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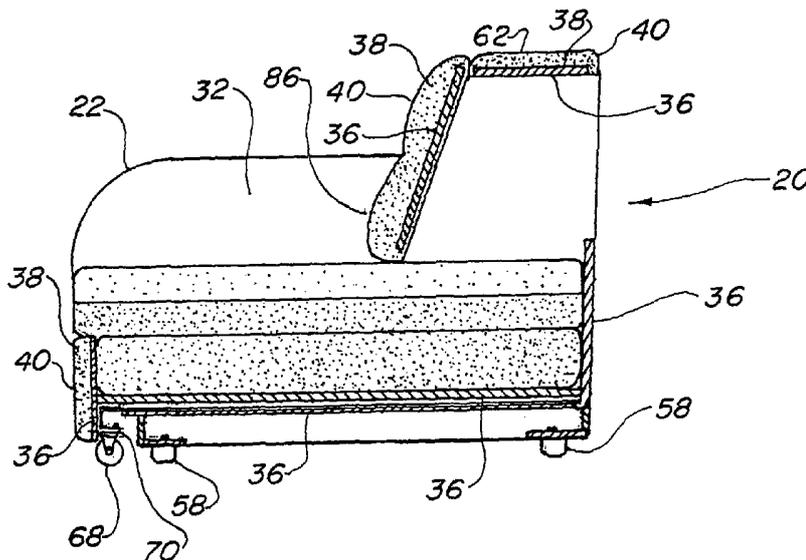
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(54) Title: A SEAT THAT CONVERTS INTO A BED



(57) Abstract: An upholstered seat (20) that converts into a bed. The seat (20) has a pair of upholstered sides (22), each having an extendible slide (42) attached onto an inner surface of the sides. The slides (42) have a length equivalent to a bed. A stationary bottom (56) having a back panel (60) is attached between the sides, while an upholstered top (62) is attached to both top edges of the sides (22). A retractable bottom platform (64), including a kick plate (66), is attached onto the extendible slides (42), thus permitting the platform to be manually urged away from the seat and extend to the length of a bed. A mattress (72) is folded in half, and rests on the retractable platform providing a cushion for the seat, and when extended with the mattress-seat unfolded into a flat position a bed is created. A back cushion (86) removably interfaces with the upholstered top (62) and mattress-seat to provide a cushion for lumbar support.

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## A SEAT THAT CONVERTS INTO A BED

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### TECHNICAL FIELD

The invention pertains to seats in general, and more specifically to a chair, a love seat or a couch having a removable upholstered back cushion. The cushion utilizes a doubled-over foam mattress for a seat, with a platform underneath that may be extended  
10 outward, permitting the mattress to be unfolded, thus forming a bed suitable for sleeping.

### BACKGROUND ART

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One of the most popular chair designs has been the LA-Z Boy® type reclining chair. This design allows a person to sit in a normal, vertical position, and then by pulling a lever, the back section of the chair moves from the vertical to a partially horizontal position, and the lower front section of the chair moves upward to form a substantially horizontal surface that provides leg support. The major benefit of the  
20 reclining chair was that if a person became tired while sitting in the chair, he/she could simply activate the lever and be placed in the reclined sleeping position.

Unfortunately, the sleeping position in a reclining chair does not produce the same, fully horizontal position as provided by a regular bed. For many people, sleeping in basically the same position every night is necessary to preclude certain pain, such as  
25 back pain or neck pain. It is not un-common for a person to wake from a night of sleeping in a reclining chair with a backache.

Obviously, if there were seat that served as a chair that could be changed into a bed having the same horizontal sleeping position as a conventional bed, the benefit would be significant. A seat that easily can be converted into a bed would be especially useful  
30 in limited space environments, such as single-room apartments, hospitals, nursing homes dormitories, hotel rooms or the like.

A search of the prior art did not disclose literature or patents that read directly on the claims of the instant invention. However the following U.S. patents are considered related:

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<u>Patent Number</u>	<u>Inventor</u>	<u>Issue Date</u>
5,271,109	Markel et al.	Dec. 21, 1993
5,394,573	Laughlin et al.	Mar. 7, 1995
5,644,804	Wang	Jul. 8, 1997
10 5,815,857	De Lorenzo	Oct. 6, 1998
5,920,928	Piretti	Jul. 13, 1999
6,718,570	Brooks	Apr. 13, 2004

Markel et al. in U.S. patent 5,271,109 teaches a convertible sofa-bed that has a support frame and a seat support. The seat support is slidably connected to the frame by a roller, and a back support is pivotally connected to the seat support. The back support includes a hook, that provides for connection of the back to the seat.

Patent No. 5,394,573 issued to Laughlin et al. is for a sofa bed that is upholstered and includes a sectional frame. A platform is provided that is retractable, with a hinge member attaching a front platform section to a back platform at an obtuse angle in one configuration, and hinges flat in another. The front platform includes at least one support leg.

Wang in U.S. patent 5,644,804 discloses a sofa bed which includes a first base frame that serves as a seat and covers a space for keeping pillows etc. A second base frame connects to the first base frame and pivots to a desired angle to serve as the back of the sofa. A pair of armrests are adjustably connected to the base frame at two opposite ends.

De Lorenzo in U.S. patent 5,815,857 teaches a fixed structure with three movable frames that are in engagement with each other in a consecutive rotatable manner and are

shiftable between a closed and open positions. A kinematic driving mechanism is interposed between the frames, and synchronization means are adapted to move the frames in a single operation.

Patent No. 5,920,928 issued to Piretti is for a sofa that may be converted into a  
5 bed by drawing the supporting structure until it reaches an elongated position in which the mattress lies flat. In a retracted position, for use as a sofa, the mattress is folded under the supporting structure.

Brooks previous patent No. 6,718,570 was issued recently for a convertible couch  
10 bed that utilizes a mattress for a seat. An upholstered top covers the rear portion of the mattress and is attached to the frame with a piano hinge. An upholstered back is attached to the top, which allows the back to fold upward in accordion fashion and rest upon the frame, thereby permitting conversion of the couch into a bed by exposing the entire mattress.

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### DISCLOSURE OF THE INVENTION

In the past, seats such as upholstered chairs and couches served a discrete purpose  
in that they were limited to just sitting or resting on cushions. The exception is that  
20 convertible couches or sofas have been developed that serve a dual purpose of both sitting and sleeping. Conventional convertible couches usually include complex frames and movable structures to permit a thin mattress to be folded under the seat of the couch, with the couch back swinging upward out of the way and the mattress unfolded away from the couch to form a bed. Many different embodiments of convertible couches have been  
25 developed and are very common in today's marketplace. While economies of number have brought this type of product within the reach of most, the fact that the structure is complicated and that a large number of frame parts are required, increases the cost above that of a traditional sofa or couch. Therefore, the primary object of the upholstered seat that converts into a bed is to employ a seat cushion in the form of a mattress-seat folded

in half for sitting. The mattress-seat is formed of a foam slab covered with upholstered material on one side, which is used for sitting, and mattress material on the other side, which is used for a bed when unfolded. The seat includes a retractable bottom platform that is pushed into the seat structure flush with the front for normal sitting, and when  
5 extended outward, the mattress is simply unfolded thus forming a full length bed.

An important object of the invention is that the cost of an elaborate frame that pivots the seat flat into a bed is eliminated. Two uncomplicated and relatively inexpensive extendable slides are utilized, which simplify the structure and allow the overall chair or couch bed construction to be uncomplicated and cost effective.

10 Another object of the invention is that the mattress-seat used for both the seat and the bed is comfortable in both functions, as the mattress-seat is made of closed cell foam which is used commonly for sleeping, therefore no minimizing of size or comfort has been necessary that would degrade its utility in either mode.

An important object of the invention is that in the upholstered seat embodiment  
15 the mattress-seat may be partially pulled out, thereby forming a lounge, which is sometimes designated as a chaise lounge. This ability is further appreciated as the length of the lounge may be adjusted to fit the user's comfort zone relative to their particular physical makeup.

Still another object of the invention is that it is easy to operate, as a kick plate in  
20 front of the seat is pulled forward on the slides, assisted by casters under the bottom platform, until full extension is achieved and is mechanically stopped by the slides. No latch or complicated mechanism is required, as the top and back do not need to be moved or altered, and the back cushion is simply removed and stored out of the way.

Yet another object of the invention is directed to the complete safety of the  
25 mechanism to transform the chair into a bed. The slides are located under the mattress on each side of the chair and are inaccessible to the operator. There are no metallic hinges or projections that may inadvertently swing down and cause injury. Further, there are no sharp edges, latches or mechanisms exposed that may be dangerous to the user.

A further object of the invention is that the style of the seat may be made wider, thus changing its utility from a chair into a loveseat or couch. Further, the shape and style of construction may be easily altered with fabric material in a variety of forms to accommodate the desired style.

