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(54) Holder for articles.

(57) A holder (100) for at least one elongate article comprises a clamping member (103) and a resilient membrane (106) stretched over it.
When no article is disposed in the clamping member (103), the membrane (106) is clear of the clamping member (103) and exhibits a tight appearance. For seating an article, the membrane (106) is pressed into the clamping member (103).

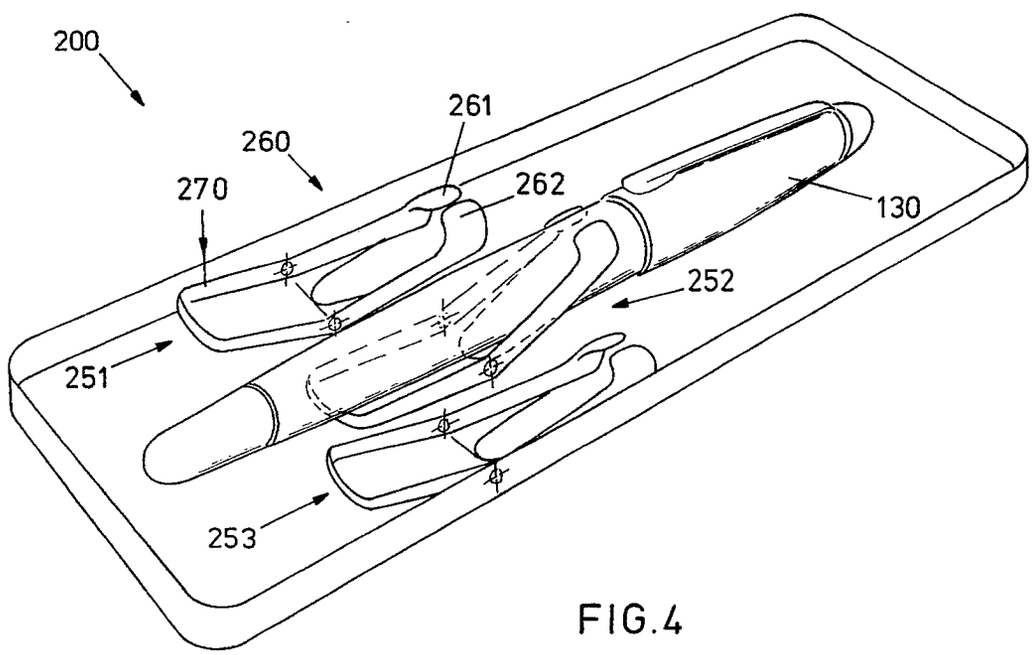

FIG.4

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This invention relates to a holder for at least one article, comprising a support table and at least one clamping member for providing a seat on the support table.

Such a holder is generally known and serves to protect the article, while the holder may be arranged in a box-like casing for further protection. The holder may also serve as a support surface for displaying the article thereon, for instance in a shop, in order to present the displayed article to a potential buyer in an attractive manner. In particular, such a holder is used for retaining elongate articles, such as pens and the like.

In view of these possible uses, it is desirable for the holder to meet a number of the following requirements. Thus, the holder should be firm and retain the article securely. For presentation purposes, the holder should have an attractive appearance. Further, the holder may be required to retain easily injured articles. It will be clear that in that case such an article should not be liable to be injured by the holder.

An example of a known holder of the above-described type is diagrammatically illustrated in Figs. 1A-B. The support table is provided with six holes for mounting therethrough a clamping member formed by an elongate resilient band. A disadvantage of this known holder is that the clamping member does not prevent any possible rotary movement of the article. In the case of such a rotary movement, the article may come into contact with adjacent articles, which may cause damage to the article. In order to prevent this, the support table may be provided with a profile, for example in the form of elongate slots as diagrammatically illustrated in Fig. 1C.

A further disadvantage of the device shown in Figs. 1A-C is that the clamping action of the clamping member is limited. As a result, the article may be displaced in its longitudinal direction. This effect may occur in particular during transport, when through falling, for example, the holder sustains a shock directed in its longitudinal direction. The forces occurring then may be so great that the end of the article comes into contact with the edge of the support table or with the sidewall of a housing encasing the holder, and damages this housing and/or is damaged itself in the process. The forces that occur in the longitudinal direction when the holder drops may even be so great that the filling of a ball pen, for example, is released from the holder and abuts said wall, whereby the tip of said filling may be damaged.

A further disadvantage of the known device relates to its flexible use. Generally, it is desirable that the holder is suitable for accommodating a plurality of articles. When the holder is intended for accommodating pens, the holder is mostly suitable for accommodating three articles, so that a writing set comprising a fountain pen, a ball pen and a propelling pencil can be accommodated in the holder. However, it will also happen that the set is not sold as a whole, but, for example, just a fountain pen is bought. In that case, only one seat is occupied in the holder which is adapted for three, and two seats are empty. In the case of the holders illustrated in Figs. 1A through C, this is disadvantageous in that the resilient clamping member at the occupied seat is less taut than when the other two seats are occupied as well, so that the disadvantage referred to above with respect to a moderate clamping action of this known device is even more evident.

Another disadvantage of the known devices is that the unoccupied seats are visibly present as such, which is undesirable for marketing reasons, because the buyer will feel "something is missing". This problem could be obviated by manufacturing different holders in different categories, with the holders in a first category being suitable for accommodating one article, the holders in a second category being suitable for accommodating two articles, etc. However, this is undesirable as well since it requires a distinction to be made when the holders are manufactured, for example with respect to the manufacturing tools, such as moulds, while, furthermore, it requires keeping a larger stock of different categories, which is impractical and inefficient. It is also possible that actually one or more empty seats in the holder are desirable for use at a later time, for example because a missing pen is purchased later on to complement an incomplete set of pens, or because pens with different colours of ink are to be kept together. This is not possible when a number of pens are being bought that are arranged in a holder wherein the number of seats corresponds exactly to the number of pens.

