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(52) UK CL (Edition W):
G5G G16

(56) Documents Cited:
US 5419729 A **US 5167561 A**
US 5067924 A **US 4492580 A**

(58) Field of Search:
INT CL⁷ **A63H, G09B**
Other: **Online: EPODOC, PAJ, TXTE, WPI.**

(54) Abstract Title: **Doll for representing weight loss/gain.**

(57) A doll 10 for representing changes in an individual's weight comprises a doll body and a plurality of discrete pieces 30 each less than the size of the torso and representative of a particular weight increment. The pieces are removably attached to the doll body to represent weight gain or loss as pieces are added or removed. A display means 22 may also be provided to enable visualisation of the weight change, the pieces being transferrable from the doll to the display means and vice versa. The doll may be used to encourage weight loss, e.g. dieting, or weight gain and methods for doing so are described.

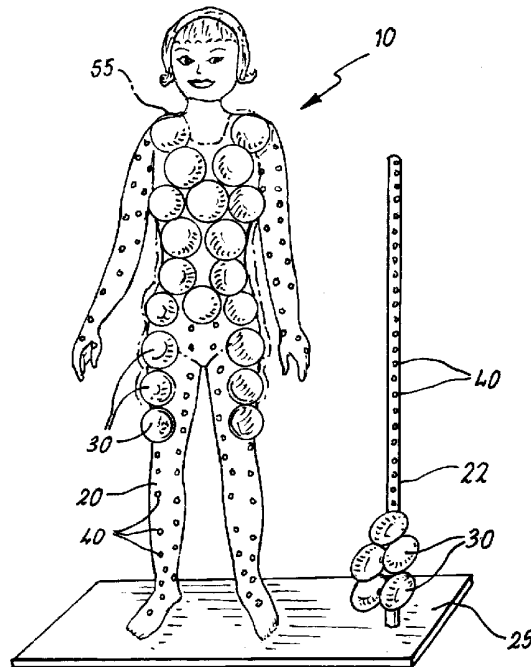


FIG. 2A

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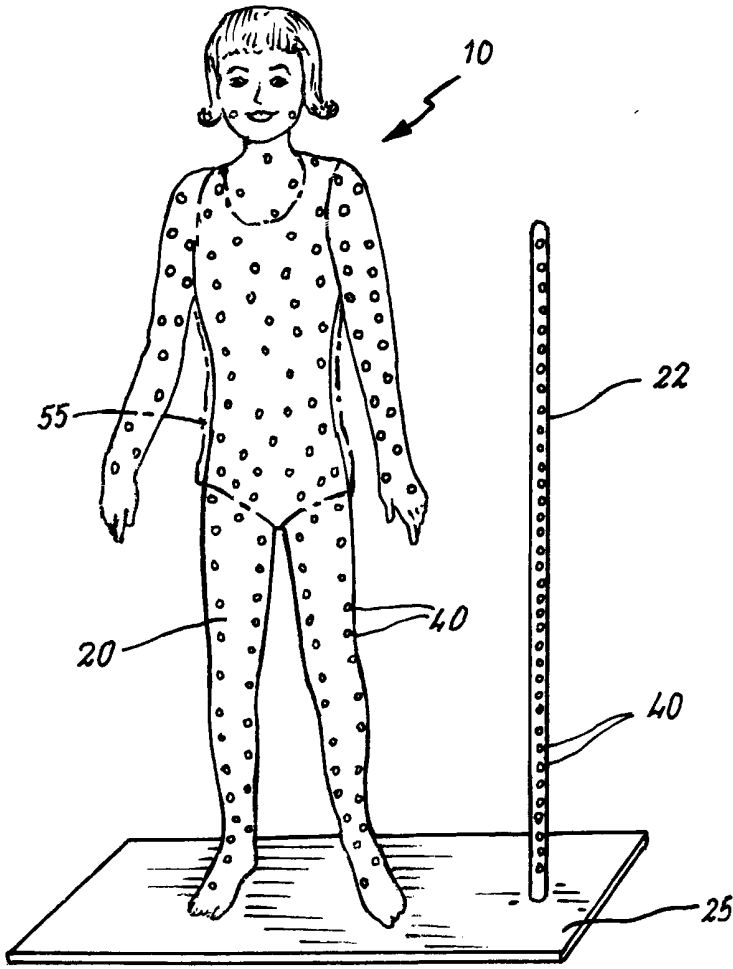