5 A final object of the invention is the utility, as the chair in all of its width embodiments may be used in homes, businesses, offices and particularly in hospitals, where a bedside chair is required for a relative or loved one who stays overnight with a patient. There is no limit to its usefulness, as the cost differential between a conventional chair, loveseat or couch is minimal.

10 These and other objects and advantages of the present invention will become apparent from the subsequent detailed description of the preferred embodiment and the appended claims taken in conjunction with the accompanying drawings.

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### BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a partial isometric view of the upholstered chair embodiment with the mattress-seat retracted.

20 FIGURE 2 is a partial isometric view of the chair embodiment with the mattress-seat partially extended, which changes the chair into a chaise lounge.

FIGURE 3 is a partial isometric view of the chair embodiment with the mattress-seat fully extended, changing the chair into a bed.

25 FIGURE 4 is a partial isometric view of the loveseat embodiment with the mattress-seat fully extended, changing the loveseat into a bed.

FIGURE 5 is a partial isometric view of the couch embodiment with the mattress-seat fully extended, changing the couch into a bed.

FIGURE 6 is a partial isometric view of the chair embodiment with the mattress-seat retracted.

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FIGURE 7 is a cross-sectional view taken along lines 7-7 of FIGURE 6.

FIGURE 8 is a cross-sectional view taken along lines 8-8 of FIGURE 6.

FIGURE 9 is a partial isometric view of one of the upholstered sides in the preferred embodiment including the slide shown extended but partially cut off.

5 FIGURE 10 is a cross-sectional view taken along lines 10-10 of FIGURE 9.

FIGURE 11 is a partial isometric view of one of the slides of the preferred embodiment shown removed from the invention for clarity, and the slide illustrated in a retracted position.

10 FIGURE 12 is a partial isometric view of one of the slides of the preferred embodiment shown removed from the invention for clarity, with the slide shown fully extended.

FIGURE 13 is a partial isometric view of one of the slides of the preferred embodiment shown removed from the invention for clarity, with the outside track separated from the inside track, illustrating the leaf spring position stop.

15 FIGURE 14 is a partial isometric view of the stationary bottom with the back attached.

FIGURE 15 is a cross-sectional view taken along lines 15-15 of FIGURE 14 best illustrating the location of the feet.

20 FIGURE 16 is a partial isometric view of the retractable bottom platform including the integral kick plate.

FIGURE 17 is a cross-sectional view taken along lines 17-17 of FIGURE 16 best illustrating the channel shaped bracket and caster.

FIGURE 18 is a partial isometric view of the channel shaped bracket shown completely removed from the retractable bottom platform for clarity.

25 FIGURE 19 is a partial isometric view of one of the casters shown completely removed from the channel shaped bracket for clarity.

FIGURE 20 is a partial isometric view of the upholstered top shown completely removed from the invention for clarity.

FIGURE 21 is a partial isometric view of the back cushion shown completely removed from the invention for clarity.

FIGURE 22 is a partial isometric view of the mattress-seat shown folded over and completely removed from the invention for clarity.

5        FIGURE 23 is a cross-sectional view taken along lines 23-23 of FIGURE 22 best illustrating the mattress top portion having a two-section foam slab, with the upper section of the slab having a softer density than the lower section.

FIGURE 24 is a partial isometric view of the mattress-seat shown unfolded flat and completely removed from the invention for clarity.

10        FIGURE 25 is an exploded view of the upholstered chair embodiment.

FIGURE 26 is a partial isometric view of the chair embodiment in a first style.

FIGURE 27 is another partial isometric view of the chair embodiment in a different style.

15        FIGURE 28 is yet another partial isometric view of the chair embodiment with a novel style.

FIGURE 29 is still another partial isometric view of the chair embodiment with a distinctive style.

FIGURE 30 is a partial isometric view of the chair embodiment with a unique identifiable style and an adjustable headrest.

20        FIGURE 31 is a final partial isometric view of the chair embodiment with a distinct style.

### **BEST MODE FOR CARRYING OUT THE INVENTION**

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The best mode for carrying out the invention of an upholstered seat that converts into a bed is presented in terms of a preferred embodiment. The preferred embodiment of the upholstered seat 20, as shown in FIGURES 1, 2, 3, and 9 is comprised of a pair of upholstered sides 22 having a front edge 24, a back edge 26, a top edge 28, an arm 30, an

inner surface 32, and an outer surface 34. An exploded view of the upholstered chair 20 is shown in FIGURE 25.

The sides 22, which are illustrated singularly in FIGURES 9 and 10, consist of a combination wood frame and upholstered cardboard or preferably a plywood structure 36 that is covered with open cell foam 38 having a thickness of at least 1/8 inch (0.32 cm) on both the inner 32 and outer 34 surfaces. The foam 38 is also covered on the exposed outer surface with upholstery material 40. Both the foam 38 and upholstery material 40 are well known in the art, with the density of the foam and the particular formulation chosen for the specific application.

An extendable slide 42 is attached to the inner surface 32 of each upholstered side 22, with the slide 42 having an extended length that is equivalent to that of a bed. The extendable slide 42, as shown by itself in FIGURES 11-13, is preferably formed as a metallic three-section track 44 that is capable of telescoping at least double its original length. In lieu of a metal, the slide 42 can be constructed of plastic or a composite material. The main structure is comprised of a pair of back-to-back C-shaped channels 46, with each having a similarly shaped smaller internal channel 48 nested inside with the open portion of the C-shape facing inside. Brackets 50 extend outward on each internal channel 48 and provide attachment to the side 22 and other moving elements on the opposite surface, as illustrated in FIGURES 10-12. While three brackets 50 are depicted in the drawings on each opposed side of the slide 42, any number and configuration may be used with equal ease and dispatch.

During operation, when the slide 42 is manually extended, since only the internal channels 48 are attached to structure, the outer C-shaped channels 46 extend about half of their length from the internal channels 48. This configuration essentially doubles the length of the slide 42 as the internal channels 48 are extendable from the front edge of the seat. As shown in FIGURE 12, a position stop mechanism provisionally maintains the extendible slide 42 in both a retracted position or in an alternate or partially extended position. A leaf spring 52 is attached to the top of the internal channel 48 which interfaces with a rectangular hole 54 in the outer C-shaped channel 46 and snaps into place when

aligned. Further, manual urging in a linear direction on the track 44 will compress the spring 52 and unlock the connection, however sufficient force is necessary to hold the track 44 in place to not compromise the desired position. A spring-loaded detent and a mating bore may be used as an equal substitution or any other similarly acting mechanism.

A stationary bottom 56, as shown in FIGURES 14 and 15, is attached between the inner surface 32 of each upholstered side 22, as shown in FIGURE 8, and juxtaposed with the extendable slides 42, as shown in FIGURE 12. The stationary bottom 56, as shown in FIGURE 14, is preferably made of plywood or some other suitable rigid material and includes a set of feet 58 that are positioned on the underside of the stationary bottom 56 to provide a solid mounting surface for the seat 20, as shown in FIGURES 6 and 7. The feet 58 may be any size or shape and may include metal caps or a smooth parent material on the lower surface of the feet. The stationary bottom 56, as shown in FIGURE 14, is formed in an open-bottom box shape, thereby permitting a large contact surface for mounting onto the sides of the box.

A back panel 60, as shown in FIGURES 14 and 15, is attached at right angles to the stationary bottom 56 and simultaneously joined between each back edge 26, as shown in FIGURE 9, of the upholstered sides 22, as shown in FIGURES 1 and 7, to form a rigid frame for the seat 20. The back panel 60 may be alternatively attached to the stationary bottom 56 as a sub-assembly, as shown in FIGURES 14 and 15, or simply attached separately as desired. The stationary bottom 56 and back panel 60 are preferably formed of a plywood structure 36 that is covered with upholstery material 40.

An upholstered top 62, as shown alone in FIGURE 20, is attached in concert to both top edges 28 of the upholstered sides 22, as shown in FIGURE 9, thus completing the seat structure. The upholstered top 62 also consists preferably of a plywood structure covered with open cell foam 38 having a thickness of at least 1/8 inch (0.32 cm). The foam 38 in turn is covered on an outer surface with upholstery material 40.

A retractable bottom platform 64, as shown in FIGURE 17, includes a vertical front kick plate 66 and casters 68, that are attached, as shown in FIGURE 12, on each

side to the brackets 50 of the extendable slides 42, thereby enabling the movable platform 64 to be manually urged away from the seat 20, as shown in FIGURE 1, to the length of a bed on the slides 42, as shown in FIGURE 12, assisted by the casters 68. The retractable bottom platform 64 is illustrated by itself in FIGURES 16 and 17, and like the proceeding elements, is made of a plywood structure 36, as shown in FIGURE 15, that is covered with upholstery material 40, as shown in FIGURE 17. The kick plate attached to the front of the structure is similarly constructed, except the plywood structure 36 is covered with open cell foam 38 having a thickness of at least 1/8 inch (0.32 cm) between the upholstery material 40.

