

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO	
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DEP: 2020 DIRECCION DE NUEVAS CREACIONES	EVE: 378 FASE NACIONAL INCLUIDO CAPITULO I
TRA: 11 PCT-PATENTE DE INVENCION CAPITULOS I Y II	FOLIOS: 5
ACT: 519 TRASLADOINFORME	

DIRECCIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C.,

Abogado(a)/Señor(a)
JUAN PABLO CADENA SARMIENTO

Asunto: Radicación: 13-237727- -2
Trámite: 11
Evento: 378
Actuación: 519
Oficio: 7557
Folios: 5

Patente de Invención	X			Patente de Modelo de Utilidad	
Vía Nacional					
Vía PCT (Fase Nacional)	X	Capítulo I	X	Capítulo II	
No. Solicitud Internacional	PCT/IB2012/050863				
Fecha de Presentación Internacional	24/02/2012				

Como resultado del examen de fondo realizado, con fundamento en el Artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se comunica:

1. Documentos estudiados

Descripción:	Rad. N° 13-237727-00000-0000	07/Octubre/2013
Reivindicaciones:	Rad. N° 13-237727-00000-0000	07/Octubre/2013
Dibujos:	Rad. N° 13-237727-00000-0000	07/Octubre/2013
Prioridad:	IT BO2011A000128	16/Marzo/2011

2. Análisis de la Prioridad

Se acepta la reivindicación de prioridad porque ésta solicitud fue presentada dentro del plazo establecido (Art. 9 D 486) y su contenido técnico corresponde con el de la prioridad reivindicada.

3. Objeto de la invención

De acuerdo con lo establecido en el numeral 1.2.2.2 del Capítulo Primero del Título X de la Circular Única para efectos del examen de patentabilidad, se tendrá en cuenta la tasa pagada por el solicitante al momento de comenzar el examen para las reivindicaciones adicionales; esto es que cuando la solicitud contenga más de diez (10) reivindicaciones y

no se haya pagado la tasa complementaria, sólo se estudiarán las cubiertas por la tasa pagada. Por lo tanto, se estudiarán las reivindicaciones 1 a 9.

Título de la solicitud: “Máquina para cortar cueros” (Fl. 1).

El problema planteado en esta solicitud, consiste en lograr una máquina para cortar cuero que sea capaz de realizar el retiro de las piezas de cuero de corte de forma automática y eficiente, al mismo tiempo que se llevan a cabo las operaciones de descarga, posicionamiento, estiramiento y corte del cuero.

Para resolver este problema técnico, la solicitud en estudio propone una máquina para cortar cueros que consta de una estructura soporte, un elemento de operación con tres o más planos de trabajo y una placa de aspiración y medios de corte asociados a la estructura soporte.

El objeto de la presente solicitud se relaciona con la Clasificación Internacional de Patentes (CIP): B 26 D 7/18, C14B 17/18.

4. Reivindicaciones relativas a un uso o a un segundo uso (Art 14 y 21 D 486)

El capítulo reivindicatorio que se refieren a una máquina para cortar cueros, no puede ser objeto de nueva patente, por el simple hecho de atribuírsele un uso distinto al originalmente comprendido por la patente inicial, de acuerdo con el Art 21 de la Decisión 486. Lo anterior, teniendo en cuenta que las características constructivas reclamadas ya habían sido divulgadas previamente en D1 que enseña una máquina para cortar hojas de tabaco (Ver numeral 7 – Examen de Patentabilidad).

5. De la solicitud de patente

Reivindicaciones (Art 30 D 486, Art 22 PCT)

El capítulo reivindicatorio no es claro porque:

- Las reivindicaciones 6 y 7, y las expresiones: “...*que se puede activar/desactivar con el fin de retener o liberar los cueros...*”, “...y que se puede mover con respecto a este...”, “...el elemento de operación (2) se puede montar sobre la estructura (...) mediante la fuerza de gravedad luego de la desactivación de la placa de aspiración.” (reivindicación 1), “...*para rotar la activación del elemento de operación (2) alrededor del eje de rotación (Z).*” (reivindicación 2), “...*para recibir los cueros cortados desde un plano de trabajo (21, 22, 23) (...) de la placa de aspiración del plano de trabajo.*” (reivindicación 8), “...*para cubrir los planos de trabajo relativos (21, 22, 23) por lo menos en la placa de aspiración de cada uno de los mismos*” (reivindicación 9), describen funciones, efectos, ventajas o resultados a alcanzar, los cuales no son aspectos susceptibles de patente. Para mayor claridad, el producto reclamado se debe definir técnicamente mediante sus características estructurales. Se sugiere al solicitante eliminar las reivindicaciones y las expresiones citadas.

De igual manera, la expresión: “...*diseñado de tal forma...*” hace referencia también a una función o un resultado a alcanzar. Por lo tanto, se sugiere reemplazarla por una expresión que describa constructivamente la invención. Por ejemplo: “comprende”.

- La expresión: “*por lo menos*” (reivindicación 1 y 9) precediendo una característica no es limitativo, porque hace opcional a la característica y no limita el alcance de la reivindicación. Se sugiere eliminarla de las reivindicaciones.
- La expresión: “*lado relativo*”, es de carácter relativo por lo cual no permite distinguir la invención del estado de la técnica. Se sugiere eliminar el término “relativo” de las reivindicaciones.

6. Determinación del Estado de la Técnica

El estado de la técnica se determinó con base en la fecha de presentación de la solicitud de prioridad: marzo 16 de 2011, y se encontró el siguiente documento que anticipa el objeto de esta solicitud:

Ítem	Documento	Título	Fecha de Publicación
D1	GB 2'069.913	'Machine for cutting sheets e.g. Tobacco leaf'	03/Septiembre/1981

El documento D1¹ divulga una maquina para cortar hojas, por ejemplo de tabaco, que comprende dispositivos de corte (3) montados en diez mesas alrededor de un eje (2). Las hojas son sostenidas por succión y cortadas en la parte superior de la estación (resumen).

7. Examen de Patentabilidad (Art 14 D486)

Novedad (Art 16 D486)

La reivindicación 1 consiste en: “*Una máquina para cortar cueros, caracterizada porque comprende: una estructura soporte (1), un elemento de operación (2), diseñado de tal forma que...*” (Ver página 14 del radicado N° 13-237727-00000-0000).