In a different type of holder, diagrammatically shown in section in Fig. 2, the support table is profiled such that the projections extending from the support table form a clamping member for an article. It is true that a holder of this type offers better clamping action than described hereinabove with reference to the type of holder illustrated in Fig. 1, but it is a disadvantage of this holder, too, that the unoccupied seats are visibly present. Moreover, compared with the type of holder illustrated in Fig. 1, this holder has the disadvantage that it is suitable only for articles whose transverse dimensions are within a specific, limited range, on account of the fact that said projections can be deformed only to a limited extent. Holders of this type, therefore, must be manufactured in different categories with respect to the transverse dimensions of the articles to be accommodated. Accordingly, when the articles to be accommodated are

pens, a separate holder must be designed and manufactured for each set of pens, with all cost involved. For the user of the holder, this is disadvantageous in that a given holder limits his choice with respect to any further articles to be placed in the holder.

A principal object of this invention is to provide a holder of the type described hereinabove, which does not have the drawbacks referred to.

In particular, it is an object of the invention to provide a holder which is capable of securely retaining articles of transverse dimensions in the range of 6-18 mm, such that an axial and/or lateral displacement of the articles is avoided. The holder should be capable of consecutively accommodating successive thick and thin articles without detracting from the clamping action.

A further object of the invention is to provide a holder which exhibits the aforementioned clamping action without damaging the articles, in order to render it particularly suitable for retaining, for instance, objects that are easily damaged, such as pens whose appearance has been finished in a high-quality manner for aesthetic reasons.

Yet a further object of the invention is to provide a holder which is suitable for accommodating a different number of articles, as desired, wherein the unoccupied seats are not recognizable as such. This requirement does not only apply to an unoccupied seat that has never been occupied yet, but also to an unoccupied seat from which a previously seated article has been removed.

A yet further object of the invention is to provide a holder in which an article is seated in a manner that is particularly attractive from an aesthetic point of view. Such a provision further stimulates the interest on the part of a potential buyer and adds to the pleasure experienced by a person who receives as a present the article accommodated in the holder.

In order to accomplish the aforementioned objects, in accordance with the invention the holder of the type described hereinabove comprises a resilient and flexible membrane arranged over said clamping member, with said clamping member in an inoperative position being entirely clear of said membrane. What is thus accomplished is that an "empty" clamping member is invisibly disposed under the membrane, the membrane extending over this clamping member giving an observer the impression of a taut support table where no clamping member is present. Accordingly, when considering this empty seat, the observer will not feel "something is missing". Advantageously, for the membrane a resilient fabric can be used, such as a fabric used in the manufacture of women's underwear. This fabric has the property that it can be neatly tightened and, in addition, has an attractive soft appearance, while it does not much resist adjustment to the clamping member when an article is accommodated therein.

Preferably, the clamping member, in an operative position, extends at least partly above an inoperative position of the membrane.

This gives the impression that an article seated in the holder is not recessed in the support table but seems to lie on the surface thereof.

It is advantageous when the clamping member comprises a clamping portion and an operating portion connected therewith at a connecting portion and the clamping member is bearing-mounted at the connecting portion for rotation about an axis of rotation extending substantially perpendicularly to the longitudinal direction of the seat, with the clamping member preferably extending in a plane perpendicular to the axis of rotation, the clamping portion extending in a first direction in the plane and the operating portion extending in a second direction in the plane, which second direction makes an obtuse angle with the first direction, and with the clamping portion in the first direction being of greater size than the operating portion in the second direction.

What is thus accomplished is that when an article is being placed in the holder, the article presses the operating portion down, whereby the clamping portion is automatically raised to extend above the inoperative position of the membrane and to receive the article in a position disposed at least partly above the inoperative position of the membrane. The membrane is pressed upwards by the clamping legs of the clamping member, and between the legs of the clamping member the membrane is pressed downwards by the article, as illustrated in Fig. 8. In the inoperative position of the clamping member, the clamping portion is directed substantially parallel to the membrane in the inoperative position, and the operating member extends obliquely upwardly at the aforementioned obtuse angle in the direction of the membrane without being in contact therewith.

Preferably, the clamping member comprises two flexible clamping legs whose length is greater than the distance from the axis of rotation to the inoperative position of the membrane and which in the operative position make an acute angle with the longitudinal direction of the seat. This renders the clamping member suitable for receiving articles whose transverse dimensions are within a comparatively wide range, for example 6-18 mm.

In a preferred embodiment of the holder, wherein at least two clamping members are present, according to the invention, the clamping members are mutually spaced apart in the longitudinal direction of the seats. What is thus prevented is that upon seating a plurality of articles, the

membrane is locally loaded too severely owing to successive stretching in the direction transverse of the longitudinal direction of the seats.

The invention will now be further explained in more detail by description of a preferred embodiment, with reference to the accompanying drawings, in which:

Fig. 1A is a diagrammatic elevational view of a known holder in a likewise known casing;

Fig. 1B is a diagrammatic cross-section of this known holder taken on line I-I of Fig. 1A;

Fig. 1C is a diagrammatic cross-section of another known holder;

Fig. 2 is a diagrammatic cross-section of yet another known holder;

Figs. 3A-B are diagrammatic sections of an embodiment of a holder according to the invention;

Fig. 4 is a diagrammatic elevational view of a further embodiment of a holder according to the invention;

Figs. 5A-B are diagrammatic longitudinal sections of the holder of Fig. 4;

Fig. 6 is a diagrammatic top plan view of a clamping member according to the invention;

Fig. 7 is a diagrammatic section of a rotary bearing for the clamping member of Fig. 6;

Fig. 8 is a diagrammatic elevational view of an article being held in the holder of Fig. 4; and

Fig. 9 is a diagrammatic section of a further embodiment of the holder according to the invention.

Figs. 1A-B show a known holder, generally designated by numeral 10, comprising an elongate support table 11 for elongate articles. The holder 10 is arranged in a box-like casing 1, comprising a bottom part 2 and a cover 4 connected thereto by means of a hinge 3. The casing 1 may be of a desired aesthetic outward form and colour, and may be provided with a brand imprint. Since the holder 10 may be arranged in any casing, and the invention does not reside in the casing, the casing will not be further discussed.

Provided in the support table 11, perpendicularly to the longitudinal direction thereof, and approximately halfway, are six holes 15_1 - 15_6. The distance between the holes 15_1 and 15_2, between the holes 15_3 and 15_4, and between the holes 15_5 and 15_6, is greater than the distance between the holes 15_2 and 15_3, and between the holes 15_4 and 15_5. Interlaced through the holes is an elongate resilient band 16, so that on the support table 11 three seats 21, 22 and 23 are defined between, respectively, holes 15_1 and 15_2, 15_3 and 15_4, and 15_5 and 15_6. In the position of the holder 10 as shown, articles 31 and 33 have been arranged on the seats 21 and 23, respectively, while seat 22 is empty.

