that the latter and the needles carried thereby can be angularly adjusted relative to the shaft 72. The shaft 72 is journaled in a long bearing 75 formed at one end of an arm 76 the other end of which is secured to a shaft 77 by a set screw 78. The cam 69 is fixed, as by bolts 79, to a flange 80 formed on the adjacent end of bearing 75. The shaft 72 extends beyond the bearing 75 and carries a gear 81 by which shaft 72 is driven as later described.

The stitching drum 18 is secured on a shaft 82 journaled in bearings 83 formed in the side frames 4 and 5 (Fig. 1). The drum 18 (Figs. 5-9) is formed with openings 84 which as the drums 60 and 18 rotate are brought into registration with the recesses 61 of drum 60. The peripheral surface of drum 60 is provided with inset rubber friction strips 85 intermediate the recesses 61 between which and the surface of drum 18 the tape and wrapper web are engaged between the stitching operations as later described. As the assembled wrapper and tape pass around the drum 18 they are engaged by a rubber feed roll 86 (Figs. 1 and 2) secured to a shaft 87 journaled at its ends in depending arms 88 pivoted on a shaft 89 extending between the side frames. Adjustable springs 90 connected between extensions 91 of arms 88 and the frame press the roll 86 toward drum 18.

The web and tape are drawn through the machine by their frictional engagement between the rubber inserts 85 and drum 18 and between feed roll 86 and drum 18. For purposes of threading the web and tape, means are provided for raising the needle drum 60 from drum 18 and

for moving the feed roll 86 away from drum 18. As shown in Figs. 1 and 2 shaft 77 carries an arm 91 provided on its free end with a roll 92 engaged by a cam segment 93 secured to a stub shaft 94. Shaft 94 is provided with a handle 95 by which the shaft 94 and cam segment 93 may be rotated clockwise as viewed in Fig. 1 to depress the arm 91 and raise the arm 76 by which needle drum 60 is carried. The movement of drum 60 is limited by an arm 96 (Fig. 3a) secured to shaft 77 and having its free end movable between lugs 97, the upper side of arm 96 being engaged by a compression spring 98 carried by the upper lug while the lower side engages the end of stop screw 99 threaded in the lower lug. One of the arms 88 which carry shaft 87 of roll 86 extends from a hub 100 which is formed with a projection 101 engageable by a cam surface 102 formed on a segment 103 secured to a stub shaft 104 to which is secured an operating handle 105. Upon counterclockwise movement of handle 105, as viewed in Fig. 1, the surface 102 engages projection 101 to swing roll 86 away from drum 18. Hub 100 carries an upwardly projecting arm 106 provided with a roll 107 engageable with an extension 108 from segment 103 to limit the clockwise movement of handle 105. Engagement of segment 103 with the hub 100 adjacent projection 101 holds roll 86 in open position during the threading operation.

The stitching of the tape through the wrapper is best shown in Figs. 5 to 10 inclusive. The needle 62 (Fig. 10) is formed with an open "eye" 109 which is flanked by blades 110 having points 111 and cutting edges 112. As the needle carrier 60 rotates to bring one of the needles into proximity to the drum 18, cam roll 67 by its engagement with cam groove 68, tilts the needle block 64 by which it is carried to increase the projection of the needle outwardly of the drum. Upon continued rotation of drum 60 the traveling tape *t* is engaged in the eye 109 as the tape leaves the pin 58 and is moved toward the traveling wrapper web *w* moving onto drum 18. As the needle carries the tape toward the web the points 111 pierce the web as shown in Fig. 6, the cutting edges 112 forming parallel cuts *c* (Fig. 14) in the web prior to the engagement of the tape with the web. As the needle is projected into the opposite opening 84 of drum 18 the portion of the wrapper between the parallel cuts is broken by shoulders 113 at the sides of eye 109 and by the tape backed up by the eye, and the tape is carried through the web in the form of a loop *l*. As will be apparent from Fig. 6 the leading portion of the wrapper and tape are firmly gripped between the rubber strips 85 and the surface of drum 18 as the tape is forced through the wrapper, the excess of tape needed for the formation of the loop being provided without shock by the yielding of spring arm 41 previously described. As is shown in Figs. 7 and 8 the loop is completely formed before the tape and wrapper is engaged by strips 85. The breaking of the web between the parallel cuts, made by the cutting edges 112, forms long and short tabs respectively designated *a* and *b* which are bent inwardly of drum 18 at the ends of the loop as the latter is formed.

