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(54) **SURGICAL CASE**

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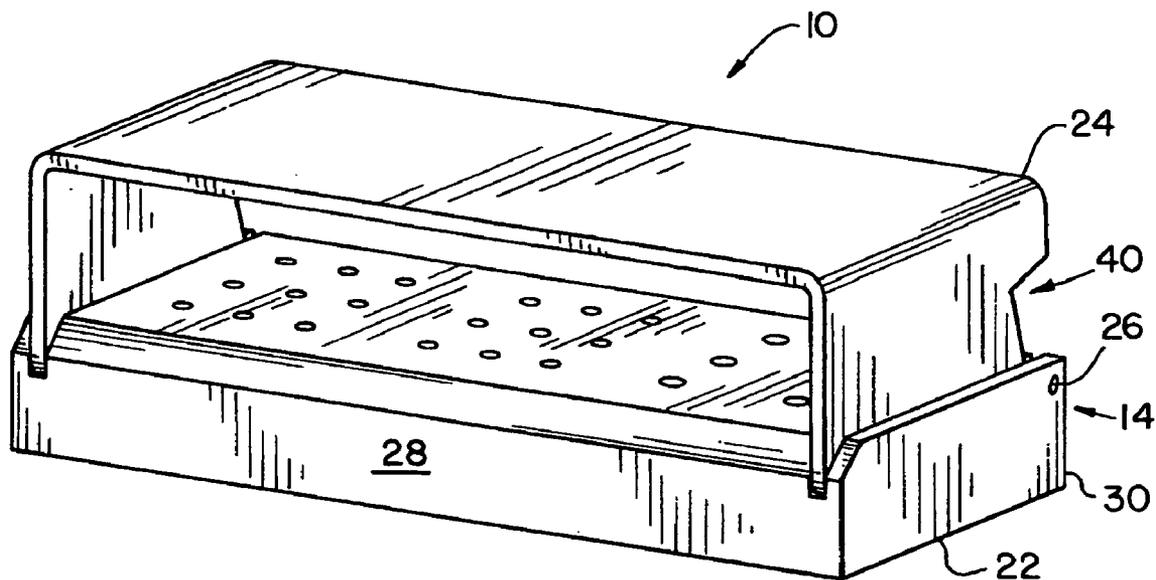
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(57) **ABSTRACT**

A surgical case including a housing having a first portion and a second portion having a front and a back. There is at least one hinge coupling the first portion and the second portion. The first portion is rotatable to a position that elevates the back relative to the front.

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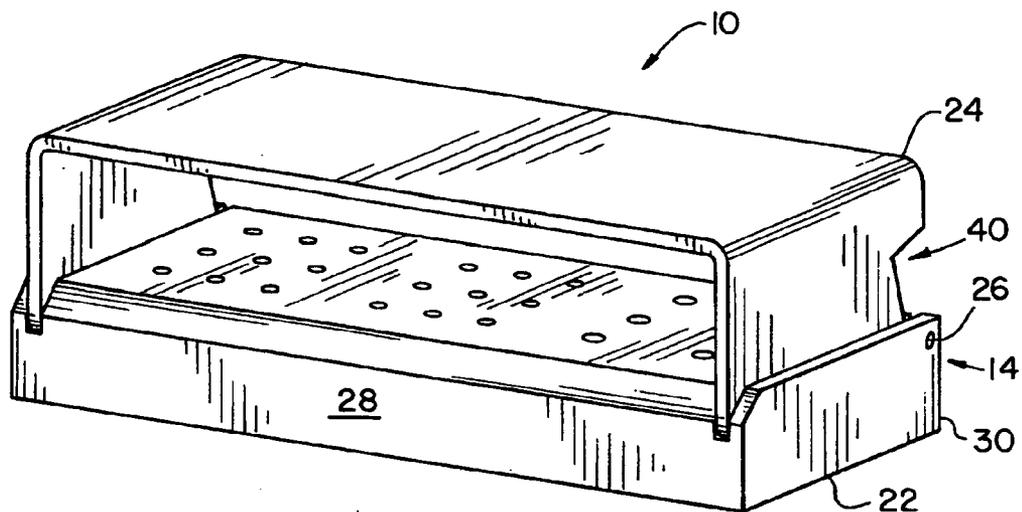