Comparación de las características técnicas esenciales, con las del estado de la técnica:

Características esenciales	D1
Máquina para cortar cueros caracterizada por:	Máquina para cortar hojas caracterizada por:
Una estructura de soporte.	Mesas (1) que están acopladas al eje (2). Las hojas son sostenidas por succión a las mesas (Fig. 1; resumen).
Un elemento de operación que exhibe un eje de rotación y por lo menos tres planos distintos de trabajo, cada uno de los cuales se disponen cerca del eje de rotación y se proporciona con una placa de aspiración.	
Medios de corte asociados con la	Conjuntos de dispositivos de

¹ http://worldwide.espacenet.com/publicationDetails/biblio?CC=GB&NR=2069913A&KC=A&FT=D&ND=3&date=19810903&DB=EPODOC&locale=en_EP

estructura de soporte.	transporte (40) cada uno toma un par de cortadores del área de almacenamiento al extremo opuesto de las mesas y los posiciona en las áreas de trabajo (Fig. 1; resumen).
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De acuerdo con la tabla anterior, las características esenciales de la máquina de la reivindicación 1 habían sido divulgadas previamente en el documento D1, por lo tanto, la materia reivindicada no es nueva.

Asimismo, el documento D1 divulga las características de las reivindicaciones dependientes así:

- Reivindicación 2: El elemento de operación exhibe una forma de prisma (Fig. 2).
- Reivindicación 4: La máquina para cortar hojas comprende 10 mesas de trabajo (Fig. 1; resumen).
- Reivindicación 5: La rueda (17) es conducida por la correa (18) y la rueda (19) por un motor (20) por medio de una transmisión variable (21) (Fig. 1; Pág. 2, líneas 40 a 45).
- Reivindicación 8: Una estación de recogida de material que comprende una banda transportadora (80) (Fig. 6; Pág.3, líneas 107 a 114)

Las reivindicaciones 6 y 7 fueron afectadas en el numeral 4 de la presente comunicación.

8. Conclusión

Los requisitos de Patentabilidad de la presente solicitud están afectados así:

Ítem	Documento	Reivindicaciones afectadas	Requisito que afecta
D1	GB 2'069.913	1, 2, 4 a 8	Novedad/Nivel Inventivo

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta (60) días contados a partir del día siguiente de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Se invita al solicitante se sirva indicar, si así lo considera, su renuncia al término faltante de sesenta (60) días para dar respuesta a este requerimiento y presentarla por escrito.

Finalmente, se le recuerda al solicitante que si como respuesta a este requerimiento llegara a modificar el capítulo reivindicatorio y éste contenga más de diez (10) reivindicaciones, no pagará la tasa de modificación voluntaria pero sí la correspondiente al pago por reivindicación adicional.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única No. 10 de 2001.



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El anterior requerimiento fue notificado por fijación en lista, de fecha 2015-07-07

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(12) UK Patent Application (19) GB (11) 2 069 913 A

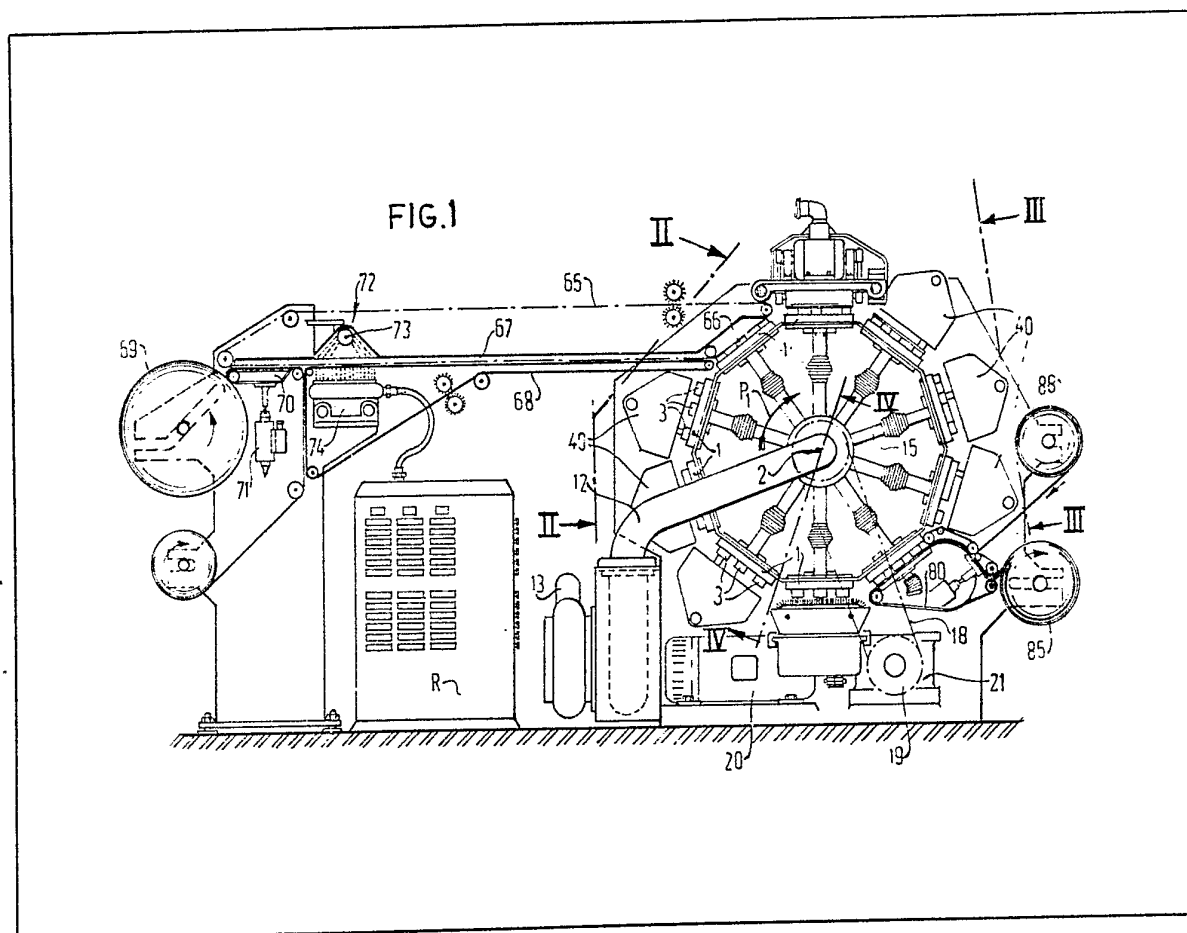
(21) Application No **8104726**
 (22) Date of filing **16 Feb 1981**
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 (31) **8001067**
 (32) **21 Feb 1980**
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3 Sep 1981
 (51) **INT CL³**
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 (58) Field of search
B4B
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(54) **Machine for cutting sheets e.g. tobacco leaf**

