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(54) **Accessories display box**

Schaukasten für Zubehör

Bôte de présentation d'accessoires

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EP 1 510 469 B1

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention:

[0001] The present invention relates to an accessories display box for storing and showing tool accessories and, more particularly, to such an accessories display box that has fastening devices that fixedly secure the cover in the closed status to keep the display items in tact. See as one examples the document EP-A- 06429.

2. Description of the Related Art:

[0002] Various accessories display boxes have been disclosed for use to keep and show tool accessories, and have appeared on the market. These accessories display boxes commonly have compartments for accommodating different tool accessories, and positioning means for keeping storage items in place. During exhibition, consumers may open the covers of the displayed accessories display boxes and pick up the storage items for visual inspection. Because the covers of conventional accessories display boxes can easily be opened, the display items may fall out of the accessories display boxes and scattered all over the surroundings. In order to prohibit consumers from opening the covers of accessories display boxes, adhesive tapes may be used to seal the covers. However, adhesive tapes can easily be broken, or detached from the accessories display boxes. Further, for holding a tool handle, an accessories display box must be made having a certain height, i.e., the compartment for tool handle must be deep enough to hold the tool handle firmly in place. However, it is difficult to pick up the tool handle from the deep too handle compartment. If the depth of the tool handle compartment is reduced too much, the tool handle may fall out of the tool handle compartment easily.

SUMMARY OF THE INVENTION

[0003] The present invention has been accomplished under the circumstances in view. It is the main object of the present invention to provide an accessories display box, which has fastening devices that fixedly secure the cover in the closed status to keep the display items in tact. It is another object of the present invention to provide an accessories display box, which has means to accommodate a tool handle for display without increasing the vertical height of the accessories display box, for enabling the consumers to touch the displayed tool handle with the hands when viewing the displayed tool handle.

[0004] To achieve these and other objects of the present invention, the accessories display box comprises a box body defining a plurality of compartments adapted to accommodate tool accessories, a cover adapted to cover the box body, and at least one fastening device

adapted to fixedly secure the cover to the box body. Each fastening device comprises a female fastening member fixedly provided at the box body, and a male fastening member fixedly provided at the cover and adapted to engage the female fastening member. The female fastening member comprises a through hole, and a plurality of crevices radially extended around the through hole and longitudinally extended along the axial length of the through hole. The male fastening member has a conical head insertable through the through hole. The conical head has a bottom edge, which stops the conical head from backward movement after insertion of the conical head through the through hole. The box body further comprises a recessed tool handle seat extended through the compartments and adapted to accommodate a tool handle. The cover has a handle hole disposed corresponding to the tool handle seat and adapted to receive a part of the tool handle being rested in the tool handle seat.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005]

FIG. 1 is an exploded view of the preferred embodiment of the present invention.

FIG. 2A is an assembly view of FIG. 1.

FIG. 2B is an enlarged view of a part of FIG. 2A showing the structure of the female fastening member.

FIG. 2C is an enlarged view of a part of FIG. 2A showing the structure of the male fastening member. FIG. 3A is similar to FIG. 2A but showing the cover closed.

FIG. 3B is an enlarged view of a part of FIG. 3A showing the male fastening member fastened to the female fastening member.

FIG. 4 is a sectional view in an enlarged scale taken along line 4-4 of FIG. 3B.

FIG. 5A is a sectional view in an enlarged scale taken along line 5A-5A of FIG. 2A.

FIG. 5B is similar to FIG. 5A but showing the tool bit receptacle lifted from the box body.

FIG. 5C is similar to FIG. 5B but showing the tool bit receptacle turned to vertical.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0006] Referring to FIG. 1, two accessories display boxes are shown abutted against each other, each accessories display box comprised of a box body **10**, a cover **20** hinged to one side of the box body **10**, and a lock **21** adapted to lock the cover **20** to the box body **10**. The box body **10** has a plurality of compartments **11** adapted to accommodate tool accessories. The box body **10** and the cover **20** are respectively molded from transparent plastics so that the storage items (tool accessories) can be seen from the outside of the respective accessories

display box.