Fig. 1

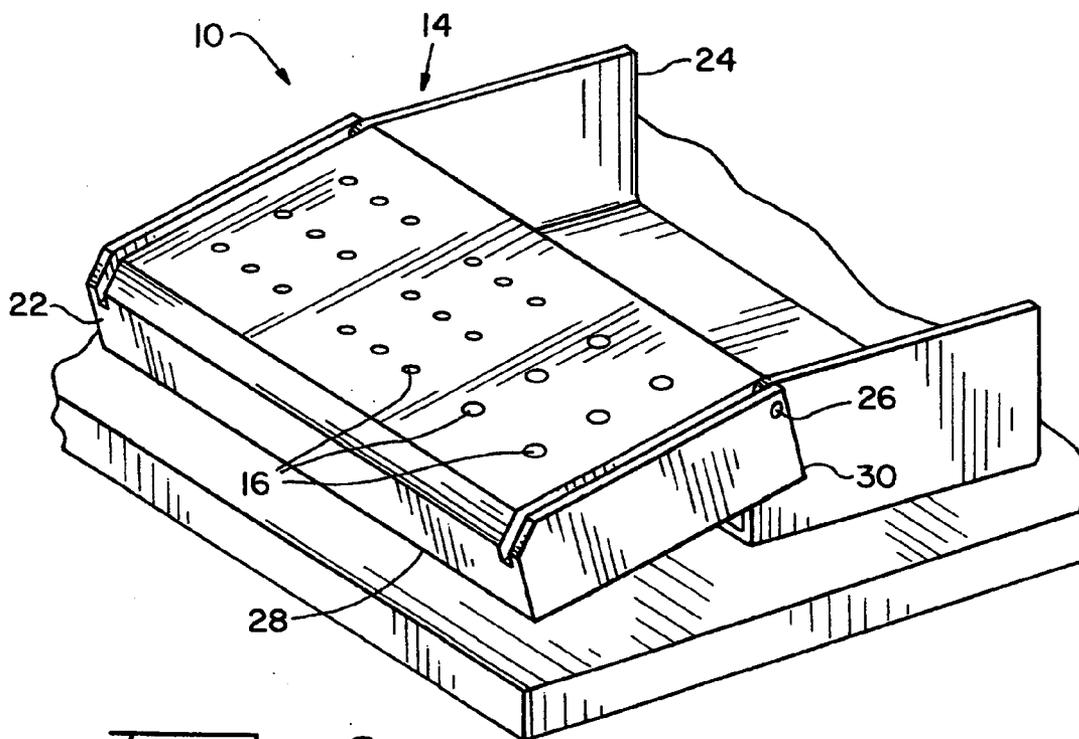


Fig. 2