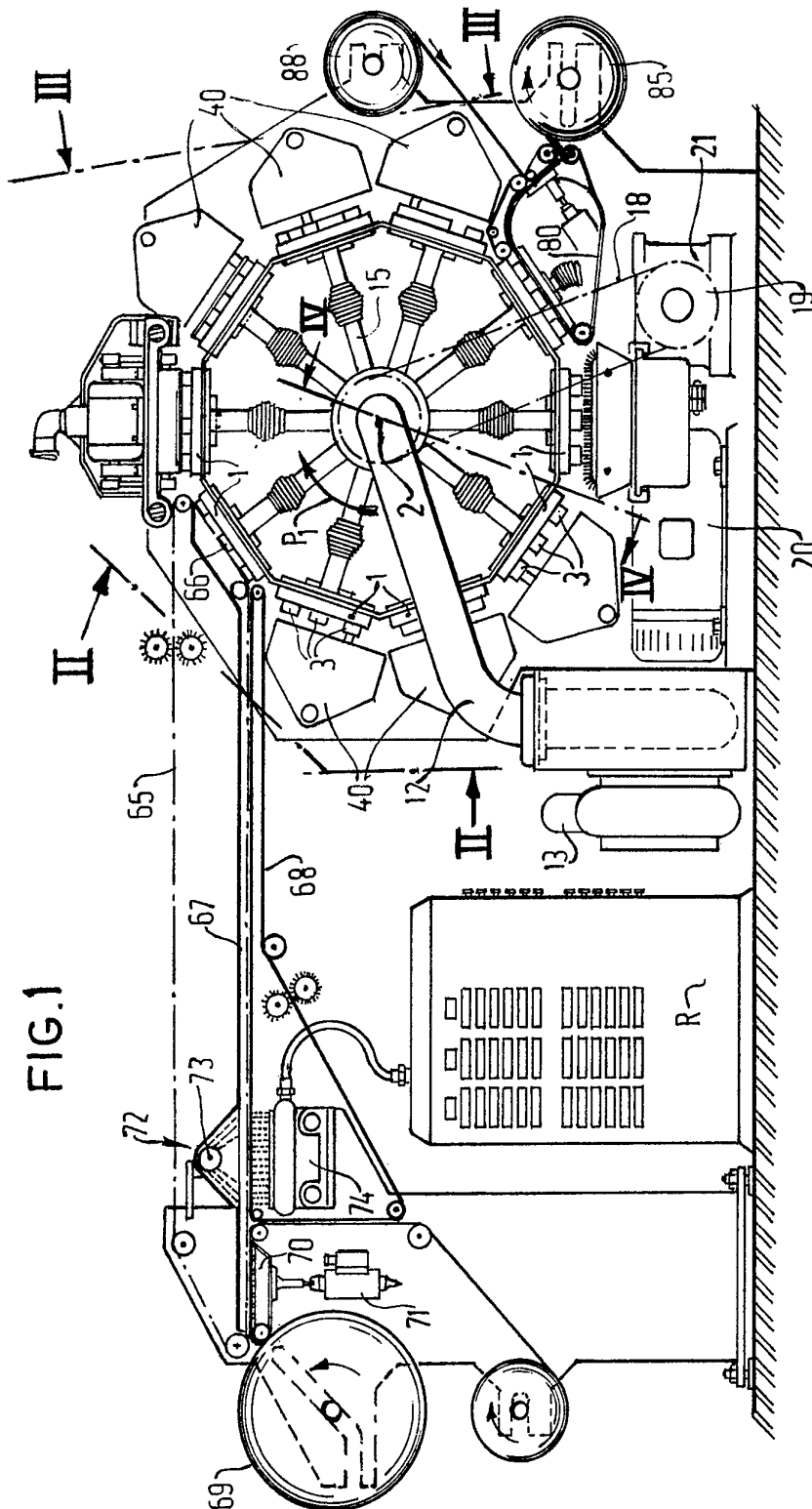
(57) Cutting devices 3 are mounted on ten tables 1 which are indexed around an axis 2. Tobacco leaves to be

cut are carried from reel 69 by suction belt 65 to a transfer section 66. They are held by suction and cut at the top station, the cut pieces being removed from cutters 3 by a take-off belt 80. Sets of transport devices 40 each take a pair of cutters from storage areas at opposite ends of the tables 10 and position them in the working area. A sensing device 74 controls the positioning of the six tools on each table according to the shape of the leaves to be cut.



GB2 069 913A

"1/5"



"2/5"

