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(11) **EP 0 995 382 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**26.04.2000 Bulletin 2000/17**

(51) Int. Cl.<sup>7</sup>: **A47D 13/10, A47D 9/02**

(21) Application number: **99307435.0**

(22) Date of filing: **21.09.1999**

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

(30) Priority: **20.10.1998 US 175901**

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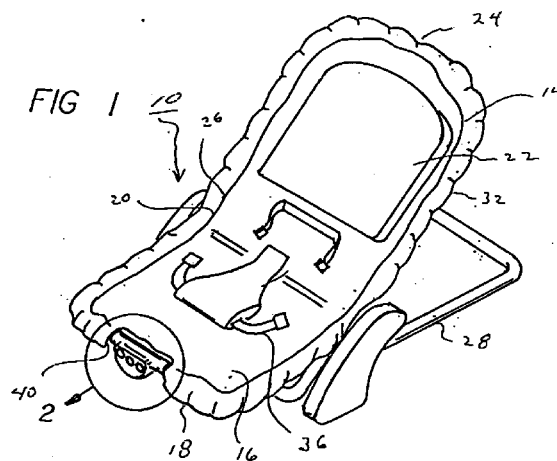
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(54) **Vibrating bouncer housing system**

(57) An infant bouncer seat system with an automatic vibrator to effect the soothing vibrating of the bouncer seat for comfort and entertainment including a tubular frame which defines the periphery of a generally horizontal base section with a front end and a back end and a generally vertical back section with an upper end and a lower end adjacent to the back of the base section and having downwardly extending legs for supporting the base section and the back section. Also included is a fabric cover which encompasses the base section and the back section for the retention of a child on the upper surface thereof. Additionally included is a vibrator housing positioned on the exposed portion of the frame. The housing has a flat upper part with a door for the receipt of a battery. The housing also has an enlarged lower part with a hollow housing therewithin for supporting the battery. A support aperture is formed laterally from edge to edge of the housing with cut-outs in the upper part and the lower housing part in mating relationship for receiving the frame. Aligned attachment apertures are located in the upper and lower housing parts adjacent to the front edge thereof for receipt of a bolt therethrough and through the apertures of the frame with a recess at the lower extent for receiving a nut matable with the bolt. Supplemental apertures extend upwardly from the lower housing part. Also included is a surface on the front portion of the lower housing part with a plurality of buttons having indicia thereon indicative of no power, low power and high power. Lastly included is a vibrator located within the housing electrically coupled with respect to the buttons and the battery whereby the depression of the first button will terminate power to the

vibrator, depression of the second button will generate low power to the vibrator for low vibrations of the frame and seat and the depression of the third button will generate high power to the vibrator for rapid vibration of the frame and seat.



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## Description

### BACKGROUND OF THE INVENTION

#### Field of the Invention

**[0001]** The present invention relates to an infant bouncer seat system with an automatic vibrator and more particularly pertains to Effecting the soothing vibrating of an infant bouncer seat for comfort and entertainment.

#### Description of the Prior Art

**[0002]** The use of infant seats of various designs and configurations is known in the prior art. More specifically, infant seats of various designs and configurations heretofore devised and utilized for the purpose of imparting motion to seats for infants through known methods and apparatuses are known to consist basically of familiar, expected, and obvious structural configurations, notwithstanding the myriad of designs encompassed by the crowded prior art which has been developed for the fulfillment of countless objectives and requirements.

