May 27, 1947. J. EHRET, JR 2,421,319

FILAMENT SCRAPER

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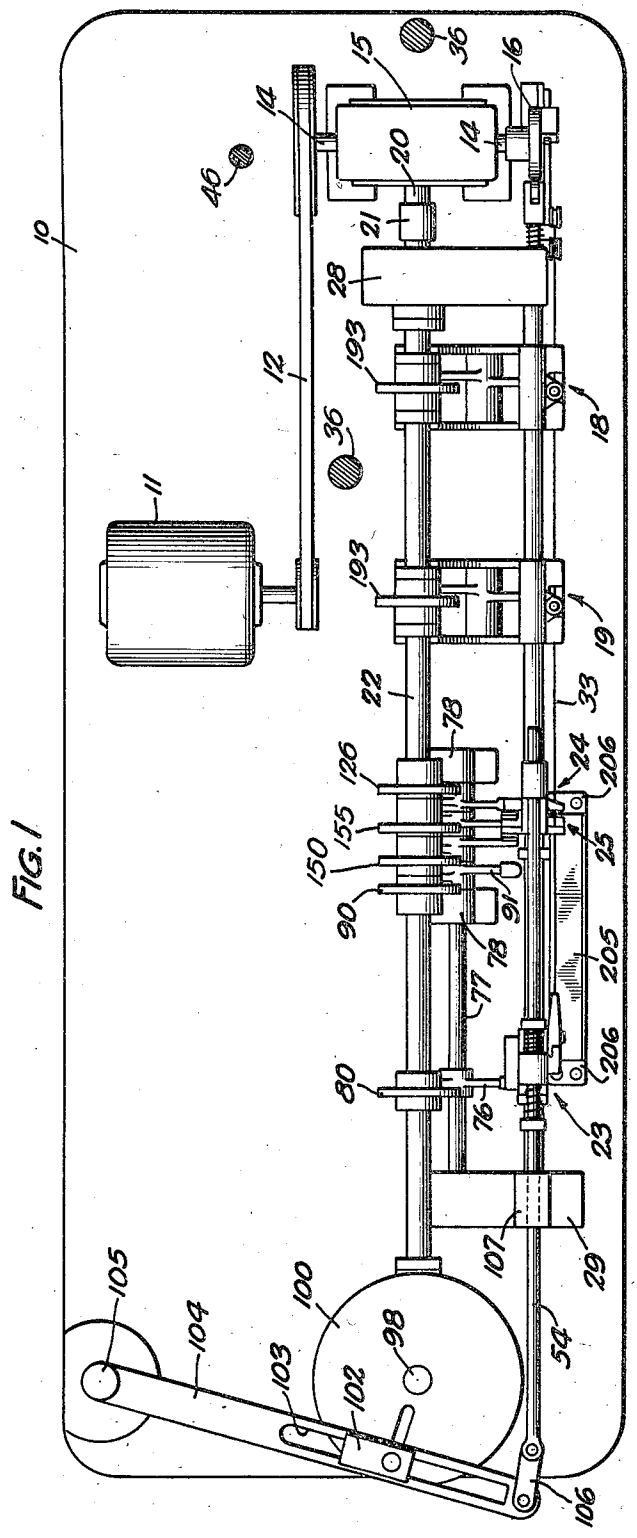


FIG. 1



FIG. 2



FIG. 3

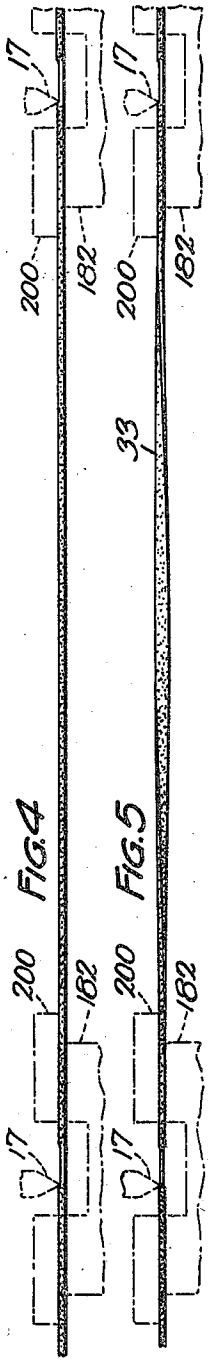


FIG. 4

FIG. 5

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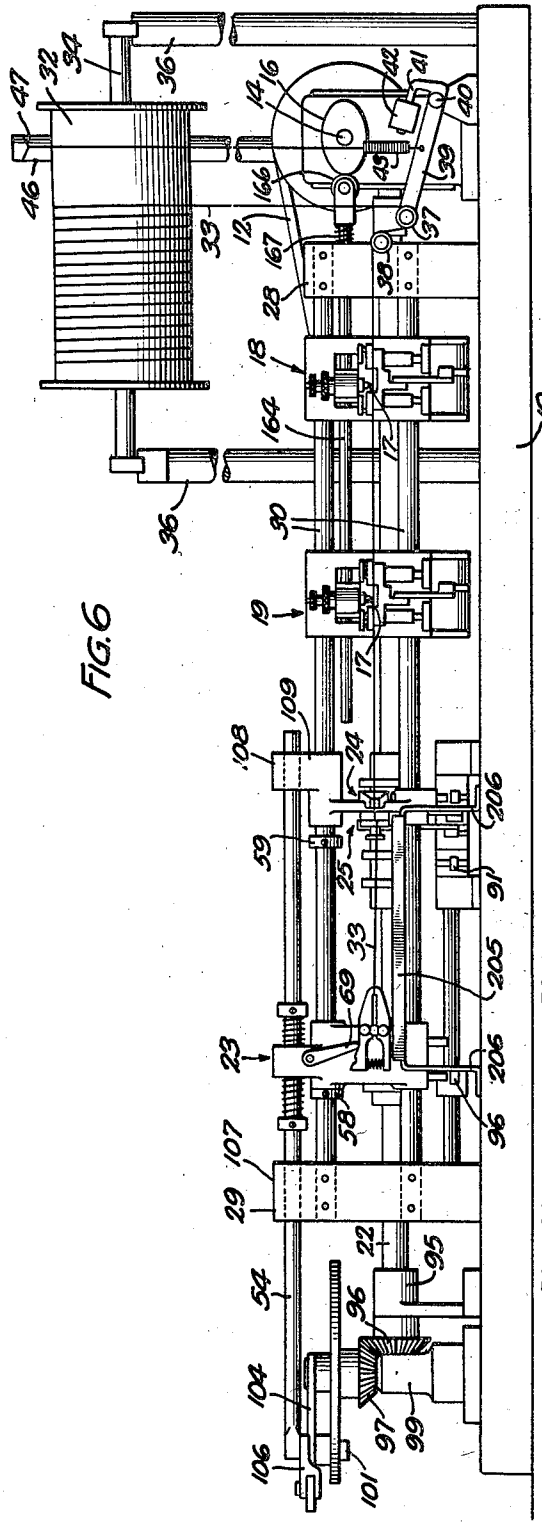