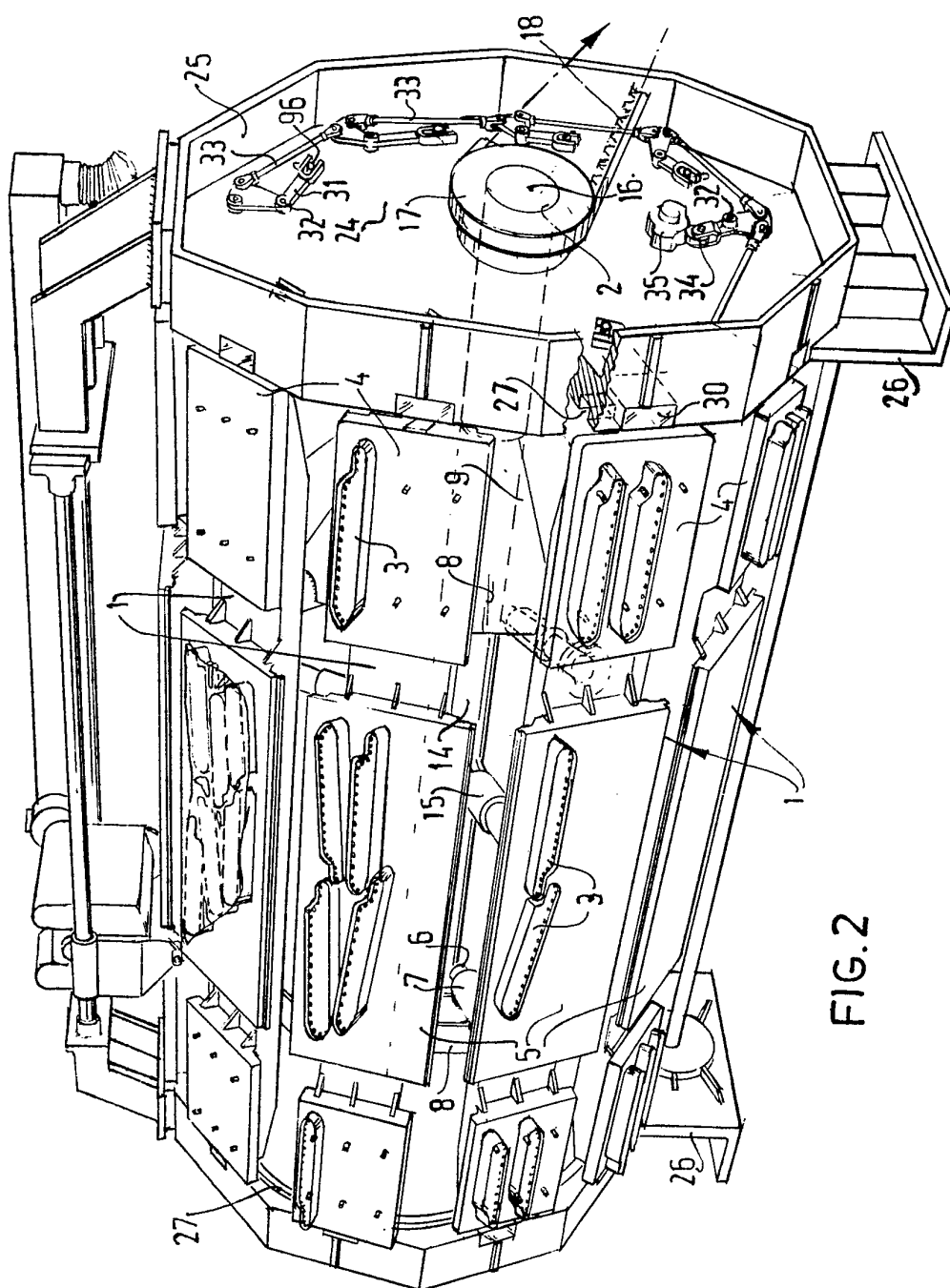


FIG. 2

"3/5"

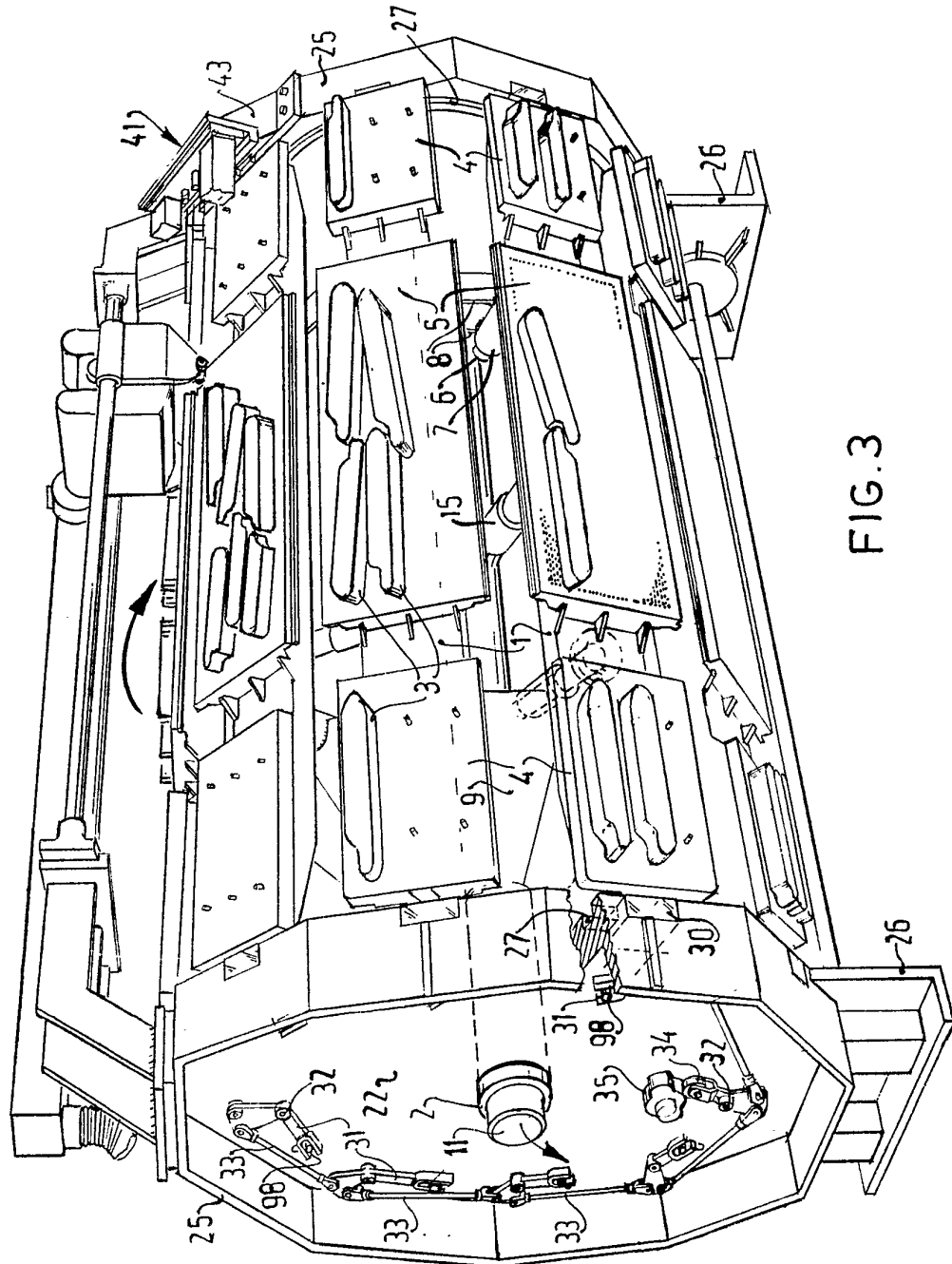
