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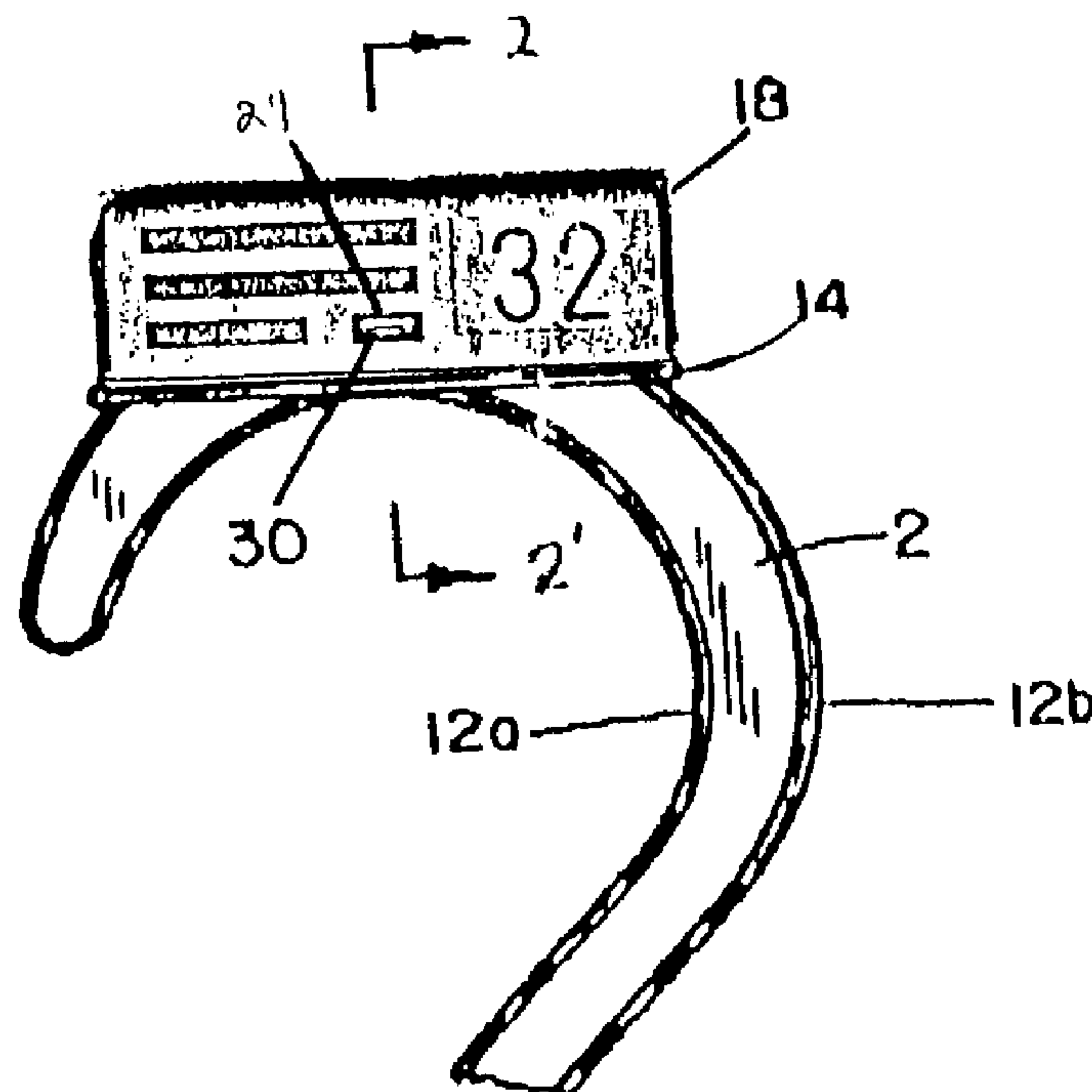
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(54) Titre : METHODE ET SYSTEME DE CODAGE COULEUR DES TAILLES SUR CINTRES ET METHODE DE
RECYCLAGE DES CINTRES MUNIS D'ETIQUETTES DE TAILLE

(54) Title: METHOD AND SYSTEM FOR COLOR CODING SIZES OF HANGERS AND METHOD FOR REUSING
HANGERS WITH SIZE INDICIA



(57) Abrégé/Abstract:

A system for color coding sizes of garments for display in a store which has a plurality of clothing lines for a plurality of consumer groups, each consumer group including consumers of similar physiology. A uniform color sizing code assists individual consumers in locating clothing in different clothing lines appropriate to their personal physiology. Individual clothing items are classified into a plurality of clothing lines and the lines are segregated into a plurality of graded sizes. Some common size designations appear in all of said lines, but may represent different sized clothing in the different lines. Large scale consumer demographics are used to identify graded sizes in different lines that would be selected by a consumer selecting clothing appropriate for their physiology, and a common color code is assigned to each graded size designation to form a matched set of graded sizes common to a specific consumer physiology.



ABSTRACT

A system for color coding sizes of garments for display in a store which has a plurality of clothing lines for a plurality of consumer groups, each consumer group including consumers of similar physiology. A uniform color sizing code assists individual consumers in locating clothing in different clothing lines appropriate to their personal physiology. Individual clothing items are classified into a plurality of clothing lines and the lines are segregated into a plurality of graded sizes. Some common size designations appear in all of said lines, but may represent different sized clothing in the different lines. Large scale consumer demographics are used to identify graded sizes in different lines that would be selected by a consumer selecting clothing appropriate for their physiology, and a common color code is assigned to each graded size designation to form a matched set of graded sizes common to a specific consumer physiology.

**METHOD AND SYSTEM FOR COLOR CODING SIZES OF HANGERS
AND METHOD FOR REUSING HANGERS WITH SIZE INDICIA**

Field of Invention:

1 The present invention is directed to the
field of garment hangers and is more particularly
directed to a method for reusing hangers with size
indicia mounted thereon. The present invention is
5 also directed to the field of clothing display in
retail stores and provides a method and system for
hanging and color coding clothing on display to assist
consumer groups in locating clothing appropriate to
their physiology.

10 **Background of Invention:**

 An article of clothing typically includes
one or more labels located somewhere inside of the
clothing article. The label usually includes size,
15 fiber content and manufacturer details as well as
information relating to country of origin and care
instructions. In addition, a tag is attached to the
article of clothing identifying the price of the
garment as well as size. The tag often includes
20 additional information relating to the store name,
manufacturer and possibly a bar code which when
scanned provides such information.

 In some cases a particular retailer or
garment manufacturer has attached a further tag to the
garment which bears a design that is in part colored
25 to permit sorting according to some attribute of the
garment such as style, color or size. For instance,
the portion of the design that is colored may be blue
to indicate a women's size 6 or green to indicate a
women's size 8 or blue to indicate a men's size 44 or
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green to indicate a men's size 48. When such
1 information is included on the tag attached to a
garment, the consumer or retailer need not review the
label of each item of clothing but merely locate the
appropriately colored tag.

5 However, tags are often attached to either
the front, back or sleeve of the garment and thus, are
not readily visible to either the retailer or the
consumer. The retailer or consumer must rifle through
the garments on the rack to locate the tags with the
10 pertinent information. If the garment is not hung on
a rack but folded in stacks (as is typical with
sweaters and jeans) the tags are often tucked inside
the garment for purposes of a neater display, thus, it
is necessary to unfold the garment to find the
15 appropriate information.