**[0003]** By way of example, United States Patent Number 5,507,564 to Huang discloses a Baby Deck Chair Having An Adjustable Back. United States Patent Number 5,370,441 to Shi-wen Chuang discloses a Baby Chair for Wheeled Cycles. United States Patent Number 5,575,530 assigned to Gerry Baby Products Company discloses an Infant Bouncer. United States Patent Number 5,509,721 to Huang discloses a Foldable Recliner Structure for an Infant. United States Patent Number 5,411,315 assigned to Children On the Go, Inc. discloses an Infant Bounce Chair. United States Patent Number 5,308,143 assigned to Joanna A. Nichols discloses a Safety Rocker for an Infant Seat. United States Patent Number 4,553,786 assigned to William Lockett, III discloses an Infant Seating and Lounge Unit. United States Patent Number 4,141,095 to Adachi discloses an Electronic Cradle. Lastly, United States Patent Number 5,460,430 assigned to Hasbro, Inc. discloses a Seat for Infant.

**[0004]** While these devices fulfill their respective, particular objectives and requirements, the aforementioned patents do not describe infant bouncer seat systems with an automatic vibrator as disclosed herein.

**[0005]** In this respect, the infant bouncer seat system with an automatic vibrator according to the present invention substantially departs from the conventional concepts and designs of the prior art, and in doing so provides an apparatus primarily developed for the purpose of effecting the soothing vibrating of an infant bouncer seat for comfort and entertainment.

**[0006]** Therefore, it can be appreciated that there exists a continuing need for a new and improved infant bouncer seat system with an automatic vibrator which

can be used for effecting the soothing vibrating of an infant bouncer seat for comfort and entertainment. In this regard, the present invention substantially fulfills this need.

### SUMMARY OF THE INVENTION

**[0007]** In view of the foregoing disadvantages inherent in the known types of infant seats of various designs and configurations now present in the prior art, the present invention provides an improved infant bouncer seat system with an automatic vibrator. As such, the general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new and improved infant bouncer seat system with an automatic vibrator and method which has all the advantages of the prior art and none of the disadvantages.

**[0008]** To attain this, the present invention essentially comprises a new and improved infant bouncer seat system with an automatic vibrator to effect the soothing vibrating of the bouncer seat and infant therein for comfort and entertainment. The system includes a tubular frame defining the periphery of a generally horizontal base section. The base section includes a front end and a back end and a generally vertical back section with an upper end and a lower end adjacent to the back of the base section and having downwardly extending legs for supporting the base section and the back section. Also included in the system is a fabric cover encompassing the base section and the back section for the retention of a child on the upper surface thereof. Further included in the system is a belt assembly coupled with respect to the fabric cover on the upper surface thereof for safely retaining the child upon the base section and back section. The system also includes a recess formed in the fabric adjacent to the front of the base section to expose the frame thereadjacent. The recess constitutes about the central third of the length of the frame at the front of the base section with spaced vertical apertures through the frame thereat. A vibrator housing is positioned on the exposed portion of the frame. The housing has a flat upper part with a door for the receipt of a single D-size battery. The housing also has an enlarged lower part with a hollow housing therewithin. A horizontal support aperture is formed laterally from edge to edge of the housing with semicircular cut-outs in the upper part and the lower housing part in mating relationship for receiving the frame therebetween. Aligned vertical attachment apertures are located in the upper and lower housing parts adjacent to the front edge thereof for receipt of a bolt therethrough and through the vertical apertures of the frame with a hexagonal recess at the lower extent for receiving a hexagonal nut matable with each bolt. The system also includes supplemental apertures extending upwardly from the lower housing part adjacent to the rear with threads in the upper housing part for the coupling between the upper and lower housing parts by a

screw. A planar generally vertical surface is on the front portion of the lower housing part with three buttons having indicia thereon indicative of no power, low power and high power. Lastly included as a part of the system is a rotatable vibrator which is located within the housing electrically coupled with respect to the buttons and the battery whereby the depression of the first button will terminate power to the vibrator, depression of the second button will generate low power to the vibrator for low vibrations of the frame and seat and the depression of the third button will generate high power to the vibrator for rapid vibration of the frame and seat.

**[0009]** There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood and in order that the present contribution to the art may be better appreciated. There are, of course, additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto.

**[0010]** In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of descriptions and should not be regarded as limiting.