10 A pair of channel shaped caster brackets 70, as shown in FIGURE 18, are positioned between the underside surface of the bottom platform 64 and the rear surface of the kick plate 66, as shown in FIGURE 16, and are used for reinforcing the interface as well as providing a suitable structural mounting surface for the casters 68, as shown in FIGURE 17. A single channel shaped caster bracket 70, is shown in FIGURE 18 and one of the two casters 68, is shown in FIGURE 19. The caster 68 is preferably the rigid type, as shown, and is bolted onto the channel shaped caster bracket 70 with threaded fasteners, which are well known in the art.

A mattress-seat 72, as shown in FIGURES 22-24, is folded in half and rests on the retractable bottom platform 64, as shown in FIGURE 16, thus providing a cushion for the seat. A bed is created when the retractable bottom platform 64 is manually extended and the mattress-seat 72 is unfolded into a flat position. The mattress-seat 72, as shown in FIGURE 22, consists of a top mattress portion 74 and a bottom mattress portion 76, which are connected together with a fabric hinge 78, as shown in FIGURE 23. The top portion 74 of the mattress-seat 72 is thicker than the bottom portion 76, which is easily observed when folded in half. This configuration is designed to accommodate the height differences between the stationary bottom 56, as shown in FIGURE 14, and the retractable bottom platform 64 when the mattress-seat 72 is unfolded in the bed embodiment, as shown in FIGURE 24.

The mattress-seat 72 is fabricated of an open cell foam slab 80 covered on the seating surface with upholstery material 40, and on a bed surface with mattress material 82. While the top portion 74 and bottom portion 76 may be the same slab material, an option is to split the top portion into a two-section foam slab 84, that are glued together, with an upper section of the slab 84 having a softer density than a lower section, thereby providing a pliant surface when a person sits on the seat 20, as shown in FIGURE 1. Further, the open cell foam slab 80 or even the two-section foam slab 84, as shown in FIGURE 23, may optionally be the so called memory foam type, which has been recently developed and is popular in today's market. It may be realized that the mattress-seat 72, as shown in FIGURE 24, is sandwiched between the kick plate 66, as shown in FIGURE 16, and back panel 60, as shown in FIGURE 15, when the seat is in both a retracted or a fully extended position.

A back cushion 86, shown by itself in FIGURE 21, is removably disposed on the arms 30 of the upholstered sides 22, as shown in FIGURE 9, and interfaces with the upholstered top 62 and the mattress-seat 72, as shown in FIGURE 6, to provide a cushion for lumbar support. The back cushion 86, as shown in FIGURE 8, is made in the same manner as the other elements of the seat 20, including the plywood structure 36, as shown in FIGURES 7 and 8.

The seat 20 is shown in the major portion of the drawings in the chair embodiment 88, as shown in FIGURE 29, as having the width equivalent to a chair which is the most popular configuration. FIGURES 26-31 illustrate various designs for the chair 88, however there are myriads of designs and styles that are applicable to this invention and therefore they are not limited to those depicted in the drawings. An advantage to the chair embodiment 88 is that it may be formed into a lounge 90, as shown in FIGURE 2, without any modification by simply extending the bottom platform 64, as shown in FIGURE 25, to a partially expanded position. The position stop mechanism in the form of the leaf spring 52 intersects with the rectangular hole 54, as shown in FIGURE 13, which retains the position until manually pushed in or out to assume the original seat or the bed position.

A very desirable feature of the invention is that the seat 20 may be configured with a width equivalent to a loveseat 92 or a bed, as shown in FIGURES 4 and 5. By widening the seat 20 to a width equivalent to a couch 94 the invention is suitable for sitting and when extended a full size bed may be formed.

5 If desired, an adjustable headrest 96, as shown in FIGURE 30, may be connected to the upholstered top 62 when the seat 20 is in a sitting position in any of the width embodiments. FIGURE 30 illustrates the headrest 96 in a chair, with adjustments made by methods well known in the art. Alternatively, in lieu of an adjustable headrest 96, the upholstered top 62 can be extended to function as a head rest or head support.

10 It should be noted that when the seat 20 is in the extended bed configuration the back cushion 86, as shown in FIGURE 25, is simply removed and stored elsewhere.

While the invention has been described in complete detail and pictorially shown in the accompanying drawings, it is not to be limited to such details, since many changes and modifications may be made to the invention without departing from the spirit and scope thereof. For example, in lieu of a solid wood or plywood frame, a plastic or a  
15 plurality of burlap webbing can be used. Hence, it is described to cover any and all modifications and forms which may come within the language and scope of the appended claims.

## CLAIMS

1. An upholstered seat that converts into a bed comprising:
- 5 a) a pair of upholstered sides each having a front edge, a back edge, a top edge, an arm, an inner surface and an outer surface,
- b) an extendible slide attached to said inner surface of each upholstered side, having an extended length equivalent to a bed,
- c) a stationary bottom attached between the inner surface of each  
10 upholstered side, juxtaposed with said extendable slides,
- d) a back panel attached to said stationary bottom and joined between each back edge of the upholstered sides,
- e) an upholstered top attached in concert to both top edges of the upholstered sides,
- 15 f) a retractable bottom platform, with a vertical front kick plate and casters, attached on each side to said extendable slides such that the platform may be manually urged away from the seat on the slides and casters to the length of a bed,
- g) a mattress-seat folded in half, resting on said retractable bottom platform to provide a cushion for the seat, further a bed is created with said retractable  
20 bottom platform manually extended and the mattress-seat unfolded into a flat position on the stationary bottom, and
- h) a back cushion removably disposed on the arms of said upholstered sides that interfaces with said upholstered top and said mattress-seat to provide a cushion for lumbar support.
- 25
2. The upholstered seat that converts into a bed as recited in claim 1 wherein said upholstered sides further comprising a plywood structure covered with open cell foam having a thickness of at least 1/8 inch (0.32 cm), and said foam covered on an outer surface with upholstery material.

3. The upholstered seat that converts into a bed as recited in claim 1 wherein said extendable slide further comprising a metallic, three-section track telescoping at least double its original length.

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4. The upholstered seat that converts into a bed as recited in claim 1 wherein said extendable slide further comprising at least one position stop that maintains the attached bottom platform in a retracted or alternate position.

10

5. The upholstered seat that converts into a bed as recited in claim 1 wherein said stationary bottom further comprising a set of feet positioned on the underside of said stationary bottom to provide a solid mounting surface for the seat.

6. The upholstered seat that converts into a bed as recited in claim 1 wherein said back is attached to a rear portion of the stationary bottom and sides at right angles and jointly to the sides for retaining the mattress-seat between the kick plate and back when the seat is in both a retracted or an extended position.

7. The upholstered seat that converts into a bed as recited in claim 1 wherein said upholstered back further comprising a plywood structure covered with upholstery material, and said upholstered top further comprising a plywood structure covered with open cell foam having a thickness of at least 1/8 inch (0.32 cm), and said foam covered on an outer surface with upholstery material.

8. The upholstered seat that converts into a bed as recited in claim 1 wherein said retractable bottom platform further comprising a plywood structure covered with upholstery material, and said kick plate further comprising a plywood structure covered with open cell foam having a thickness of at least 1/8 inch (0.32 cm), and said foam covered on an outer surface with upholstery material.

9. The upholstered seat that converts into a bed as recited in claim 1 wherein said retractable bottom platform further comprising a pair of channel shaped caster brackets positioned between an underside surface of said bottom platform and a rear surface of said kick plate for reinforcing the interface therebetween and providing a suitable structural mounting surface for said casters.

10. The upholstered seat that converts into a bed as recited in claim 9 wherein each caster attached to said channel shaped bracket further comprising a rigid type caster bolted onto said channel shaped bracket with threaded fasteners.

11. The upholstered seat that converts into a bed as recited in claim 1 wherein said mattress-seat further comprising a top mattress portion and a bottom mattress portion connected together with a fabric hinge, with said top portion thicker than said bottom portion to accommodate height differences between the stationary bottom and the retractable bottom platform when unfolded in a bed embodiment.

12. The upholstered seat that converts into a bed as recited in claim 11 wherein said mattress-seat further comprising an open cell foam slab covered on a seating surface with upholstery material, and on a bed surface with mattress material, wherein said mattress top portion having a two-section foam slab with an upper section of the slab having a softer density than a lower section of the slab for providing a pliant surface when sitting thereupon.

13. The upholstered seat that converts into a bed as recited in claim 1 wherein said back cushion further comprising a plywood structure covered with open cell foam having a thickness of at least 1/8 inch (0.32 cm), and said foam covered on an outer surface with upholstery material.

14. The upholstered seat that converts into a bed as recited in claim 1 wherein said seat further comprising a width equivalent to a chair, therefore forming a chair or when extended, a bed.

5 15. The upholstered seat that converts into a bed as recited in claim 14 wherein said chair is formed into a lounge when said bottom platform is extended to a partially expanded position.