FIG. 6

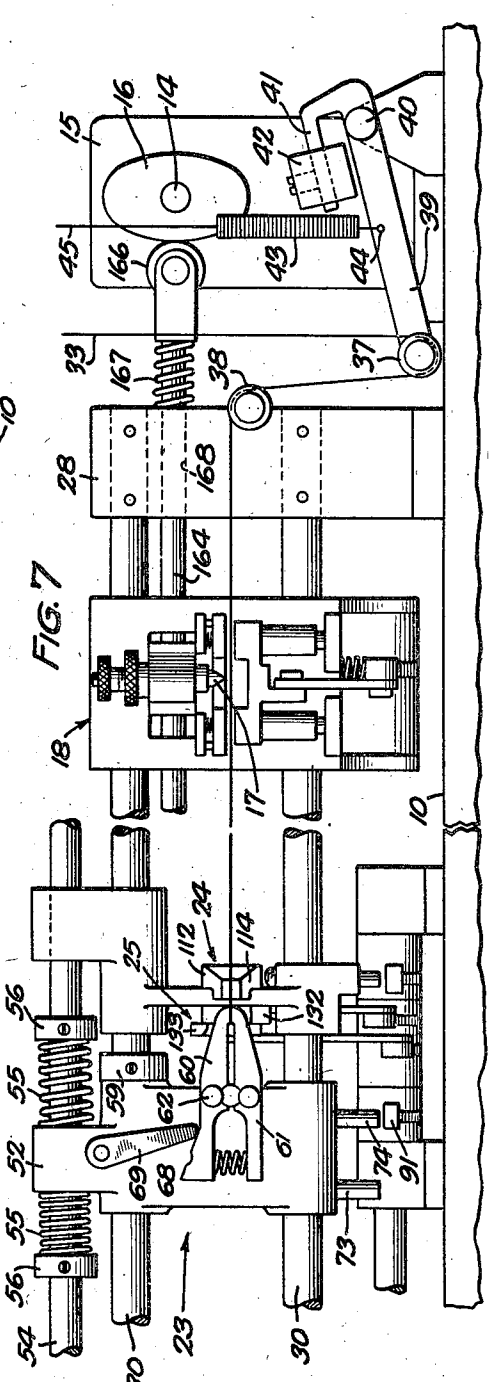


FIG. 7

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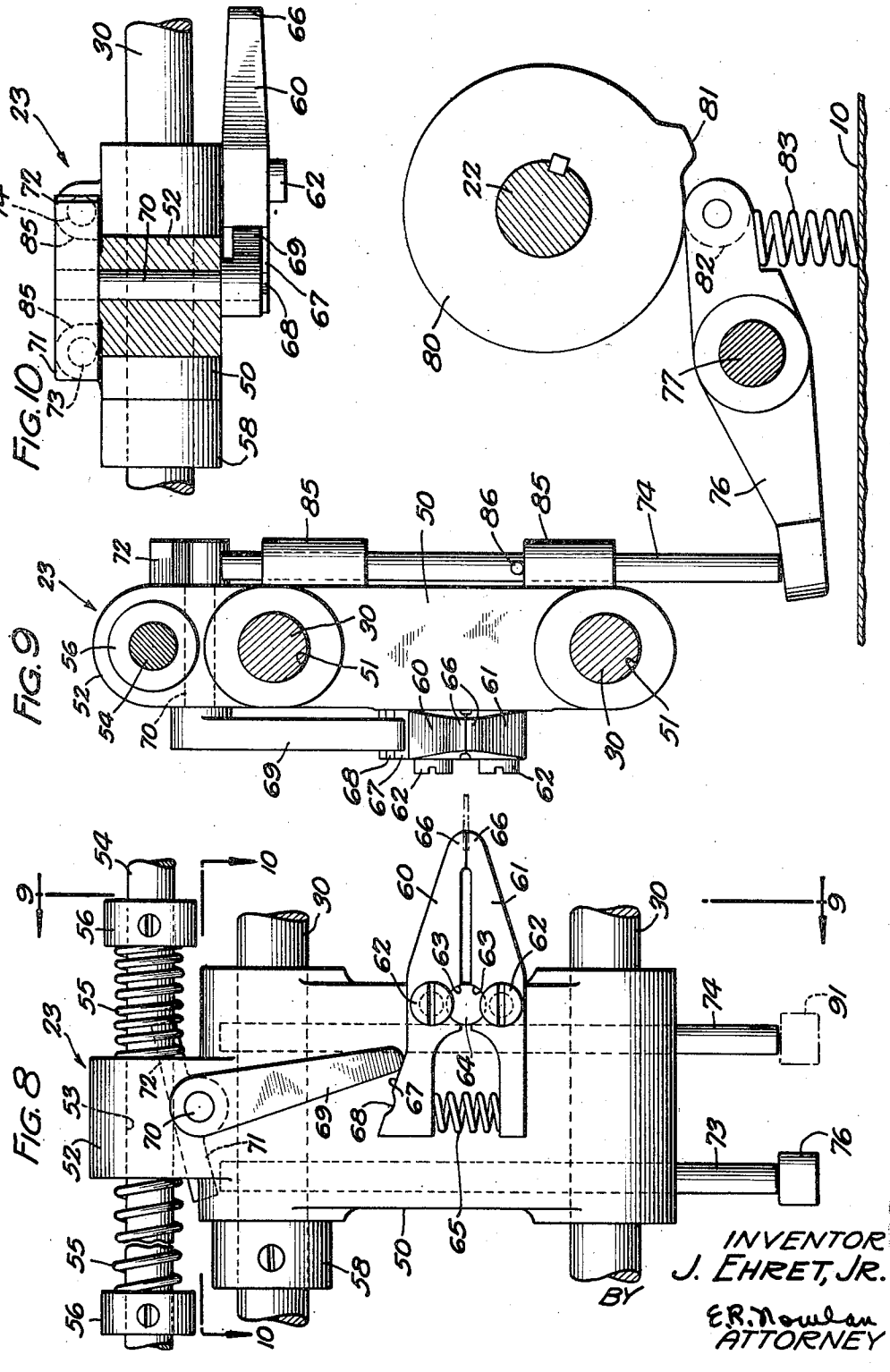