 Furthermore, there is virtually no
uniformity between manufacturers and/or retailers as
to the designation of the desired attribute of the
clothing. For instance, the color blue may mean size
20 6 for one manufacturer or retailer but size 12 for
another. Thus, the consumer is not aided by the color
designation when visiting different areas of the
store. Further, blue may refer to large in a men's
jacket size but medium for men's slacks.

25 For purposes of displaying garments
suspended on hangers in an orderly and attractive
manner to the retail customer, it is often desired to
affix an indicating means on the hanger in a position
visible to the retail customer while the hanger is
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suspended on a rack. The indicating means identifies
1 some attribute of the garment suspended from the
hanger, such as size, quality, color, manufacturing
data, or pattern.

5 The provision of a readily visible size
indicator on a garment hanger is now accepted by
retailers as a desirable addition to a garment hanger.
To accommodate the various types of hangers available
in the industry numerous indicating means have been
10 developed in a variety of shapes, sizes and materials.
Similarly, hangers have been developed to accommodate
a variety of different indicating means.

In Australian Patent No. 638436 and
corresponding U.S. Patent No. 5,388,354, assigned to
15 the assignee of the present invention, a low-profile
molded plastic indicator for a garment hanger which
requires limited modification to the hook of the
hanger to enable the indicator to be securely attached
to the top of the hook where it is most visible is
20 described. The indicator is also designed to enable
sorting into a predetermined orientation to enable
automated handling and fitting of the indicators to
hangers as described in U.S. Patent Nos. 5,272,806 and
25 5,285,566 which are assigned to the assignee of the
present invention.

Such hangers and indicia are typically used
only a single time and then shipped to either a
landfill as waste or a recycling center where the
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plastic hangers are granulated into pellets which are then resold.

However, landfills are taking up more and more space and recycling is often an expensive venture which renders such an option cost inefficient despite the need to conserve our environment's resources. Furthermore, many companies do not want to purchase recycled-content plastic products for either safety (i.e., food containers) or aesthetic purposes.

Summary of Invention

Accordingly, it is a feature of preferred embodiments of the present invention to provide a uniform system for color coding an attribute of clothing which is then used by the consumer and/or retailer to distinguish the item from other items.

There is disclosed a method and system for color coding the sizes of clothing displayed in retail clothing stores having a plurality of clothing lines for a plurality of consumer groups such that consumers may move from an area displaying one line of clothing to another area within the retail store displaying other lines of clothing and easily find articles of clothing appropriate to their physiology identified by the same color code.

More particularly, the method of color coding includes:

(a) classifying the individual items of clothing to be offered for sale into a plurality of clothing lines;

(b) segregating each of the clothing lines into a plurality of graded sizes with a plurality of common size designations that appear in all of the clothing lines;

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(c) identifying graded sizes in different clothing lines that would be selected by a consumer selecting clothing appropriate for the same consumer's physiology;

(d) assigning a common color code to each graded size designation identified in step (c) above to form a matched set of graded sizes common to a specific consumer physiology; and

10 (e) displaying the individual items of clothing on hangers having a color coded size cap mounted thereon, the color of said size cap conforming to the assigned common color code.

Thus, the consumer may move from an area displaying one line of clothing to another within the retail store displaying other lines of clothing and find articles of clothing appropriate to his or her physiology which are identified by the same common color code.

20 The method specifically contemplates color coding the sizes of individual lines of clothing such as women's apparel, men's apparel, women's apparel sized by waist, men's apparel sized by waist, plus sized apparel, infant and toddler apparel, youth apparel, and intimate apparel.

The clothing is graded into size designations which are common to the individual lines of clothing. The graded sizes are based on large

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scale consumer physiological demographics, so that in
1 identifying the graded size for an item of clothing
sized by a waist size, the size identified is common
to the graded size of an item of clothing sized by a
chest size for the same consumer physiological
5 profile.

Common size designations include S(small),
M(medium), L(large) and XL(extra large). Less common
but still often utilized are the following size
designations XS(extra-small), P/S (petite/small), S/M
10 (small/medium), M/L(medium/large), XXL(extra-extra
large) and XXXL (extra-extra-extra large).

In some situations a more specific size
designation is required and the common size
designations can be translated into numeric size
15 designations such as 2, 4, 6, 8, 10, 12, 14, 16, 18
and 20, or 1, 3, 5, 7, 9, 11, 13 and so on. In an
infant line of clothing the size designations may be 3
months, 6 months, 9 months, 12 months, 18 months and
24 months.

20 A common color code is assigned to each
graded size designation so as to form a matched set of
graded sizes common to a specific consumer physiology
profile. The common color codes are selected from 16
easily distinguishable colors. In a preferred
25 embodiment the colors are selected from: lemon, pink,
aqua, red, tan, yellow, light blue, green, sky blue,
purple, olive, royal blue, orange, light green,
burgundy, brown, peach, gold, lilac, gun metal, beige
and smoke. The only colors repeated for graded size
30 designations are repeated in clothing lines not worn

by the same consumer, as for example in an
1 infant/toddler clothing line and a plus-sized clothing
line.

For instance, the size XXS, newborn and 3
months may be used in different lines of clothing as
5 size designations. However, all of these clothes are
about the same size and thus would fit infants of
similar physiology. By displaying all of these
individual items of clothing on hangers having a pink
size cap mounted thereon, the color pink indicates
10 that the clothing will fit a particular infant
physiology.

The same color designating for instance the
smaller sized infant apparel can also be used in other
lines of clothing such as women's apparel to designate
15 the smaller sized clothing within that line, such as
XXS, size 3 and size 28 waist. Thus, the purchaser
may move from area to area of the retail store and
find articles of clothing appropriate to fit a
particular physiology based on the color coding of the
20 sizes.

In other words, a female consumer conforming
to an average physiological demographic profile can
move from area to area within the retail store,
reviewing numerous lines of clothing, as for example,
25 from slacks, to suits, to dresses, to coats and to
intimate apparel by many different manufacturers or
designers and find the size appropriate to her
physiological profile identified by the same color
code in each area for each separate line of clothing.
30 The same consumer when making purchases for others can

still use the same common color code to locate
1 articles of clothing for others.

The system of the present invention provides
for color coding the sizes of clothing displayed in
retail clothing stores having a plurality of clothing
5 lines for a plurality of consumer groups, wherein each
consumer group includes individual consumers of
similar physiology, said system providing a uniform
color sizing code to assist individual consumers in
locating items of clothing in different lines of
10 clothing appropriate to their physiology in different
areas of the retail store, said system comprising:

(a) a plurality of individual items of
clothing to be offered for sale, each item classified
into one of a plurality of clothing lines;

15 (b) a plurality of graded sizes for each of
said clothing lines, said graded sizes having a
plurality of common size designations that appear in
all of said lines;

(c) a common code group having the same code
20 identification for identifying graded sizes in
different clothing lines that would be selected by a
consumer selecting clothing appropriate for the same
consumer physiology;

(d) a plurality of color coded index caps,
25 each of said colored codes assigned to a common code
group identified in step (c) above to form a matched
set of color coded index caps identifying graded sizes
common to a specific consumer physiology;

(e) a plurality of hanger styles for
30 displaying the individual items of clothing, each of

the hangers having one of said color coded index caps
1 mounted thereon, the color of said index cap
conforming to the assigned common code group,

whereby a consumer may move from an area
displaying one line of clothing to another within said
5 retail store displaying other lines of clothing and
find articles of clothing appropriate to their
physiology displayed on hangers identified by the same
index cap color.