16. The upholstered seat that converts into a bed as recited in claim 1 wherein said  
10 seat further comprising a width equivalent to a loveseat, therefore forming a loveseat or when extended, a bed.

17. The upholstered seat that converts into a bed as recited in claim 1 wherein said  
15 seat further comprising a width equivalent to a couch, therefore forming a couch when extended, a full size bed.

18. The upholstered seat that converts into a bed as recited in claim 1 further  
20 comprising an adjustable head rest connected to said upholstered top when the seat is in a sitting position.

19. A process for producing an upholstered seat capable of converting into a bed  
comprising the steps of:

- a) forming a pair of upholstered sides
- b) attaching an extendable slide to each upholstered side,
- 25 c) attaching a stationary bottom between each upholstered side beneath said extendable slides,
- d) attaching a back panel jointly upon said stationary bottom and between each upholstered side,
- e) attaching an upholstered top onto the upholstered sides,

f) connecting a retractable bottom platform to said extendable slides such that the platform may be manually urged away from the seat the length of a bed,

g) placing a mattress-seat folded in half on said bottom platform to provide a cushion for the seat, further a bed is created with the bottom platform manually extended  
5 and the mattress-seat unfolded into a flat position, and

h) placing back cushion on said upholstered sides interfacing with said upholstered top and said mattress-seat to provide a cushion for lumbar support.

20. An upholstered seat that converts into a bed comprising a pair of upholstered  
10 sides, with each having an extendable slide, a stationary bottom including a back panel, and an upholstered top attached to said sides, a retractable bottom platform attached to said extendable slides such that the platform may be manually urged away from the seat to the length of a bed, a mattress-seat folded in half, resting on said bottom platform to provide a cushion for the seat, and a bed is created with said bottom platform manually  
15 extended and the mattress-seat unfolded into a flat position, further a back cushion removably disposed on said upholstered sides to provide a cushion for lumbar support.

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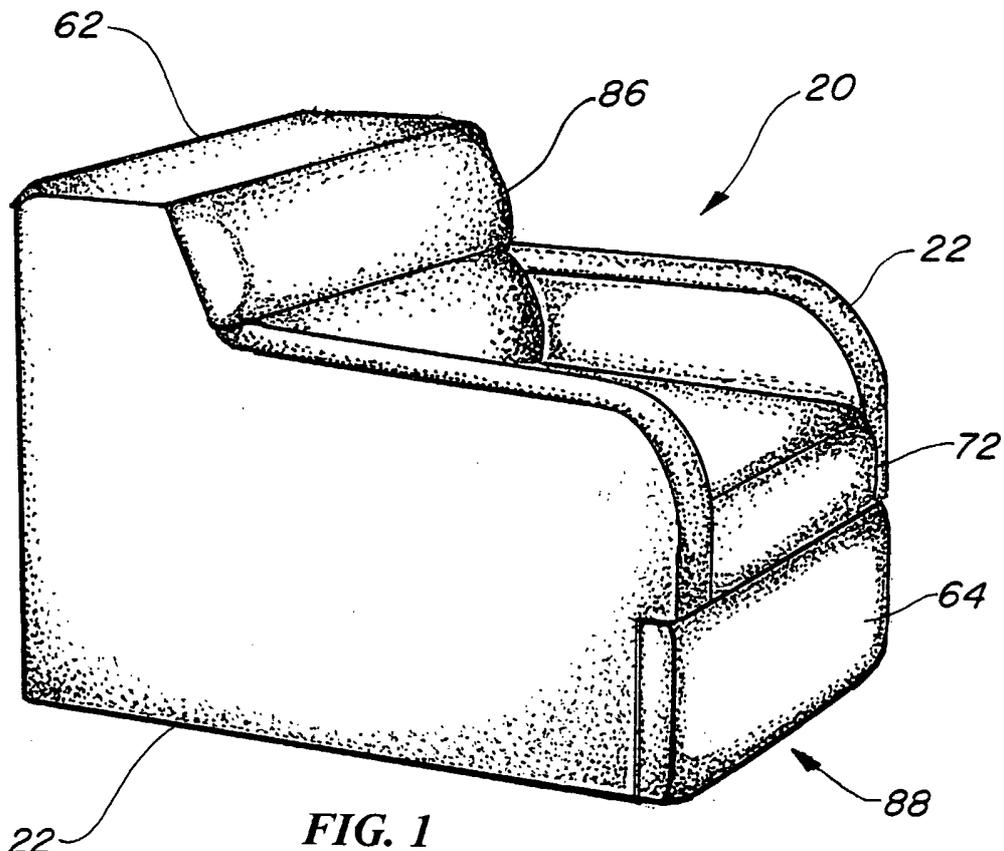