FIG. 10

FIG. 9

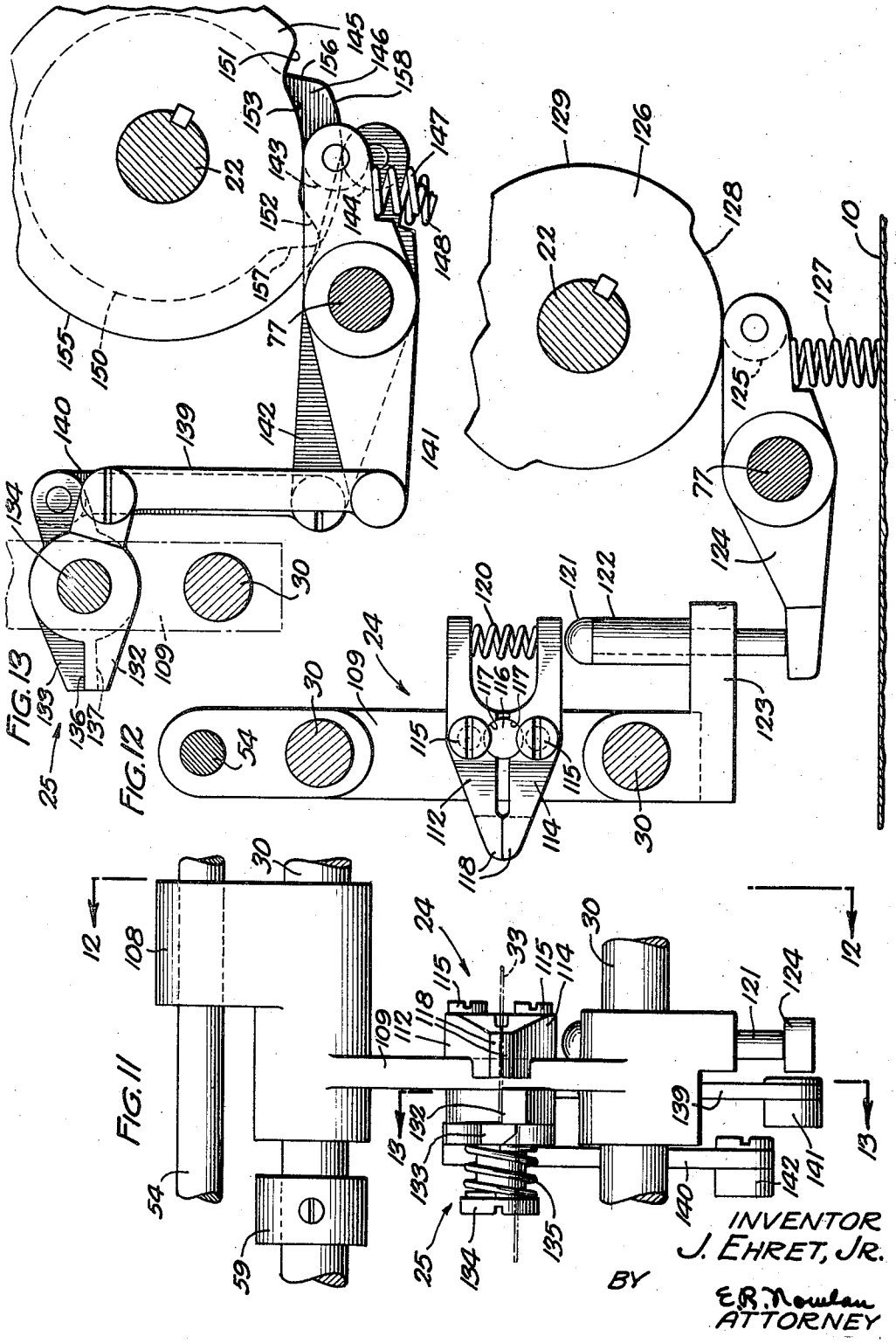
FIG. 8

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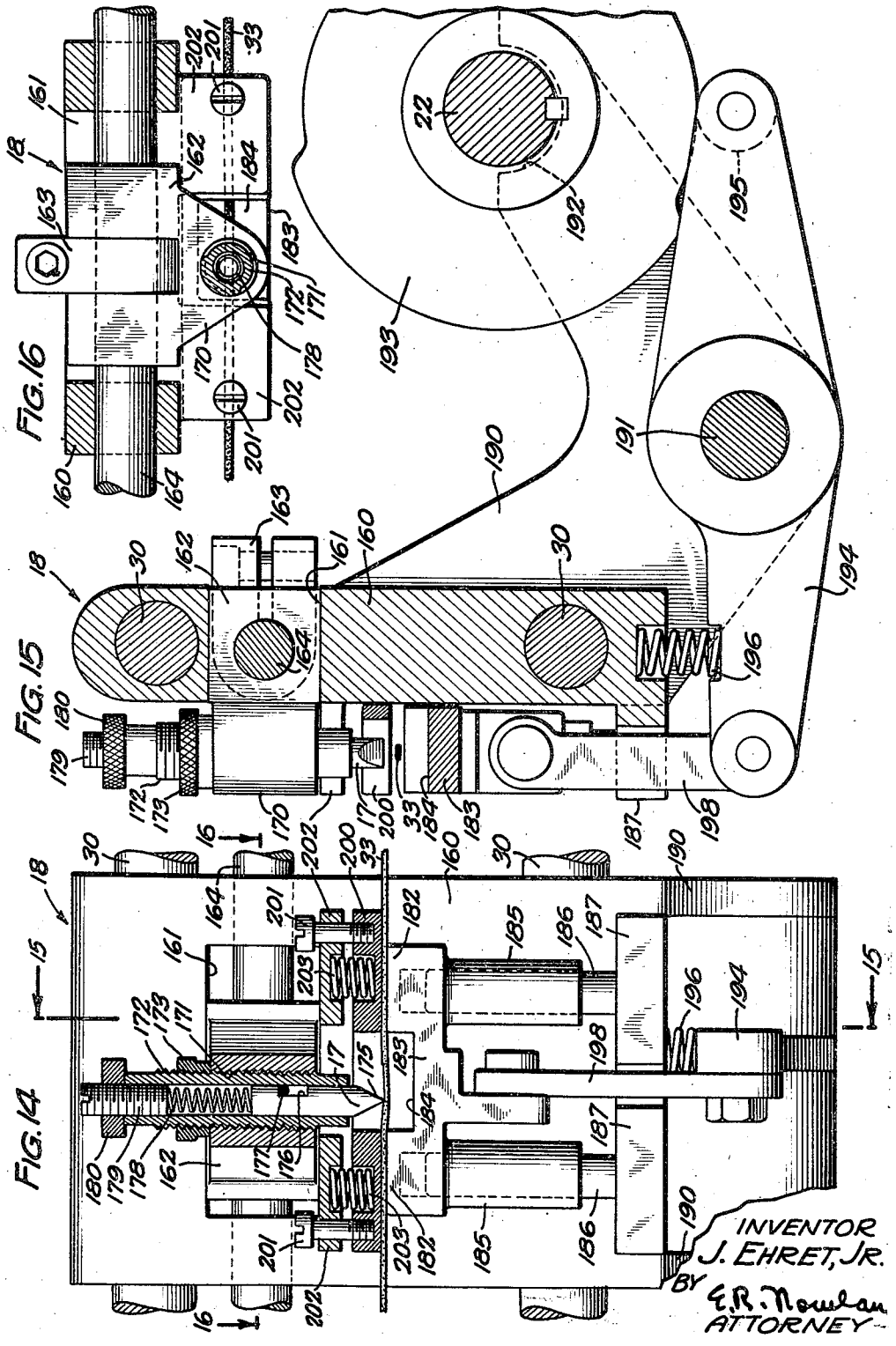
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Patented May 27, 1947 2,421,319

UNITED STATES PATENT OFFICE

2,421,319

FILAMENT SCRAPER

John Ehret, Jr., Trenton, N. J., assignor to Western Electric Company, Incorporated, New York, N. Y., a corporation of New York

Application February 16, 1944, Serial No. 522,610

7 Claims. (Cl. 15—93)

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This invention relates to material treating apparatus, and more particularly to apparatus for scraping given lengths of coating from coated filaments for use in vacuum tubes.

Vacuum tube filaments are generally cut from a strand or ribbon of suitable material coated, for example, with a barium-strontium mixture baked to a hard surface. The necessary treatment to condition such filaments for welding, to support wires of the mounting structures of the various types of vacuum tubes, includes cutting of the filament material into definite lengths and removing the coating from the ends of each length.

An object of the invention is to provide a material treating apparatus which is highly efficient in treating filaments for vacuum tubes.

With this and other objects in view, the invention comprises a material treating apparatus having mechanisms to advance a covered material predetermined distances intermittently, scrape the cover for variable distances from opposite sides of the material at predetermined variable spaced distances, and sever the material at the scraped positions.