[0007] Referring to FIGS. 2A~2C and FIG. 1 again, each accessories display box 20 further comprises a plurality of fastening devices 30 adapted to fixedly secure the free end of the cover 20 to the box body 10. Each fastening device 30 comprises a female fastening member 31 provided at the box body 10, and a male fastening member 34 provided at the free end of the cover 20 and connectable to the female fastening member 31. The female fastening member 31 has a through hole 32 extended through the top and bottom sides thereof, and a plurality of crevices 33 radially extended from the through hole 32 and cut through the top and bottom sides of the female fastening member 31. Because of the presence of the crevices 33, the through hole 32 is slightly radially expandable. The male fastening member 34 is a rod member extended from one peripheral side of the cover 20, having a conical head 35, a collar 36 extended around the periphery and spaced from the bottom edge 351 of the conical head 35 at a distance approximately equal to the depth of the through hole 32. The diameter of the bottom edge 351 of the conical head 35 is slightly greater than the diameter of the through hole 32.

[0008] Referring to FIGS. 3A, 3B, and 4, when closed the cover 20 at the first time, the male fastening member 34 of each fastening device 30 is fastened to the respective female fastening member 31 to fixedly secure the cover 20 to the box body 10 in the close position. By means of the conical head 35, the male fastening member 34 can easily be inserted into the through hole 32 of the respective female fastening member 31. After insertion of the male fastening member 34 into the through hole 32 of the respective female fastening member 31, the bottom edge 351 of the conical head 35 and the collar 36 are respectively stopped at the top and bottom sides of the female fastening member 31 outside the through hole 32, and therefore the male fastening member 34 and the female fastening member 31 are fixedly fastened together, and cannot be separated from each other unless breaking the male fastening member 34 from the cover 20.

[0009] Referring to FIG. 3A and FIGS. 1 and 2A again, each accessories display box further comprises a tool handle positioning structure. The tool handle positioning structure comprises a recessed handle seat 41 disposed in the compartments 11 of the box body 10 and adapted to accommodate a tool handle 40, and a handle hole 42 formed at the cover 20 corresponding to the recessed portions 41 and adapted to receive a part of the tool handle 40 and to hold down the tool handle 40 in the recessed handle seat 41. When the cover 20 closed and fixedly fastened to the box body 10, the cover 20 holds down the tool handle 40 in the recessed handle seat 41, preventing displacement of the tool handle 40.

[0010] Referring to FIGS. 5A~5C and FIGS. 1 and 2A again, each accessories display box further comprises a tool bit receptacle 50 fastened to the box body 10 and adapted to hold a set of tool bits 54 that are arranged in

proper order subject to their lengths. The tool bit receptacle 50 has two polygonal coupling blocks 53 disposed at two opposite lateral sides adjacent to the bottom side 531 and respectively coupled to respective polygonal coupling holes 52 in the box body 10. Further, the bottom side 531 of the tool bit receptacle 50 is smoothly arched so that the tool bit receptacle 50 can be turned about the axis passing through the coupling holes 52 and positioned in one of a series of angular positions relative to the box body 10. Because the box body 10 is molded from plastics, the polygonal coupling blocks 53 can be turned with the tool bit receptacle 50 relative to the polygonal coupling holes 52 by force, and then quickly positioned in the desired angular position after release of external force. Further, an oblique stop wall 55 is provided inside the box body 10, and adapted to stop the storage tool bits 54 in the tool bit receptacle 50.

[0011] A prototype of accessories display box has been constructed with the features of FIGS. 1~5. The accessories display box functions smoothly to provide all of the features discussed earlier.

[0012] Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention as it is defined in the appended claims.