FIG. 1

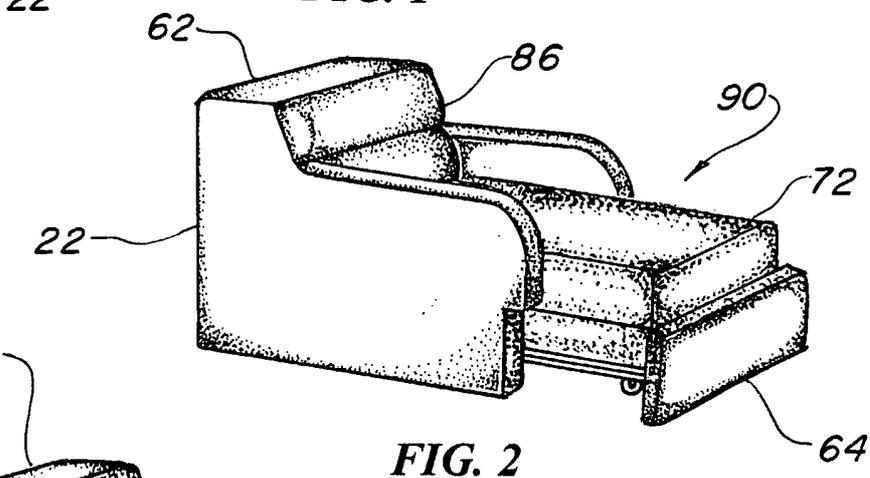


FIG. 2

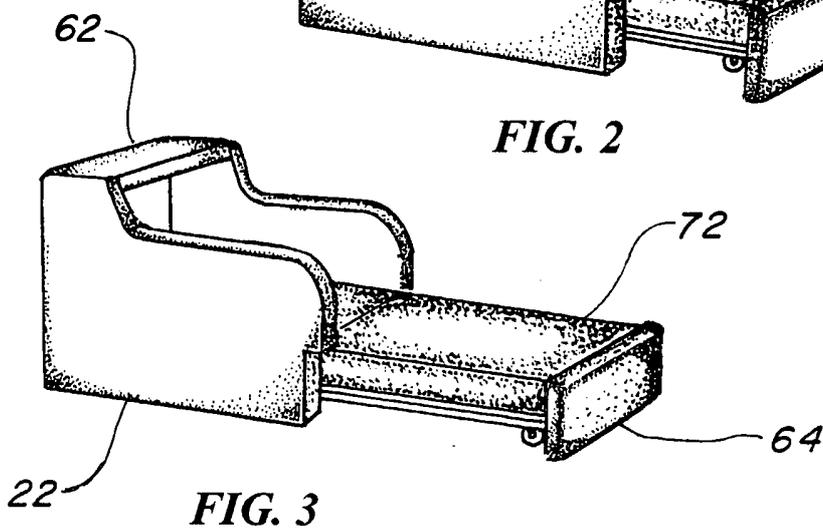


FIG. 3

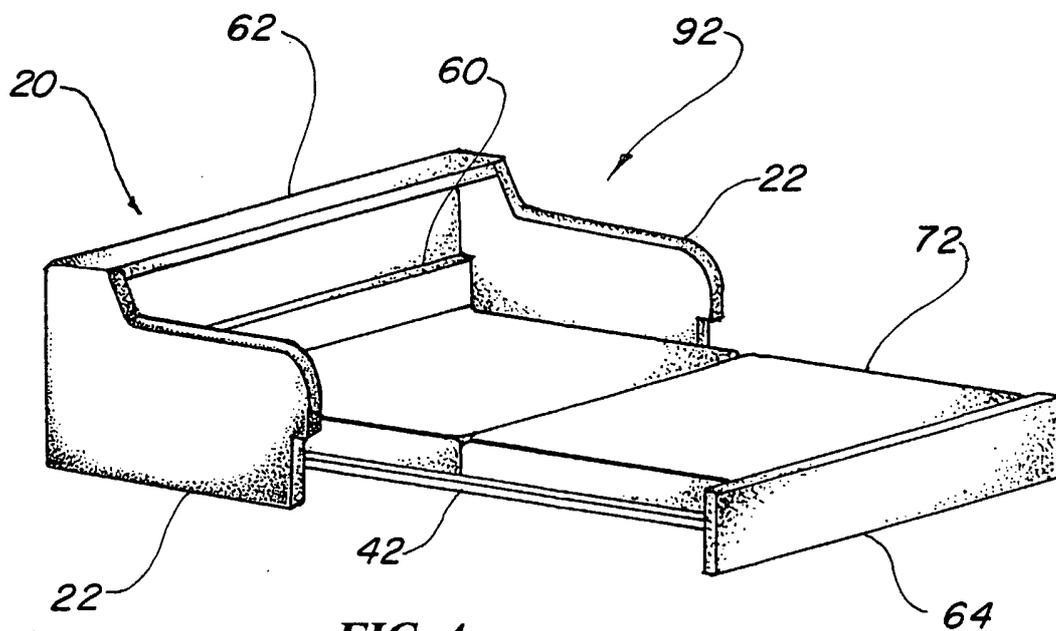


FIG. 4

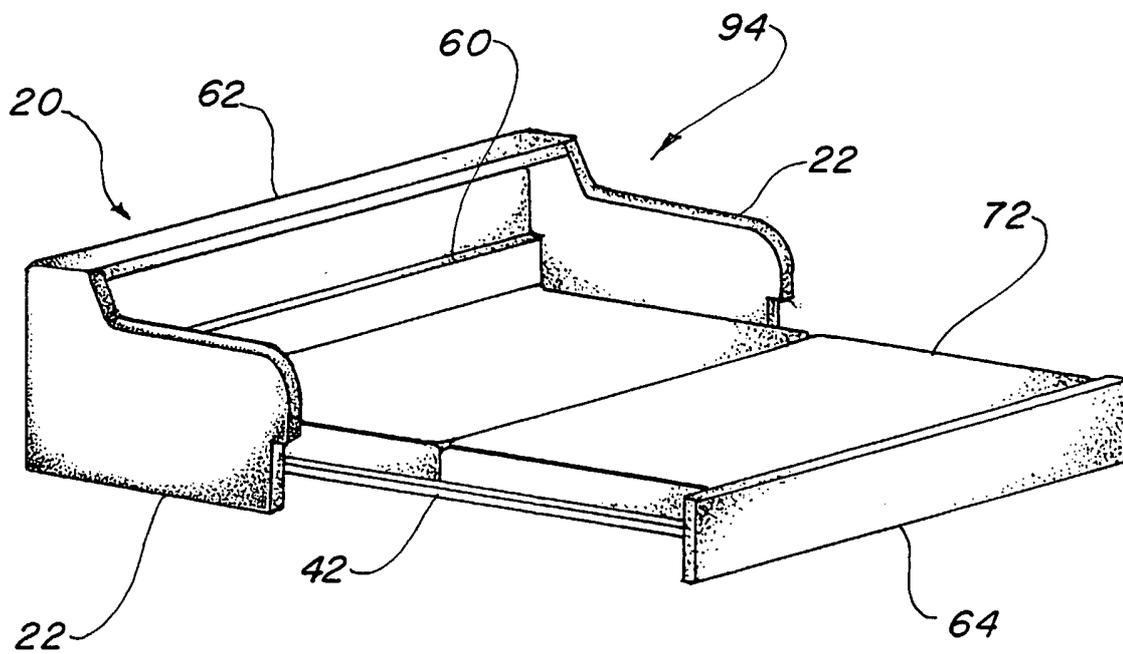


FIG. 5

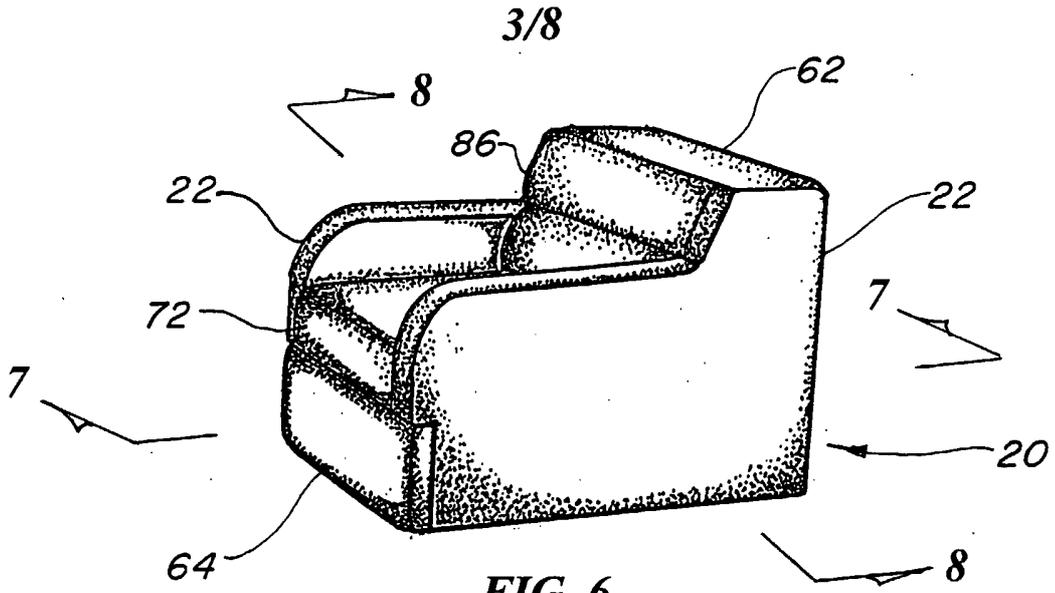


FIG. 6