In the holder 10, the clamping action is provided by the resilience of the member 16. This clamping action is insufficient for the articles 31 and 33 to be retained in position during a shock load, when articles 31 and 33 may shift in their longitudinal direction, as designated by the two-headed arrow P1, or may rotate laterally, as designated by the two-headed arrow P2. In particular the clamping action is insufficient when not all seats 21, 22 and 23 accommodate an article, as shown, because then the member 16 is stretched out to a lesser extent and its clamping force is reduced.

Fig. 1C diagrammatically shows a support table 41 of a known holder 40, with a casing being omitted for the sake of clarity. The holder 40 is different from the holder 10 in that elongate grooves 45, 46 and 47 have been provided in the support table 41 at the seats 42, 43 and 44 thereof. Thus, it is true, an improved retention with respect to lateral rotation is provided for, but this holder 40, too, has the above described problems with respect to the clamping action in the longitudinal direction of the articles.

Fig. 2 diagrammatically shows a known holder 50, which as such exhibits improved clamping action over the holders 10 and 40 shown in Figs. 1A-C. To that effect, the support table 51 of the holder 50 comprises elongate profiled portions 52_1 -52_4, whose longitudinal direction is parallel to the longitudinal direction of the holder 50, and between which seats 53, 54 and 55 are defined. An article 56 arranged in the seat 53 is securely clamped to the support table 51, provided the transverse dimensions of the article 56 match the transverse dimensions of the seat 53. An article 57 that is too small, is not retained at all. When an article is too big, it requires a great deal of force to accommodate it on a seat or to remove it therefrom, and one or more of the profiled portions 52_1 - 52_4 may even be irreparably damaged.

The known holders 10, 40 and 50 all have the disadvantage that an empty seat is visibly present, as is clearly demonstrated by the empty seats 22, 43 and 54. In other words, it is clear to see that the holder 10, 40, 50 might have accommodated one more article, because evidently unused clamping members are present.

Fig. 3A diagrammatically shows a cross-section of an embodiment of a holder 100 according to the invention, which does not have the disadvantages referred to. The holder 100 comprises a bottom 101 and sidewalls 102. Connected to the bottom are three clamping members 103, 104, 105, providing three seats 111, 112, and 113. It will be appreciated that the number of clamping means has been chosen to be three only by way of example, so that the number of seats can be compared with the number of seats of the known holders dis-

cussed in the foregoing.

Stretched over the clamping members 103, 104, 105 is a resilient and flexible membrane 106, which functions as support table 109. When a seat is not in use, the corresponding clamping member is invisible by virtue of the membrane 106 tightly stretched over it.

When an article 130 is to be arranged in a seat, as, for example, seat 112, the article 130 is placed above this seat 112 and the article 130 is pressed between the legs 107, 108 of the corresponding clamping member 104 (Fig. 3B), with the membrane 106 adjusting around the article 130 between the clamping member 104 and the article 130. Thus, the membrane 106 prevents the article 130 from coming into direct contact with the clamping member 104, whereby the surface of the article 130 is protected against any damage due to contact with the clamping member 104. Because the membrane 106 is resilient and flexible, it requires virtually no extra force to deform the membrane 106 for its adjustment between the clamping member 104 and the article 130. A particularly suitable material for the membrane 106 is a fabric as used for the manufacture of women's underwear. Such fabric has the property that it can be neatly stretched tight and, in addition, has an attractive, soft appearance. At the same time, it is sufficiently elastic and resilient to permit of deformation of the membrane 106 to a position between the legs 107, 108 of the clamping member 104 and of the attendant local stretching of the membrane 106, while it adjusts to the clamping member 104 without much resistance when an article is being arranged therein. Moreover, it is sufficiently soft to prevent damage to the surface of the article 130.

An observer now considering the holder 100 with the article 130 arranged therein, will see that the support table 109 has a seat 112 of a shape in precise conformity with the shape of the article 130. He sees only the seat 112 that is being used, and does not see that the holder 100 comprises other seats 111, 113 which have remained unused. Thus he gets the impression that the holder 100 has been designed especially to match the article 130.

Upon removal of the article 130 from the holder 100, the membrane 106 will tighten again over the clamping member 104 so that the situation of Fig. 3A is reached again. The preferred material referred to, in particular, has the positive characteristic that it re-assumes the initial position illustrated in Fig. 3A without the deformation illustrated in Fig. 3B leaving any traces on the membrane 106.

The clamping member 103, 104, 105 is of a shape and flexibility such that, on the one hand, it is suitable for accommodating articles of different transverse dimensions, while, on the other hand, a proper clamping action on such articles is invariably provided for, so that a secure retention of such articles in the holder 100 is ensured.

Fig. 4 diagrammatically shows an elevational view of a preferred embodiment of a holder 200 with clamping means 251, 252, 253 according to the invention, with the membrane being omitted for the sake of clarity. In the holder 200, the clamping members 251, 252, 253 can be displaced between an inoperative position and an operative position. In the inoperative position, a clamping member is disposed entirely under the plane of the membrane, while in the operative position, the clamping member extends at least partly above the inoperative position of the membrane so as to provide a seat which is disposed at least partly above the plane of the support table. This is illustrated more clearly in Figs. 5A-B, showing a diagrammatic longitudinal section of the holder 200 and the clamping member 252, Fig. 5A showing the situation where the clamping member 252 is not in use, and Fig. 5B showing the situation where an article, not shown, has been arranged in the clamping member 252.