Other objects and advantages will be apparent from the following detailed description when considered in conjunction with the accompanying drawings, wherein

Fig. 1 is a top plan view of the apparatus;

Fig. 2 illustrates a ribbon-type filament and the effect of the scraping units of the apparatus thereon;

Fig. 3 illustrates a strand-type filament and the effect of the scraping units thereon;

Fig. 4 is a schematic illustration of the strand-type of filament material, illustrated in Fig. 3, being scraped;

Fig. 5 is a schematic illustration of the scraping of the ribbon-type of filament, illustrated in Fig. 2;

Fig. 6 is a front elevational view of the apparatus;

Fig. 7 is an enlarged fragmentary front elevational view of a portion of the structure shown in Fig. 6;

Fig. 8 is a fragmentary front elevational view of the material feeding unit;

Fig. 9 is a vertical sectional view of the feeding unit, this view being taken along the line 9—9 of Fig. 8;

Fig. 10 is a fragmentary sectional view taken along the line 10—10 of Fig. 8;

Fig. 11 is a fragmentary front elevational view of the material gripping and shearing units;

Fig. 12 is a vertical sectional view taken along the line 12—12 of Fig. 11;

Fig. 13 is a fragmentary schematic sectional view taken substantially along the line 13—13 of Fig. 11;

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Fig. 14 is a fragmentary front elevational view of one of the scraping units;

Fig. 15 is a vertical sectional view of the scraping unit shown in Fig. 14, this view being taken along the line 15—15 of this figure; and

Fig. 16 is a fragmentary horizontal sectional view taken substantially along the line 16—16 of Fig. 14.