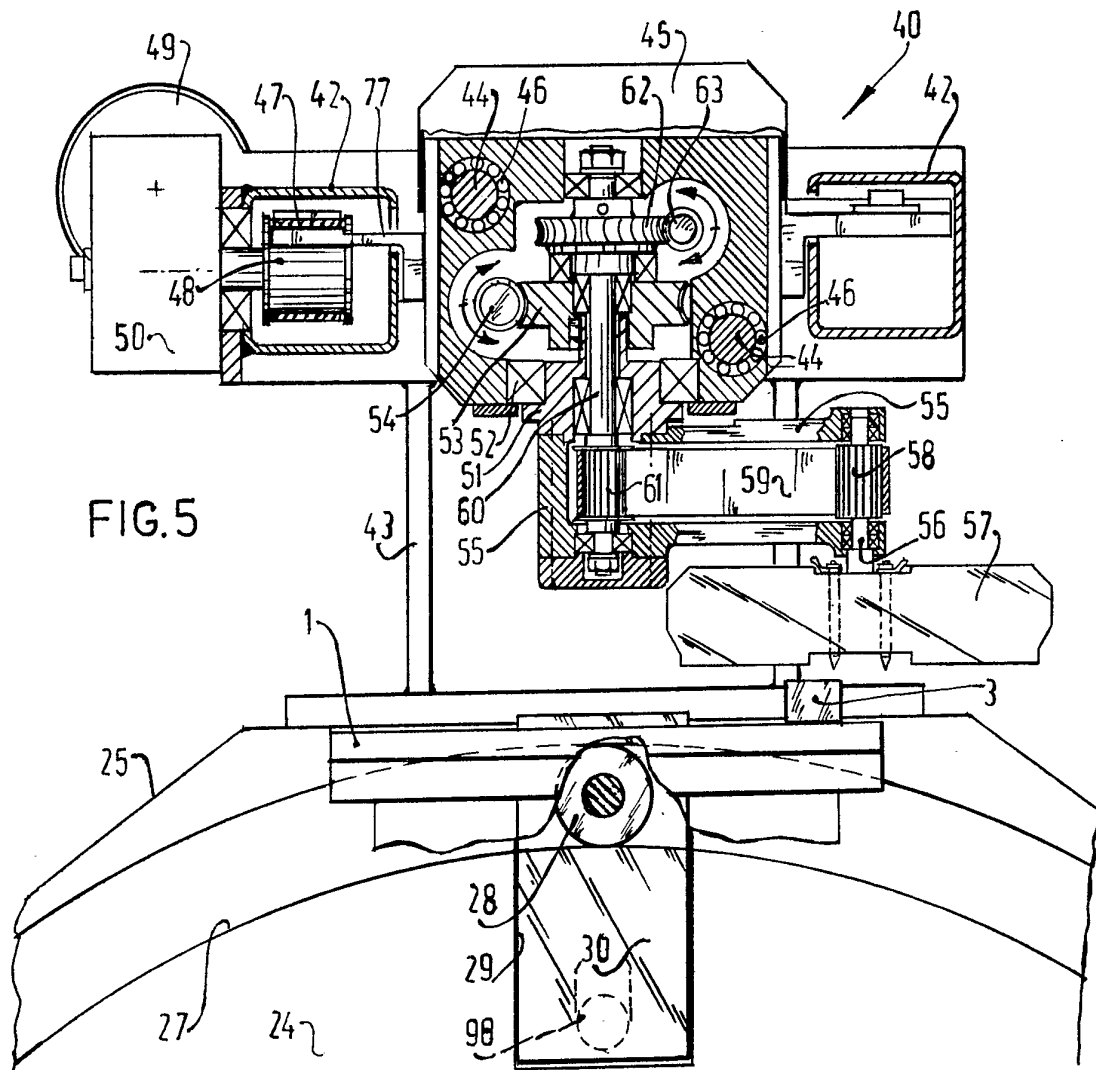
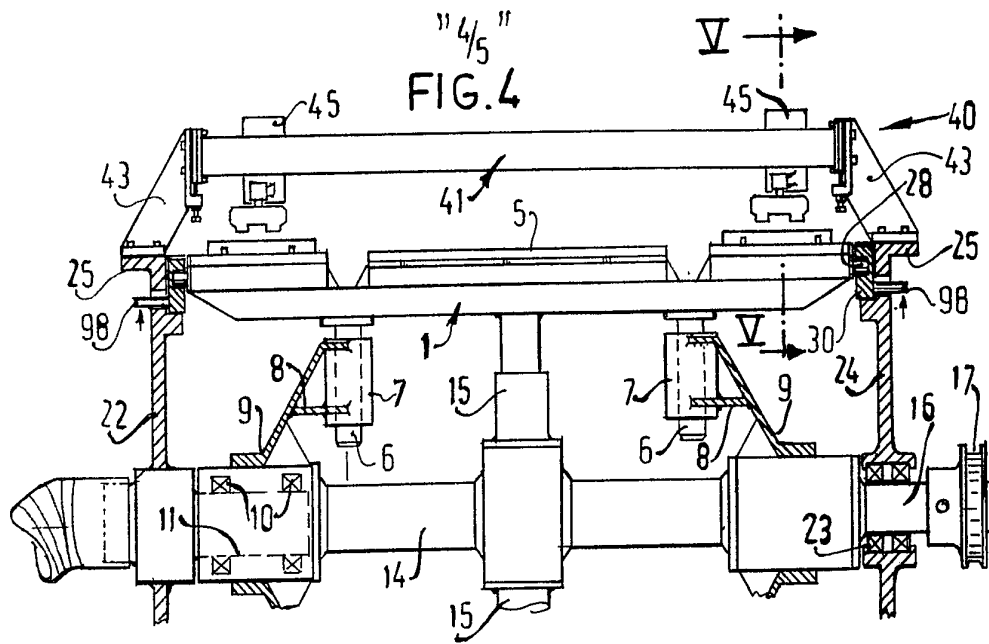