Claims

1. An accessories display box comprising a box body, said box body (10) defining a plurality of compartments adapted to accommodate tool accessories, a cover (20) adapted to cover said box body, and at least one fastening device adapted to fixedly secure said cover to said box body, wherein each said fastening device comprises a female fastening member (31) fixedly provided at said box body, said female fastening member comprising a through hole (32) and a plurality of crevices (33) radially extended around said through hole and longitudinally extended along the axial length of said through hole, and a male fastening member (34) fixedly provided at said cover and adapted to engage said female fastening member, said male fastening member having a conical head (35) insertable through said through hole, said conical head having a bottom edge (351), which stops said conical head from backward movement after insertion of said conical head through said through hole.
2. The accessories display box as claimed in claim 1, wherein said box body comprises a recessed tool handle seat extended through said compartments and adapted to accommodate a tool handle; said cover comprises a handle hole disposed corresponding to said tool handle seat and adapted to receive a part of the tool handle being rested in said

tool handle seat.

3. The accessories display box as claimed in claim 1, wherein said male fastening member further comprises a collar extended around the periphery thereof and spaced from said conical head at a distance approximately equal to the axial length of said through hole, said collar having a diameter greater than the diameter of said through hole. 5
4. The accessories display box as claimed in claim 1, wherein said box body and said cover are respectively molded from transparent plastics. 10
5. The accessories display box as claimed in claim 1, wherein said box body further comprises two polygonal coupling holes aligned at two sides, and a pivoted tool bit receptacle turnable in and out of said box body and adapted to receive a set of tool bits, said tool bit receptacle comprising two polygonal coupling blocks disposed at two sides and respectively coupled to said polygonal coupling holes. 15
6. The accessories display box as claimed in claim 5, wherein said tool bit receptacle has a smoothly arched bottom side. 20
7. The accessories display box as claimed in claim 5, wherein said box body further comprises an oblique stop wall adapted to stop storage tool bits in said tool bit receptacle when said tool bit receptacle set inside said box body. 25

Patentansprüche

1. Schaukasten für Zubehör, welcher sich zusammensetzt aus einem Kastenkörper, wobei der Kastenkörper (10) eine Vielzahl von Fächern definiert, welche angepasst sind, um Werkzeugzubehöerteile in sich aufzunehmen, einen Deckel (20), welcher angepasst ist, um den Kastenkörper abzudecken, und mindestens eine Verschlussvorrichtung, welche angepasst ist, um den Deckel fest an dem Kastenkörper zu befestigen, wobei eine jede der Verschlussvorrichtungen ein weibliches Verschlusselement (31) aufweist, welches fest an dem Kastenkörper vorgesehen ist, wobei das weibliche Verschlusselement ein Durchgangsloch (32) und eine Vielzahl von Nuten (33) aufweist, welche radial um das Durchgangsloch herum angeordnet sind und sich in Längsrichtung entlang der axialen Länge des Durchgangsloches erstrecken, und ein männliches Verschlusselement (34) aufweist, welches fest an dem Deckel vorgesehen ist und angepasst ist, um mit dem weiblichen Verschlusselement in Eingriff zu treten, wobei das männliche Verschlusselement einen konischen Kopf (35) aufweist, welcher durch das 35

Durchgangsloch hindurch eingeführt werden kann, wobei der konische Kopf an seiner Grundseite eine Kante (351) aufweist, welche eine Rückwärtsbewegung des konischen Kopfes nach der Einführung des konischen Kopfes durch das Durchgangsloch stoppt.