Referring now to the drawings, attention is first directed to Figs. 1, 6 and 7. A supporting base or table 10 has a motor 11 mounted thereon; this motor constituting the power means for the apparatus, and through a pulley connection 12, a shaft 14 of a speed reducing unit 15 is driven. The shaft 14 extends through the unit and has an elliptical cam 16 mounted on the forward end thereof. As hereinafter described, the cam 16 will cause vibration or lateral reciprocation of scraping elements 17 of scraping units indicated generally at 18 and 19. An output shaft 20 of the speed reducing unit 15 is connected, through a couple 21, to a cam shaft 22. Through the aid of the cam shaft 22, the various units of the apparatus are actuated, including the material feeding unit indicated generally at 23, the material gripping and holding unit indicated generally at 24, the shearing unit indicated generally at 25, in addition to certain portions of the scraping units 18 and 19.

Vertical brackets or members 28 and 29 support, in apertures thereof, parallel supporting rods 30, which provide the main support for the various units, the brackets in turn being mounted upon the base 10 at spaced positions as illustrated.

A drum 32 for supporting a supply of material 33 is rotatably supported by a shaft 34, the ends of which are carried by vertical members 36 extending from the base 10 upon which they are mounted. The material 33 passes downwardly about a sheave 37 and over a sheave 38, from where it travels longitudinally of the apparatus, controlled in its advancement relative to the scraping units 18 and 19 and the units 24 and 25 by the feeding unit 23. The sheave 37 is supported by the end of a lever 39, pivotally supported at 40 and having an arm 41 for supporting a weight 42, the latter being adjustable on the arm to vary the downward force of the lever on the sheave 37 and thus on the material 33. A spring 43, having one end fixed as at 44 to the lever 39 and the other end connected, through the aid of a strand 45, to a fixed member 46 as at 47, serves to apply a given lifting force to the lever which is counteracted by the weight 42, depending upon the tension desired to be created in the material 33.

Considering now the feeding unit 23, attention as directed to Figs. 1 and 6 for the general illustration thereof and Figs. 7 to 10 inclusive for

more detailed illustration of the feeding unit. The unit 23 includes a support or body member 50 apertured, as at 51, for mounting upon the supporting rods 30 for sliding movement thereon. The supporting member 50 includes an integral upper portion 52 apertured, at 53, to receive an actuating rod 54. Compression springs 55 are disposed concentric with the actuating rod 54 between collars 56 and their respective sides of the projection 52, providing a cushioned connection between the actuating rod and the support. The collars 56 may be secured to the actuating rod 54 at any desired position thereon depending upon the length of material desired for each filament. Also, collars 58 and 59 (Figs. 6 and 8) are mounted upon the upper supporting rod 30 at desired spaced positions to serve as stops for the unit 23.

Gripping elements 60 and 61 are pivotally supported, at 62, upon the support 50 and are of the respective contours as shown, provided with concaved recesses 63 adjacent their pivots to receive a cylindrical control member 64. Through this structure the actuation of either element will cause like actuation of its companion element. A spring 65 normally urges the elements 60 and 61 into closed positions, adapting them to grip, between their jaws 66, the end of the material. A cam surface 67, disposed at an angle with respect to the longitudinal center line of the elements, extends into a concaved retaining recess 68 to receive an actuating finger 69, which serves to cause actuation of the gripping elements when riding upon the cam surface 67 and into the recess 68. The recess 68 serves to hold the finger 69 against displacement during movement of the unit 23 toward the units 24 and 25. The finger 69 is pivotally supported, as at 70, and has lateral projections 71 and 72 positioned to be engaged by cam actuating rods 73 and 74, respectively. When in the position shown in Figs. 1, 6, 8, 9 and 10, the cam actuating rod 73 is positioned for actuation through a cam lever 76. The cam lever 76 is mounted for rotation upon a shaft 77, the latter being supported in suitable bearings 78 and the vertical member 29. A cam 80, fixedly mounted upon the cam shaft 22 and of the contour shown in Fig. 9, is adapted to actuate the lever 76 through the engagement of a high portion 81 of the cam with a cam roller 82 of the lever 76. A spring 83 causes the cam roller 82 to constantly ride upon the cam 80 and to hold the lever 76 in its inoperative position until actuated by the high portion 81 of the cam. The function of this mechanism under the control of the cam 80 is to move the rod 73 upwardly to rock the finger 69 about its pivot 70 and ride upon the cam surface 67 of the element 60 until its engaging end is disposed in the recess 68, to thus open the elements 60 and 61 and hold them in the open position for a given length of time.

The rods 73 and 74 are supported for vertical movement in apertured portions 85 integral with the support 50. Pins 86, carried by each of the rods 73 and 74, normally rest upon their lower portions 85 to locate the lower ends of the rods 73 and 74 short distances above the normal positions of the engaging ends of their respective cam levers. The detailed structures of the cam 80 and its lever 76 for the rod 73 are shown particularly in Fig. 9. Another cam 90, identical with the cam 80, is mounted upon the cam shaft 22, as illustrated in Fig. 1, and adapted to actuate a cam lever 91, which is substantially identical in structure to the cam lever 76, rotatably mounted upon the shaft 77 and provided with a spring similar to the spring 83 to cause the lever 91 to be normally held in its inoperative position against its cam 90 until time for its actuation by a high point of the cam 90 similar to the high point 81 of the cam 80. The levers 76 and 91, as illustrated in Fig. 1, are disposed at spaced positions. When the unit 23 is moved to its extreme position, to the right (Figs. 1 and 6), the gripping elements 60 and 61, which are in open position during this movement, have their jaws 66 disposed above and below the forward end of the material 33 which is held by the unit 24. After the unit 23 reaches this position, the rod 74 is disposed above the lever 91 and is actuated or moved upwardly through the actuation of the lever 91 by its cam 90, to trip the finger 69, moving it out of its recess 68 and into the position shown in Fig. 8. The spring 65 thus causes closing of the gripping elements 60 and 61, causing them to grip the ends of the material.