FIG. 1A

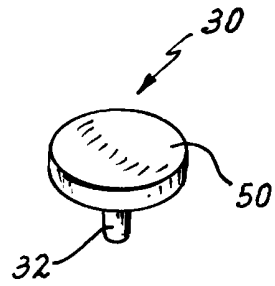


FIG. 1B

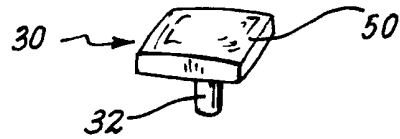


FIG. 1C

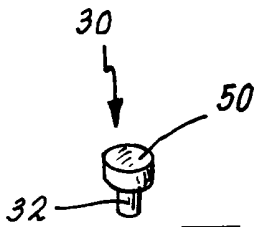


FIG. 1D



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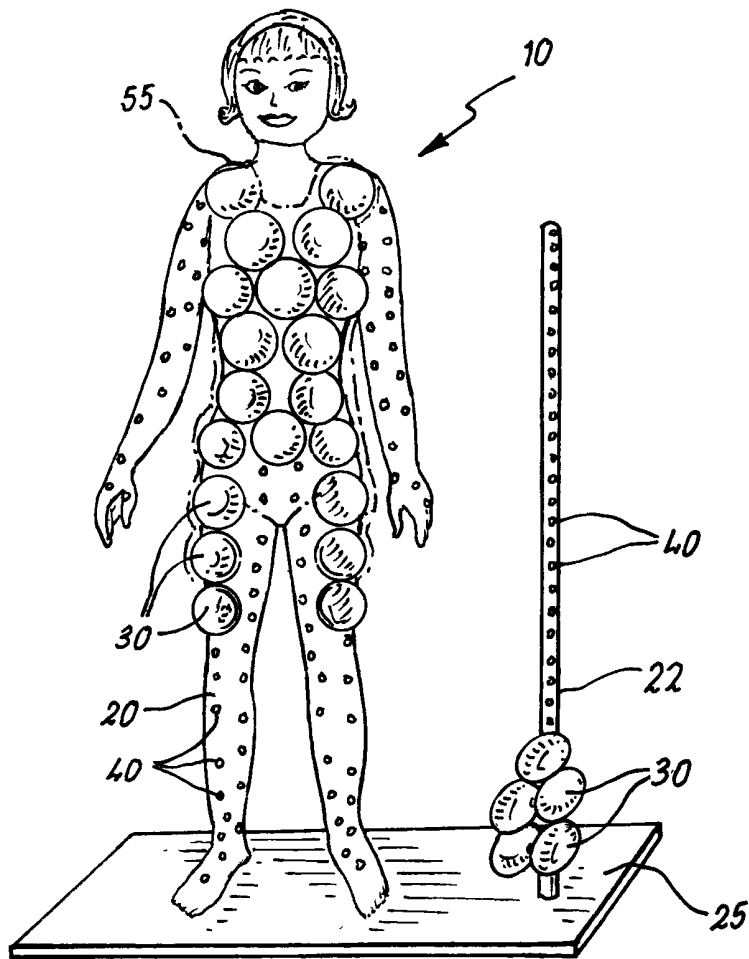