**[0011]** As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

**[0012]** It is therefore an object of the present invention to provide a new and improved infant bouncer seat system with an automatic vibrator which has all of the advantages of the prior art infant seats of various designs and configurations and none of the disadvantages.

**[0013]** It is another object of the present invention to provide a new and improved infant bouncer seat system with an automatic vibrator which may be easily and efficiently manufactured and marketed.

**[0014]** It is further object of the present invention to provide a new and improved infant bouncer seat system with an automatic vibrator which is of durable and reliable constructions.

**[0015]** An even further object of the present invention is to provide a new and improved infant bouncer seat system with an automatic vibrator which is susceptible of a low cost of manufacture with regard to both

materials and labor, and which accordingly is then susceptible of low prices of sale to the consuming public, thereby making such infant bouncer seat system with an automatic vibrator economically available to the buying public.

**[0016]** Even still another object of the present invention is to provide an infant bouncer seat system with an automatic vibrator for effecting the soothing vibrating of an infant bouncer seat for comfort and entertainment.

**[0017]** Lastly, it is an object of the present invention to provide a new and improved An infant bouncer seat system with an automatic vibrator to effect the soothing vibrating of the bouncer seat for comfort and entertainment including a tubular frame which defines the periphery of a generally horizontal base section with a front end and a back end and a generally vertical back section with an upper end and a lower end adjacent to the back of the base section and having downwardly extending legs for supporting the base section and the back section. Also included is a fabric cover which encompasses the base section and the back section for the retention of a child on the upper surface thereof. Additionally included is a vibrator housing positioned on the exposed portion of the frame. The housing has a flat upper part with a door for the receipt of a battery. The housing also has an enlarged lower part with a hollow housing therewithin for supporting the battery. A support aperture is formed laterally from edge to edge of the housing with cut-outs in the upper part and the lower housing part in mating relationship for receiving the frame. Aligned attachment apertures are located in the upper and lower housing parts adjacent to the front edge thereof for receipt of a bolt therethrough and through the apertures of the frame with a recess at the lower extent for receiving a nut matable with the bolt. Supplemental apertures extend upwardly from the lower housing part. Also included is a surface on the front portion of the lower housing part with a plurality of buttons having indicia thereon indicative of no power, low power and high power. Lastly included is a vibrator located within the housing electrically coupled with respect to the buttons and the battery whereby the depression of the first button will terminate power to the vibrator, depression of the second button will generate low power to the vibrator for low vibrations of the frame and seat and the depression of the third button will generate high power to the vibrator for rapid vibration of the frame and seat.

**[0018]** These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated preferred embodiments of the

invention.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0019]** The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

Figure 1 is a perspective view of the preferred embodiment of the Infant bouncer seat system with an automatic vibrator constructed in accordance with the principles of the present invention.

Figure 2 is an enlarged perspective view of the vibrator taken at circle 2 of Figure 1.

Figure 3 is a top elevational view of the vibrator shown in Figure 2.

Figure 4 is a front elevational view of the vibrator shown in the prior Figures.

Figure 5 is a side elevational view taken along line 5-5 of Figure 4.

Figure 6 is a cross-sectional view taken along line 6-6 of Figure 5.

**[0020]** The same reference numerals refer to the same parts through the various Figures.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

**[0021]** With reference now to the drawings, and in particular to Figure 1 thereof, the preferred embodiment of the new and improved Infant bouncer seat system with an automatic vibrator embodying the principles and concepts of the present invention and generally designated by the reference numeral 10 will be described.

**[0022]** The present invention, the infant bouncer seat system with an automatic vibrator 10 is comprised of a plurality of components. Such components in their broadest context include a frame, a cover, a belt assembly and a vibrator housing. Such components are individually configured and correlated with respect to each other so as to attain the desired objective.