2. Schaukasten für Zubehör gemäß Anspruch 1, bei welchem der Kastenkörper einen vertieften Sitz für einen Werkzeuggriff aufweist, wobei sich dieser Sitz durch die Fächer hindurch erstreckt und angepasst ist, um einen Werkzeuggriff in sich aufzunehmen; wobei der Deckel ein Griffloch aufweist, welches entsprechend dem Sitz des Werkzeuggriffes angeordnet ist und welches ausgelegt ist, um einen Teil des Werkzeuggriffes in sich aufzunehmen, welcher in dem Sitz für den Werkzeuggriff ruht. 40
3. Schaukasten für Zubehör gemäß Anspruch 1, bei welchem das männliche Verschlusselement weiterhin einen Ring aufweist, welcher sich um die Peripherie desselben herum erstreckt und welcher von dem konischen Kopf um einen Abstand entfernt ist, welcher annähernd der gleiche ist wie die axiale Länge des Durchgangsloches, wobei der Ring einen Durchmesser besitzt, der größer ist als der Durchmesser des Durchgangsloches. 45
4. Schaukasten für Zubehör gemäß Anspruch 1, bei welchem der Kastenkörper und der Deckel jeweils aus durchsichtigen Kunststoffen geformt sind. 50
5. Schaukasten für Zubehör gemäß Anspruch 1, bei welchem der Kastenkörper weiterhin zwei polygonale Kopplungslöcher aufweist, welche an zwei Seiten ausgerichtet sind, sowie ein drehbar gelagertes Aufnahmefach für Schneid- bzw. Bohreinsätze, welches in den Kastenkörper hinein und aus demselben heraus gedreht werden kann und welches angepasst ist, um einen Satz von Schneid- bzw. Bohreinsätzen in sich aufzunehmen, wobei das Aufnahmefach für die Schneid- bzw. Bohreinsätze zwei polygonale Kopplungsblöcke umfasst, welche an zwei Seiten angeordnet sind und an die jeweiligen polygonalen Kopplungslöcher angekoppelt sind. 55
6. Schaukasten für Zubehör gemäß Anspruch 5, bei welchem das Aufnahmefach für die Schneid- und Bohreinsätze eine leicht gebogene Bodenseite aufweist.
7. Schaukasten für Zubehör gemäß Anspruch 5, bei welchem der Kastenkörper weiterhin eine schräge Stoppwand aufweist, welche ausgelegt ist, um die Schneid- bzw. Bohreinsätze in dem Aufnahmefach für Schneid- bzw. Bohreinsätze zurückzuhalten, wenn das Aufnahmefach für die Schneid- und Bohreinsätze innerhalb des Kastenkörpers angeordnet

ist.

Revendications

1. Boîte de présentation d'accessoires comprenant un corps de boîte, ledit corps de boîte (10) définissant une pluralité de compartiments adaptés pour recevoir des accessoires d'outils, un couvercle (20) adapté pour couvrir ledit corps de boîte et au moins un dispositif d'attache adapté pour immobiliser ledit couvercle sur ledit corps de boîte, dans laquelle chacun des dispositifs d'attache comprend un élément d'attache femelle (31) prévu de manière fixe au niveau dudit corps de boîte, ledit élément d'attache femelle comprenant un trou de passage (32) et une pluralité de fentes (33) s'étendant radialement autour dudit trou de passage et s'étendant longitudinalement le long de la longueur axiale dudit trou de passage, et un élément d'attache mâle (34) prévu de manière fixe au niveau dudit couvercle et adapté pour s'emboîter dans ledit élément d'attache femelle, ledit élément d'attache mâle étant pourvu d'une tête conique (35) pouvant être insérée à travers ledit trou de passage, ladite tête conique étant pourvue d'un bord inférieur (351) qui arrête ladite tête conique et empêche son mouvement vers l'arrière après l'insertion de ladite tête conique à travers ledit trou de passage.

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2. Boîte de présentation d'accessoires selon la revendication 1, dans laquelle ledit corps de boîte comprend un siège de manche d'outil évidé s'étendant à travers lesdits compartiments et adapté pour recevoir un manche d'outil ; ledit couvercle est pourvu d'un trou pour un manche situé de manière correspondante audit siège de manche d'outil et adapté pour recevoir une partie du manche d'outil déposé dans ledit siège de manche d'outil.

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3. Boîte de présentation d'accessoires selon la revendication 1, dans laquelle ledit élément d'attache mâle comprend, en outre, un collier s'étendant sur sa périphérie et situé à une distance de ladite tête conique à peu près égale à la longueur axiale dudit trou de passage, ledit collier ayant un diamètre supérieur au diamètre dudit trou de passage.