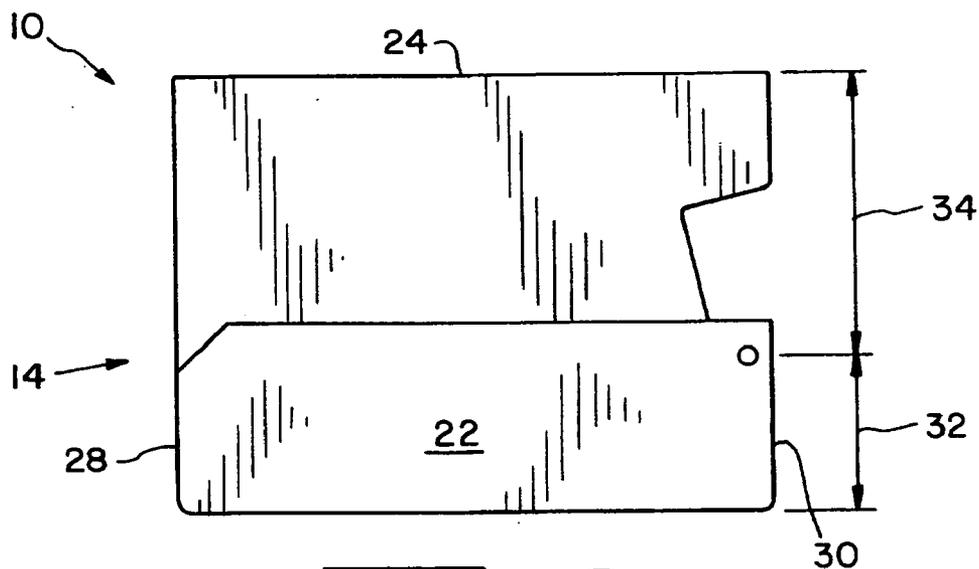


Fig. 3

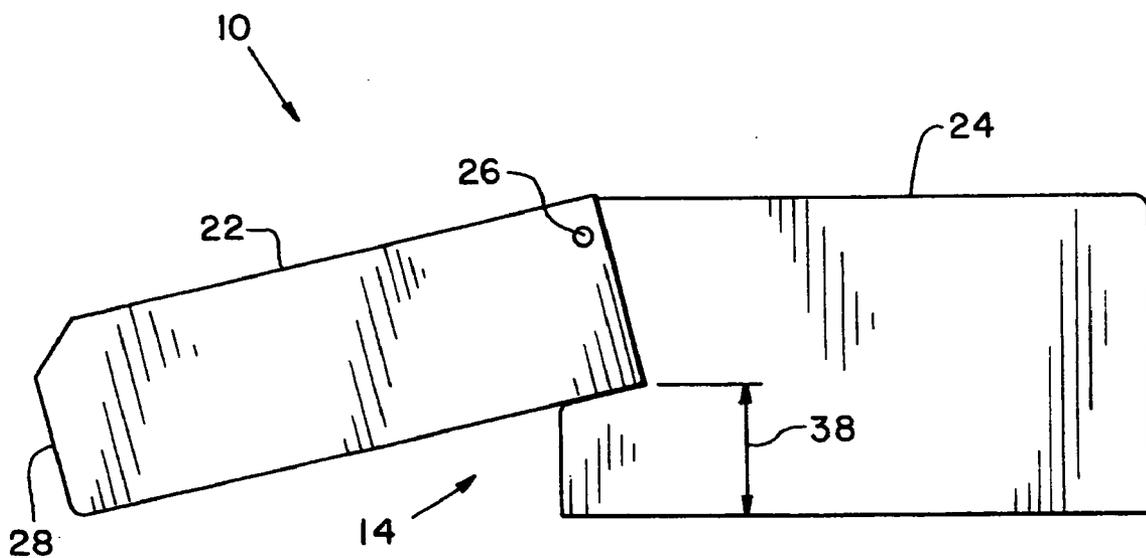