The graded sizes are based on large scale
10 consumer physiological demographics, so that in
identifying the graded size for an item of clothing
sized by a waist size, the size identified is common
to the graded size of an item of clothing sized by a
chest size for the same consumer physiological
15 profile. Furthermore, in a preferred form of the
invention, a consumer conforming to an average
physiological demographic profile can move from
department to department within the retail store,
reviewing plural lines of clothing, as for example,
20 from slacks, to suits, to dresses, to coats and to
intimate apparel and find the size appropriate to his
or her physiological profile identified by the same
color coded index cap in each department for each
separate line of clothing.

25 The colors used by the color codes index
caps are selected from about 16 easily distinguishable
colors such as those described above. Typically, each
color designates a different size. In the present
system each color coded index cap also visually
30 displays one of said common size designations. Thus,

the consumer at first identifies the size of the
1 garment suspended from the hanger by the color of the
index cap and then verifies the size by the size
designation thereon.

For conservation purposes, it is
5 contemplated that the color coded index caps may be
removed from said hangers to enable reuse of the
hanger with a different clothing line. Accordingly,
the system of the present invention further includes a
means for removing said color coded index caps from
10 the hangers.

It is also contemplated that the index cap
be automatically attached to the hanger.
Consequently, the system of the present invention
further includes an automatic means for attaching the
15 color coded index caps to the hangers.

It is also an object of the present
invention to provide a method for reusing hangers
having size indicia removably mounted thereon wherein
plastic hangers used to display garments in a retail
20 store are re-used several times before being shipped
as waste or recycled.

More particularly, the method of the present
invention comprises:

(a) shipping a first plurality of hangers to
25 a plurality of clothing manufacturers at scattered
geographic locals;

(b) shipping a plurality of removable size
indicia to the plurality of clothing manufacturers at
the scattered geographic locals, the removable size
30

indicia adapted to be removably secured to the first
1 plurality of hangers;

(c) assembling one hanger from said
plurality of hangers with a garment and one of the
removable size indicia, wherein the size indicia
5 represents the size of the garment and the size
indicia is preferably attached to the hanger
automatically;

(d) batching a plurality of the hangers with
garments suspended therefrom and size indicia mounted
10 thereon and then shipping the batch to a retail outlet
for display and sale of the garments;

(e) removing a definable percentage of the
hangers with the size indicia mounted thereon from the
garments as said garments are sold, and returning the
15 defined percentage of hangers with size indicia to a
reuse center;

(f) removing the size indicia from the
hangers at the reuse center and inspecting the hangers
to obtain a plurality of selected hangers for reuse,
20 wherein the removal of the size indicia from the
hanger is preferably performed by automated removal;
and

(g) augmenting the selected hangers with
newly molded hangers to provide the first plurality of
25 hangers and repeating step (a) to form a loop for
reused hangers.

The method of the present invention
particularly addresses environmental concerns to
reduce plastic waste by reducing the overall number of
30 plastic garment hangers being manufactured.

The first plurality of hangers is molded and
1 shipped to numerous clothing manufacturers in a
variety of geographic locals throughout the world. In
a preferred embodiment batches of the removable size
indicia, which correspond to the hangers in the first
5 plurality of hangers, are molded from plastic and then
shipped to the various clothing manufacturers. The
batches are typically molded by size and color to form
batches of color coded size indicia in a plurality of
different colors. In a preferred embodiment the
10 batches of color coded size indicia are bundled into
stacks and automatically attached to the hangers. To
ensure color uniformity the color coded size indicia
can be molded at a single location. Each size indicia
is mounted on a hanger from which a garment is also
15 suspended such that the size of the garment
corresponds to the size indicia.

Groups of hangers with size indicia mounted
thereon and garments suspended therefrom are organized
according to a retail store's order and then the batch
20 of hangers with size indicia and garments are shipped
to a retail store or retail distribution center for
display and sale of the garments. Such garments are
floor ready meaning that the garment can literally go
from the packing box to the rack for display. Much of
25 the back room sorting, sizing and pricing is
eliminated. Because the garments arrive at the store
already hung on hangers, the number of hangers the
store is required to store is also vastly reduced. It
will be noted that when the hangers with garments and
30 size indicia may be shipped to a retail distribution

center, the center then forwards the appropriate
1 number of such items to the appropriate retail store.

In the present method as the garments are
sold in the retail store the hangers with size indicia
are removed from the garments and separately packaged
5 for return shipment to a reuse center. The number of
hangers set aside for reuse is a definable percentage
taking into account that some customers will request
that they be permitted to keep a hanger at the point
of sale and that hangers may be inadvertently damaged,
10 thrown out or kept by a store. In a preferred
embodiment the definable percentage of hangers removed
for reuse is 65% to 90%. It has been found that about
10% to 35% of the hangers identified as the first
plurality of hangers will be unrecoverable.

15 At the reuse center the size indicia are
automatically removed from the hangers and the hangers
are inspected for damage or other contamination. The
non-damaged and non-contaminated hangers are selected
for reuse. It is contemplated that about 10-30% of
20 the returned hangers will be unrecoverable which means
that in a preferred embodiment the number of hangers
selected for reuse constitutes about 50% to 80% of the
first plurality of hangers originally molded and sent
to the garment manufacturers. In a preferred
25 embodiment the hangers not selected for reuse are
ground into pellets and either recycled or sold as
scrap plastic. In a preferred embodiment the recycled
plastic is ground, fed into a hopper and melted down
in a barrel extruder to form a molten plastic which is
30 then injected into a mold machine to form recycled

plastic hangers for retail consumer usage. The
1 consumer grade hangers are then returned to the retail
store for sale.

The hangers which are selected for reuse are
returned to garment manufacturers and batched with
5 newly molded hangers to repeat the present process.
Statistical averages indicate that a hanger will
complete 2 to 6 loops of reuse before being considered
unrecoverable. Typically the hangers are cleaned
before being returned to the garment manufacturers for
10 reuse.

Since fewer than 100% of the hangers are
reused it is necessary to augment the supply of
hangers being reused with newly molded hangers in
order to maintain a constant adequate supply. In the
15 preferred embodiment the supply of selected hangers is
augmented with about 20 to 50% of the number of the
first plurality of hangers. However, the number of
overall hangers which are molded is less than if there
was no reuse.

20 In yet another embodiment the present
invention contemplates the reuse of the color coded
indicia. Accordingly, the present method further
includes the steps of sorting the removed size indicia
from the hangers by color. If different size
25 designations are utilized for the same color coded
size indicia then a secondary sort by size must also
be completed. The sorted size indicia would then be
bundled and shipped to the garment manufacturers for
mounting on hangers. In a preferred embodiment the

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method further includes the step of washing the color
1 coded size indicia.