FIG. 2A

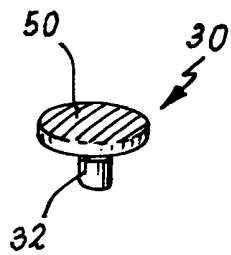


FIG. 2B

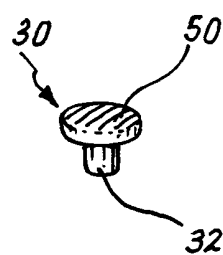


FIG. 2C

FIG. 3A

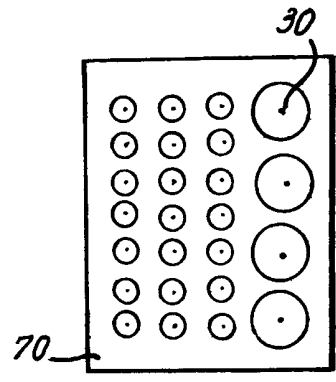
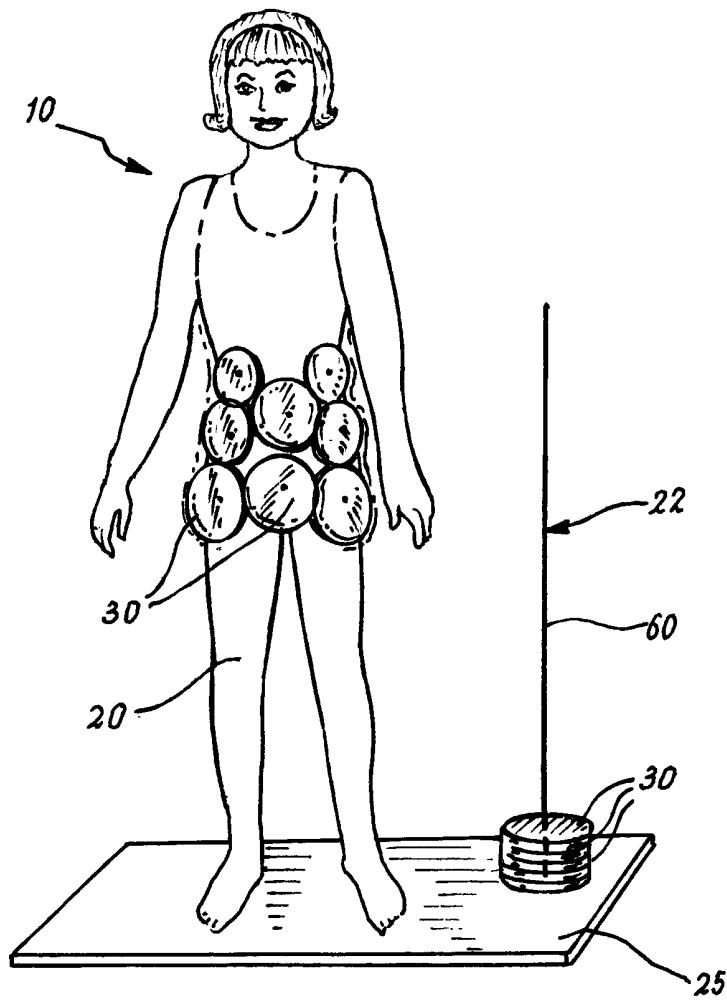


FIG. 3B



Weight change doll

This invention relates to dolls which simulate physical changes in the human body, and
5 particularly weight change.

About 46% of men in England and 32% of women are overweight (a body mass index of
25-30 kg/m²), and an additional 17% of men and 21% of women are obese (a body mass
10 index of more than 30 kg/m²). Overweight and obesity are increasing - the percentage of
adults who are obese has roughly doubled since the mid-1980's. The prevalence of obesity
increases with age throughout childhood - in 1996, around 13% of 8 year olds and 17% of
15 year olds in England were obese. These levels of childhood obesity are likely to
exacerbate the trend towards increased overweight and obesity in the adult population:
compared to thin children, obese children have a two-fold increase in the risk of becoming
15 overweight adults.

Obesity has been linked to several serious medical conditions, including diabetes, heart
disease, high blood cholesterol, high blood pressure, and stroke. It is also associated with
higher rates of certain types of cancer. Obese women are more likely than non-obese
20 women to die from cancer of the gallbladder, breast, uterus, cervix and ovaries. In addition
to physical problems, obesity can also cause psychological problems - Western society
emphasizes physical appearance and often equates attractiveness with slimness, especially
for women.

25 Losing a small amount of weight (e.g. as little as 10% of body mass) can reduce the
chances of developing heart disease or a stroke by improving cardiovascular function,
blood pressure, and levels of blood cholesterol and triglycerides. In spite of these obvious
improvements to an individuals health in relation to weight loss, losing weight is generally

perceived as difficult, and many individuals are unable to sustain a program of weight loss, or maintain a healthy weight after a program of weight loss.