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4. Boîte de présentation d'accessoires selon la revendication 1, dans laquelle ledit corps de boîte et ledit couvercle sont moulés, respectivement, dans des plastiques transparents.

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5. Boîte de présentation d'accessoires selon la revendication 1, dans laquelle ledit corps de boîte est pourvu, en outre, de deux trous de couplage polygonaux alignés sur deux côtés et comprend un réceptacle pivotant pour outils rapportés que l'on peut rentrer

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et sortir dudit corps de boîte par rotation et qui est adapté pour recevoir un jeu d'outils rapportés, ledit réceptacle pour outils rapportés comprenant deux blocs de couplage polygonaux situés sur deux côtés et couplés respectivement auxdits trous de couplage polygonaux.

6. Boîte de présentation d'accessoires selon la revendication 5, dans laquelle ledit réceptacle pour outils rapportés est pourvu d'un côté inférieur présentant une courbe douce.

7. Boîte de présentation d'accessoires selon la revendication 5, dans laquelle ledit corps de boîte comprend, en outre, une paroi d'arrêt oblique adaptée pour stopper les outils rapportés rangés dans ledit réceptacle pour outils rapportés lorsque ledit réceptacle pour outils rapportés est placé à l'intérieur dudit corps de boîte.

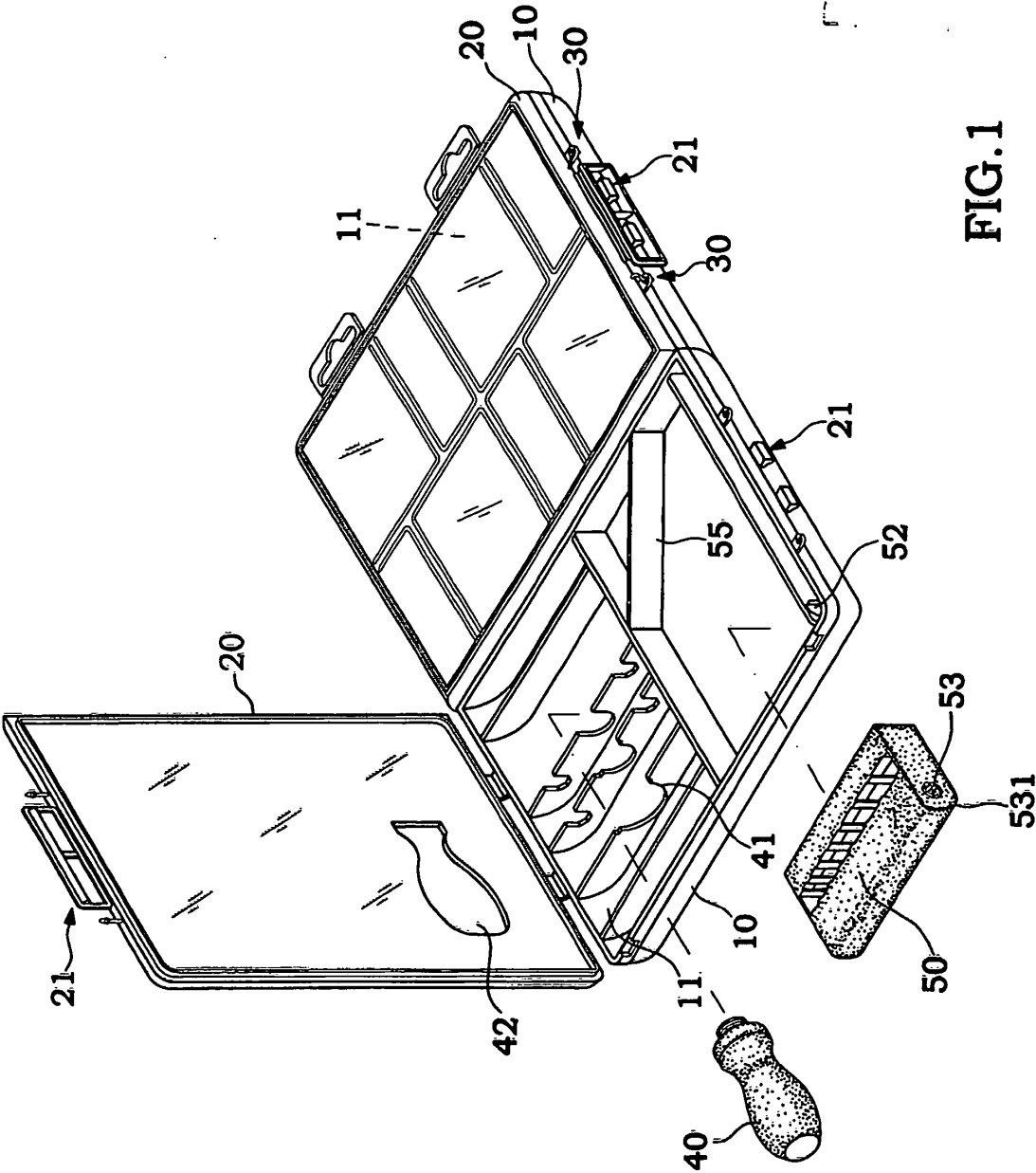
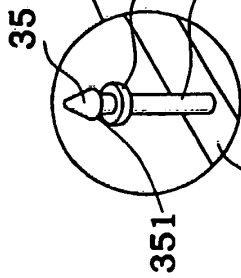
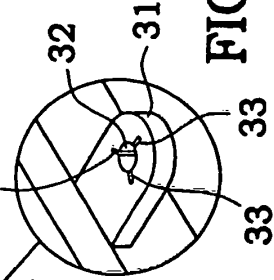
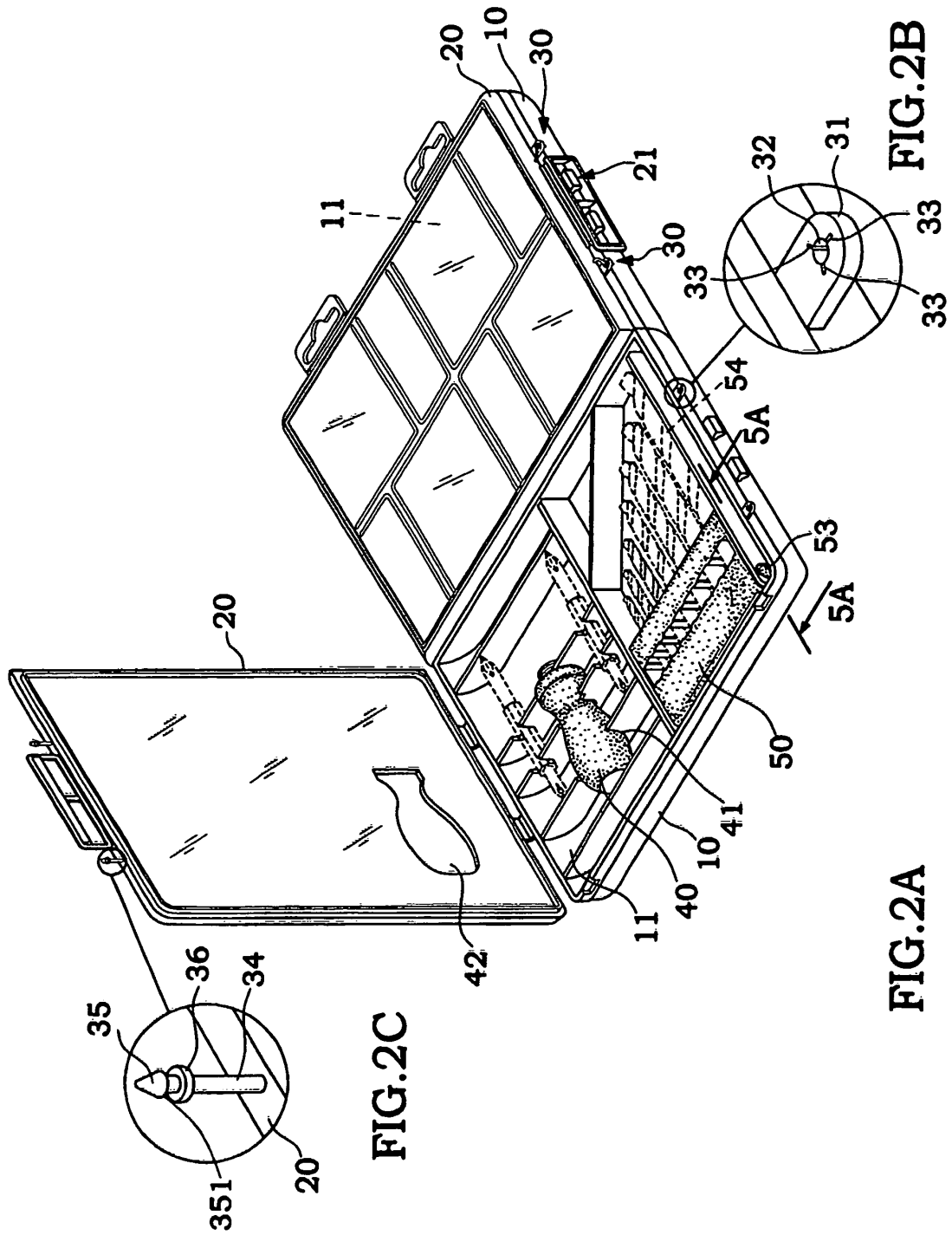