The mechanism for actuating the feeding unit 23 through the aid of the actuating rod 54 is shown at the left of both Figs. 1 and 6. The cam shaft 22, which is driven by the motor 11, is journalled in suitable bearings in the vertical member 28 and in a bearing bracket 95 which is mounted upon the table or base 10. A bevelled gear 96 is mounted upon the adjacent end of the cam shaft 22 and interengages a similar bevelled gear 97, the latter being mounted upon a vertical shaft 98 which is journalled in a bearing 99 supported by the table 10. The shaft 98 also has a wheel 100 mounted thereon above the gear 97, the wheel having an eccentric spindle 101 carried thereby and projecting into a connecting block 102. The block 102 is positioned to ride in an elongate aperture 103 of a lever 104, the latter having one end pivotally supported at 105 while the other end is connected through a link 106 to the actuating rod 54. Therefore, through the constant rotation of the wheel 100, the lever 104, through the eccentric connection with the wheel, is oscillated about its pivot 105 to cause reciprocation of the actuating rod 54 to move the unit 23 to intermittently advance given lengths of the material 33. It will be noted that the actuating rod 54 is supported in a bearing 107 carried by the vertical member 29 and in a bearing portion 108 of a supporting bracket 109, which supports the units 24 and 25.

Attention is now directed to the unit 24, which is shown in detail in Figs. 11 and 12. This unit constitutes the material holding means and is similar in structure to the unit 23 in that it is provided with material gripping elements 112 and 114 pivotally supported at 115 and having a connecting member 116 cylindrical in contour and receivable in concave recesses 117 of the elements 112 and 114, to cause simultaneous and like actuation of both elements when one of the elements is actuated. The forward ends of the elements 112 and 114 are provided with gripping jaws 118 between which the material 33 is advanced, through the aid of the unit 23, when the elements are in open position, and, through the aid of which the material may be held against displacement, during the scraping operations. The elements 112 and 114 are normally held in closed positions through the aid of a spring 120 positioned between the legs of the elements, as illustrated in Fig. 12. The pivots 115 are threadedly disposed in the supporting bracket 109 so that the gripping jaws are positioned adjacent the path of advancement of the material.

An actuable plunger 121, supported in a sleeve 122, carried by a lateral projection 123 of the supporting bracket 109, has its lower end positioned to be engaged by a cam lever 124 which is mounted for rotation upon the shaft 77 and provided with a cam roller 125 held in engagement with the periphery of a cam 126 through the aid of a spring 127. As illustrated in Fig. 12, the gripping elements 112 and 114 are in their closed positions, and during this interval a low portion 128 of the cam 126 rides upon the roller 125, a high portion 129 of the cam causing actuation of the lever 124 to move the plunger 121 upwardly to cause movement of the elements 112 and 114 into open positions against the force of the spring 120.

The unit 25, namely the shearing unit, is also mounted upon the supporting bracket 109. This unit includes companion shearing elements 132 and 133, which are mounted upon a common pivot 134 carried by the bracket 109. Through the aid of a spring 135 (Fig. 11) engaging the shearing element 133, a given force is applied to hold the elements in close engagement with each other, to perform a satisfactory shearing operation upon the material 33, the shearing element 132 being backed up by the bracket 109. The bracket 109 is, as illustrated, supported by the supporting rods 30, locating the units 24 and 25 in their preferred positions adjacent the path of the material 33. The elements 132 and 133 have shearing edges 136 and 137, respectively, which, when moved relative to each other into the closed position shown in Figs. 11 and 13, will shear the material. Through the aid of links 139 and 140, the elements 132 and 133 are connected operatively to their respective cam levers 141 and 142. The cam levers are rotatably mounted upon the shaft 77 and are provided with cam rollers 143 and 144 respectively, which are held in engagement with their cams 145 and 146 through the aid of springs 147 and 148. The cams 145 and 146 are mounted upon the cam shaft 22, for rotation therewith, and differ in contour to cause reverse movements of the cutting elements 132 and 133. The cam 145 has a high portion 150 throughout its periphery excepting between positions 151 and 152, where a low portion 153 is provided to allow the spring 147 to cause movement of its element 132 into closed position as shown in Fig. 13. The cam 146 has a low portion 155 for the major portion of its periphery excepting between positions 156 and 157, where a high portion 158 causes actuation of its lever 142 to move the element 133 into closed or cutting position. Therefore, for the major portion of the operating cycle the cutting elements 132 and 133 are held in their open positions, as illustrated in Fig. 7, so that the forward ends or gripping jaws 66 of the elements 60 and 61 of the feeding unit 23 may pass therebetween to grip the leading end of the material 33 held by the elements 112 and 114 of the unit 24.

Attention is now directed to the scraping units 18 and 19, which are identical in structure, a description of one being applicable to both units. The unit 18 has been selected and is shown in detail in Figs. 14, 15 and 16. This unit includes a supporting bracket 160 mounted upon the supporting rods 30 at a selected position with respect to the vertical member 28 and the supporting bracket of the companion unit 19. A rectangular aperture 161 is formed in the supporting bracket 160, to receive a reciprocable element 162 formed for reciprocation between given limits in the aperture. The element 162 has spaced portions as illustrated in Fig. 6, to receive a mounting clamp 163 therebetween, the latter being fixedly mounted upon an actuating rod 164 to thus connect the element thereto. The actuating rod 164 has a similar connection with the unit 19 and serves to cause simultaneous actuation of the scraping elements 17 of both units. This actuation of the rod 164 is brought about through the rotation of the cam 16 engaging a cam roller 166 which is constantly urged to ride upon the cam through the aid of a spring 167. The actuating rod 164 is supported for its reciprocable movement in an aperture 168 in the vertical member 28.