Brief Description of the Figures:

The foregoing and other objects of the
invention may now be more readily ascertained from the
5 following detailed description of the preferred
embodiments thereof, taken in conjunction with the
accompanying drawings, in which:

Figure 1 illustrates a hanger hook with a
color coded size cap mounted thereon that is useful in
10 the practice of the present invention;

Figure 2 is a cross section taken along
section lines 2-2' of Figure 1 which illustrates the
interior construction of the hanger and hook
combination illustrated in Figure 1;

15 Figure 3 is an illustration of a common
color code assigned to various sub-sets of the
plurality of graded size, as determined by large scale
consumer demographics;

Figure 4 is an illustration of one set of
20 common size designations illustrating a sub-set of the
plurality of graded sizes of the present invention;

Figure 5 is an illustration of one family of
hanger designs that may be used throughout a retail
clothing store to uniformly display the articles of
25 clothing for sale, and to display the color codes of
the present invention;

Figures 6(a), 6(b) and 6(c) are three
drawings, which when combined as indicated thereon,
illustrate one representative example of a color code
30 scheme of the present invention;

Figure 7 is an isometric view of a mechanism
1 useful in the automatic assembly of the color coded
index caps and hangers of the present invention;

Figure 8 is an plan view of the mechanism
shown in Figure 7 illustrating the assembly of a color
5 coded index cap to a hanger as taught by the present
invention;

Figure 9 is an isometric view of a mechanism
useful in the dis-assembly of the color coded index
caps from the hangers to enable reuse of the hangers;

10 Figures 10(a), 10(b) and 10(c) illustrate in
sequence the operation of the mechanism illustrated in
Figure 9 as the hanger and color coded index cap are
disassembled; and

Figure 11 illustrates a diagram for
15 implementing the method for re-using hangers having
size indicia.

Detailed Description of the Invention:

Referring now in detail to the drawings, and
to the embodiments depicted in Figures 1 and 2, there
20 is illustrated a hanger hook 2 with a color coded size
cap 18 mounted thereon that is useful in the practice
of the present invention. The hook 2 of a molded
plastic garment hanger is shown in simplified form and
is adapted to engage a rod or other supporting means.
25 In practice the hook typically includes the
strengthening ribs 12a, 12b around the perimeter of
the hook. It will be noted that in Figures 1 and 2,
the body and clips of the hanger are not depicted.
30 The body and clip structure of the hanger can take on

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many different types of configurations as long as the hanger supports the garments suspended thereon. In Figure 5, several exemplary hanger styles which will accommodate a variety of types of clothing are depicted. Each of the hangers shown in Figure 5 includes a means for attaching a color coded size cap 18.

10 The color coded size cap 18 which is mounted on the hanger is more clearly illustrated in Figure 2. As shown therein the size cap includes side walls 20, 22 formed with at least one retention aperture 24, 26, as described in Australian Patent No. 638436 and U.S. Patent No. 5,388,354. The apertures 24, 26 define through-openings which facilitate stacking of the indicator 18 with other indicators prior to fitting to a hanger.

20 The indicator is retained on the hook by an indicator attachment mechanism. As illustrated in Figures 1 and 2, the hook 2 is formed with a flange 14 defining a top region 16, which in a preferred embodiment is flattened and slightly larger in peripheral dimensions than the lowermost portion of an indicator 18. An upstanding web 4 extends centrally from the top region 16 of the hook 2. The web 4 can be shaped similarly to the shape of the cavity of the indicator 18 so as to comfortably fit within that cavity. As one alternative, the web 4 can be shaped to follow the normal contour of the hanger hook.

The web 4 is formed with integrally molded
1 indicator attachment means 28. In the present
embodiment the indicator attachment means includes
central opening 6 from the upper portion of which a
resilient detent leg 8 extends downwardly terminating
5 in a laterally projecting portion 30 configured to
engage one of the apertures 24 or 26 in the side wall
of the indicator 18, as shown in Figure 2.

Since the detent leg 8 is narrow and is
10 resiliently connected to web 4, it is easily deflected
laterally by means of a probe or pin inserted into the
aperture 24 or 26 which engages laterally projecting
portion 30 to displace laterally projecting portion 30
toward the plane of the web to clear the aperture 24
15 or 26 and allow the indicator to be removed from the
web 4. This operation can be achieved simply and
quickly with little or no damage to the indicator 18
or the attachment means 28. Nevertheless, while the
laterally projecting portion 30 remains in the
20 position shown in Figure 2 of the drawings, the
indicator 18 will remain securely fastened to the web
4 and will withstand all usual handling operations to
which the hanger is subjected in day-to-day use.

25 To improve the flexibility of the detent leg
8, it can be reduced in thickness as shown at 200 in
Figure 2 of the drawings.

Other means for attaching indicators to
hangers can be utilized, such as the means described
30 in U.S. Patent No. 5,388,354, wherein the indicator

may also be retained on the hook by means of at least
1 one abutment projecting from the hook which engages an
aperture in the side wall of the indicator. However,
when the indicator is retained by an abutment, the
indicator is not easily removed from the hanger and
5 either the hanger or the indicator may be damaged
during the process.

In the preferred embodiment of the present
invention the size cap shown is of a rectangular
10 configuration, see for example, Figures 1 and 3, and
presented at the top of the hook. However, other
shapes and configurations of size caps can be used in
accordance with the present invention.

The indicator 18 of the preferred embodiment
15 has been particularly well-received by retailers and
consumers in the method and system for color coding
sizes of clothing on display which is also useful in
the practice of the present invention.

In the present method and system, individual
20 articles of clothing are classified according to line,
such as men's apparel, women's apparel, infant and
toddler apparel, youth apparel, girl's apparel, boy's
apparel, intimate apparel, men's apparel sized by
25 waist, women's apparel sized by waist, petite apparel
and plus apparel. Each line of clothing is then
further classified according to type of clothing. For
instance, further classification in the women's line
includes dresses, shirts, blouses, skirts, slacks,

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1 suits, sweaters, coats, jackets, panties, bras, and
bathing suits.

Each of these lines of clothing is then
segregated into a plurality of graded sizes with a
plurality of common size designations that appear in
5 all of the clothing lines. Common size designations
may include XXS (extra, extra-small), XS(extra-small),
P/S (petite/small), S(small), S/M (small/medium),
M(medium), M/L(medium/large), L(large), L/XL
10 (large/extra-large), XL(extra-large), XXL(extra-extra-
large) and XXXL (extra-extra-extra large). Of these
designations S, M, L and XL are almost universally
available. Each of these common size designations
designates clothes intended to fit consumers of a
15 particular physiology.

In some situations, typically, when the
clothing is more tailored, a more specific size
designation is required and the size designations are
referenced by numerals such as 2, 4, 6, 8, 10, 12, 16,
20 18 and 20; 1, 3, 5, 7, 9, 11 and 13; or 3/4, 5/6, 7/8,
9/10, 11/12, 13/14 and 15/16, which would appear in
numerous clothing lines.

The particular graded sizes in different
25 clothing lines that would be selected by a consumer
selecting clothing appropriate for a particular
physiology is then identified and a color code
assigned to each graded size designation to form a
matched set of graded sizes common to a specific
30 consumer profile. The clothing is displayed on a

1 hanger with a color coded size cap mounted thereon
such that the color of the size cap conforms to the
assigned color code.

5 For instance, in the color coding system
illustrated in Figure 3, the color blue has been
assigned 7 different size designations: L, M/L, 24 M,
9, 9/10, 24 W and 38. As indicated by the sizes
matched in this set, the blue color indicates a large
size clothing. In women's apparel, the sizing used in
10 different lines of clothing would typically be L or
M/L and 9 or 9/10 to designate a particular physiology
profile. A women of this physiology would know by
using the color coding method and system of the
present invention that she could look for garments
15 hung on a hanger with a blue size cap to find clothes
that matched her physiology.