As drums 60 and 18 continue their rotation, cam groove 68 acts to retract the needle as in Fig. 9 and upon further rotation the needle is withdrawn from the loop *l* leaving the latter in the opening 84 of drum 18.

As will be understood, at least that portion of the loop which in its formation requires that the

tape move relative to the eye of the needle, and to that portion of the wrapper web with which it is in contact, is left free of adhesive through operation of the cam 47 previously described, the portion between the loops being adhered to the wrapper web.

From roll 18 the composite web, formed by the stitching operation just described, passes downwardly over a guide plate 114 (Figs. 1, 2 and 12a) secured to a cross bar 115. The guide plate 114 is formed with a groove 116 to accommodate the passage of the tape loops *l*, and preferably the surface is provided with antifriction ridges 117. Beyond the plate 114 the assembled webs pass through a guiding device generally indicated at 118, Figs. 1, 2 and 12. As best shown in the latter figure the guide 118 comprises pairs of opposed ribs 119, and ribs 120 opposed by channel members 121 which impart vertically extending temporary corrugations *d* to the web to stiffen it as it passes to the cutter hereinafter described.

As the composite web passes through the guide 118 its central portion is engaged between two feed rolls 122 and 123. Roll 122 is secured to a shaft 124 which is driven as later described and is provided with a hand wheel 125 by which the shaft can be manually turned in threading the web through the machine. Roll 123, which is rubber covered, is carried on a short shaft 126 journaled in the side members 127 of a rectangular frame (Figs. 2 and 13), the lower member of which is in the form of a bearing 128 by which the frame is pivoted on a cross rod 129. The upper ends of side member 127 are connected by a bar 130 formed with a boss 131 (Fig. 13), which is engaged by a suitable spring pressed pin 132 which yieldingly presses roll 123 in the direction of roll 122. Pin 132 is carried by an arm 133 pivoted at 134 and provided with a handle by which the arm may be swung upwardly permitting the frame 127—130 with its roll 123 to be swung outwardly for threading of the web. As best shown in Fig. 13 the guide ribs 120 and the adjacent ribs 119 are carried by angle brackets 135 secured by screws 136 to bar 130 so that the ribs 120 and outer ribs 119 are swung outwardly with roll 123.

Below feed rolls 122—123 the composite web extends across the path of articles *x* entering the wrapping machine and between a fixed blade 137 and a rotary blade 138 by which a wrapper *y*, as shown in Fig. 18, is severed from the web to be carried into the wrapping machine by the advancing article.

The fixed blade 137, as best shown in Figs. 1 and 13, is carried by a cross member 139 extending between blocks 140 secured to posts 3 by screws 141. The blade 137 is adjustably mounted on member 139 by bolts 142 extending through suitable openings (not shown) in the blade and screws 143 engaging the rear edge of the blade.

The rotatable blade 138 is adjustably secured by screws 144 to a hub 145 fixed to a shaft 146. Shaft 146 is driven at a non-uniform speed by elliptical gearing, as best shown in Fig. 11, from shaft 124 which carries feed roll 122. Shaft 124 carries a gear 147 which meshes with a gear 148 secured to a stub shaft 149. Secured to shaft 149 is an elliptical gear 150 which meshes with an elliptical gear 151 secured to the knife shaft 146. The elliptical gears are so set on their respective shafts that the rotatable knife is moved sufficiently slowly to permit the loop *l* to pass the blade as shown in Fig. 15, the blade moving with increased rapidity through the cutting steps of

Figs. 15, 16 and 17 so as to come in behind the loop and cut the tape and the wrapper web adjacent the trailing end of the loop.

The shaft 124 is driven from any suitable source of power (not shown) such as a driven shaft of the wrapping machine which it serves, by a sprocket chain 152 engaging around a sprocket 153 secured to shaft 124.