FIG. 3



" 5/5 "

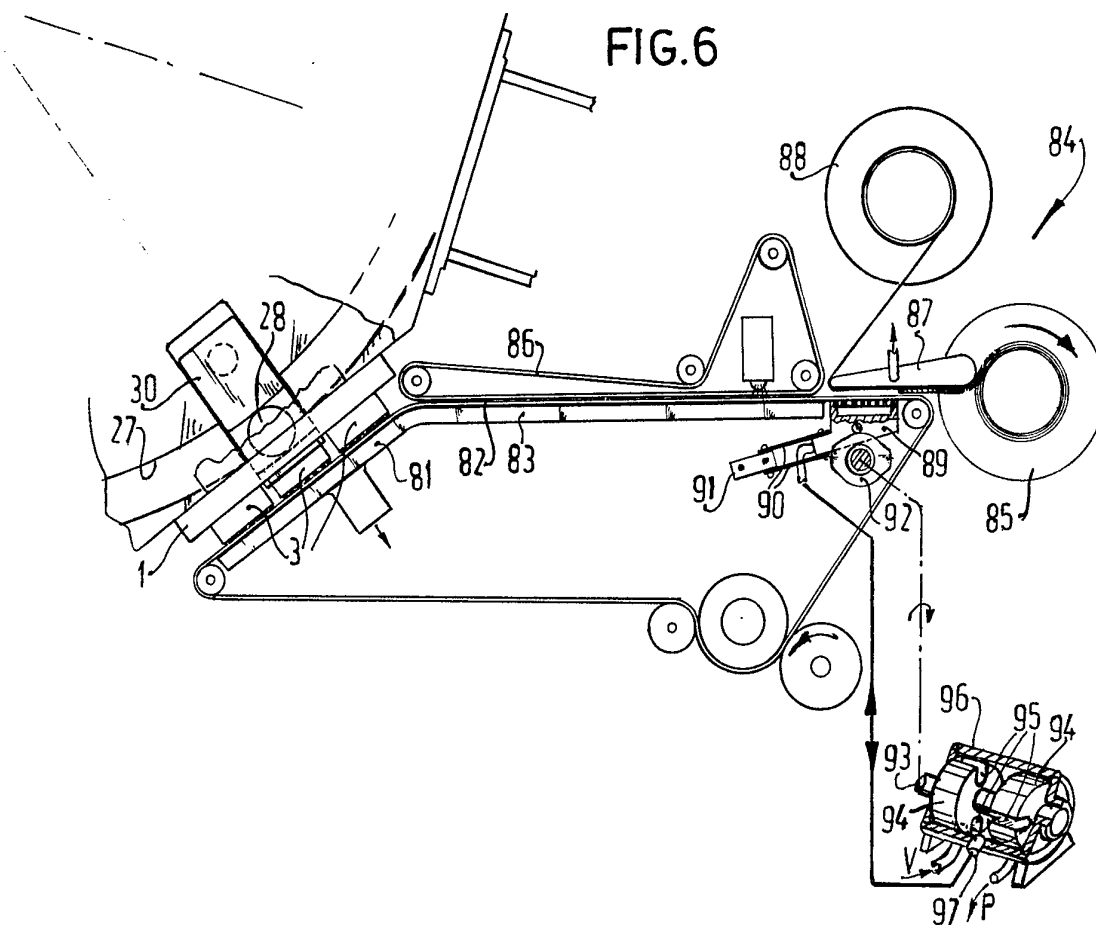


FIG. 7

SPECIFICATION

Device for working sheet-like objects

The invention relates to a device for working sheet-like objects particularly tobacco leaves, comprising one or more work-tables and tools co-operating herewith for treating an object lying on a work-table.

The invention has for its object to provide a device by means of which a large number of treatments of the sheet-like object can be sequentially performed, whilst nevertheless the device has limited dimensions.

This device is distinguished in that the or each table is movable along a closed, curved path, the or each centre of curvature of said path being located on a perpendicular of the work-table top. Thus the tables are prevented from being constantly moved in their plane; on the contrary, they are subjected to a tilting movement. Owing to this path of movement the width of the device is essentially determined by the transverse dimension of the moving table, whereas the height and the length of the device are essentially determined by the number of tables arranged in sequence.

According to the invention in order to prepare each table for a treatment desired for each object, each table is provided with the associated tools.

Preferably, said tools can be releasably fixed to the table.

In a preferred embodiment a table comprises a section for storing the tools and a work-section for arranging said tools.

According to the invention the device furthermore comprises transport means for displacing the tools from the storing section to the work-section of the table and conversely.

Said transport means are effectively formed by one or more guides disposed along the path for an individual slide having a member picking up the object.

For accurately positioning the tool on the table said pick-up member is, in accordance with the invention, rotatable with respect to the slide about a line perpendicular to the work-surface of the table.

Preferably the pick-up member is arranged at the end of an arm rotatably journaled in the slide, whilst in addition the pick-up member may be rotatably journaled in said end of the arm.

In the preferred embodiment each transport means comprises a rotatably driven, first hollow spindle connected with one end of the arm and journaled in the slide, a second, rotatably driven spindle coaxially arranged in the former, a third spindle connected with the pick-up member and journaled in the other end of said arm and an endless, flexible transfer element, for example, a toothed belt, passed around the second and third spindles.

The tool to be arranged on the table may be a cutting element for severing pieces from sheets of paper, leather or tobacco leaves. Therefore, in the tobacco industry the tool is a cutting element

corresponding to the contour lines of wrappers or binders of cigars.

For the automatic arrangement of objects on the tables the device according to the invention is characterized by a transfer station disposed along the path of the tables and preferably comprising an endless suction belt extending over the table top. When the subatmospheric pressure is raised the object present on the side of the suction belt facing the table will detach so that transfer becomes possible.

In a further development of the device said suction belt extends along a scanning station, in which the objects to be treated are scanned for assessing the circumference and other details such as thickness differences of the sheet-like object, after which a computer processing the data obtained will control the tool transport means.

According to the invention the device furthermore comprises a pick-up station following the deposition station viewed in the direction of movement and, if necessary, opposite the storing section of the table.

This pick-up station is equipped with means for removing the processed object portions from the table and for transferring them to a storing belt or a bobbin.

The transfer means preferably comprise an air cabinet arranged on the side of an air-pervious conveyor belt remote from the supporting face, said cabinet being alternately connectable with a source of pressurized air and a source of subatmospheric pressure through a valve.

According to the invention the valve body is rotatably arranged in the valve housing and is preferably formed by two relatively spaced cylindrical parts arranged on a spindle and having relatively off-set recesses in their surfaces in a manner such that by rotating the valve body the air cabinet changes over from pressurized air to subatmospheric pressure which a very short time i.e. in dependence upon the rate of rotation.

The invention will be described more fully with reference to an embodiment illustrated in the accompanying drawing.

The drawing shows in:

Fig. 1 a side elevation of a processing device, Fig. 2 a perspective front view in the direction of the arrow II—II in Fig. 1,

Fig. 3 a perspective rear view taken on the line III—III in Fig. 1,

Fig. 4 a detail view of part of the device taken on the line IV—IV in Fig. 1,

Fig. 5 a sectional view taken on the line V—V in Fig. 4,

Fig. 6 a side elevation of a detail of the pick-up station of the device on an enlarged scale,

Fig. 7 a perspective view of the rotatable change-over valve used in the pick-up station of Fig. 6.

The device illustrated in the Figures comprises ten tables 1 drivable along a circular path around a horizontal rotary axis 2 in the direction of the arrow P1. In this embodiment the centre of

curvature of the path is located on the line 2, but obviously an elliptical path may be traced as an alternative, in which case the several centres of curvature are all located on a perpendicular of the table top 1.

Although the device of Fig. 1 may be employed for any sheet-like object of paper, leather or the like, the implement shown in the Figures is particularly intended for processing tobacco leaves or halves thereof to obtain wrappers or binders for cigars. For this purpose each table co-operates with a corresponding number of cutting members 3 transportable from a storing section 4 of the table to a work-section 5 thereof and inversely (see Figs. 2 and 3). From these Figures it will be apparent that storing section 4 is provided on either side of a work-section of each table. Each section 4 has three cutting members 3 so that for each work-section 5 six cutting members can be arranged.

In order to arrange the cutting members 3 in the desired pattern, to deposit and treat the object, to pick up the treated object and to carry back the cutting members 3 to the storing section the tables 1 can be sequentially moved into ten positions, which is apparent from Fig. 1. For this purpose each table 1 (see also Fig. 4) is provided on the underside with two parallel studs 6 slidable in sleeves 7. The sleeves 7 are fastened through a support 8 to a rotatable hub 9. The hub 9 shown on the left-hand side in Fig. 4 is rotatable by bearings 10 about a fixed hollow spindle 11, which communicates with a duct 12 connected with a suction apparatus 13 (see Fig. 1). Through a hollow pipe 14 arranged between the hubs 9 the hollow spindle 11 communicates with a telescopic tubing 15, which is otherwise connected with the work-section 5 of the table 1 constructed in the form of a suction cabinet.

The right-hand hub 9 shown in Fig. 4 is rigidly connected with a spindle 16, to the end of which is secured a driving wheel 17. This wheel 17 is driven through a driving belt 18 and a wheel 19 by a motor 20 via a variable transmission 21 (see Fig. 1).