Returning now to the element 162, it will be noted that a forwardly projecting portion 170 thereof is provided with a vertical threaded aperture 171 to receive a threaded sleeve 172 held in a desired adjusted position therein relative to the path of the material 33 through the aid of a nut 173. The scraping element 17, having a tapered lower end 175 extending to an edge sufficiently sharp for the removal of the coating or covering material from the core of the main material 33, is movably disposed in the sleeve 172 limited in its movement by a notch 176 cooperating with a pin 177 carried by the sleeve 172. A spring 178 engages the scraping element 17 in the sleeve 172 to apply a desired holding force upon the element, which force may be varied through the aid of an adjusting screw 179, the adjustment of which may be held through the aid of a nut 180. Through the aid of this mechanism, the scraping element 17 is constantly reciprocated between given limits under the control of the cam 16 and the actuating rod 164. The path of advancement of the material 33 is beneath the scraping element 17, as illustrated in Fig. 15. During its advancement, the material 33 rides upon spaced portions 182 of a table 183, the central portion of which is recessed, as at 184. The table 183 has tubular portions 185 integral therewith and projecting downwardly over vertical guides 186 supported by lateral projections 187 of the supporting bracket 160. Integral arms 190 of the supporting bracket 160 are of the contours illustrated in Fig. 15, extending rearwardly in parallel spaced positions to support the ends of a shaft 191 and formed to straddle the cam shaft 22 as at 192. A cam 193, keyed to the cam shaft 22 and of the contour shown in Fig. 15, is adapted to actuate a cam lever 194 supported by the shaft 191 through the aid of a cam roller 195 rotatably carried by the lever. The cam lever 194 is normally urged counterclockwise through the aid of a spring 196, to maintain the roller 195 upon the periphery of the cam. Through the aid of a link 198, the cam lever 194 is operatively connected to the table 183 to cause vertical movement of the table relative to the scraping element 17 to move the material into engagement with the scraping element. Means is provided to cooperate with the table 183, particularly the supporting portions 182 thereof, to grip the material upon the opposite sides of the scraping element 17 and to hold the material against displacement during the scraping operation. This means includes a pad 200 supported by screws 201 movably disposed in lateral projections 202 of the supporting bracket 160 and normally urged downwardly, through the aid of springs 203 interposed between the pad 200 and the projections 202, as illustrated in Fig. 14, and limited in the downward movement by the heads of the screws 201.

As heretofore stated, the unit 19 is identical in

every detail with the unit 18 and is operated simultaneously herewith to move the adjacent portion of the material into engagement with its vibrating or reciprocating element 17 for the scraping of the covering from the material. These units are positioned with respect to each other and the shearing element 25, depending upon the length of the filament or article desired to be scraped from the material. The shearing operation is performed, in the present instance, at the center line of the scraped portion of the material. Therefore, the accurate adjustment of the units is important. The units 18 and 19 are so complete in themselves that the adjustment requires only their movement on the supporting rods, the integral arms 190 thereof causing simultaneous adjustment of the cams 193 on the cam shaft 22 through their key connections.

A platform or receiving tray 205 extends between units 23 and 25 a short distance therebeneath, when the former is in the left hand position as shown in Figs. 1 and 6, to receive the severed articles of filaments. The tray is provided with supporting legs 206 through the aid of which tray may be supported and mounted upon the table 10.

Considering now the operation of the apparatus, let it be assumed that the various units are in their desired positions and that the material 33 is of the ribbon type illustrated in Figs. 2 and 5. Let it also be assumed that the material is threaded through the apparatus as illustrated in Figs. 1, 5 and 6. During the threading of the material, it is given a twist so that one half turn will exist in the material between the scraping units 18 and 19 as illustrated in Fig. 5. During the operation of the unit 18, the portion of the material adjacent the recess 184 of the table 183 will be moved into engagement with the scraping element 17 of this unit, resulting in the scraping of the cover from the adjacent side of the material. The material is held firmly against displacement between the portions 182 of the table and the pad 200 through the force of the springs 203, leaving the portion of the material being scraped unsupported.

The function of the unit 19 will not be discussed at this time. Instead, attention is directed to the advancement of the material as the units 18 and 19 open, moving their tables 183 downwardly to thus move the material away from the scraping element 17, the unit 23 first approaching the leading end of the material disposed adjacent the unit 25, the material adjacent this portion being held by the unit 24. As soon as the unit 23 reaches its extreme position at the right, the finger 69 will be tripped, that is, moved free of its retaining recess 68, allowing the spring 65 to close the elements 60 and 61 to grip the leading end of the material. As soon as this has been accomplished, the gripping elements 112 and 114 of the unit 24 are opened through the actuation of the cam 126, freeing the material for advancing a given distance. This advancement is brought about through the movement of the unit 23 to its extreme position at the left, through the actuation of the rod 54 and the eccentric driving means therefor illustrated in Figs. 1 and 6. During this advancement of the material, the portion thereof which was scraped by the element 17 of the unit 18 is presented to the unit 19, the scraped portion, however, being disposed at the opposite or under side of the material away from the scraping element 17 of the unit 19. Therefore, during the next scraping operation when both units 18 and 19 function, the unit 18 will scrape a new portion of the material, while the unit 19, that is, its element 17, will scrape the opposite side of the portion previously scraped by the unit 18.

During the next advancing cycle of the material, which is brought about while the shearing unit 25 is open, the portion present at the unit 19 will be disposed at the shearing unit 25. Thus after the unit 23 has completed the advancement of the material and the holding members of the unit 24 have closed upon the material, the shearing elements 132 and 133 will be moved into closed positions simultaneously through the actuation of their respective levers functioning through their cams to shear the material at the center line of the scraped portion. The sheared portion of the material will drop upon the tray or table 205, where it may be removed at will, it being released by the opening of the unit 23.