5 Just as obesity can represent a serious health risk to an individual, people who are seriously
underweight due to illnesses such as anorexia or bulimia also experience serious medical
problems. Body weight problems are often caused by distorted body image - i.e. the
inability of an individual to accurately assess their true size and form. Weight change dolls
can facilitate weight gain or loss by simulating the individual to identify with the doll
physically and in so doing provide a means by which that individual can perceive their own
10 body image in a more accurate manner.

A variety of weight change dolls are known in the prior art. US5419729 discloses a doll
with an expandable covering and inflation mechanism to simulate weight loss or muscular
development. US5167561 discloses a doll comprising a means to selectively expand or
15 contract parts of the doll in accordance with weight loss or gain. JP10165952 discloses
a doll comprising a tape player to play a pre-recorded message to an individual to reinforce
the chosen dieting method, and thereby prevent overeating. US5067924 discloses a doll
comprising layers of "skin" made of stretchable synthetic material, which can be removed
or added to the doll to represent weight loss or gain.

20 The problem with these prior art dolls is that they generally comprise many moving parts,
or electronic components, which in manufacturing terms can lead to an increased assembly
time, and increased manufacturing costs. Another problem with prior art dolls is that the
doll itself, or the simulated weight change as represented by the doll is often unrealistic.
25 For example, the addition or removal of uniform layers of "skin" (as disclosed in
US5067924) gives little flexibility to remove or add simulated weight to the doll in specific
areas, for example the hips, or stomach, resulting in a less accurate simulation of an
individuals weight change.

The present invention seeks to provide an aid for losing or gaining weight by providing a doll to realistically simulate the individual trying to change their weight.

5 Thus, according to a first aspect of the present invention there is provided a doll for simulating changes in an individual's weight comprising a doll's body and a plurality of discrete pieces each less than torso size and representing a predetermined weight increment, said pieces being removably attachable from said doll's body for simulating weight gain and loss as said pieces are added or removed, thereby providing a means by which weight change of said individual can be simulated using said doll.

10

The pieces may be distributed over different parts of the body of the doll e.g the hips, or stomach, or they may be distributed all over the body of the doll, thereby providing a degree of flexibility for the weight distribution, and thus a realistic simulation of the body shape of the individual undertaking the weight change program.

15

In the instance where an individual is attempting to lose weight, the doll can be "loaded" with pieces which simulate body fat, and which represent the total amount of weight to be lost. The pieces of fat may be attached to the doll in any desired location, e.g in the area of the body that the individual perceives they have the most problem with. The doll may
20 be kept in a place which would remind the individual of their weight loss program e.g. in the kitchen, or on top of the refrigerator. When the individual has lost a known quantity of weight, the equivalent simulated amount can be removed from the doll, making the doll look thinner, and thereby rewarding the individual and motivating them to continue with the weight loss program until their desired target weight is achieved. In the same way,
25 somebody trying to gain weight would attach pieces representing body fat or muscle to the doll as weight was gained.

The advantage of the doll according to the present invention is that it gives an individual increased flexibility for positioning of the simulated weight to be gained or lost, and thus the opportunity to tailor the weight distribution of the doll to more accurately represent the individual, and improving the chances of the individual forming a "bond" with the doll.

5 Ultimately, this may improve the chances of the individual conforming to the program of weight loss or gain. For example, an individual with fat hips may choose to attach the pieces simulating the weight on the hips of the doll, such that as the weight is lost, they can be removed from the hip area, providing a realistic visual simulation of the weight loss of the individual. Similarly, in the instance where somebody is gaining weight by body-
10 building for example, as muscle is built up for example in the arms, the pieces simulating the weight may be added to the arms of the doll, and fashioned, contoured or moulded to realistically represent the increased size of the e.g. biceps or triceps of the individual. Another advantage of the doll according to the present invention is that the doll comprises few moving parts and is mechanically simple, which means it may be manufactured
15 quickly and cheaply. The doll also does not require any electrical power, and is more reliable than the prior art dolls, which may not only require a power source e.g. batteries, but also regular maintenance. Another advantage of the doll according to the present invention is that it is light, and may be carried around with the individual as a companion, thereby increasing the strength of the "bond" which may be formed between the individual
20 and the doll, and thus improving the chance of a successful program of weight loss or gain.