The other driven members of the machine are driven through shaft 124 by a chain 154, Figs. 1 and 2, which chain engages a sprocket 155 on shaft 124. The sprocket chain 154 passes around a sprocket 156 secured to shaft 48, carrying cam 47, a sprocket 157 secured to shaft 51 which carries adhesive applying disc 50 and a sprocket 158 secured to shaft 82 on which drum 18 is mounted. Shaft 82 carries a gear 159 (Figs. 2 and 3a) which meshes with the gear 61 on shaft 72 of drum 60. Gear 159 also meshes with a gear 160 secured to shaft 87 of feed roll 86 to drive the latter.

As best shown in Figs. 2 and 3a the sprocket 158 is adjustably secured to a flange 161 formed on a hub 162 which is fixed to shaft 82, the adjustment being provided by bolts 163 which extend through arcuate slots 164 in the flange. By loosening bolts 163 the shaft 82 may be moved relative to sprocket 158 and chain 154 to thereby shift the position of the loop *l* relative to the rotary blade 138 and thereby lengthen or shorten the extensions *e* and *f* of the tearing strip with respect to the ends of the wrapper.

Considering in more detail the operation as shown in Figs. 5 to 8 it will be seen that with the engagement of the tape *t* in the needle eye 109 in Fig. 5 the tape is held in predetermined central relation between the blades 112. As the needle advances through the positions of Figs. 6 and 7 the succeeding portion of the tape is drawn through the needle into loop form simultaneously with the formation of the parallel slits in the wrapper web by the blades. As shown in Fig. 6 the points 111 of the blade pierce the wrapper in advance of contact of the tape with the wrapper to initiate the cuts and the blades are in the cuts at the time the tape engages the wrapper. The portion of the wrapper underlying the tape as the tape and wrapper are brought into engagement is uncut and continuous in the direction of movement of the webs. This and the fact that the needle and the cutting blades form a unit and the fact that the action of positioning the tape and forming the side cuts are substantially simultaneous assures an accurate positioning of the tape between and parallel with the cuts. As the blades further penetrate the wrapper the lengths of the cuts are increased by a drawing cut in the direction of wrapper travel. The wrapper is easily pierced by the pointed blades and due to the drawing type of cutting action, as distinguished from die cutting, the slits are formed without substantial resistance and the blades remain sharp over a long period of constant use.

As best shown in Fig. 10 the spaces between the eye 109 and blades 112 are occupied by the shoulders 113 which present a relatively sharp angular edge to the web between the tape and blades. As the tape is pressed against the wrapper web the latter bridges the opening 84 and is in a sufficiently taut condition so that continued pressure by the shoulders 113 breaks the wrapper web cleanly between the eye and the cuts being formed by the blades 112. The portion of the wrapper immediately beneath the tape

and eye of the needle is immediately and easily broken by the continued advance of the needle through the wrapper web. The operation of the needle is so rapid that the forming of the parallel slits, the positioning of the tape with respect to the blades and on the wrapper, and the penetration of the tape through the wrapper into loop form are substantially simultaneous. The result is a more accurate and faster operation than where the wrapper web is precut with parallel slits and cross cuts and the tape subsequently registered over the cuts and pushed through as has previously been proposed.

As the opening 84 advances beneath drum 60 the needle carrying block is tilted by cam 63 to the position of Figs. 7 and 8 and then to the position of Fig. 9 to free the needle in the loop, and to clear the blades from the cuts and the forward edge of opening 84 for free withdrawal of the needle and blades from the opening.

What we claim is:

1. In a machine for forming a wrapper provided with a tearing strip, means for advancing webs of wrapper material and tearing strip material in spaced relation, means to apply adhesive to spaced portions of the tearing strip, a needle member having spaced piercing and slitting blades with an open eye between them, means to move said member to successively engage the non-adhesive portions of the tearing strip web in said open eye and to advance said blades and engaged portion of the tearing strip web toward and through the wrapper web, to project the non-adhesive coated portions of the tearing strip web in spaced loops extending through and beyond the wrapper web, and means to press the adhesive coated portions of the tearing strip web to the wrapper web adjacent the loops.

2. In a machine for forming a wrapper provided with a tearing strip, means for continuously advancing webs of wrapper material and tearing strip material, said means including opposed rotatable drums, means to rotate said drums, one of said drums having an opening, means to guide the wrapper web onto the surface of the latter drum and over said opening, an open eyed needle carried by the other drum and positioned to enter said opening as the drums rotate, said needle including two spaced pointed blades positioned one at each side of the needle eye and engaging the wrapper web over said opening to form parallel slits therein, means guiding the tearing strip into position to be engaged in the eye of the needle and carried thereby against the wrapper web between the slits as the latter are formed and upon further advance of the needle into said opening to simultaneously rupture the wrapper web between the slits and draw a succeeding portion of the tearing strip web through the eye into projecting loop form in said opening.