The spindle 11 is rigidly secured in a side plate 22 of the main frame, whereas the spindle 16 is rotatably arranged by means of bearings 23 in the opposite side plate 24 of the main frame. Each side plate is reinforced by peripheral plates 25, which are supported on the floor by a supporting foot 26.

On the inner side of the frame plates 22 and 24, a guide path 27 is provided along the outer periphery thereof for guiding a wheel 28 arranged at the head end of the worktable. Moreover, each processing station comprises on the side plates a radially extending guide 29 for radially guiding a sliding member 30, which is furthermore provided with a guide corresponding with the guide 27. Each sliding member is equipped with a pin 98 extending outwardly through an elongate hole in the side plates 22, 24, said pin being engaged by fork-shaped levers 32 (see Figs. 2, 3 and 5). Each lever 31 has its fulcrum in a pin 32 on the side

plate 22, 24 and on the side remote from the fork the levers are intercoupled by connecting rods 33. The lowermost lever 31 is furthermore provided with a cam follower 34, which follows a rotatable cam 35. Upon rotation of the cam 35 the nose thereof will cause the cam follower 34 to turn about the pin 32, this turn of the connecting rods 33 being transferred to each lever 31 in a manner such that the sliding member 30 in the radial guide is moved outwardly whilst carrying along the guide wheel 28 of the table and hence the work-table 1. This is enabled by the sliding connection of the studs 6 in the guide 7. This movement up and down of the work-tables with respect to the transport direction is required for moving the table top in the various processing stations, if necessary, in the direction towards the associated tools. The vacuum of the work-section of each table 1 is ensured by the telescopic tubing 15.

For displacing the tool elements 3 from the storing section 4 towards the work-section 5 and inversely each station along the path of movement of the tables according to the invention comprises transport means generally designated by 40. Fig. 4 shows six transport means of this kind arranged in groups of three members. One construction of a transport means particularly intended for cutting members 3 is explained more fully hereinafter with reference to Figs. 4 and 5.

It is noted for completeness' sake that the transport means are omitted from the perspective views of the drawing.

The transport means 40 comprises a bridge-shaped frame 41 essentially formed by two parallel hollow girders 42 mounted on each side by supports 43 on the peripheral plates 25 of the side frame plates 22, 24.

Between the hollow girders 42 two guide rods 44 are arranged so as to be relatively off-set in the direction of height, along which rods two slides 45 are slidable by means of built-in ball bearings 46.

The sliding movement is performed by means of a driving belt 47 arranged in the girder 42 and connected with an arm 77 coupled with the slide. The driving belt 46 is passed around two reversing rollers 48 one at each end of the hollow girder 42. One of the rollers 48 is driven by a motor 49 via a transmission 50. A similar drive of the other slide is obtained by a corresponding structure in the other hollow girder 42 (not shown in Fig. 5).

The slide 45 is provided on the underside with a hollow spindle 51, which is rotatably arranged in the slide by means of bearings 52. The hollow spindle 51 is provided at the top end with a worm wheel 53, which is engaged by a driven worm 54. The lower end of the spindle 51 is fastened to an arm so that upon rotation of the worm wheel 54 by a motor (not shown) the spindle 51 rotates and hence the arm 55 performs a pivotal movement about an axis perpendicular to the work-table top 1.

The end of the arm 55 holds a second spindle 56, to the lower end of which is secured a lifting member 57. The lifting member 57 may be of any

structure: it serves for lifting the cutting member 3. This may be carried out by means of grabs or a magnetic system. Pins in the lifting members 57 serve for correctly centering the member relatively to the element 3.

Inside the arm 55 the spindle 56 is provided with a toothed pinion 58, around which is passed a toothed belt 59; in the hollow spindle 51 is journaled a third spindle 60, to which is fastened a toothed pinion 61, around which is passed the toothed belt 59. At the top the spindle 60 is provided with a worm wheel 62 engaged by a driven worm wheel 63. Upon rotation of the worm wheel 63 by a motor (not shown) the spindle 60 is rotated and hence also the spindle 56 via the toothed belt 59. In this manner the lifting member 57 can be turned with respect to the arm 51. The parallel structure with the toothed belt 59 has the advantage that a rotation of the spindle 51 and hence of the arm 55 does cause a displacement of the lifting member 57 relative to the table top 1, but does not bring about a turn about the spindle 56.

By means of the transport means described above each lifting member 57 can be positioned in the longitudinal and the transverse direction with respect to the work-table 1, whilst at the same time the angular turn can be performed by the displacement of the slide or rotation of the arm 55 and of the spindle 56. The motors required thereto can be controlled by the computer R shown on the left-hand side of Fig. 1 at the side of the device.

From Figs. 2 and 3 it will be apparent that in each position the two slides 45 with the lifting members 57 coupled herewith bring each time two cutting elements 3 to the work table top so that in three successive positions of the table the six cutting elements are all arranged on the work-surface. The removal of the cutting elements is performed in the inverse order, which is illustrated in Fig. 3.

After the cutting tool is arranged on the central surface of the table 1, the sheet-like product can be deposited, which is performed in the station shown in the left-hand top side of Fig. 1.

For this purpose an endless belt 65 is arranged at said station, the portion 66 of said belt being parallel to the work-surface of the table 1 in said station. The belt is made from porous material so that when subatmospheric pressure is applied to the other side of the belt by means of an exhaust cabinet 67 sheet-like products are drawn towards the belt 65. In order to reduce air consumption across the belt, a counterbelt 68 is arranged below the belt 65.

The belt 65 extends horizontally from the sequence of work tables 1 to a storing bobbin 69, between whose reels are stored the sheet-like products, for example, halves of tobacco leaves. The top roller of the bobbin 69 is wound off through an air cabinet 70, which can be moved up and down by means of a ram 71. As soon as a sheet-like product has arrived above the air cabinet 70, the ram 71 is energized so that the air cabinet 70 is moved upwards against the bottom

side of the belt 65, after which the product can be carried along by the belt 65.

In order to feed the desired data of the product to be treated to the computer for controlling the various motors and the synchronous movements of the tables, the sheet-like product is exposed at the station 72 to a source of radiation 73, the resultant image being recorded by a recording member 74, which converts the features of the leaf i.e. the contour lines, holes or cracks or the ribs into digital or analogue data, which are applied to the computer R.

The distance between the exposure station 73 and the deposition station at the belt portion 66 such that three stations before the cutting tools can be arranged at the centre of the work-table under the control of the computer R. The transfer of the sheet-like product at the belt run 66 is obtained by raising the subatmospheric pressure in the belt run 66 is obtained by raising the subatmospheric pressure in the part of the cabinet 67 near the belt run 66 and by pressing the work-table 1 upwards with the cutting tools 3. Then the subatmospheric pressure at the central part 5 of the table 1 draws the product towards the cutting tools 3.