FIG.1



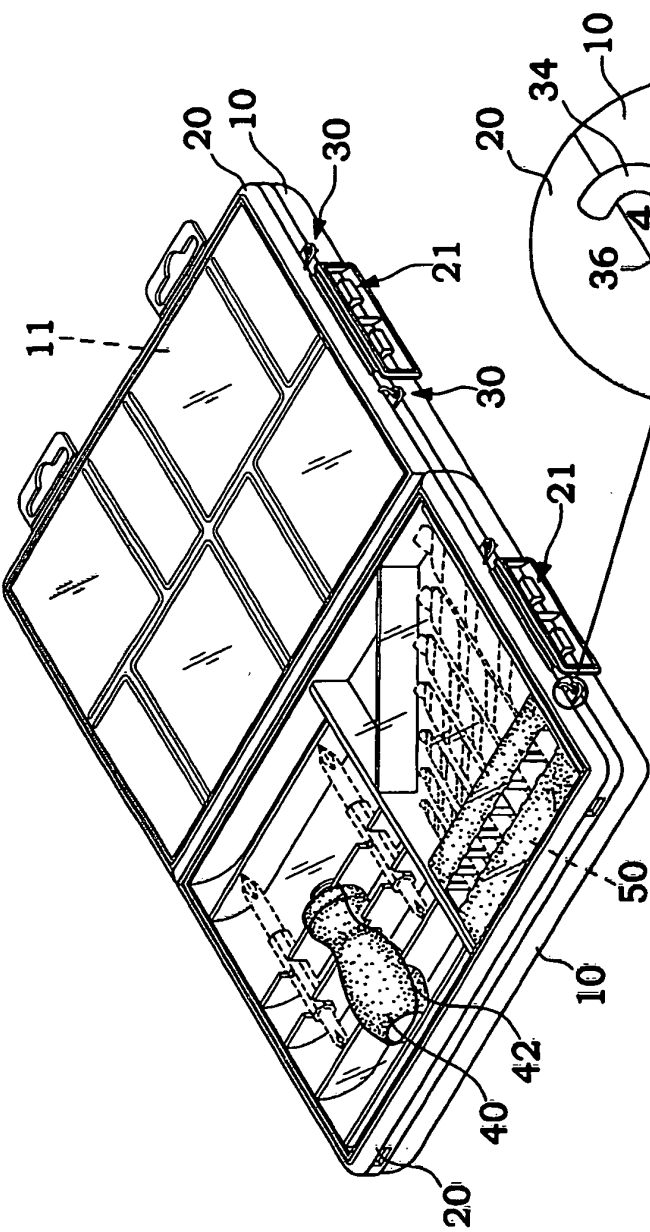


FIG. 3A

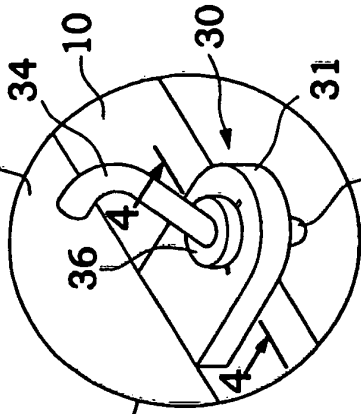


FIG. 3B

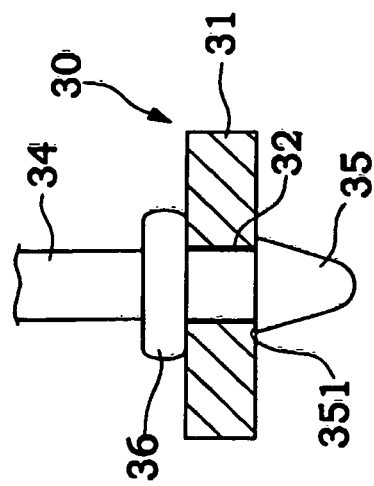