The clamping member 252, of which Fig. 6 shows a top plan view, comprises a clamping portion 260 with clamping legs 261 and 262 each provided at one end with projecting portions 263 and 264 directed to each other, and an operating portion 270 for engagement by an article to be accommodated so as to automatically bring the clamping member 251 from the inoperative position to the operative position. The clamping portion 260 and the operating portion 270 are substantially elongate and are interconnected at a hinging portion 271, forming an obtuse angle α. In the embodiment shown, the hinging portion 271 comprises two pins, 272, 273, projecting on opposite sides of the clamping member 252 for engagement with rotary bearings 210 mounted on the bottom 201 of the holder 200 and preferably formed as one whole therewith. Fig. 7 shows an enlarged section of a rotary bearing 210, comprising a chamber 211 for mounting a pin 272, 273 and an entrance 212 to the chamber 211, with the vertical dimension of the entrance 212 being slightly smaller than the corresponding dimension of a pin 272, 273 so that the pins 272, 273 form a snap connection in the rotary bearings 210 for rotatably and detachably connecting the clamping member 252 with the bottom 201.

In the inoperative position (Fig. 5A), the clamping portion 260 is directed substantially along the bottom 201 of the holder 200. The length of the operating portion 270 is such that it does not extend up to the membrane 206 in this position. The position now assumed by the membrane 206 will hereinafter be designated by the term reference plane 206'. The clamping member 252 is

retained in this inoperative position when it is not in use, for instance under the influence of a spring member (not shown) arranged especially for this purpose, or under the influence of gravity.

When an article 130 is being arranged between the legs 261 and 262 of the clamping member 251, this article 130 presses the operating portion 270 downwards, whereby the clamping portion 260 is raised (Fig. 5B). The extent to which the operating portion 270 is pressed downwards, depends on the transverse dimension of the article 130. In the situation illustrated in Fig. 5B, the operating portion 270 is directed virtually parallel to the bottom 201, with the clamping portion 260 extending above the reference plane 206' indicated by a dotted line. As a result, the article 130 is retained at least in part above the reference plane 206', as is illustrated more clearly in Fig. 8, which corresponds to Fig. 4, but in which the membrane 206 is shown and the clamping members are invisible. In Fig. 8 the membrane 206 is shown as being provided with a grid, so as to bring out more clearly the form of the membrane 206 deformed by the article 130 and clamping member 252.

An observer now considering the holder 200 with the article 130 accommodated therein, sees that the holder 200 has a support table 209 with a seat 212 whose shape conforms precisely to the shape of the article 130. He only sees the seat 212 that is being used, and he does not see that the holder 200 has other seats which have remained unused. Thus he gets the impression that the holder 200 has been designed especially to match the article 130.

The clamping portion 260 of the clamping member 252 is particularly suitable for receiving articles of different transverse dimensions, because the longitudinal direction of the clamping portion 260, when in the operative position, makes an acute angle with the longitudinal direction of the article 130. As a result, even when comparatively large articles are received, the deformation occurring in the legs 261 and 262 is relatively small, so that comparatively large articles can be accommodated as well without any plastic deformation of the legs 261 and 262 occurring. Further, the force required for opening the clamping portion 260 is comparatively small on account of the length of the legs 261 and 262. The effect is that the surface of the article 130 is hardly loaded, if at all, when the article 130 is being arranged between the legs 261 and 262, and that the membrane 206 will readily slide between the article 130 and the legs 261, 262. It is advantageous that the ends of the legs 261 and 262 are rounded off.

The clamping action of the clamping member 252 shown, in cooperation with the membrane 206, as in accordance with the invention, constitutes an improvement over the clamping action of the known clamping members by virtue of the fact that a clamping force is exerted not just in a horizontal direction by the pinching action of the clamping legs 261 and 262 forced apart by the article 130, but also in a vertical direction on account of the resilience of the membrane 206. A large surface area of the article 130 is in proper contact with the membrane 206.

As will appear from Fig. 4, the clamping members 251, 252, and 253 are displaced relative to each other in the longitudinal direction. This provision prevents a situation where, in the case of more than one article 130 being arranged in the holder 200, a single portion of the membrane 206, more specifically, a single set of transverse fibers of the membrane 206, is deformed to an extent where damage to the membrane 206 may occur. It will be clear that a similar effect can be achieved by arranging the clamping members 251, 252, and 253 in a mirrored configuration in the longitudinal direction.

As discussed with reference to Fig. 1, a holder is generally mounted in a box-like casing 1 with a bottom part 2 and a cover 4. In the cover 4 there is room for receiving an article arranged in the holder in the closed position of the box-like casing 1. In a preferred embodiment, the holder 200 is provided according to the invention with a second membrane 306 to be provided in a cover 4 of a box-like casing 1. In the closed position of the casing 1, as shown in Fig. 9, an article 130 arranged in the holder will be retained additionally by the stretch of the second membrane 306. Moreover, the article 130 is now completely surrounded by membranous material, so that even in the case where a user has not arranged the article 130 in a clamping member of the holder in entirely the correct manner, damage to the article 130 is avoided as much as possible. Advantageously, the second membrane 306 is provided by a second holder half 200', to be mounted in the cover 4 of the casing 1, and the second holder half 200' may be identical to a first holder half 200 as described hereinabove, with the understanding that no clamping members are provided in the second holder half 200'.

It will be clear to anyone skilled in the art, that various changes and modifications of the embodiments shown are conceivable without departing from the invention. Thus, for example, a holder can be constructed such that it simultaneously functions as a bottom part or a cover of a box-like casing.

Although the invention is eminently suitable for use in a holder that is suitable for receiving elongate articles, such as pens, it will be clear that the invention can also be used in a holder for receiving articles of a different type, such as medical instru-

ments, jewelry, and the like, in which case a clamping member to be used is adapted to the shape of the article in question

Claims

1. A holder for at least one article, comprising a support table and at least one clamping member for providing a seat on the support table, characterized by a resilient and flexible membrane arranged over said clamping member, with the clamping member in an inoperative position being entirely clear of said membrane.

2. A holder according to claim 1, characterized in that said clamping member in an operative position extends at least partly above an inoperative position of said membrane.

3. A holder according to claim 1 or 2 characterized in that said at least one seat is elongate; that the clamping member comprises a clamping portion and an operating portion connected therewith at a connecting portion; and that said clamping member is bearing-mounted at said connecting portion for rotation about an axis of rotation extending substantially perpendicularly to the longitudinal direction of the seat.

4. A holder according to claim 3, characterized in that said clamping member extends in a plane perpendicular to said axis of rotation, with the clamping portion extending in a first direction in said plane and the operating portion extending in a second direction in said plane, said second direction making an obtuse angle with said first direction, and that the clamping portion in said first direction is of greater dimension than the operating portion in said second direction.