The product is subjected to the cutting tools in the upper station in Fig. 1 by any means, for example, pressing rollers passed over the cutting edges of the cutting tools 3. These pressing means lie beyond the scope of the invention; they are generally known in the tobacco industry for cutting wrappers or binders from tobacco leaves.

The desired, severed portion of the sheet-like product is left inside the cutting edges of the cutting tools 3 so that after the cutting tools have been returned to the storing sections of the work-tables 1 said portions of the product have to be removed, which can take place at the pick-up station, which is positioned diametrically opposite the deposition station in Fig. 1 (shown on the right-hand bottom side).

Said pick-up station is located opposite the deposition sections of the work-tables 1 and will be explained more fully hereinafter with reference to Figs. 6 and 7.

The pick-up station is essentially formed by an endless belt 80, whose run 81 is parallel to the top of the work-table 1. This run adjoins a substantially horizontal run 82; at the sides of said runs a cabinet 83 communicates with a source of subatmospheric pressure. When the subatmospheric pressure at the top of the work-table is raised, the severed products are drawn to the run 81 of the belt 80 and transported to a transfer station 84 for transferring the products to the bobbin reel 85.

The major part of the run 82 of the conveyor belt 80 is screened by a concurrently moving covering belt 86 for minimizing the consumption of subatmospheric pressure.

The transfer station comprises a deposition table 87 constructed in the form of a suction box, along the bottom side of which is passed the bobbin belt from the upper roller 88 towards the

roller 85.

On the side of the belt 80 remote from the deposition table 87 is arranged a pressing member 89 also constructed in the form of a box, which is fastened by means of leaf springs 90 to part to the frame 91.

The pressing member 89 is pushed upwards by means of a rotatable cam 92 against the belt portion 80 so that the top surface of the belt portion 80 is pressed against the deposition table 87. The product concerned can therefore be transferred from the belt 80 towards the bobbin belt, which can be furthered by producing excess pressure in the box-shaped pressing member 89.

This can be carried out by providing on the rotary shaft of the cam 92 a rotatable valve which is shown in detail in Fig. 7.

The rotatable valve comprises two cylindrical bodies 94 relatively spaced on a spindle 93 and having each recesses 95, which are relatively off-set. The housing 96 of the valve has three connections, the medium one 97 of which communicates with the box-shaped pressing member 89. The connections beside the connection 97 communicate on the one hand with a source of subatmospheric pressure and on the other hand with a source of pressurized air. It will be obvious that by correctly positioning the recesses 94 with respect to the noses of the cam 92 the box 89 can be connected either with the source of subatmospheric pressure or with that of excess pressure, the change-over being performable within a particularly short time so that the transfer of the product of the deposition table 87 can be very effectively carried out.

As a matter of course, the invention is not limited to the embodiment described above.

CLAIMS

1. A device for working sheet-like objects, particularly tobacco leaves, comprising one or more work-tables and tools co-operating herewith for treating an object lying on a work-table characterized in that the or each table is movable along a closed, curved path, the or each curvature of said path being located on a perpendicular to the top of the work-table.

2. A device as claimed in claim 1 characterized in that each table is provided with the associated tools.

3. A device as claimed in claims 1 and 2 characterized in that a tool is formed by a releasable element to be stuck to the table.

4. A device as claimed in claims 1 to 3 characterized in that the table comprises a section for storing the tools and a work-section for arranging the tools.

5. A device as claimed in claims 1 to 4 characterized in that the device comprises transport means for displacing the tools from the storing section towards the work-section of the table and inversely.

6. A device as claimed in claims 1 to 5 characterized in that the transport means are formed by one or more guides arranged alongside

the path for at least one slide having a member picking up the tool element.

7. A device as claimed in claims 1 to 6 characterized in that the pick-up member is rotatable with respect to the slide about a line perpendicular to the top of the work-table.

8. A device as claimed in claims 1 to 7 characterized in that the pick-up member is arranged at the end of an arm rotatably journaled in the slide.

9. A device as claimed in claim 8 characterized in that the pick-up member is rotatably journaled in said end of the arm.

10. A device as claimed in claim 9 characterized by a first, rotatably driven hollow spindle connected with one end of said arm and journaled in the slide, a second, rotatably driven spindle coaxially arranged in the former, a third spindle connected with the pick-up member and journaled in the other end of said arm and by an endless, flexible transfer member passed around the second and third spindle.

11. A device as claimed in claim 10 characterized in that the transfer member is a toothed belt.

12. A device as claimed in any one of the preceding claims characterized in that the or each table is movable up and down with respect to the direction of propagation.

13. A device as claimed in any one of the preceding claims characterized in that the path of the table is circular.

14. A device as claimed in any one of the preceding claims, particularly suitable for severing wrappers or binders for cigars from tobacco leaves, characterized in that the tool is a cutting element corresponding to the contour line of a wrapper or a binder.

15. A device as claimed in claim 14 characterized in that the table is constructed in the form of a suction box.

16. A device as claimed in claims 14 and 15 characterized in that the storing section of the table is provided with tool centering pins.

17. A device as claimed in any one of the preceding claims characterized by a station arranged alongside the path of the table for depositing each sheet-like object on the table.

18. A device as claimed in claim 17 characterized in that the deposition station comprises an endless suction belt extending above the table top.

19. A device as claimed in claims 17 and 18 characterized in that the suction belt extends along a scanning station.

20. A device as claimed in claims 17 to 19 characterized in that with respect to the direction of movement of the work-tables a pick-up station is arranged after the deposition station.

21. A device as claimed in claim 20 characterized in that the pick-up station is located opposite the storing section of the work-table.

22. A device as claimed in claims 20 and 21 characterized in that the pick-up station comprises means for removing treated portions of the

products and for transferring them to a storing belt or bobbin.

23. A device as claimed in claim 22 characterized in that the transfer means comprise
5 an air cabinet arranged on the side of an
airpervious conveyor belt remote from the
supporting face, said cabinet being alternately
connectable through a valve with a source of
excess air pressure and one of subatmospheric
10 pressure.

24. A device as claimed in claims 22 and 23 characterized in that the valve body is rotatably
journalled in the valve housing.

25. A device as claimed in claims 23 and 24

15 characterized in that the valve body is formed by two cylindrical parts relatively spaced apart on a spindle and having relatively off-set recesses in the surfaces.

26. A device as claimed in claims 23 to 25
20 characterized in that the air cabinet can be moved towards and away from a porous belt.

27. A device as claimed in claims 23 to 26 characterized in that a rotatable cam controls the movement of the air cabinet.

25 28. A device as claimed in claims 23 to 27 characterized in that the cam and the valve body are arranged on the same rotary shaft.