The doll may be used in combination with a display means to which the pieces simulating the weight to be lost or gained may be removably attachable. The display means enables visualisation and quantification of the weight change of the individual as pieces are
25 removed from the doll and attached to the display means (as weight is lost) or removed from the display means and attached to the doll (as weight is gained).

By simulating the individual, and thus becoming either fatter (weight gain) or thinner (weight loss), the doll acts as a positive reinforcement to encourage the individual to change their weight, or maintain a healthy weight. The display means may also discourage over-eating or under-eating by an individual by visually showing the exact quantity of weight which has been lost or gained by the individual during the weight loss program. For example, if an individual had lost 2 kg in weight, pieces simulating the equivalent quantity of weight could be removed from the doll and displayed using the display means to show that the individual had lost that weight. In this situation, not only would the doll look thinner, but the display means would display the pieces representing 2 kg in lost thereby enabling quantification of the lost weight and further motivating the individual to maintain their weight change program.

The display means may comprise a projection, member or receptacle for storage and display of the pieces. For example, the display means may comprise a stick onto which the pieces may be attached, or a tube into which the pieces may be dropped and stacked e.g. vertically. The display means may comprise weighing scales, which may accurately weigh the pieces and comprise a scale or display to convert the weight of the pieces into the corresponding actual weight. For example, a piece representing 1 kg of body fat may weigh exactly 1g, and the e.g. electronic scales may display the weight measured in grams as an equivalent kilogram quantity, or the scales may comprise a means to convert the actual weight of the piece into a simulated weight. The display means may comprise a spike, upon which the pieces may be displayed. Other display means for visualising the pieces (i.e. the simulated weight change of the individual) are envisaged and will be well known to a person skilled in the art.

25

The doll may represent a male or female adult, or a male or female child. The doll may be the same gender as the individual undertaking the weight change program. The doll may also represent an animal, for example a domestic pet such as a dog. In the situation where

an animal is for example obese, the doll may serve to remind the owner not to overfeed the pet, thereby promoting weight loss.

The pieces may simulate body fat or skeletal muscle.

5

The doll may comprise a plastic material, textiles, rubber, metal, or combinations thereof.

10 The doll may be provided with at least one item of clothing. The doll may be provided with a removable swimsuit for example, which may be fitted onto the doll after the pieces simulating fat or muscle have been attached to the doll's body. The clothing may be loose fitting or stretchable to allow pieces to be attached or removed from the doll's body. The doll may be provided with a variety of clothing items - indeed, other clothing items are envisaged and will be well known to a person skilled in the art.

15 The doll may be provided with a means to maintain the posture of the doll in a chosen position. The doll may be mounted on a stand or mounting platform, so as to keep it in an upright or standing position. The doll may be suspended from a wall, or a ceiling, or it may be movable, and moulded or shaped into a position such as sitting, kneeling or standing. The doll may comprise movable joints, e.g. head, neck, elbows, knees, hips,
20 hands and feet, so as to provide a range of possible postures for the doll. To facilitate identification with the individual undertaking the weight change program, the doll's skin colour may closely match the individual's, and the hair may be the same colour, style, and length.

25 The pieces may comprise a releasable engagement means thereby facilitating attachment to and removal from the doll's body and the display means. The pieces may comprise pins or pegs for engagement with corresponding holes located on the doll's body or the display means. The pieces may comprise a magnet for attachment to a doll's body or display

means comprising a metallic surface. The pieces may comprise hooks to facilitate attachment to the doll or display means. Alternatively, the pieces may comprise e.g. hoops of material which may be hung from hooks positioned on the doll or the display means. The pieces may comprise an adhesive surface. Others forms of releasable engagement means, such as Velcro (RTM), buttons or zips, might be contemplated.