**[0023]** The new and improved infant bouncer seat system 10 has an automatic vibrator to effect the soothing vibrating of the bouncer seat and infant therein for comfort and entertainment. The system comprises, in combination, a tubular frame 14 which defines the periphery of a generally horizontal base section 16. The base section has a front end 18 and a back end 20. The seat frame also includes a generally vertical back section 22. The back section has an upper end 24 and a lower end 26 adjacent to the back of the base section. The frame also has downwardly extending legs 28 for supporting the base section and the back section.

**[0024]** The system further includes a fabric cover 32 which encompasses the base section and the back section. Together the cover and frame function for the

retention of a child on the upper surface of the cover.

**[0025]** The system further includes a belt assembly 36 which is coupled with respect to the fabric cover. The belt assembly is located on the upper surface of the cover for safely retaining the child upon the base section and back section of the seat.

**[0026]** A recess 40 is formed in the fabric adjacent to the front of the base section to expose the frame thereadjacent. The recess constitutes about the central third of the length of the frame at the front of the base section. Spaced vertical apertures 42 extend through the frame at this exposed region of the frame.

**[0027]** The system further includes a vibrator housing 46. Such housing is positioned on the exposed portion of the frame. The housing has a generally flat upper part 48 with a door 50 for the receipt of a single D-size battery 52. The housing also has an enlarged lower part 54 with a hollow housing 56 therewithin.

**[0028]** A horizontal support aperture 60 is formed in the system laterally from edge to edge of the housing. Such aperture includes semicircular cut-outs in the upper part and the lower housing part. The cutouts are in mating relationship for receiving the frame therebetween.

**[0029]** Aligned vertical attachment apertures 64, 66 are located in the upper and lower housing parts adjacent to the front edge thereof for receipt of a bolt 68 therethrough and through the vertical apertures of the frame. A hexagonal recess is formed at the lower extent of the aperture 66 for receiving a hexagonal nut matable with each bolt.

**[0030]** Supplemental apertures 76 in the system extend upwardly from the lower housing part adjacent to the rear with threads 78 in the upper housing part for the coupling between the upper and lower housing parts by a screw 80.

**[0031]** Additionally provided in the system is a planar generally vertical surface 84 on the front portion of the lower housing part with three buttons 86, 88, 90 having indicia thereon indicative of no power, low power and high power.

**[0032]** Lastly provided in the system is a rotatable vibrator 94. The vibrator is located within the housing and is electrically coupled with respect to the buttons and the battery. In this manner, the depression of the first button 86 will terminate power to the vibrator. Depression of the second button 88 will generate low power to the vibrator for low vibrations of the frame and seat. Depression of the third button 90 will generate high power to the vibrator for rapid vibration of the frame and seat.

**[0033]** The system of the present invention as described hereinabove further comprises a two-piece clamshell housing that contains a two-speed vibrating motor, 1 D size battery, a three button switch assembly and terminals. The housing mounts to the bouncer frame, tubing with two nuts and bolts directly through holes in the tubing clamping the two-piece housing

together for improved vibration transmission throughout  
 bounce frame. The contoured shape of the housing  
 and method of how it is attached to the frame for better  
 vibration carried through tubing makes the present  
 invention superior over the prior art.

**[0034]** As to the manner of usage and operation of  
 the present invention, the same should be apparent  
 from the above description. Accordingly, no further dis-  
 cussion relating to the manner of usage and operation  
 will be provided.

**[0035]** With respect to the above description then, it  
 is to be realized that the optimum dimensional relation-  
 ships for the parts of the invention, to include variations  
 in size, materials, shape, form, function and manner of  
 operation, assembly and use, are deemed readily  
 apparent and obvious to one skilled in the art, and all  
 equivalent relationships to those illustrated in the draw-  
 ings and described in the specification are intended to  
 be encompassed by the present invention.