5. A holder according to at least one of the preceding claims, characterized in that the clamping member comprises two flexible clamping legs, whose length is greater than the distance from the axis of rotation to the inoperative position of the membrane and which in the operative position make an acute angle with the longitudinal direction of the seat.

6. A holder according to at least one of the preceding claims, provided with at least two clamping members, characterized in that the clamping members are displaced relative to each other in the longitudinal direction of the seats.

7. A holder according to at least one of the preceding claims, characterized by a second membrane coacting with said first membrane for retaining an article accommodated in the holder between the two membranes in the closed position of the holder.

8. A clamping member intended for a holder according to at least one of the preceding claims.

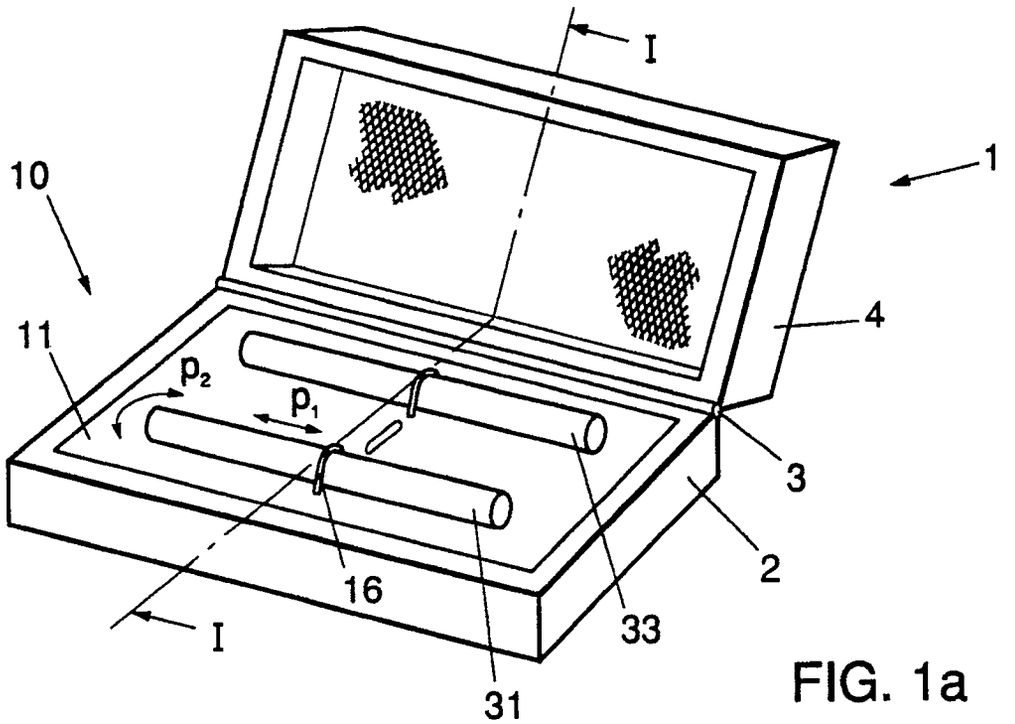
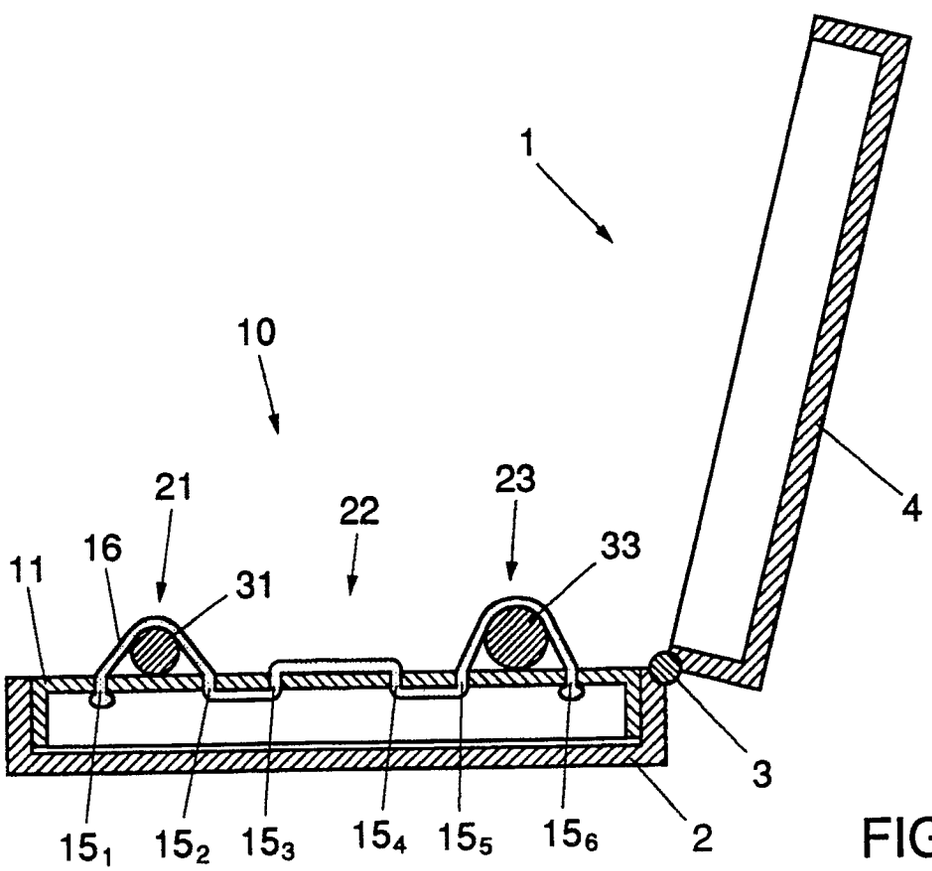

I
1
10
4
11
p_2
p_1
3
2
16
33
I
31

FIG. 1a


1
10
4
21
22
23
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15_1
15_2
15_3
15_4
15_5
15_6
2