As previously stated, the materials from which the filaments may be formed, through the aid of this apparatus, may vary in size from that of the strand type illustrated in Figs. 3 and 4 to those having greater widths such as the ribbon type illustrated in Figs. 2 and 5. When the apparatus is employed to scrape material of the strand type, it is not necessary to thread this type of material through the apparatus with an existing twist present therein between the units 18 and 19. By supporting the material only at the opposite sides of the portion being scraped and leaving that portion unsupported, the action of the scraping element 17 will actually scrape the covering from one side of the material and break the covering free of the other parts of that scraped portion due to the reciprocable action of the resiliently supported element 17 of each unit and the bending or flexing action of that portion of the material. In this instance the same operation is repeated at the unit 19 that was performed at the unit 18, to assure complete removal of all portions of the covering at the desired length of material being scraped.

In reviewing the function of the apparatus, it will be observed that units 18, 19, 25 and 23 are open and the unit 24 is closed when the unit 23 is ready to grip the leading end of the material. The unit 25 remains closed until after the unit 23 is closed, to grip the end of the material, after which the unit 24 is open, allowing advancement of the material the given distance equalling the distance between the scraping element 17 of the units 18 and 19. After the material has been advanced and before the unit 23 returns to advance the material another given length, the first length of the material is severed by the closing of the unit 25, during which time units 18 and 19 are closed to bring about the scraping operations thereof, the material being held under tension between the unit 24 and the supply drum 32, this tension being created through the lever 39 under the control of the weight 42 and the spring 43.

Although specific improvements of the invention have been shown and described, it will be understood that they are but illustrative and that various modifications may be made therein without departing from the scope and spirit of this invention as defined by the appended claims.

What is claimed is:

1. An apparatus for scraping portions of a cover from a covered core, the apparatus comprising a scraping element having a scraping edge, means to continuously reciprocate the element between given limits, means to grip a covered core at

spaced positions beyond the said limits of the element, leaving the intermediate portion thereof unsupported, and means to move the gripping means to move the unsupported portion of the core into engagement with the scraping edge of the element for scraping a portion of the cover from the said unsupported portion of the material.

2. An apparatus for scraping portions of a cover from a covered core, the apparatus comprising a scraping element having a scraping edge, means to continuously reciprocate the element between given limits, companion gripping members formed to grip a covered core adjacent the said limits and leave the intermediate portion thereof unsupported, and means to cause movement of one of the gripping members toward the other gripping member to cause them to grip the covered core and to subsequently move the gripping members with the covered core to move the unsupported portion thereof laterally into engagement with the scraping edge of the element.

3. An apparatus for scraping portions of a cover from a covered flat-sided core, the apparatus comprising a scraping element having a scraping edge, means to continuously reciprocate the element between given limits, companion gripping members formed to grip a covered core adjacent the said limits and leave the intermediate portion thereof unsupported, and means to cause movement of one of the gripping members toward the other gripping member to cause them to grip the covered core and to subsequently move the gripping members with the covered core to move the unsupported portion thereof sidewise laterally into engagement with the scraping edge of the element to cause removal of all parts of the cover of the portion within the said limits of the element.

4. An apparatus for scraping portions of a cover from a covered core, the apparatus comprising means to advance a covered core intermittently in a given path, like scraping elements disposed at spaced positions on the same side of the said path, and means to cause presentation of opposing sides of the covered core to the respective scraping elements to cause removal of portions of the cover from opposite sides of the core.

5. An apparatus for scraping portions of a cover from a covered core, the apparatus comprising a feeding unit movable between a gripping position and a releasing position including companion gripping elements one of which has a cam surface, separate means to pivotally support the elements, means operatively connecting the elements for movement of one of the elements into open or closed positions upon movement of the other element into its open or closed positions, means to normally urge the elements into their closed positions, a finger pivotally supported by the unit and movable in engagement with the said cam surface to move the element thereof into open position, cause the connecting means to move the other element into open position and hold the elements in the open positions during their travel to the gripping position to grip the leading end of the core, means actuable adjacent the gripping position to release the finger to render the closing means effective to cause the elements to grip the leading end of the core, means to move the unit to intermittently advance the core, and means to scrape a portion of the cover from the core.

6. An apparatus for scraping portions of a cover from a covered core, the apparatus comprising a feeding unit movable between a gripping position and a releasing position including companion gripping elements one of which has a cam surface, separate means to pivotally support the elements, means operatively connecting the elements for movement of one of the elements into open or closed positions upon movement of the other element into its open or closed positions, means to normally urge the elements into their closed positions, a finger pivotally supported by the unit and movable in engagement with the said cam surface to move the element thereof into open position, cause the connecting means to move the other element into open position and hold the elements in the open positions during their travel to the gripping position to grip the leading end of the core, means actuable adjacent the gripping position to release the finger to render the closing means effective to cause the elements to grip the leading end of the core, means to move the unit to intermittently advance the core, means to scrape a portion of the cover from the core, and means actuable adjacent the releasing position to move the finger to move the elements into their closed positions.

7. An apparatus for scraping portions of a cover from a covered core, the apparatus comprising a feeding unit movable between a gripping position and a releasing position including companion gripping elements one of which has a cam surface, separate means to pivotally support the elements, a cylindrical member disposed in recesses of the elements between their pivotal supports to cause movement of one of the elements into open or closed position upon movement of the other element into its open or closed position, means to normally urge the elements into their closed positions, a finger pivotally supported by the unit and movable in engagement with the said cam surface to move the element thereof into open position, cause the connecting means to move the other element into open position and hold the elements in the open positions during their travel to the gripping position to grip the leading end of the core, means actuable adjacent the gripping position to release the finger to render the closing means effective to cause the elements to grip the leading end of the core, means to move the unit to intermittently advance the core, and means to scrape a portion of the cover from the core.

JOHN EHRET, JR.

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