In infant's apparel the sizing would
typically be either large or 24 months both of which
20 identify garments that would fit an infant of a
particular physiology. Thus, the consumer could then
look for garments hung on hangers with a blue size cap
to find appropriate garments.

It will be noted that the same color
25 designating the larger sized clothing in the women's
apparel line is used to designate the larger sized
clothing in the infant apparel line. This system can
be followed in garments sized by waist, where for
instance the blue color indicates a 38 waist and also
30 in the plus-sized apparel to designate a 24W, where

1 the plus-sized line of clothing runs from size 16W to
26W. This system permits the purchaser to move from
department to department of a retail store and find
articles of clothing appropriate to fit a particular
5 physiology based on the color coding of the sizes.
Furthermore, this same consumer can make purchases for
others knowing only the bare basics of the recipient's
physiology.

Figure 4 illustrates one set of common size
10 designations showing a subset of the plurality of
graded sizes of the present invention wherein:

lemon designates XXL
purple designates XL or L/XL
blue designates L or M/L
15 green designates M
yellow designates S
pink designates XXS.

A different color designates each graded size in this
universal system of sizing. It will be noted that
20 there are two size designations for purple and blue.
This is possible because a single manufacturer of
clothing would not typically use both forms of sizing
for the same type of garment. However, both forms of
sizing may be found in a single classification of
25 clothing. By designating all clothing that can fit a
specifically sized person with a single color the
consumer then easily knows to look for that color size
cap when selecting clothing on display.

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Figure 5 illustrates one family of hanger designs that may be used throughout a retail clothing store to uniformly display the articles of clothing for sale and to display the color codes of the present invention. Hangers 300, 302 and 304 are typically used to hang tops such as shirts, blouses, dresses, coats, jackets, robes, nightgowns, rompers, overalls, swimwear and sweaters. Hanger 300 which is 12 inches long can be used to hang infant and toddler tops, hanger 302 which is 14 inches long can be used to hang kids tops and hanger 304 which is 17 inches long can be used to hang adult tops. Hangers 306, 308 and 310 are typically used to hang bottoms such as slacks, denims and skirts. Hanger 306 which is 8 inches long can be used to hang infant and toddler bottoms, hanger 308 which is 10 inches long can be used to hang children's bottoms and hanger 310 which is 12 inches long can be used to hang adult bottoms. Hanger 312 can be used to hang bras, panties, slips and bathing suits. A hanger body length of about 10 inches is preferred to accommodate a variety of different sizes. Hanger 314 is a frame hanger which can be used to hang infant and toddler separates and coordinates. The varying lengths of hangers 300 - 310 accommodate virtually all of the different lines of clothing ranging from infants to plus sizes.

Each of these hangers includes an indicator attachment mechanism as described previously herein to display the color coded size caps described herein at

the top of the hook. Typically a retail store
1 utilizes many different hanger designs depending upon
the type of garment and the manufacturer. Limiting
the number of hangers used throughout the store to
about eight different designs is an extremely cost-
5 effective maneuver which will also standardize the
display and result in a neater appearance. However,
it will be noted that the eight designs of Figure 5
constitute a preferred embodiment of the present
10 invention. Any hanger with an indicator attachment
mechanism suitable for receiving a color coded size
cap can be used in the method and system of the
present invention.

Figures 6(a), 6(b) and 6(c) illustrate one
15 representative example of a color code scheme of the
present invention which can accommodate the sizing
needs of all lines of clothing and departments in a
large retail store.

At the far left of Figure 6(a) designated as
20 Rows A-G are a plurality of size classifications which
would be appropriate for a plurality of clothing lines
are designated as universal, tall/multi, infant or
toddlers, metric, multi-sizes, plus-size and waist
25 sizes. It will be noted that more than one size
classification may be found in a single line of
clothing. For instance, in women's apparel, clothing
may be sized in universal sizes (Row A), metric sizes
(Row D) (typically, odd numbers, even numbers or
30 multi-sizes), plus sizes (Row F) or by waist (Row G).

To the right of each class designation in
1 each row is a series of graded size designations
appropriate for each class. The size designations are
based on large scale consumer physiological
5 demographics, so that in identifying the graded size
for an item of clothing sized by a waist size, the
size identified is common to the graded size of an
item of clothing sized by chest size or universal size
for the same consumer physiological profile.

10 The particular graded sizes in different
clothing lines that would be selected by a consumer
for a specified physiological profile are set forth in
columns each of which are assigned a color. Each
color designates a specific size which will fit a
15 consumer of a particular physiological profile. The
color coded size cap mounted on the hanger (such as
any hanger depicted in Figure 5) from which the
garment is suspended can be used to determine which
clothing on display is to be selected to form a
20 matched set of graded sizes common to a specific
consumer physiology.

About 16 different colors are needed to
differentiate between all of the different sizes. One
25 family of colors is set forth in Figure 6 in Columns
1-20, which includes: lemon (Pantone 101 U), pink
(Pantone 189 U), aqua (Pantone 326 U), red (Pantone
192 U), tan (Pantone 145 U), yellow (Pantone 121 U),
light blue (Pantone 306 U), green (Pantone 340 U), sky
30 blue (Pantone 2975 U), light purple (Pantone 2715 U),

1 olive (Pantone 398 U), blue (Pantone 285 U), orange
(Pantone 165 U), dark purple (Pantone 2593 U), light
green (Pantone 375 U) and burgundy (Pantone 246 U).
Colors can be reused in different lines of clothing
5 where the sizes do not overlap but still typically
designate either a larger, smaller or medium size.

For instance in the present embodiment it
will be noted that the colors yellow, aqua, tan and
sky blue have been used more than once in designating
10 a physiological profile. Using the color aqua
(Columns 3 and 18) as an example, the sizes 2 and
waist 29 designate one physiological profile, while
XXXL, 15 and 15/16 designate a completely separate
physiological consumer profile. There would be no
15 overlap in the lines of clothing sought by individuals
between these two size groups. The size 4T is also
designated by the color aqua. Again this size does
not overlap with either of the other two size groups
which renders it permissible to reuse the color in the
20 toddler line. Also it is noted that the size 4T is
one of the largest toddler sizes bringing the use of
the color in line with its larger size designation.
When a color is used to designate a multitude of sizes
25 in nonoverlapping lines of clothing it will not be a
color used to designate one of the more common sizes
such as S, M or L.

However, typically a color will only be used
once to designate a single physiological profile.
30 More than 70% of all size caps will fall into one of

1 five colors that designates the physiological profile
for the following universal sizes: XS, S, M, L and XL
and the corresponding size classes designated by row.
To enhance the visibility of these size caps for these
most common sizes the size caps are assigned the
5 brightest and most basic colors, respectively - red,
yellow, green, blue and purple.

Blue for instance designates a large size in
the present embodiment as discussed previously with
respect to Figure 3. Yellow designates the size
10 small. Corresponding to this physiological profile
for a women's line of clothing are the sizes S, 5,
5/6, and waist 32. Clothes marked with these sizes
would all fit a women of a particular physiological
15 profile. The sizes S and 12M also would fit an infant
of a particular physiological profile and the size 20W
is considered to be a small plus-sized garment.
Accordingly, attaching a yellow size cap to the
hangers from which each of these garments are
20 suspended would enable a consumer to match up all the
different clothes from numerous clothing lines and by
numerous manufacturers which fit a particular
physiology identified as being small. Thus, the
25 consumer could move from department to department
reviewing numerous lines of clothing from slacks, to
suits, to coats, to dresses, to intimate apparel and
find the size appropriate for that consumer's
particular physiological profile. The consumer would
30 even recognize the color as designating a particular

size profile in other lines of clothing, such as an
1 infant or men's apparel.