FIG. 4

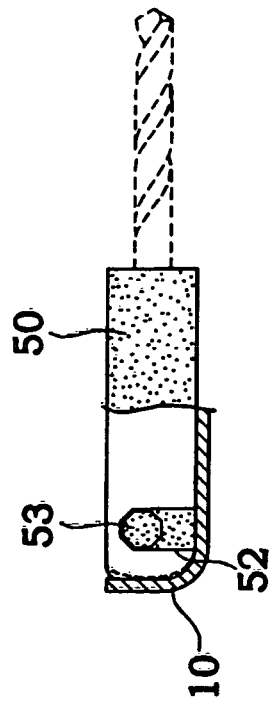


FIG. 5A

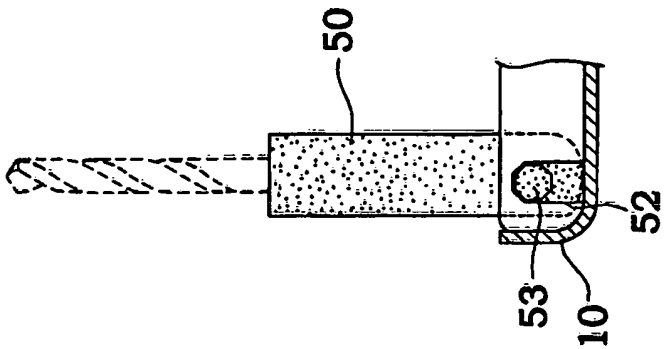


FIG. 5C

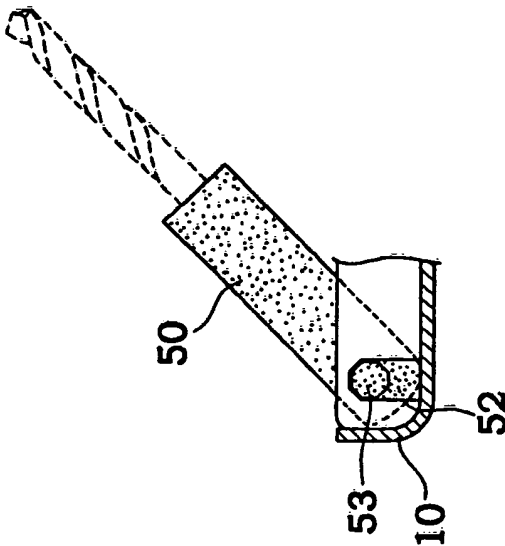


FIG. 5B