FIG. 1b

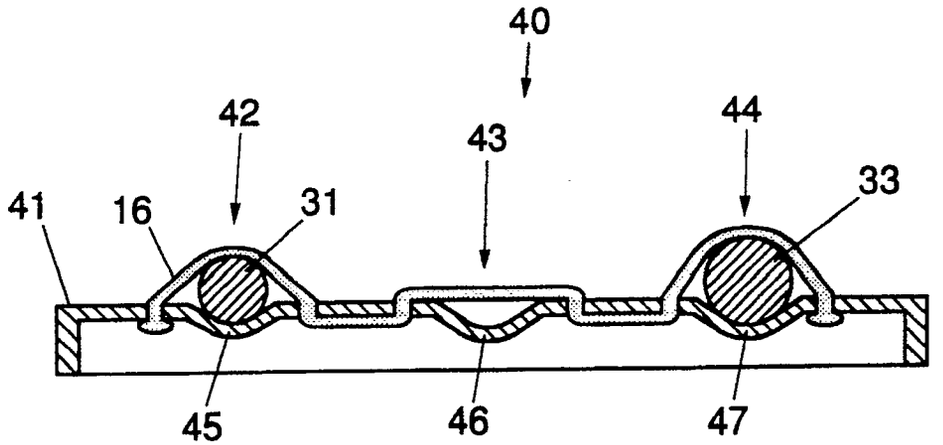

FIG. 1c

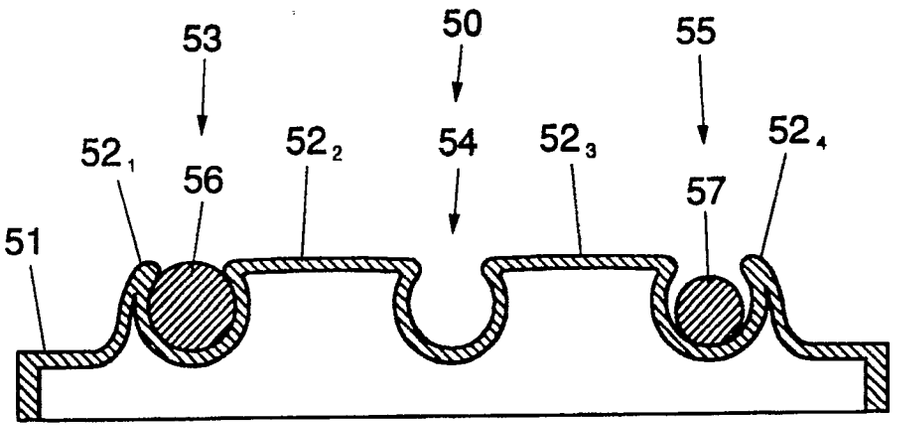

FIG. 2

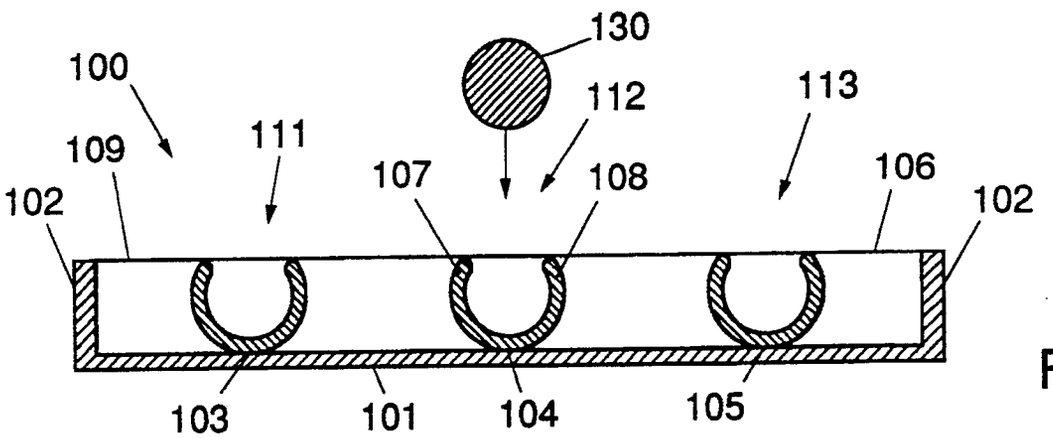

FIG. 3a

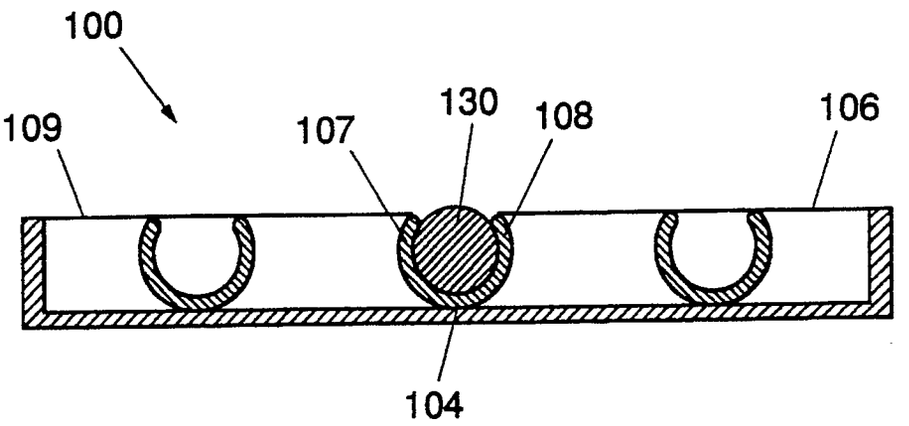

FIG. 3b

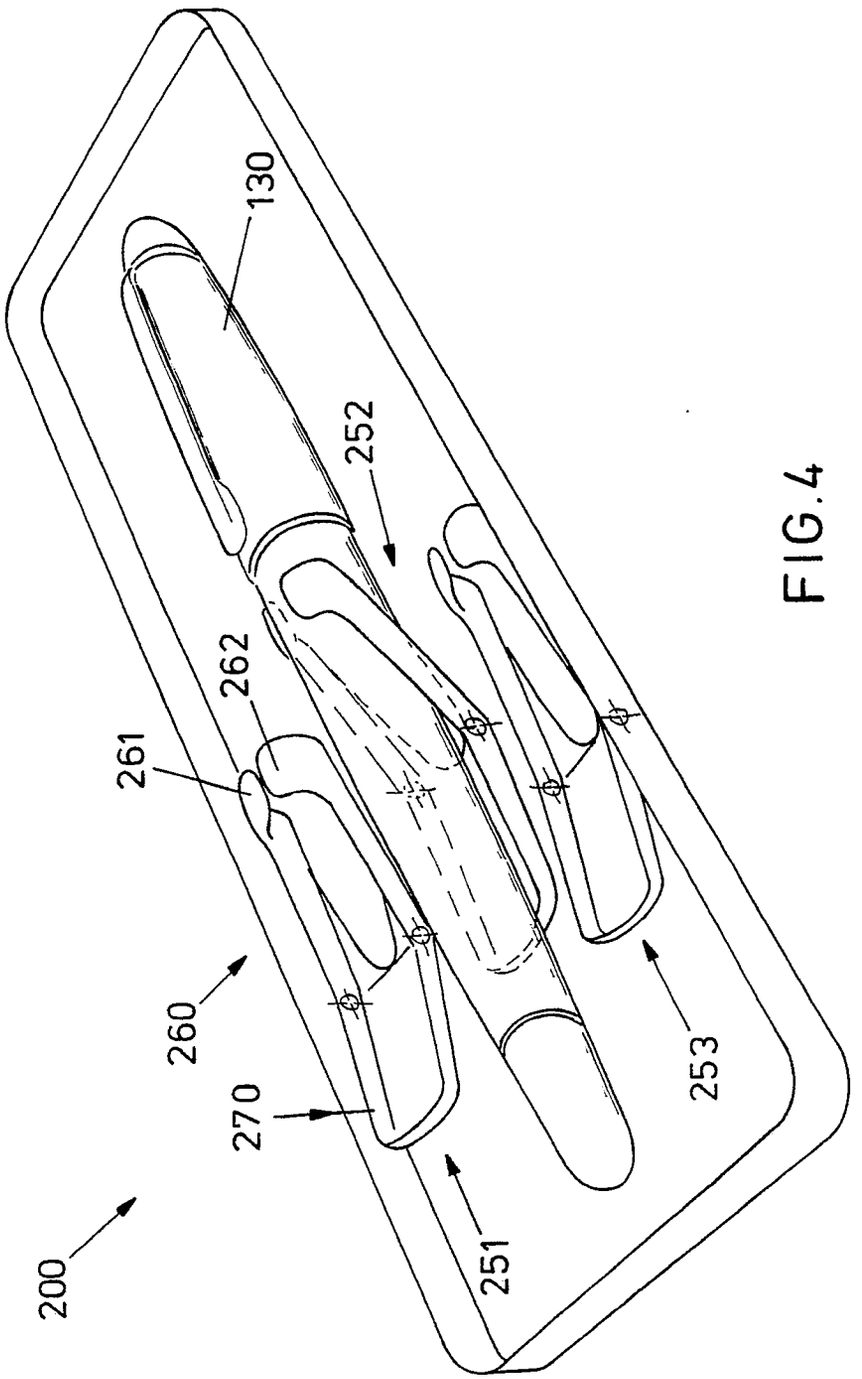

FIG.4

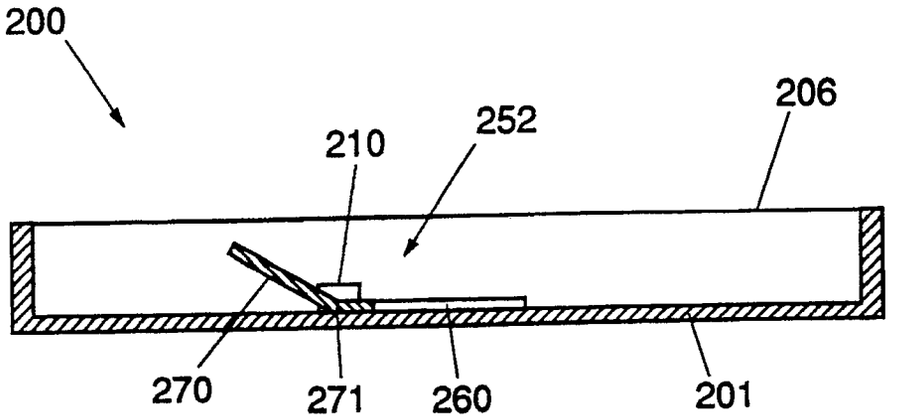

FIG. 5a

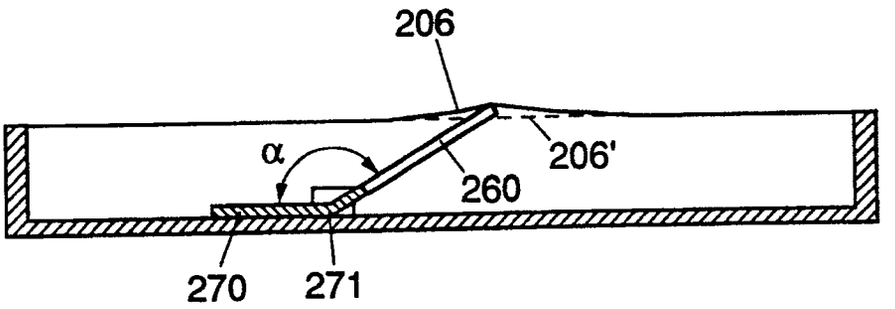

FIG. 5b

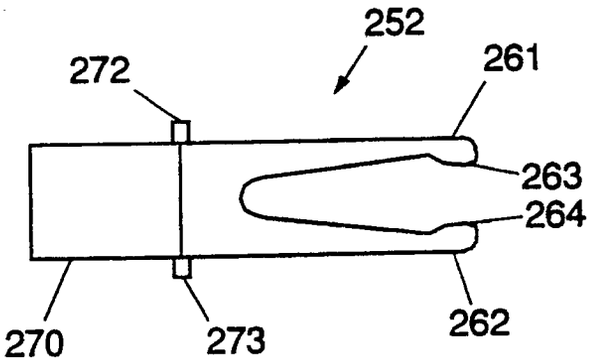

FIG. 6