3. In a machine for forming a wrapper provided with a tearing strip, means for continuously advancing webs of wrapper material and tearing strip material, said means including opposed rotatable drums, means to rotate said drums, one of said drums having an opening, means to guide the wrapper web onto the surface of the latter drum and over said opening, an open eyed needle carried by the other drum and positioned to enter said opening as the drums rotate, said needle including two spaced pointed blades positioned one at each side of the needle eye, the points of the blades extending outwardly beyond the eye of the needle, the cutting edges

of the blades being directed in the direction of travel of the webs and extending inwardly from the eye of the needle, said blades engaging the wrapper web over said opening to form parallel slits therein, means guiding the tearing strip web into position to be engaged in the eye of the needle and carried thereby against the wrapper web between the slits as the latter are formed and upon further advance of the needle into said opening to simultaneously rupture the wrapper web between the slits at a point adjacent the trailing end of the slits and draw a succeeding portion of the tearing strip web through the eye into a loop form projecting inwardly of said opening, and cutting means engaging the webs intermediate the ends of said slits and adjacent the trailing end of said loop to sever the webs transversely.

4. In a machine for forming a wrapper provided with a tearing strip, means for continuously advancing webs of wrapper material and tearing strip material, said means including opposed rotatable drums, means to rotate said drums, one of said drums having an opening, an open eyed needle pivoted to the other drum and extending outwardly therefrom in position to enter said opening as the drums rotate, said needle being provided with spaced cutting blades positioned one at each side of the eye and extending beyond the latter, means to guide the wrapper web onto the surface of the first drum and over said opening therein, means to guide the tearing strip web into position to be engaged in the eye of the needle and moved into contact with the wrapper end as the needle advances toward said opening, said blades piercing the wrapper web to form spaced parallel slits between which the eye of the needle engages the wrapper web to simultaneously rupture the wrapper between the slits and draw a succeeding portion of the tearing strip web through the eye into a loop form projecting inwardly of said opening and cam means to swing said needle about its pivot to increase its projection from the drum as the needle engages the tearing strip web and to reduce its projection as the loop is formed and the needle withdrawn from said opening upon continued rotation of the rolls.

5. In a machine for forming a wrapper provided with a tearing strip, means for advancing webs of wrapper material and tearing strip material, means for substantially simultaneously forming parallel cuts in the wrapper web and forcing a portion of the tearing strip web through the wrapper web to project it in loop form from the opposite face of the wrapper web

and means to sever the webs transversely adjacent the trailing end of the loop, said severing means comprising a rotating blade positioned on the side of the wrapper web from which the loop projects, a fixed blade positioned on the opposite side of the wrapper web for cooperation with the rotating blade and means to rotate the latter blade at a peripheral speed less than the linear speed of the webs to permit the projecting loop to pass the rotating blade and to thereafter increase the speed of the rotating blade to engage the webs forwardly of and adjacent the trailing end of the loop and sever the webs transversely.

6. In a machine for forming a wrapper provided with a tearing strip, means for advancing webs of wrapper material and tearing strip material, means to apply adhesive to spaced portions of the tearing strip, a needle member having spaced piercing blades with an open eye between them, means to move said member to successively engage non adhesive portions of the tearing strip web in said open eye and to advance said blades and the engaged portion of the tearing strip web through the wrapper web, to project the non adhesive portions of the tearing strip web in spaced loops extending through and beyond the wrapper web, means to press the adhesive portions of the tearing strip web to the wrapper web adjacent the loop, a rotating blade positioned on the side of the wrapper from which the loop projects, a fixed blade positioned on the opposite side of the wrapper for cooperation with the rotating blade, means to drive the latter blade at a peripheral speed less than the linear speed of the webs to permit the projecting loops to pass the rotating blade and to thereafter increase the speed of the rotating blade to engage the webs forwardly of and adjacent the trailing end of the loops and sever individual wrappers from the webs, and means to adjust the cycles of operation of the loop forming means and the rotary blade with respect to each other.

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