Each piece may comprise a head comprising for example sponge, or a solid material such as rubber. Alternatively, the head may comprise a sealed bag or cell of liquid, or jelly which may be pliable, deformable, or mouldable. Each piece may be designed to proportionally represent weight increments such as 0.5 lb or 1 lb, or 1 kg or 2 kg. The pieces may be marked so as to show the simulated weight of the piece. The pieces may be flesh coloured or coloured to designate different weight increments. The pieces may be proportional in size to one another, such that for example a 2 kg piece is twice the size of a 1 kg piece. Similarly, the weight of the pieces may be proportional to one another. The pieces may be coloured such that muscle may be represented in one colour, and fat may be represented in another. The pieces may comprise a means to attach to other pieces, as well as the doll's body and the display means. This would facilitate a layering effect wherein pieces could be attached to the doll's body and layered over each other, for example in areas of the doll's body which correspond to particularly fatty areas of the individual undertaking the weight change program.

The pieces may be deformable, pliable, or mouldable, such that one or more pieces attached to the doll's body in a desired location (e.g. the hips, or biceps) or the display means, may be moulded or shaped to realistically represent the shape of the individuals body.

According to a second aspect of the present invention there is provided a method for encouraging weight loss in an individual comprising the steps of:

i) providing a doll comprising a doll's body, a display means, and a plurality of discrete pieces each less than torso size and representing a predetermined weight increment, said pieces being removably attachable from said doll's body and said display means, for simulating weight gain and loss as said pieces are added or removed thereby providing a means by which weight change of said individual can be simulated using said doll's body; said display means enabling visualisation and quantification of the weight change of said individual as said pieces are removed from said display means and attached to said doll, or removed from said doll and attached to said display means;

ii) attaching one or more pieces to said doll's body, said pieces representing the target quantity of weight to be lost;

iii) removing one or more pieces from said doll's body and attaching said pieces on said display means as said individual loses an increment of weight, said pieces corresponding to said weight loss;

iv) attaching a predetermined number of pieces from said display means to said doll's body as said individual gains an increment of weight, said pieces corresponding to said weight gain; and

v) repeating steps (iii) or (iv) until said target quantity of weight has been lost.

According to a third aspect of the present invention there is provided a method for encouraging weight gain in an individual comprising the steps of:

i) providing a doll comprising a doll's body, a display means, and a plurality of discrete pieces each less than torso size and representing a predetermined weight increment, said pieces being removably attachable from said doll's body and said display means, for simulating weight gain and loss as said pieces are added or removed thereby providing a means by which weight change of said individual can be simulated using said doll's body; said display means enabling visualisation and quantification of the

weight change of said individual as said pieces are removed from said display means and attached to said doll, or removed from said doll and attached to said display means;

ii) attaching one or more pieces to said display means, said pieces representing the target quantity of weight to be gained;

5 iii) removing one or more pieces from said display means and attaching said pieces to said doll's body as said individual gains an increment of weight, said pieces corresponding to said weight gain;

 iv) removing one or more pieces from said doll's body and attaching said pieces to said display means as said individual loses an increment of weight, said pieces
10 corresponding to said weight loss;

 v) repeating steps (iii) or (iv) until said target quantity of weight has been gained.

According to a fourth aspect of the present invention there is provided a kit of parts
15 comprising a doll for simulating changes in an individual's weight, said doll comprising a doll's body, a plurality of discrete pieces each less than torso size and representing a predetermined weight increment, and a display means to store and display said pieces, said pieces being removably attachable from said doll's body and said display means, said doll simulating weight change of said individual as said pieces are added to or removed from
20 said doll's body, and said display means enabling visualisation and quantification of the weight change of said individual as said pieces are removed from said display means and attached to said doll, or removed from said doll and attached to said display means.

The kit of parts may additionally comprise information regarding weight change, healthy
25 eating, exercise, or health tips, for example in the form of one or more books, videos, CDS, DVDs, computer software packages, pamphlets, leaflets, and charts.

Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Figure 1A shows a front elevation of a female doll and display means both
5 comprising holes for attachment of pieces comprising pegs;

Figures 1B, 1C, and 1D respectively show three different pieces comprising
pegs in front elevation;

10 Figure 2A shows a front elevation of a female doll and display means both
comprising holes for attachment of pieces comprising pegs, together with attached pieces;

Figures 2B and 2C respectively show two different pieces comprising pegs
in front elevation, wherein the simulated weight of the larger piece (Figure 2B) is twice
15 the simulated weight of the smaller piece (Figure 2C);

Figure 3A shows a front elevation of a female doll and display means
comprising a spike; and

20 Figure 3B shows a plan view of a sheet of adhesive material comprising
adhesive pieces;

Referring to Figures 1A-1D and 2A-2D of the drawings, a doll 10 comprises a doll's body
20, a display means 22 mounted upright on a mounting platform 25 and a plurality of
25 pieces 30 (Figures 1B-D), comprising pegs 32 for insertion into a plurality of holes 40 on
the doll's body 20 and the display means 22. The pieces 30 each comprise a head 50 which
may be flattened and vary in size, shape and thickness to represent known different
increments of weight, which may represent body fat or muscle. The individual undertaking

the weight change program decides on a target quantity of weight to lose or gain. This quantity of weight is represented by one or more pieces 30 which are attached to either the doll's body 20 for a weight loss program or the display means 22 for a weight gain program. The doll is provided with a garment of clothing 55 which may be stretchable to fit over the doll's body 20 when pieces 30 are attached to it. As the individual changes their actual weight over time, the corresponding simulated weight in pieces 30 is removed from the doll's body 20 and attached to the display means 22 (for weight loss), or removed from the display means 22 and attached to the doll's body 10 (for weight gain). The doll's body 20 will either lose or gain simulated weight, and thus provides a means of visualising the change in body shape of an individual, and the display means 22 enables the individual to visualise and quantify the actual weight change.

Referring to a specific example of weight loss (see Figures 2A-C), an individual who decides to lose 25 lbs in weight and has already lost 5 lbs, attaches the simulated equivalent of 5 lbs in pieces 30 using either 1 lb increments (Figure 2B), 0.5 lb increments (Figure 2C), or combinations thereof, to the display means 22, and the remaining pieces 30 to the doll's body 20. The head 50 of the pieces 30 may comprise a deformable or pliable material such that the pieces may be shaped or contoured according to the wishes of the individual. An item of clothing 55 e.g. a leotard or swimsuit may be fitted over the doll's body 20 comprising the attached pieces 30. The pieces may be attached to the doll's body 20 or display means 22 by insertion of a peg 32 into a hole 40. As further weight is lost by the individual, the equivalent quantity of weight in pieces 30 is removed from the doll's body 20 and attached to the display means 22. Thus, as pieces 30 are removed from the doll's body 20, the doll 10 becomes thinner, and the actual quantity of weight lost by the individual may be determined by adding up the simulated weight increments represented by the pieces 30 attached to the display means 22.

Referring to Figures 3A and 3B, in a second embodiment of the present invention, the display means 22 comprises an upright spike 60 mounted on the mounting platform 25. The pieces 30 comprises solid lumps comprising e.g. rubber, having an adhesive surface. These pieces 30 are provided attached to an adhesive sheet of paper 70 (Figure 3B). The
5 pieces 30 adhere to the doll's body 20 and after removal from the doll's body 20 the pieces 30 may be "speared" on the spike 60 as a means of displaying the actual quantity of weight lost by the individual.

Claims

1. A doll for simulating changes in an individual's weight comprising a doll's body and a plurality of discrete pieces each less than torso size and representing a predetermined weight increment, said pieces being removably attachable from said doll's body for simulating weight gain and loss as said pieces are added or removed, thereby providing a means by which weight change of said individual can be simulated using said doll.
2. A doll as claimed in claim 1, in combination with a display means, said pieces being removably attachable to said display means, said display means enabling visualisation of the weight change of said individual as said pieces are removed from said display means and attached to said doll, or removed from said doll and attached to said display means.
3. The combination of claim 2, wherein said display means comprises a projection, member or receptacle for display of said pieces.
4. A doll or the combination as claimed in any one of the previous claims, wherein said pieces comprise a releasable engagement means.
5. A doll or the combination as claimed in any one of the previous claims, wherein said pieces are deformable or pliable or mouldable.
6. A doll or the combination as claimed in any one of the previous claims, wherein said pieces simulate body fat or skeletal muscle.