By placing a color coded size cap at the top
of each hanger the consumer is greatly aided in
locating all garments designed to fit a particular
5 physiological profile in numerous different
departments from different clothing lines no matter
how the garment is sized, universally or metrically.
This also aids the salesperson who is assisting the
10 consumer in looking for a particular garment either on
the floor of the store as well as in the back rooms of
the store where any additional garments are stored,
replenishing a rack of clothing, organizing a rack of
clothing according to size or re-organizing a rack of
15 clothing by size at the end of the day.

It is also contemplated that in the
preferred embodiment of the system of the present
invention the color coded size caps and the garments
are assembled at the point of manufacture and arrive
20 at the store already on the hanger. This means that
the actual matching of the color coded size cap and an
article of clothing takes places before shipment of
the garment from the manufacturer. The garment
25 arrives at the retail store, floor ready. The prehung
color coded sized garments need only be removed from a
box and hung on the rack. Most of the typical back
room work in a retail store is eliminated, thus making
the system of the present invention extremely cost-
30 efficient. In a preferred embodiment, the attachment

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of the color coded size cap to the hanger is performed automatically at the time the garment is hung. Although the attachment could also be by manual means.

One such means for automatically attaching a color coded size cap to hanger is illustrated in Figures 7 and 8 and is more specifically described in United States Patent Nos. 5,272,806; 5,285,566 and 5,507,087. It will be noted that each of these patents is assigned to the assignee of the present invention. In the illustrated embodiment of a system for attaching an indicator to a hanger, the attaching means includes a pair of magazine towers 101 and 102 dimensioned to contain a vertical stack of hangers therebetween and a third magazine 108 which receives a bundle of stacked indexing caps. The hangers rest on platen member 104 and are selectively engaged by a reciprocating plate 105 which includes a cutout 105a conforming to the exterior dimensions of the index coded cap 18.

Immediately adjacent cut-out 105a are alignment cams 109. The ends 111a, 111b of reciprocating plate 105 provide a spring loaded tip for engagement of the hanger 11. In addition, the magazines 101 and 102 are independently adjustable by means of bracket 110 and support 112 to configure the system to a wide variety of hanger shapes including those depicted in Figure 5. Each of the magazines 101, 102 and 108 have cut-outs 101a, 102a which allow

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1 the hangers and index caps to be withdrawn from the
magazines as plate means 105 reciprocates forwardly as
illustrated in Figure 7. Stand-off legs 113-115 are
used to elevate the system above the employee work
5 bench, to assist the operator in draping the article
of clothing about the hanger before the hanger is
withdrawn from the system. Alternately, the
individual legs can be altered in length to provide a
slanted configuration which will facilitate hanging
10 clothes therefrom.

As illustrated in Figure 8, the system is
loaded with a bundle of stacked caps indicated at 18
which are loaded into magazine 108. Magazine 108 is
suspended above the reciprocating plate 105 and platen
15 104 by brackets 116, 117. Prior to engagement with
the hanger 11 the spring loaded tips 111a, 111b of
reciprocating plate 105 are fully distended. As plate
105 moves forward, or downwardly as illustrated in
Figure 8, it first engages an index cap from the stack
20 of caps 18 within recess 105a. The alignment surface
109 centers the hook 2 within the reciprocating plate
105 so that the indicator attachment mechanism on the
hook is properly aligned with the index cap 18 during
25 attachment. Plate 105 is dimensioned such that the
index cap is seated on hook 2 by the impact of plate
105 as the floating spring loaded tips 111a, 111b
engage the center portion of hanger 11. The hanger is
then driven forwardly out of the magazines 101, 102 to
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1 the position illustrated by the dotted lines in Figure
8.

5 The hanger engages eccentric stops 106a,
106b and displaces the end portion of platen 104
outwardly as illustrated in Figure 8. The spring
loaded tips 111a and 111b compensate for
irregularities in hanger molding and reduce the impact
of the reciprocating plate 105 on the central portion
of the hanger. This substantially eliminates the
10 broken and shattered hangers normally encountered in
this type of device. As the pneumatic cylinder 103
drives platen 104, the spring loaded tips 111a, 111b
are compressed, and the spring loaded platen 107 is
between platen 104, and platen 107. As illustrated in
15 Figure 8, the hanger is now presented to the operator
with the clips 32a-32b suspended above the work space
and free from any immediately adjacent encumbrances,
so that the operator may quickly and easily attach a
garment thereto. As the article of clothing is
20 attached to the hanger, it is lifted free of the
spring loaded tips 111a, 111b of platen 105, which
allows platen 107 to close thereby actuating the
control mechanism for the system to return
25 reciprocating plate 105 back to its original starting
position. If set on automatic, as soon as the plate
105 has reciprocated to its fully retracted position,
it is reciprocated forward to automatically dispense
another index coded cap and hanger.

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In still another embodiment the system for color coding sizes of clothing displayed in retail clothing stores includes automatic means for removing the color coded index caps to the hangers.

Figures 9 and 10(a), (b) and (c) illustrate one such means for removal wherein the indicator attachment mechanism is of the embodiment depicted in Figures 1 and 2 herein. The laterally extending portion 30 of the indicator attachment mechanism is easily deflected by means of a pin 220 inserted in the aperture 24 of indicator 18 which engages the laterally extending portion to displace it towards the plane of web 4 to clear the aperture 24 and allow the indicator 18 to be removed from the hanger 1. Using this system, which is described more particularly in International Application No. PCT/US96/01286, the color coded indexing caps can be automatically removed from their respective hangers 1.

In this embodiment the hanger 1 is fed to the apparatus for removing the color coded index cap by a feeding rail 205. The feeding rail is inclined so that the hangers 1 move downwardly toward the apparatus by gravity. To initiate the process the hangers 1 can be placed onto the feeding rail 205 manually or automatically. Other means to feed hangers 1 to the apparatus can comprise a screw conveyor, a belt conveyor, or any other appropriate means to carry the hangers toward the apparatus.

The apparatus of the present embodiment
1 includes a front plate 206, a back plate 107 and an
actuating means 208. Front plate 206 and back plate
207 are arranged vertically and are facing each other.
In the embodiment shown in Figure 9, the two plates
5 206 and 207 are almost quadratic, however, any other
appropriate shape, for example rectangular, can be
used.

The actuating means 208 includes a
10 pneumatically driven escapement valve with two rods.
Each of the rods is connected to the plate 206 or 207
via respective connecting means 209 and 210. In use,
the actuating means 208 moves the front plate 206 and
the back plate 207 parallel to each other in a
15 vertical plane. This movement is periodically
repeated to permit the removal of cap from one hanger
after another.