**[0036]** Therefore, the foregoing is considered as  
 illustrative only of the principles of the invention. Fur-  
 ther, since numerous modifications and changes will  
 readily occur to those skilled in the art, it is not desired  
 to limit the invention to the exact construction and oper-  
 ation shown and described, and accordingly, all suitable  
 modifications and equivalents may be resorted to, fall-  
 ing within the scope of the invention.

## Claims

1. A new and improved infant bouncer seat system  
 with an automatic vibrator to effect the soothing  
 vibrating of the bouncer seat and infant therein for  
 comfort and entertainment comprising, in combina-  
 tion:

a tubular frame defining the periphery of a gen-  
 erally horizontal base section with a front end  
 and a back end and a generally vertical back  
 section with an upper end and a lower end  
 adjacent to the back of the base section and  
 having downwardly extending legs for support-  
 ing the base section and the back section;  
 a fabric cover encompassing the base section  
 and the back section for the retention of a child  
 on the upper surface thereof;  
 a belt assembly coupled with respect to the fab-  
 ric cover on the upper surface thereof for safely  
 retaining the child upon the base section and  
 back section;  
 a recess formed in the fabric adjacent to the  
 front of the base section to expose the frame  
 thereadjacent, the recess constituting about  
 the central third of the length of the frame at the  
 front of the base section with spaced vertical  
 apertures through the frame thereat;  
 a vibrator housing positioned on the exposed  
 portion of the frame, the housing having a flat

upper part with a door for the receipt of a single  
 D-size battery, the housing also having an  
 enlarged lower part with a hollow housing  
 therewithin;

a horizontal support aperture formed laterally  
 from edge to edge of the housing with semicir-  
 cular cut-outs in the upper part and the lower  
 housing part in mating relationship for receiving  
 the frame therebetween;

aligned vertical attachment apertures in the  
 upper and lower housing parts adjacent to the  
 front edge thereof for receipt of a bolt there-  
 through and through the vertical apertures of  
 the frame with a hexagonal recess at the lower  
 extent for receiving a hexagonal nut matable  
 with each bolt;

supplemental apertures extending upwardly  
 from the lower housing part adjacent to the rear  
 with threads in the upper housing part for the  
 coupling between the upper and lower housing  
 parts by a screw;

a planar generally vertical surface on the front  
 portion of the lower housing part with three but-  
 tons having indicia thereon indicative of no  
 power, low power and high power; and

a rotatable vibrator located within the housing  
 electrically coupled with respect to the buttons  
 and the battery whereby the depression of the  
 first button will terminate power to the vibrator,  
 depression of the second button will generate  
 low power to the vibrator for low vibrations of  
 the frame and seat and the depression of the  
 third button will generate high power to the  
 vibrator for rapid vibration of the frame and  
 seat.

2. An infant bouncer seat system with an automatic  
 vibrator to effect the soothing vibrating of the  
 bouncer seat for comfort and entertainment com-  
 prising:

a tubular frame defining the periphery of a gen-  
 erally horizontal base section with a front end  
 and a back end and a generally vertical back  
 section with an upper end and a lower end  
 adjacent to the back of the base section and  
 having downwardly extending legs for support-  
 ing the base section and the back section;  
 a fabric cover encompassing the base section  
 and the back section for the retention of a child  
 on the upper surface thereof;  
 a vibrator housing positioned on the exposed  
 portion of the frame, the housing having a flat  
 upper part with a door for the receipt of a bat-  
 tery, the housing also having an enlarged lower  
 part with a hollow housing therewithin for sup-  
 porting the battery;  
 a support aperture formed laterally from edge

to edge of the housing with cut-outs in the upper part and the lower housing part in mating relationship for receiving the frame;

aligned attachment apertures in the upper and lower housing parts adjacent to the front edge thereof for receipt of a bolt therethrough and through the apertures of the frame with a recess at the lower extent for receiving a nut matable with the bolt;

supplemental apertures extending upwardly from the lower housing part;

a surface on the front portion of the lower housing part with a plurality of buttons having indicia thereon indicative of no power, low power and high power; and

a vibrator located within the housing electrically coupled with respect to the buttons and the battery whereby the depression of the first button will terminate power to the vibrator, depression of the second button will generate low power to the vibrator for low vibrations of the frame and seat and the depression of the third button will generate high power to the vibrator for rapid vibration of the frame and seat.