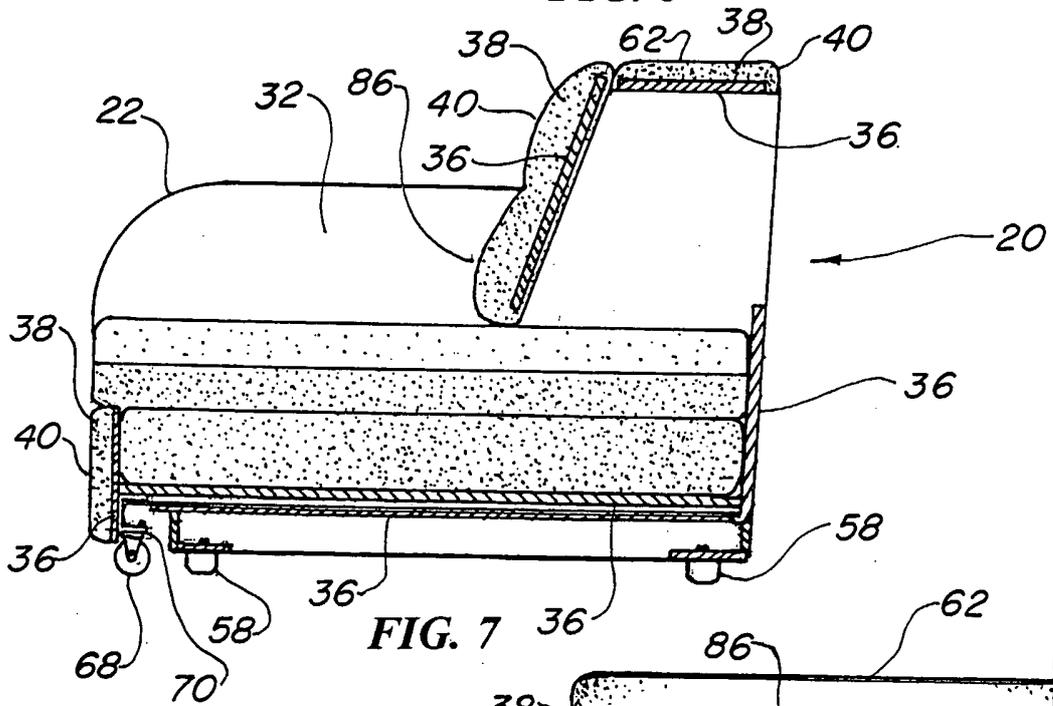


FIG. 7

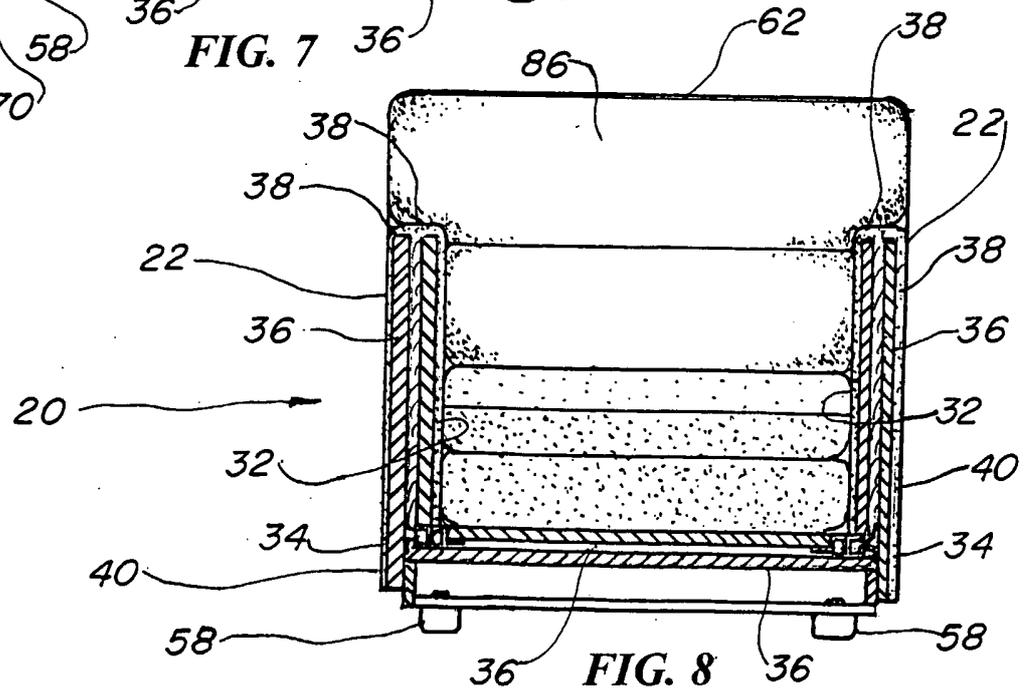


FIG. 8

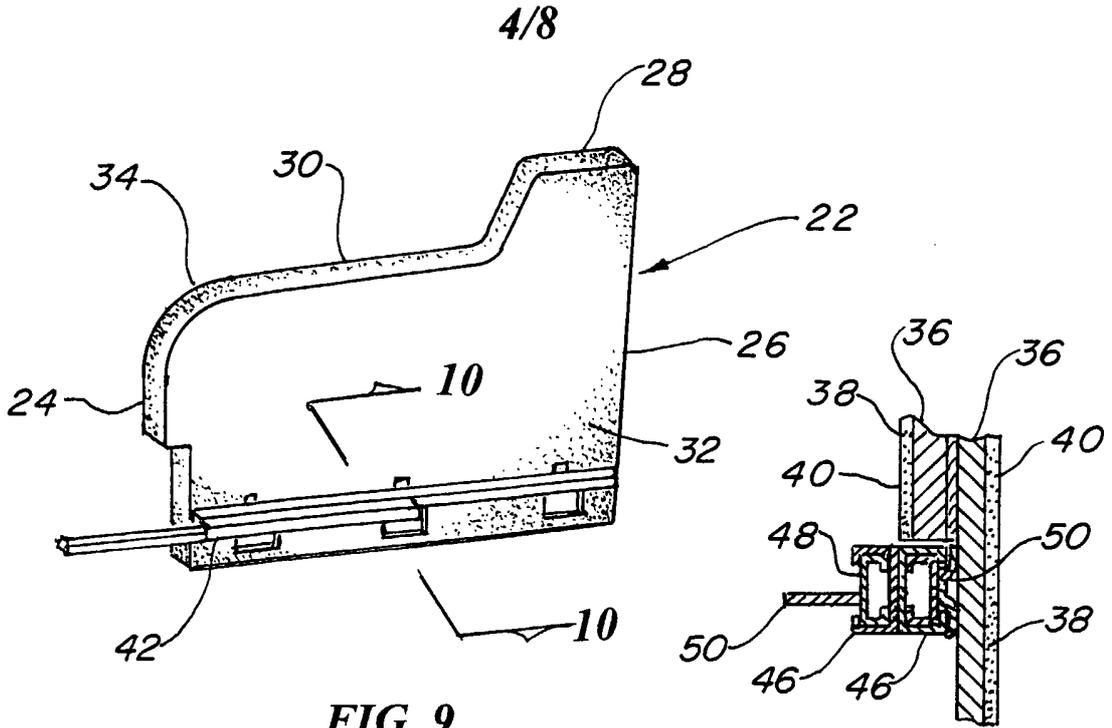


FIG. 9

FIG. 10

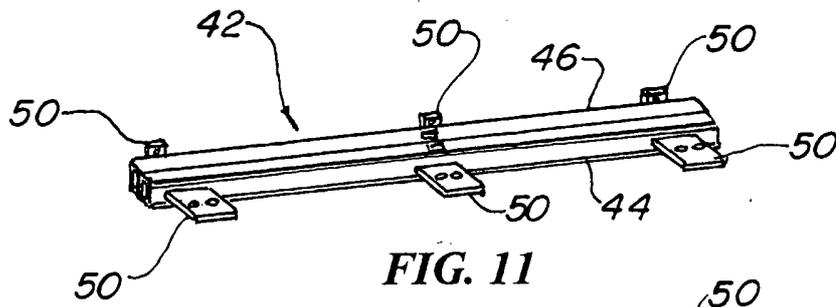


FIG. 11

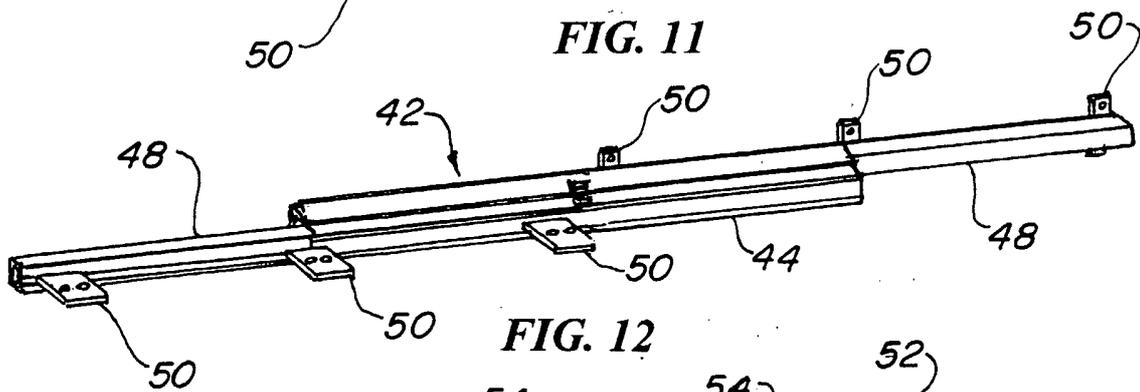


FIG. 12