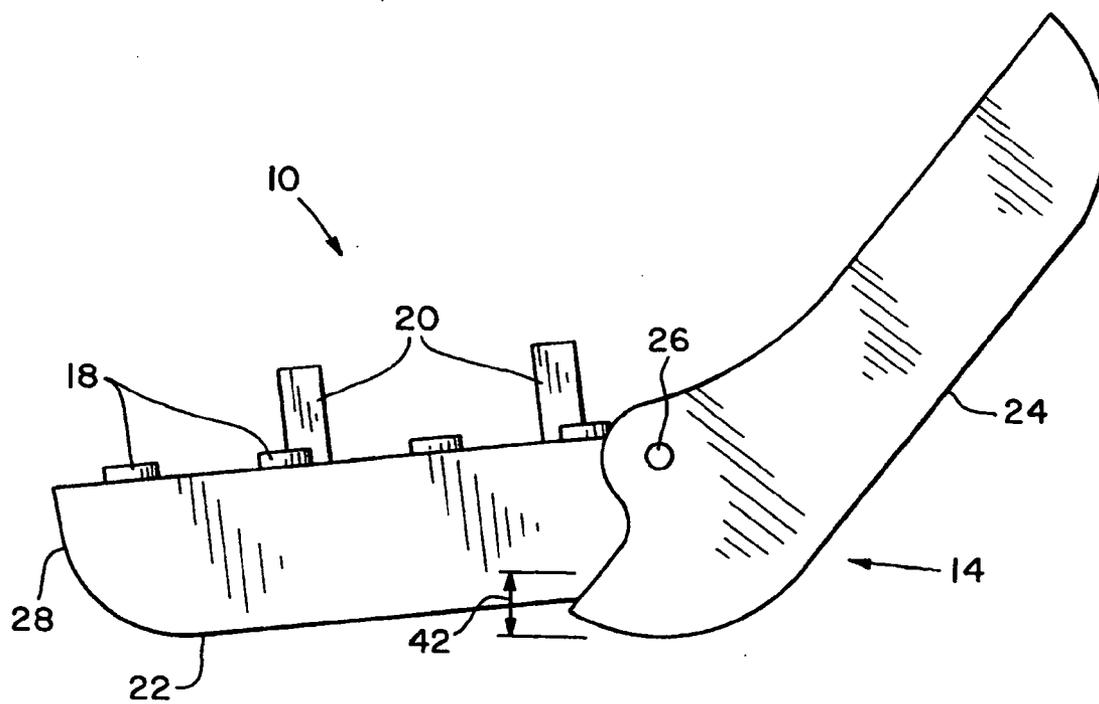
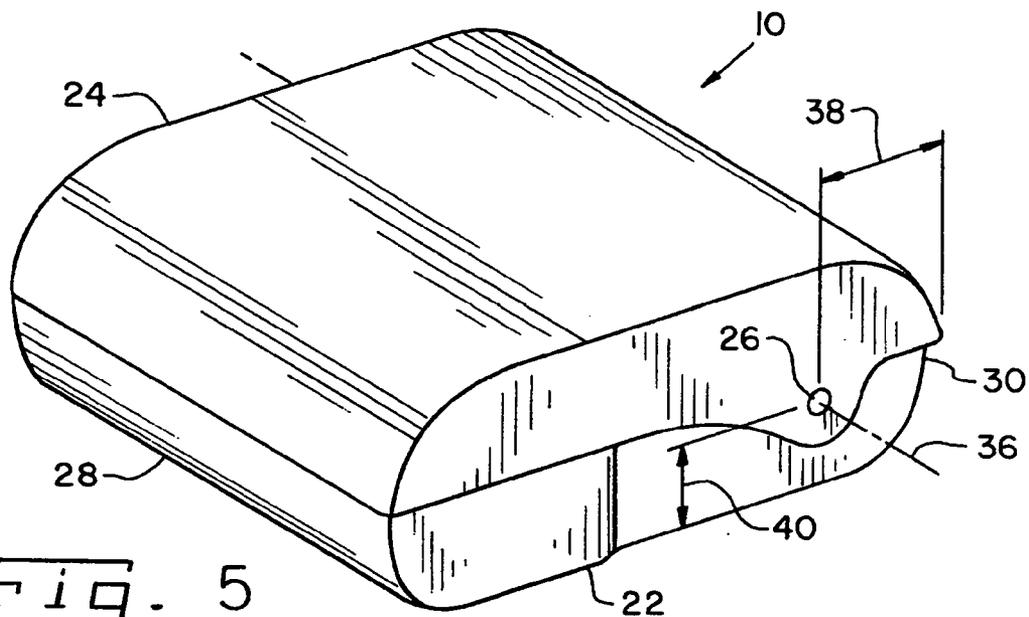