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3. The apparatus as set forth in claim 2 and further including a belt assembly coupled with respect to the fabric cover on the upper surface thereof for safely retaining the child upon the base section and back section.

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4. The apparatus as set forth in Claim 2 and further including a recess is formed in the fabric adjacent to the front of the base section to expose the frame thereadjacent, the recess constituting about the central third of the length of the frame at the front of the base section with spaced vertical apertures through the frame thereat.

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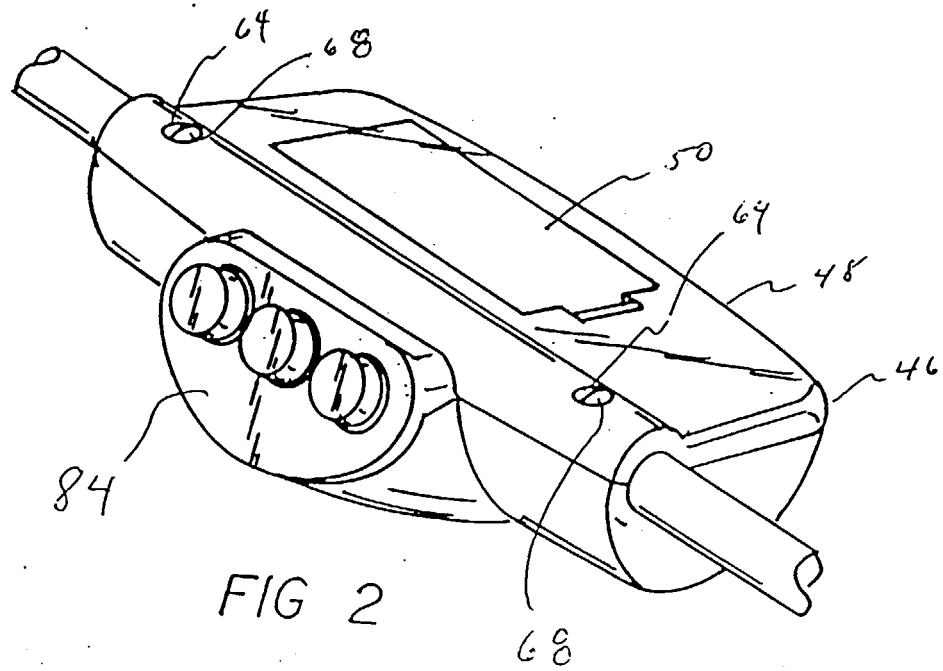
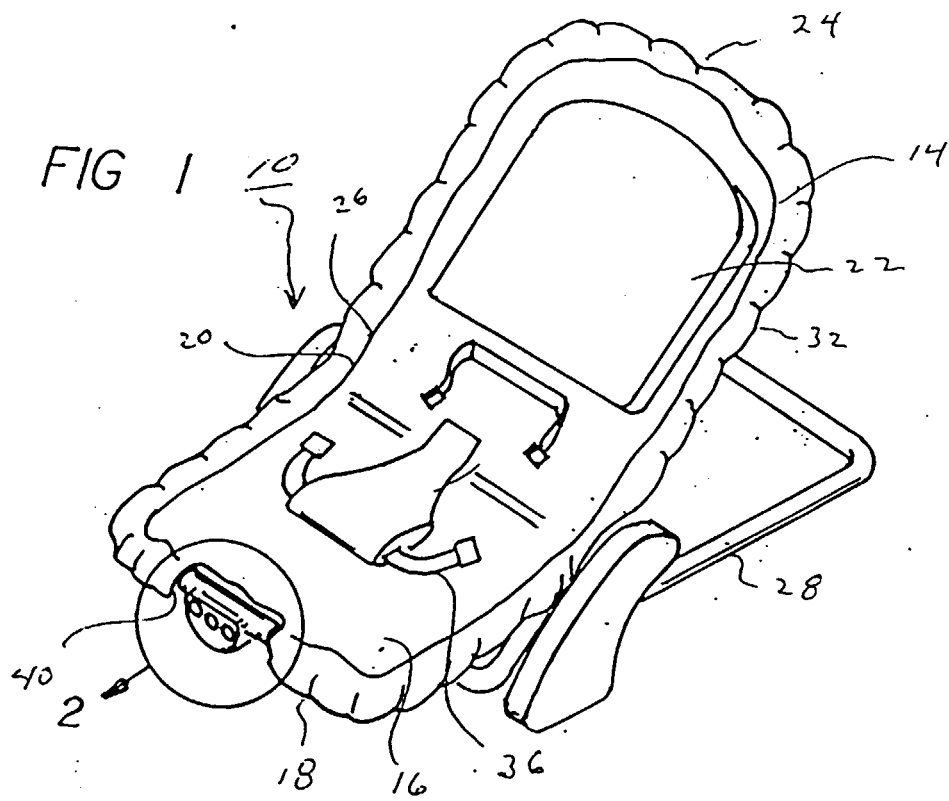
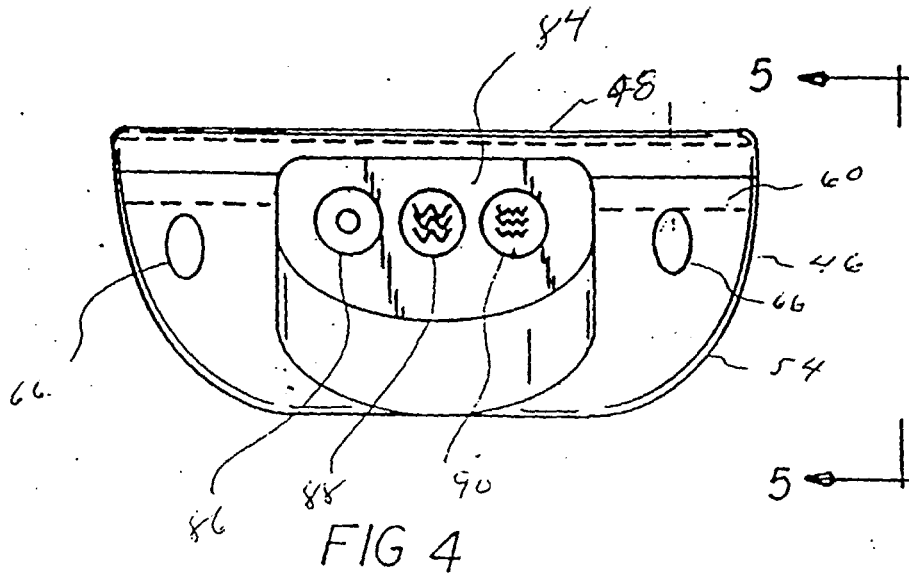
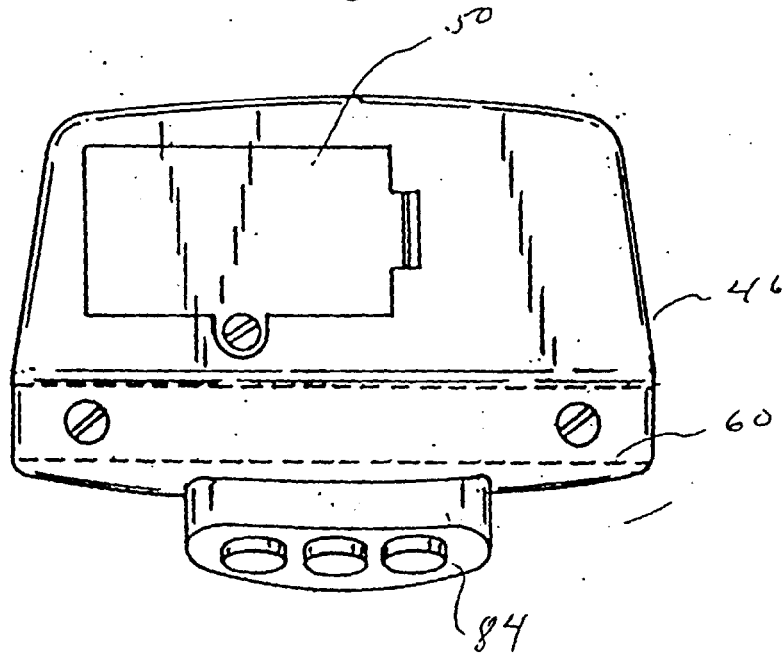