Back plate 207 has a recess 219 positioned
20 on an outer portion of the surface facing the front
plate 206. Recess 219 is dimensioned to correspond to
the dimensions of indicator 18, so that when a hanger
1 is pressed against the back plate 207, the indicator
18 is received in the recess 219. A pin 220 is
25 provided on the back wall of the recess 219 in a
position corresponding to the aperture 24 of the
indicator 18. The dimensions, such as the size and
the shape, of the pin 220 are selected according to
the dimensions, particularly, the shape and the depth,
30 of the aperture 24, so that the pin 220 enters the

aperture 24 and is able to displace the laterally
1 projecting portion 30 of the web 4 of the hanger 1 to
clear the aperture 24, and permit the indicator 18 to
be removed from the hanger 1. In the preferred
embodiment of Figure 9, the pin 220 has a rectangular
5 cross-section, but another appropriate shape can be
used.

Front plate 206 includes a through-opening
or window 218. Window 218 is preferably dimensioned
10 to correspond to the configuration of recess 219 of
back plate 207. However, the window 218 can have any
appropriate shape, as long as the indicator can pass
through it. When back plate 207 is in its upper
position and the front plate 206 is in its lower
15 position, the recess 219 and the window 218 match, so
that the indicator 18 can be removed from the recess
219 through the window 218.

In the described embodiment the preferred
method for removal of the indicator 18 from recess 219
20 is by means of an air blast through aperture 221 in
the back wall of recess 219. Aperture 221 is
connected to an air control means by means of a tube
227, shown in Figure 10(c). The air blast through the
opening 221 is controlled so that when the back plate
25 207 reaches its upper position, and the front plate
206 is in its lower position, the air blast is
generated or enabled, which pushes the indicator 18
through the window 218 of front plate 206. The
30 released indicator passes through the window 218 and

is collected by a discharge tube or chute 224,
1 positioned in front of the window 218 and leads the
released indicator to a container 225 (shown in
Figures 10(a) and 10(c)).

5 The feeding rail 205 extends under the two
plates 206 and 207. The distance between the plates
206 and 207 and the feeding rail 205 when the plates
are in their lower positions is preferably such that
10 pin 220 of back plate 207 will be aligned with
aperture 24 of indicator 18. The height of the
assembly is adjusted to provide an automatic operation
for different styles of hangers and hooks.

As illustrated in Figure 9 the back plate
207 is in its lower position and the front plate 206
15 is in its upper position. When hanger 1 moves down
the feeding rail 205 toward the decapping apparatus
the movement of the hanger 1 is stopped by the back
plate 207.

20 Figures 10(a), 10(b) and 10(c) illustrate
the sequence of the operation for automatically
removing color coded index caps from hangers in
accordance with the present invention.

More particularly, Figure 10(a) illustrates
25 the start of the cycle for removing color coded index
caps 18 from a plurality of hangers. As shown, it
will be noted that the back plate 207 is lowered to
its lowermost position and a plurality of hangers are
waiting in front of the decapping apparatus on the

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feeding rail 205 in line for removal of the indicator
1 caps 18 one after the other.

The front plate 206 is raised but only needs
to be raised upwardly until it no longer covers the
recess 219. In other words, the amplitude of the
5 movement of the plates 206 and 207 has to be at least
the height of the recess 219, so that the indicator 18
can be received in the recess 219.

Gravity pushes the foremost hanger with
10 indicator into the recess 219 of back plate 207.
After the indicator 18 is received in the recess 219
of the back plate 207, the front plate 206 is moved
downwardly to seat the indicator 18 firmly or at least
to hold the indicator firmly in the recess 219 of the
15 back plate 207. In this position the pin 220 of the
back plate 207 displaces the laterally extending
portion 30 of the hanger 1, to permit the release of
the indicator 18 from the hanger 1. The pin 220 is
long enough to fully displace the laterally extending
20 position 30 from the recess 24 of indicator 18, but is
not long enough to engage the aperture 6 of hook 2.

Figure 10(b) illustrates the sequence of
removing the indicator 18 from a hanger 1 mid-cycle
25 when both the front and back plates 206 and 207 are in
their lower positions. After the pin 220 releases the
indicator attachment mechanism the front plate 206 is
lowered to separate the released indicator and hanger
1 from the rest of the hangers and also to engage the
30 foremost hanger 1. To assist in the separation of the

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1 foremost hanger 1 with the released indicator from the
2 other hangers the lower edge 246 of the front plate
3 206 can be beveled. The beveled lower edge 246 of the
4 front plate 206 holds the hanger 1 down by abutting
5 against the edge of the top region 16 of the hook of
6 the hanger 1. As shown in Figures 10(a)-10(c) lower
7 edge 246 of front plate 206 is beveled towards the
8 back plate 207. As one alternative, lower edge 246
9 can have a step-shape.

10 Figure 10(c) illustrates the end of the
11 cycle wherein the pin 220 has displaced the laterally
12 extending portion 30 from the indicator 18, and the
13 indicator may be removed from hanger 1 when the back
14 plate 207 is moved upwardly to its upper position,
15 while the front plate 206 stays in its lower position.
16 Since pin 220 of the back plate 207 extends into the
17 aperture 24 of the indicator 18, the back plate 207
18 carries the indicator 18 upwardly. The front plate
19 106 engages hanger 1 and prevents the hanger 1 from
20 also being carried upwardly.

21 Consequently, the pin 220 has two functions:
22 displacing the laterally extending portion 30 of the
23 hanger 1 to release the indicator 18 from the hanger 1
24 and carrying the indicator 18 upwardly to separate the
25 indicator 18 from the hanger 1.

26 As previously described the indicator 18 is
27 preferably removed from recess 219 by means of air
28 blast through aperture 221 in back plate 207. The air
29 blast pushes the indicator 18 through the window 218
30

of the front plate 206. The released indicator 18
1 passes through the window 218 of the front plate 206
and is collected by a discharge tube 224, which is
positioned in front of the window 218 and leads the
released indicator to a container 225.

5 Upon removal of the indicator 18 from hanger
1 and after back plate 207 is moved upwardly, hanger 1
continues to slide down the feeding rail 205. As
illustrated in Figure 10(c), hanger 1 with web 4 is
10 moving down the feeding rail 205 after being decapped.
The decapped hanger is either collected manually or
automatically therefrom, for example by means of a
screw conveyor, which can collect decapped hangers
from a plurality of feeding rails 205 coming from
15 respective decapping apparatuses.

As illustrated in Figures 9 and 10(a), the
automatic means for removing indicators from hangers
is driven pneumatically, and further comprises
position control means 211, air control means 214, a
20 first timer 216, a second timer 217, and an air valve
237. The air valve 237 generates and/or controls the
pressurized air, by which the decapping apparatus
according to the preferred embodiment of the present
invention is controlled and driven.
25

The air valve 237, the timers 216 and 217,
the actuating means 208, the air control means 240 and
the position control means 211 respectively are
connected by air tubes for pneumatic control. Also,
30

1 the entire apparatus is held and fixed to a holding
means (not shown).

5 As shown in Figure 10(a), the position
control means 211 comprises a first detector 212 for
the position of the front plate 206 and a second
detector 213 for the position of the back plate 207.
The first detector 212 and the second detector 213
work on a pneumatical basis and have a similar
structure. First and second detectors 212 and 213
10 each include generally a cylindrical tube illustrated
by 244 and 245, respectively, and pistons 222 and 223,
respectively, which are movable within each of said
cylindrical tubes 244 and 246. The outer ends of
pistons 222 and 223 are provided with contact plates,
15 which are contacted by the upper sides of the front
plate 206 and the back plate 207, respectively.