7. A doll or the combination as claimed in any one of the previous claims, wherein said doll represents a human or animal.

8. A doll or the combination as claimed in any one of the previous claims,
5 wherein said doll additionally comprises at least one item of clothing.

9. A doll as claimed in any of the previous claims, wherein said doll additionally comprises a means to maintain the posture of said doll in a chosen position.

10 10. A method for encouraging weight loss in an individual comprising the steps of:

i) providing a doll comprising a doll's body, a display means, and a plurality of discrete pieces each less than torso size and representing a predetermined weight increment, said pieces being removably attachable from said doll's body and said
15 display means, for simulating weight gain and loss as said pieces are added or removed thereby providing a means by which weight change of said individual can be simulated using said doll's body; said display means enabling visualisation and quantification of the weight change of said individual as said pieces are removed from said display means and attached to said doll, or removed from said doll and attached to said display means;

20 ii) attaching one or more pieces to said doll's body, said pieces representing the target quantity of weight to be lost;

iii) removing one or more pieces from said doll's body and attaching said pieces on said display means as said individual loses an increment of weight, said pieces corresponding to said weight loss;

25 iv) attaching a predetermined number of pieces from said display means to said doll's body as said individual gains an increment of weight, said pieces corresponding to said weight gain; and

v) repeating steps (iii) or (iv) until said target quantity of weight has been lost.

11. A a method for encouraging weight gain in an individual comprising the steps
5 of:

i) providing a doll comprising a doll's body, a display means, and a plurality of discrete pieces each less than torso size and representing a predetermined weight increment, said pieces being removably attachable from said doll's body and said display means, for simulating weight gain and loss as said pieces are added or removed
10 thereby providing a means by which weight change of said individual can be simulated using said doll's body; said display means enabling visualisation and quantification of the weight change of said individual as said pieces are removed from said display means and attached to said doll, or removed from said doll and attached to said display means;

ii) attaching one or more pieces to said display means, said pieces
15 representing the target quantity of weight to be gained;

iii) removing one or more pieces from said display means and attaching said pieces to said doll's body as said individual gains an increment of weight, said pieces corresponding to said weight gain;

iv) removing one or more pieces from said doll's body and attaching said
20 pieces to said display means as said individual loses an increment of weight, said pieces corresponding to said weight loss;

v) repeating steps (iii) or (iv) until said target quantity of weight has been gained.

12. A kit of parts comprising a doll for simulating changes in an individual's
25 weight, said doll comprising a doll's body, a plurality of discrete pieces each less than torso size and representing a predetermined weight increment, and a display means to store and display said pieces, said pieces being removably attachable from said doll's body and said

display means, said doll simulating weight change of said individual as said pieces are added to or removed from said doll's body, and said display means enabling visualisation and quantification of the weight change of said individual as said pieces are removed from said display means and attached to said doll, or removed from said doll and attached to said display means.

13. A doll, combination or kit of parts substantially as hereinbefore described with reference to, and illustrated in, and as shown in Figures 1 and 2

10 14. A doll, combination or kit of parts substantially as hereinbefore described with reference to, and illustrated in, and as shown in Figure 3 of the drawings.

15. A method of encouraging weight change substantially as hereinbefore described with reference to Figures 1 and 2 of the drawings.

15

16. A method of encouraging weight change substantially as hereinbefore described with reference to Figure 3 of the drawings.



INVESTOR IN PEOPLE

— 1 —

Application No: GB0305501.9

Examiner: Matthew Jefferson

Claims searched: 1 to 16

Date of search: 3 August 2004

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular reference
A	1	US 5419729 A (GROSS) See abstract and figures.
A	1	US 5167561 A (RIZZO) See abstract and figures.
A	1	US 5067924 A (MUNTER) See abstract and figures.
A	1	US 4492580 A (SABEL) See abstract and figures.

Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art.
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^W :

Worldwide search of patent documents classified in the following areas of the IPC⁰⁷

A63H; G09B

The following online and other databases have been used in the preparation of this search report

Online: EPODOC, PAJ, TXTE, WPI.