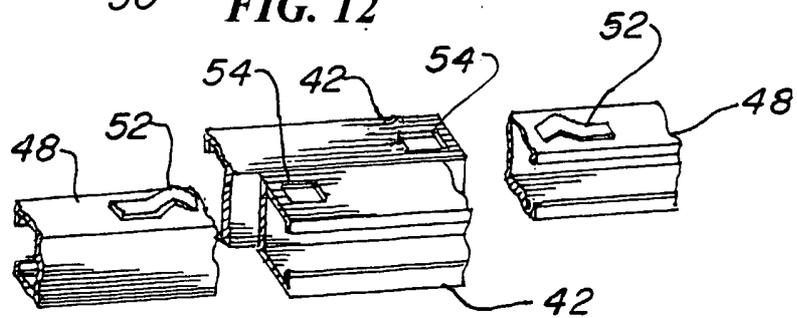


FIG. 13

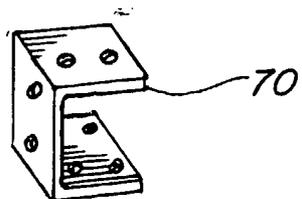
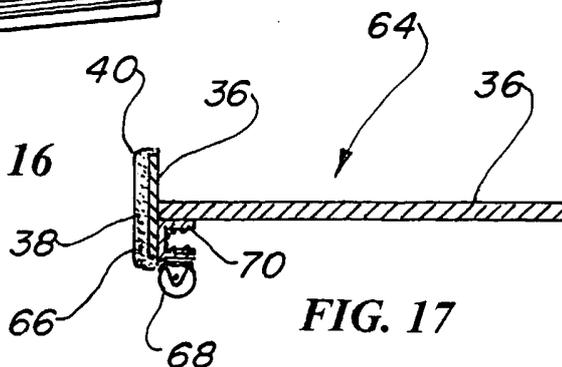
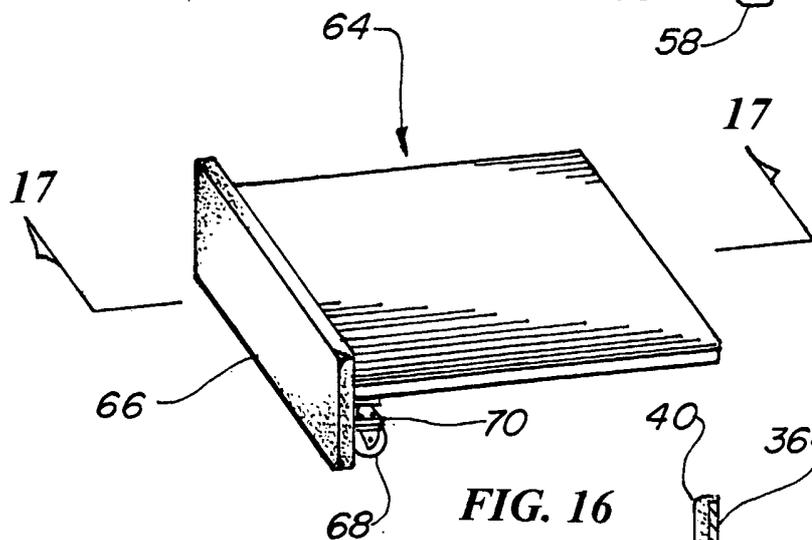
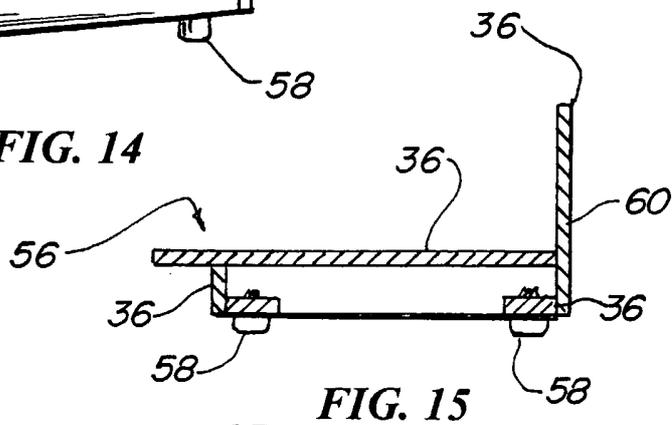
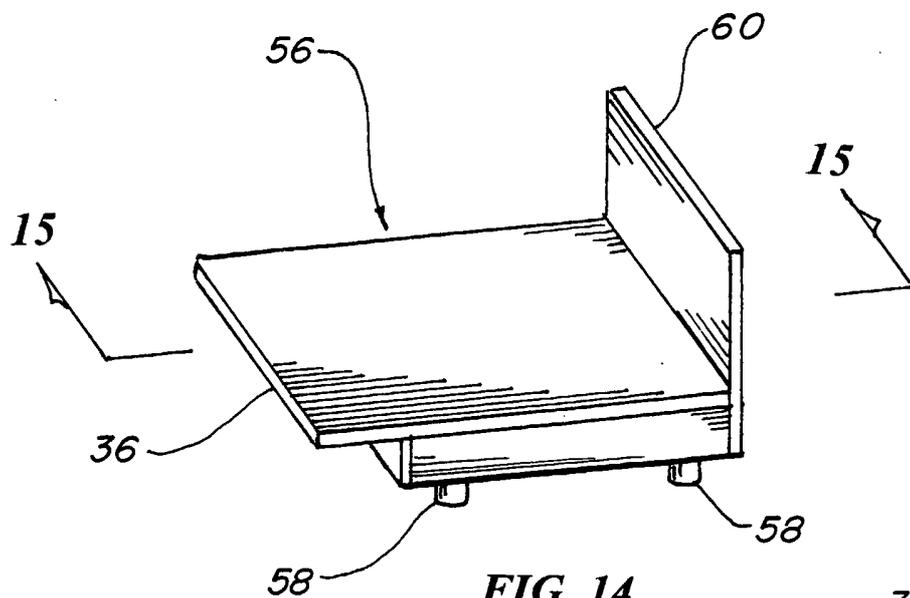