Fig. 4



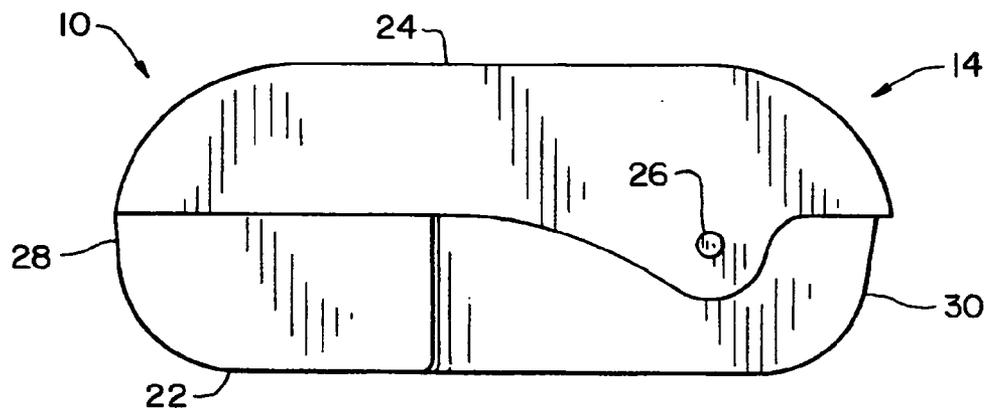


Fig. 7

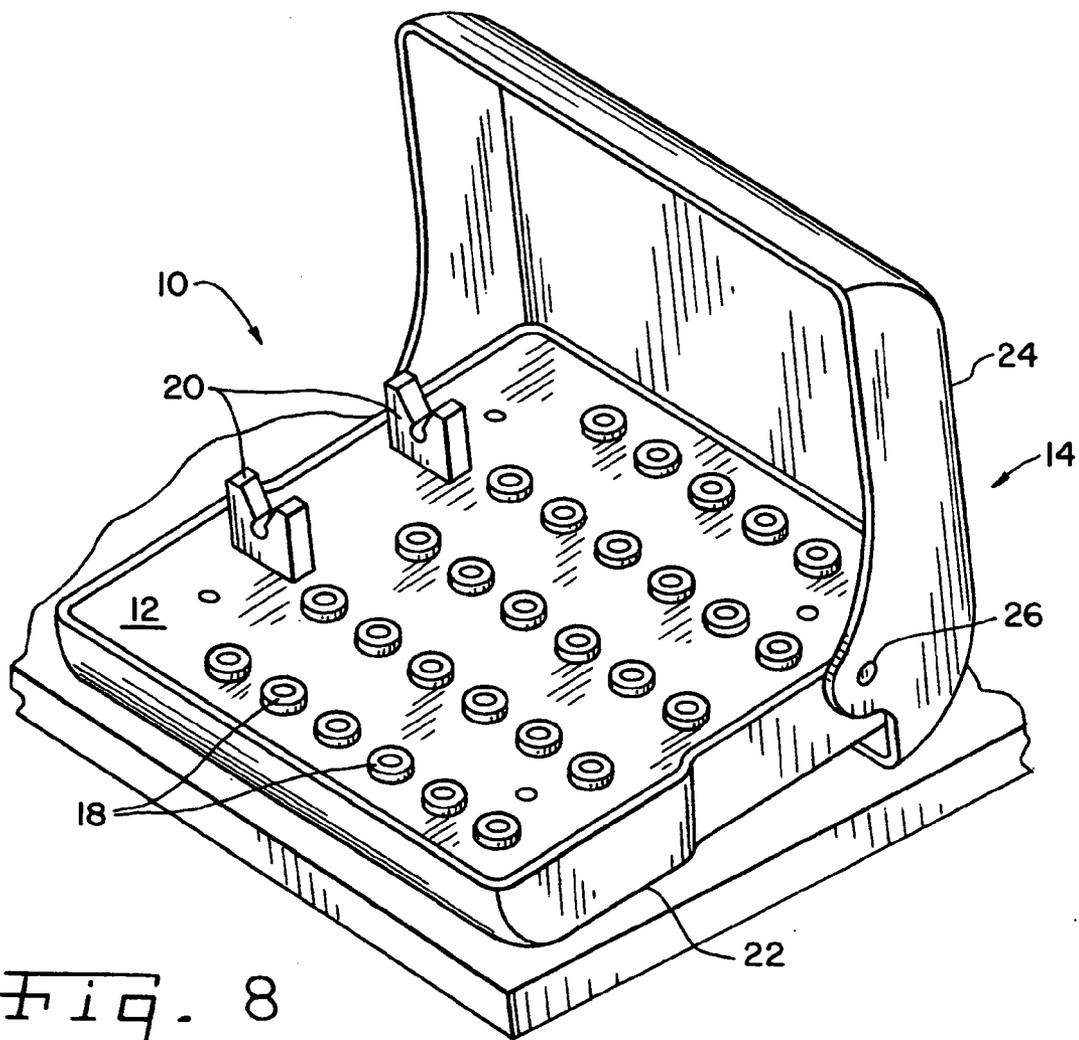


Fig. 8

**SURGICAL CASE**

**BACKGROUND OF THE INVENTION**

[0001] 1. Field of the Invention.

[0002] The present invention relates to a surgical case, and, more particularly, to a surgical case having a hinged lid.

[0003] 2. Description of the Related Art.

[0004] Surgical instruments are frequently stored in cases. For example, surgical drill bits are conventionally stored in cases that lie flat and have a bit-holding member. Surgical instruments are placed in the cases for autoclaving, the cases often being stackable. The cases incorporate functions for storing, transporting, and presenting of reusable surgical instruments to the surgeon during surgery. A preparatory step to any surgical procedure is to have the surgical instruments and related components and accessories sterilized. This procedure involves subjecting the case and the instruments contained therein to an autoclaving operation wherein these objects are subjected to an elevated temperature of approximately 270° F. and an elevated pressure.

[0005] One requirement for any autoclaving tray or instrument holder for these instruments and components is that it is able to withstand the elevated temperatures and pressure, and to do so for many cycles. Efficient use of the autoclave dictates a close placement of the surgical instruments in the case to maximize the capacity of the case. Outer surfaces of the cases are typically parallel to a plane in which the instruments lie so as to minimize wasted space. Even though it may be desirable to place the instruments as close together as possible, a competing requirement is related to ergonomic factors, in that the instruments must be spaced apart so as to be easily grasped and removed from the case.

[0006] A problem with surgical cases is that the instruments stored therein are not presented in a fashion that is easy for surgical personnel to see and access.

[0007] What is needed in the art is a simple, cost effective device and method for the presentation of surgical instruments to surgical personnel.

**SUMMARY OF THE INVENTION**

[0008] The present invention relates to a surgical case having a hinged lid that elevates the rear of the case.

[0009] The present invention comprises, in one embodiment thereof, a surgical case including a housing having a first portion and a second portion having a front and a back. There is at least one hinge coupling the first portion and the second portion. The first portion is rotatable to a position that elevates the back relative to the front.

[0010] An advantage of the present invention is that the lid serves to elevate the base in order to present the tools contained within the surgical case so that they can be more easily seen and grasped by the user.