FIG 3





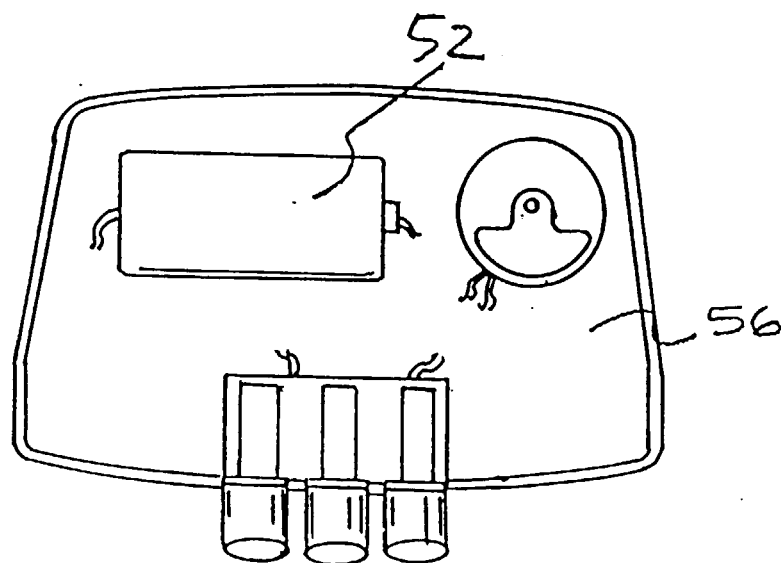
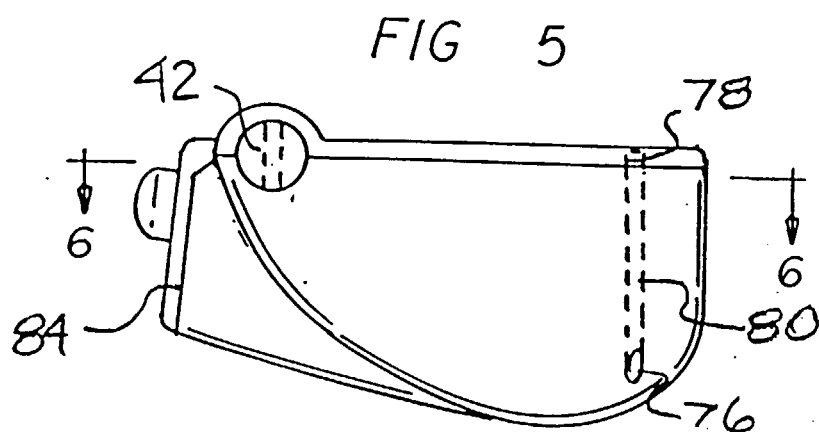


FIG 6



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# EUROPEAN SEARCH REPORT

Application Number  
EP 99 30 7435

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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 January 2000	Examiner Joosting, T
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.92 (P4/C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 7435

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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25-01-2000

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