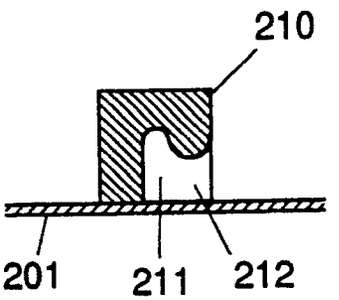

FIG. 7

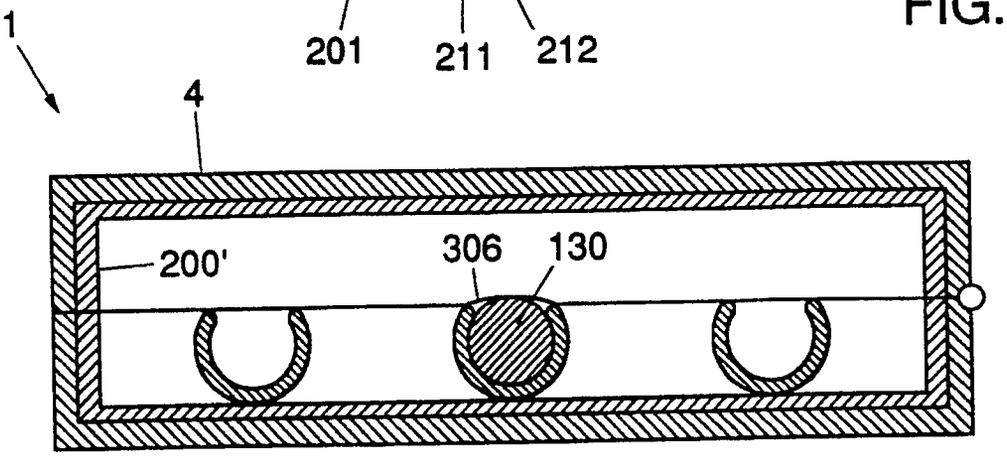

FIG. 9

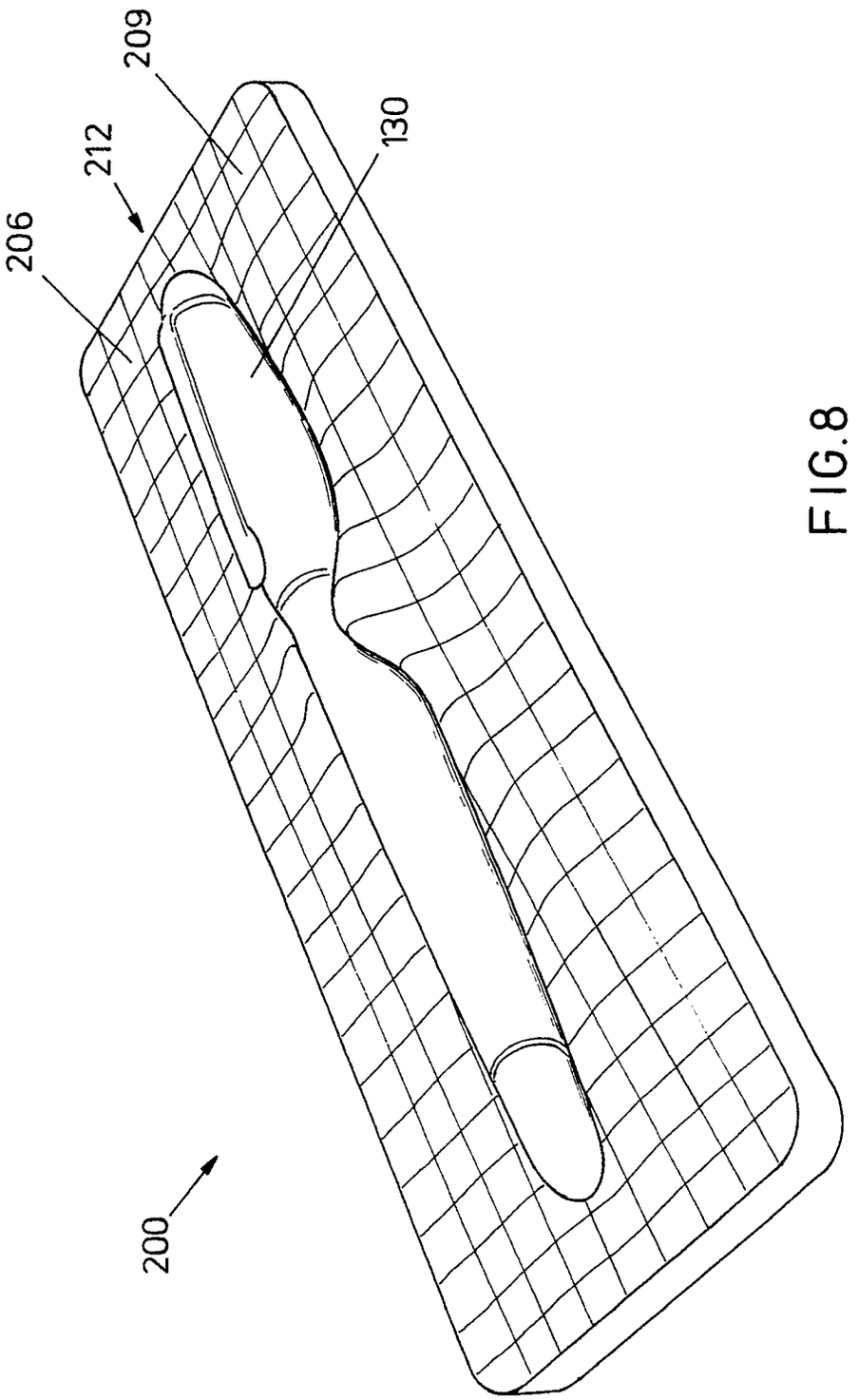

FIG.8

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 20 0394

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	CH-A-5 162 98 (INTERGRAPHIC) * the whole document *	1	B 65 D 25/10
A	GB-A-4 373 (HOMER) * the whole document *	1	
A	FR-A-2 391 668 (EUGEN WILHEM)		
A	US-A-1 763 488 (TITCOMB)		
A	GB-A-8 700 56 (PARTRIDGE & LOVE)		
A	US-A-2 228 493 (WILL) fami		

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A 45 C
A 47 F
B 65 D

The present search report has been drawn up for all claims

Place of search	Date of completion of search	Examiner
The Hague	12 June 91	SIGWALT C.

CATEGORY OF CITED DOCUMENTS

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