[0011] Another advantage of the present invention is that it elevates the back of the base by way of the position of the lid.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0012] The above-mentioned and other features and advantages of this invention, and the manner of attaining

them, will become more apparent and the invention will be better understood by reference to the following description of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

[0013] FIG. 1 illustrates an embodiment of a surgical case of the present invention;

[0014] FIG. 2 is a perspective view of the surgical case of FIG. 1 in an open position;

[0015] FIG. 3 is a side view of the surgical case of FIGS. 1 and 2;

[0016] FIG. 4 is another side view of the surgical case of FIGS. 1-3 in an open position;

[0017] FIG. 5 is a view of another embodiment of the surgical case of the present invention;

[0018] FIG. 6 is a side view of the surgical case of FIG. 5;

[0019] FIG. 7 is another side view of the surgical case of FIGS. 5 and 6 in a closed position; and

[0020] FIG. 8 is a perspective view of the surgical case of FIGS. 5-7 in an open position.

[0021] Corresponding reference characters indicate corresponding parts throughout the several views. The exemplifications set out herein illustrate one preferred embodiment of the invention, in one form, and such exemplifications are not to be construed as limiting the scope of the invention in any manner.

**DETAILED DESCRIPTION OF THE INVENTION**

[0022] Referring now to the drawings, and more particularly to FIGS. 1-8, there is shown a surgical case 10, also known as a dental case 10 including a tray 12 and a housing 14.

[0023] Tray 12 includes holes 16 therethrough, which can accommodate grommets 18 and holders 20. Grommets 18 and holders 20 assist in the holding of dental and/or surgical instruments placed therein.

[0024] Housing 14 includes a lower portion 22, an upper portion 24 and hinges 26. Lower portion 22 includes a front 28 and a back 30. When upper portion 24, also known as a lid 24 is in a closed position as shown in FIGS. 1, 3, 5 and 7, front 28 and back 30 each are supported by a supporting surface thereunder. When lid 24 is open, as shown in FIGS. 2, 4, 6 and 8, lower portion 22, also known as base 22, is lifted so as to elevate back 30 so that it is raised as compared to front 28. Lid 24 may be fixed to lower portion 22 by way of hinges 26 or may be removable from lower portion 22.

[0025] A height 32 from the bottom of base 22 to hinge 26 is less than height 34 between hinge 26 and the top of lid 22. The difference between height 32 and height 34 contributes directly to the amount of elevation 38 which back 30 is lifted above a supporting surface. As lid 24 is rotated about a pivot axis 36, a portion of lid 24 contacts the supporting surface and a portion of lid 24 rotates beneath back 30 of base 22. Additional aspects such as the geometries of the lid and base are also contemplated, such as the shape of the embodiment of the present invention illustrated in FIGS. 5-8. Features on the lid, such as the curved surface of the back of lid 24 in FIGS. 5-8, serve to alter the elevation to which back 30 is

elevated. Other features contemplated, but not shown in the figures, include protrusions along the back of lid 24, which would contact the underlying surface and further elevate back 30.

[0026] Alternatively, a distance 38, from hinge 26 to the back of lid 24 may be greater than height 40 from the bottom of base 22 to hinge 26. The difference between distance 38 and height 40 contributes directly to the amount of elevation 42, which back 30 is lifted above a supporting surface. As lid 24 is rotated about pivot axis 36, a portion of lid 24 contacts the supporting surface and a portion of lid 24 rotates beneath back 30 of base 22.

[0027] If lid 24 is interior to base 22 as shown in FIGS. 1-4, a notch 40 is placed in lid 24 to allow lid 24 to rotate underneath base 22. Alternatively to notch 40, a groove or open area in base 22 can also be provided which allows an un-notched lid 24 to rotate into the position as shown in FIGS. 2 and 4. Positioning lid 24 so that it is exterior to base 22 as shown in FIGS. 5-8 allows lid 24 to rotate and causes base 22 to elevate similar to the embodiment shown in FIGS. 2 and 4. The positioning of hinge point 26 alters heights 32 and 34, which directly effects elevation 38 as lid 24 co-acts with the location of hinge 26 to elevate back 30 to a predetermined height.