FIG. 18

FIG. 19

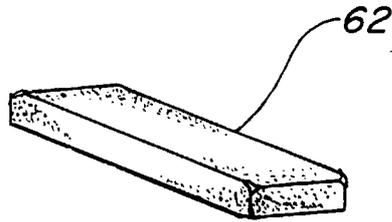


FIG. 20

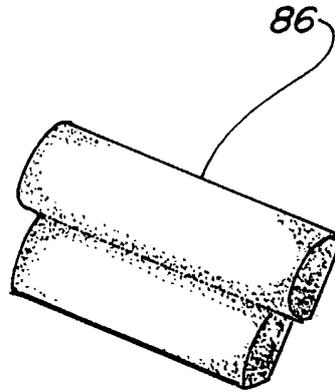


FIG. 21

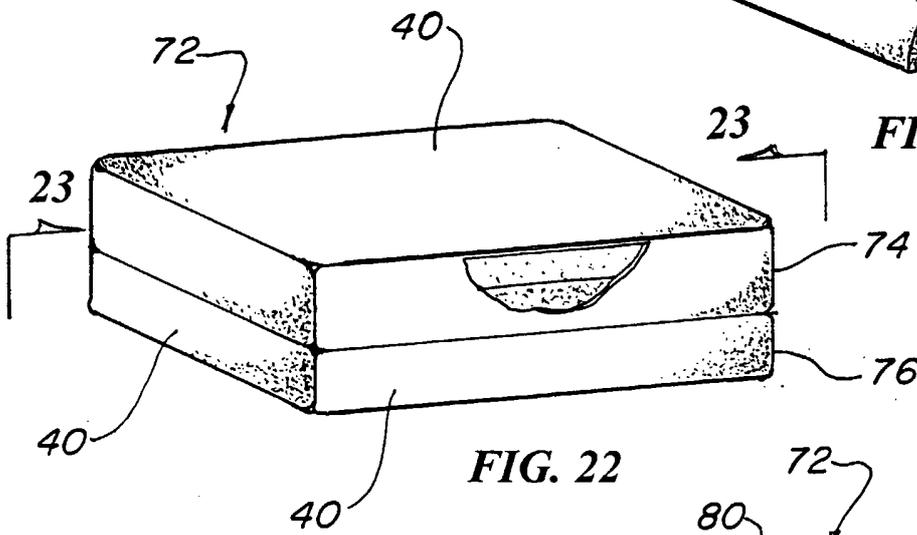


FIG. 22

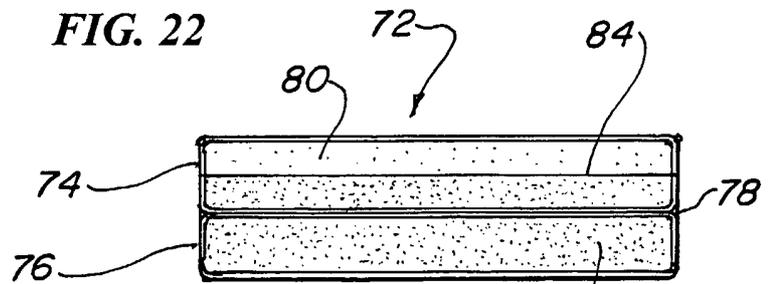


FIG. 23

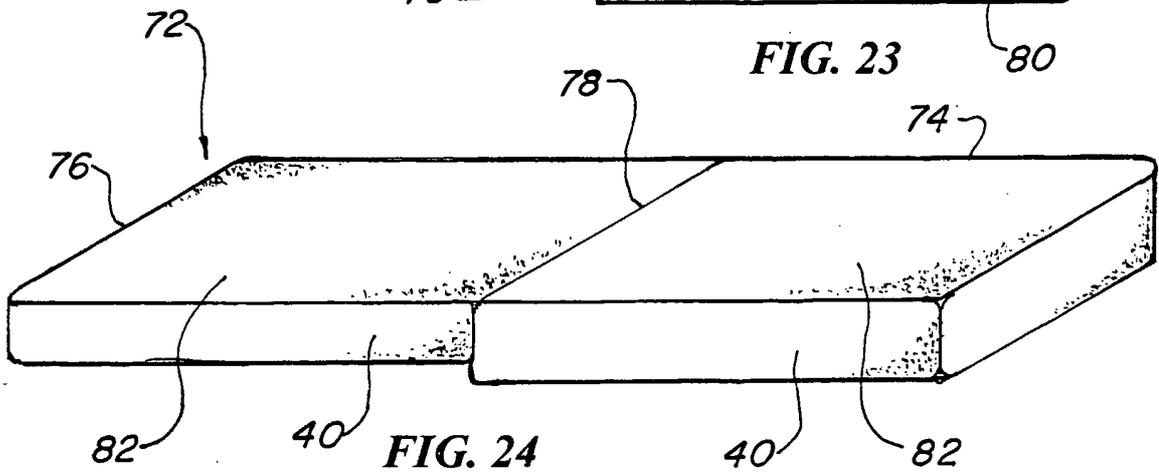


FIG. 24

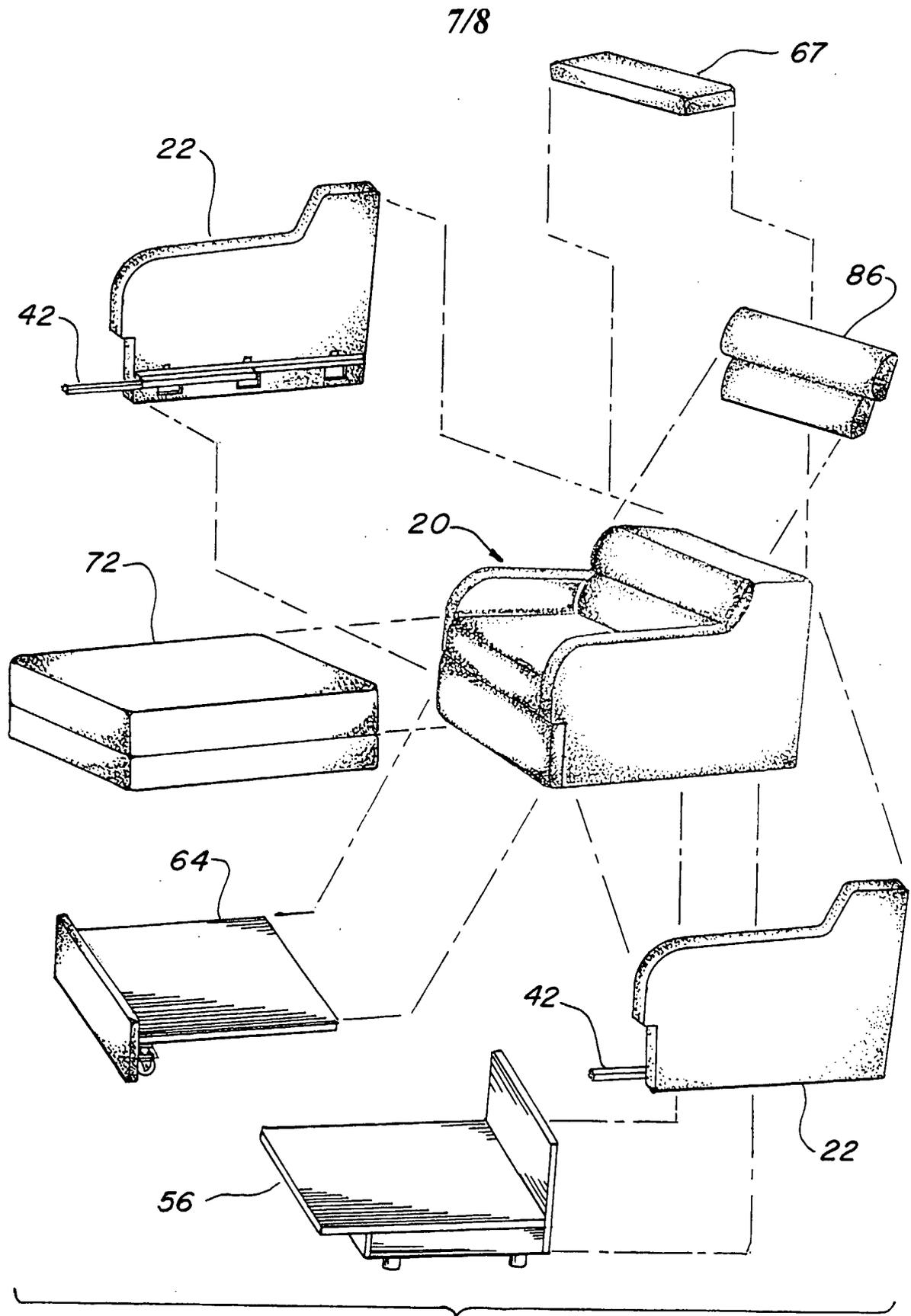
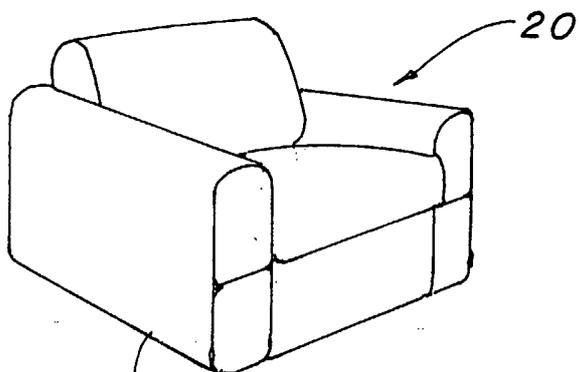
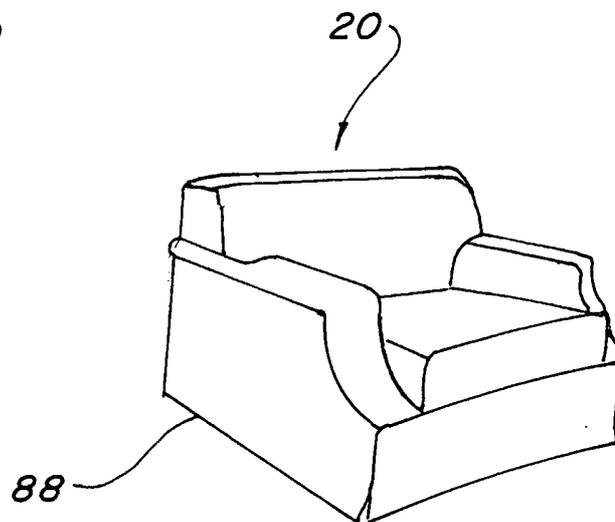


FIG. 25

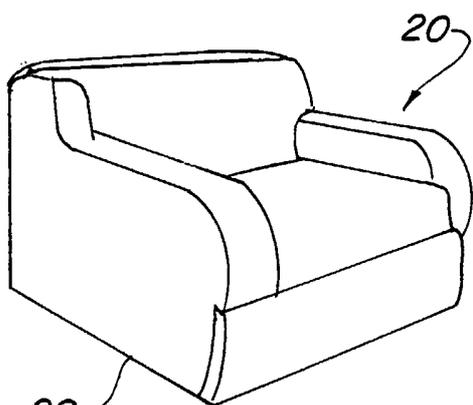


88 FIG. 26



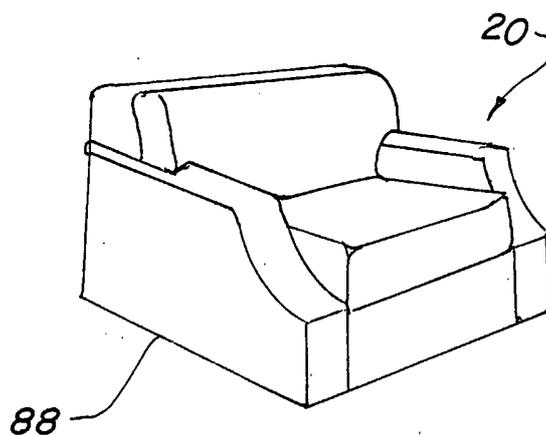
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FIG. 27



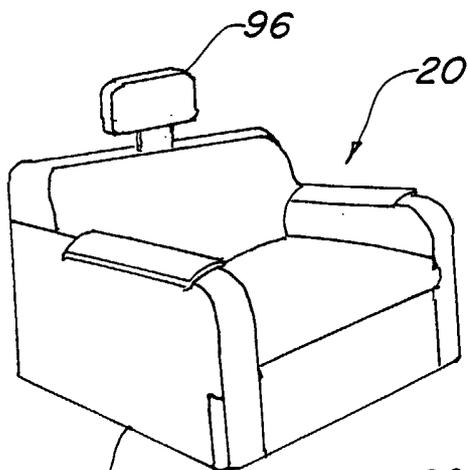
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FIG. 28



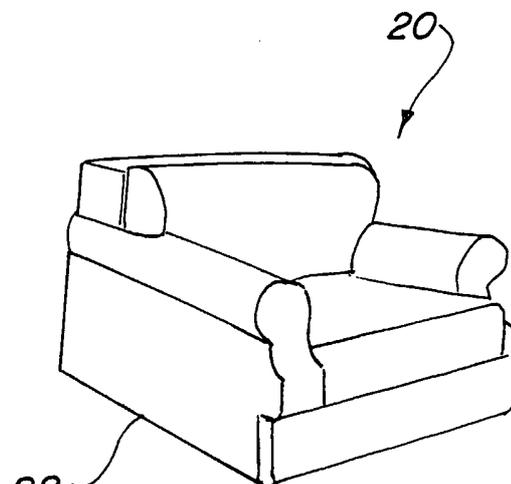
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FIG. 29



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FIG. 30



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FIG. 31

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/24811

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(7) : A47C 17/13 US CL : 5/14, 18.1; 29/428 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 5/12.1, 14, 17, 18.1, 21; 29/91, 91.1, 428 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched NONE Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) NONE		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 755,089 A (WERSEL, Jr.) 22 March 1904 (22.03.1904), Figs. 1 and 2.	1-20
X	US 5,038,421 A (HARRIS) 13 August 1991 (13.08.1991), Figs. 1-3, 6, and 7.	1-30
Y	US 5,195,193 A (MAGISTRETTI) 23 March 1993 (23.03.1993), Figs. 1-4.	1-30
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search 21 December 2005 (21.12.2005)		Date of mailing of the international search report <b>18 JAN 2006</b>
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer M. Safavi <i>U Hod g</i> Telephone No. (571) 272-3600