[0028] The present invention advantageously angles the plane in which the surgical instruments are presented when the lid is open so that the instruments themselves are more easily seen and accessed by surgical personnel. The stadium-like presentation of the instruments improves the ergonomics of the surgical case so that individual instruments can be more easily grasped and removed from the case.

[0029] While this invention has been described as having a preferred design, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

What is claimed is:

1. A surgical case, comprising:
  - a housing including:
    - a first portion; and
    - a second portion having a front and a back; and
  - at least one hinge coupling said first portion to said second portion, said first portion rotatable to a position that elevates said back relative to said front.
2. The surgical case of claim 1, wherein said first portion having a first height and said second portion having a second height, said first height being greater than said second height.
3. The surgical case of claim 2, wherein said first portion is a lid having at least one notch removed therefrom to accommodate said back of said second portion.
4. The surgical case of claim 3, wherein said lid has two edges and said second portion has two recesses each of which accommodate one of said two edges.

5. The surgical case of claim 4, wherein said at least one hinge includes a first hinge and a second hinge that is substantially co-axial with said first hinge.

6. The surgical case of claim 5, wherein said second portion includes a plurality of holes positioned to accommodate one of surgical instruments and holders for surgical instruments.

7. The surgical case of claim 1, wherein said first portion has a first height and said second portion has a second height, said at least one hinge being at a position above the bottom of said second portion that is less than one half the sum of said first height and said second height.

8. The surgical case of claim 7, wherein said first portion is a lid, said first height of said lid co-acting with said position of said at least one hinge to elevate said back when said lid is in an open position.

9. A surgical case assembly, comprising:

a base having a front and a back, said base in at least partial contact with a surface; and

a lid hingedly connected proximate to said back of said base, said lid having an open position in which said lid contacts the surface and elevates said back above the surface.

10. The assembly of claim 9, wherein said lid has a first height and said base has a second height, said first height being greater than said second height.

11. The assembly of claim 10, wherein said lid has at least one notch removed therefrom to accommodate said back of said base.

12. The assembly of claim 11, wherein said lid has a first edge and a second edge, said base having a first recess and a second recess, said first recess accommodating said first edge and said second recess accommodating said second edge when said lid is in a closed position.

13. The assembly of claim 12, further comprising:

a first hinge associated with a portion of said first recess and a portion of said first edge; and

a second hinge associated with a portion of said second recess and a portion of said second edge, said first hinge being substantially co-axial with said second hinge.

14. The assembly of claim 13, wherein said base and said lid are one of fixed and removable from each other.

15. The assembly of claim 9, wherein said lid has a first height and said base has a second height, said lid being hingedly connected to said base by a hinge at a position above the bottom of said base that is less than one half the sum of said first height and said second height.

16. The assembly of claim 15, wherein said first height of said lid co-acts with said position of said hinge to elevate said back when said lid is in said open position.

17. A method of elevating a surgical case, comprising the steps of:

hingedly attaching a lid to a base; and

opening said lid causing said lid to contact a surface beneath a portion of said base thereby lifting a portion of said base above the surface.

18. The method of claim 17, wherein said lid has at least one notch removed therefrom to accommodate a portion of said base when said lid is in an open position.

19. The method of claim 17, wherein said lid has a first height and said base has a second height, said lid being

hingedly attached to said base at a position above a bottom of said base that is less than one half the sum of said first height and said second height.

**20.** The method of claim 19, wherein said first height of said lid co-acts with a location of said position to elevate said back when said lid is in an open position.

**21.** A surgical case assembly, comprising:

a base having a bottom wall; and

a lid hingedly connected to said base about a pivot axis, said lid having a top wall and a back wall, said pivot axis being located a first distance from said back wall,

said pivot axis being located a second distance from said top wall, said pivot axis being located a third distance from said bottom wall, one of said first distance and said second distance being greater than said third distance.

**22.** The surgical case assembly of claim 21, wherein said first distance is greater than said third distance.

**23.** The surgical case assembly of claim 21, wherein said first distance is greater than said second distance.

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