In the upper position, the front plate 206
and the back plate 207 press inwardly pistons 222 and
223, respectively, and cause a pneumatic signal in the
20 position control means 211, thereby permitting a
steady control of the position and the movement of the
plates 206 and 207. Figure 10(a) shows a cross
section of the control means 211 and the plates 206
and 207, whereby the position of the plates 206 and
25 207 is the same as in Figure 9. Also, the discharge
tube 224 and a collecting container 225 for the
released indicators 18 are illustrated.

30 Figure 10(c) illustrates a side view of the
air control means 214 and the tube plates 206 and 207.

The air control means 214 comprises a third detector
1 215 for detecting the position of the back plate 207.
Third detector 215 has a cylindrical tube 249 and a
piston 226, which, generally have the same shape and
function as the first and second position detectors
5 212 and 213 as described above. In Figure 10(c), the
back plate 207 is in its upper position, and the front
plate 206 is in its lower position. The back plate
having released and carried a indicator 18 upwardly
10 from hanger 1, contacts a contact plate 226 of the
position detector 215 and moves the contact plate 226
together with its piston into the cylindrical tube of
the detector 215. This causes a pneumatic signal
within the air control means 214, which enables a
15 pressurized air blast through a tube 227, which is
connected to the opening 221 of the back plate 207 by
appropriate connection 228. The air blast through the
opening 221 ejects the released indicator 18 through
the window 218 of the front plate 206 into the
20 discharge tube 224. The arrow in Figure 10(c)
indicates the direction of the movement of the
indicator 18.

In operation, the back plate 207 moves
25 downwardly to its lower position, which is followed by
an upward movement of the front plate 206 to its upper
position. The whole movement cycle is repeated
periodically, so that a plurality of hangers 1 can be
decapped easily and reliably in an automated process.
30 Since one of the plates 206 and 207 is always in its

1 respective lower position, there will be always a
number of hangers 1 on the feeding rail 205 waiting to
be decapped one after another, as shown in Figures
10(a)-10(c).

5 The actuating means 208 controls the
movement of the two plates 206 and 207, so that the
front plate 206 cannot move upwardly when the back
plate 207 is not in its lower position, and the back
plate 207 cannot move upwardly when the front plate
10 206 is not in its lower position. This ensures that
the hangers to be decapped do not slide along the
feeding rail 205 under the plates 206 and 207 without
being decapped.

15 The first timer 216 controls the regular
cycle of the movement of the two plates 206 and 207,
whereas the second timer 217 enables a repeated
downward movement of the front plate 206. If, for
example the hook of the hanger 1 is bent or damaged,
or the indicator 18 is bent or damaged, the front
20 plate 206 is not permitted to slide downwardly to
press or hold the indicator 18 into the recess 219,
since its lower edge contacts the upper edge of the
indicator 18 and is therefore restricted in its
25 downward movement. In this case, the timer 217 gives
a signal to the actuating means 208 to lift the front
plate 206 up again and retry to move it downwardly.
This is repeated, until the indicator 18 is properly
received in the recess 219 of the back plate 207 and
30 the front plate 206 can move to its lower position

without resistance. This problem can already
1 partially be avoided by an appropriate angle or bend
of the lower edge of the front plate 206, as discussed
above.

5 Although the system of Figures 9 and 10 has
been illustrated with only one style of hanger shown
in Figure 5, it is contemplated that a hanger of any
other style, including the styles shown in Figure 5,
could be substituted therefore.

10 As illustrated in Figure 11, a method for
re-using hangers having size indicia removably mounted
thereon is illustrated in a schematic flowchart form.
A hanger manufacturing center 401 molds hangers and
ships the hangers via distribution channel 403 to a
15 plurality of garment manufacturers 405 at scattered
geographic locales. While a single group of garment
manufacturers 405 are illustrated in Figure 11, it
should be noted that in actual practice, there may be
hundreds of garment manufacturers that supply garments
20 to any large retail outlet.

Simultaneously, a plurality of removable
size indicia are molded at 407 and shipped in bundles
413 of size indicia via distribution channel 409 to
these same garment manufacturers 405.

25 At each of the plurality of garment
manufacturers 405, a single hanger 411 and a single
index cap from bundle 413 are assembled with the
garment manufactured by the U.S. garment manufacturing
facility at that geographic local. The size indicia
30 represents at least one characteristic of the garment,

and preferably indicates the size of the garment as
1 denoted in the country in which the retail store to
which the garment is to be shipped, is located. A
plurality of hangers, garments and size indicia are
then batched as illustrated at 415, and the batch is
5 shipped to a retail store 419 or a regional
distribution center 417 operated by the retail store
chain 419.

The regional distribution center 417
provides a supply of garments on hangers 421 to the
10 various retail stores 419 at scattered geographic
locations for sale to consumers. At the point of sale
in the retail store 419, the garments are removed from
the hangers and the hangers 411 are returned to the
regional distribution center 417. It is preferred
15 that the hangers are shipped to the distribution
center in collapsible pallet-sized boxes with plastic
lids. While it is preferable to return all of the
hangers to the regional distribution center 417, it is
noted that in actual practice, from 10-25% of the
20 hangers shipped from the distribution center to the
retail store as garments on hangers 421 are not
returned, but are sold with the garment to the
consumer, or are damaged or otherwise lost in use.

At the regional distribution center 417, the
25 hangers are batched and sent to the recycle center
423, again preferably in the collapsible pallet-sized
boxes, where the removable size indicia are removed,
and the hangers are inspected and sorted by size and
type, and then cleaned.

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In a preferred embodiment of the invention,
1 the size indicia are automatically removed as
previously described with respect to Figures 7 and 8.

At the recycle center 423 it has been found
that from 10-30% of the hangers returned are no longer
5 suitable for reuse because of excess wear, breakage,
warpage, gum tags or other debris which can not easily
be removed.

The hangers that fail the inspection and the
index caps are returned via distribution channel 425
10 to a location which grinds or granulates the hanger
rejects and index caps as illustrated at 427. At
location 427, the hangers are also separated to
classify the hangers according to the material from
which they were molded, with polypropylene and
15 polystyrene being the two primary materials from which
hangers are molded. The polypropylene granulated
material is then used to mold consumer hangers as
indicated at 429 which may be returned by a
distribution channel 431 for sale to consumers. The
20 remaining material not suitable for remolding is sold
as scrap as indicated at 433.

At the recycle center 423, it has been found
that from 30-50% of the hangers that originally
entered the recycling loop at 403 are available for
25 redistribution. The hangers 411, without any size
indicia matter thereon, are then reshipped to the
garment suppliers 405 as part of the order fulfillment
at supply line 435. The supply of hangers at 435 is
augmented by freshly molded hangers as indicated at
30 403 and the combined stream of recycled and new

hangers 437 is returned to the garment suppliers 405
1 as indicated in Figure 11. It is contemplated that
each hanger will pass through the loop 2 to 6 times
before it becomes unrecoverable. The hangers shipped
from the recycle center 423 for reuse can be shipped
5 to either US or offshore garment manufacturers.
However, since it is contemplated that only 50-80% of
the originally molded hangers will be reused the
supply may only be sufficient to meet the demands of
the closer, in this instance, the US garment
10 manufacturers. The cost of molding vs. shipping
internationally must also be taken into consideration
when dealing with offshore garment manufacturers.
However, the higher shipping costs are often
outweighed to meet a particular customer's demand in
15 an offshore country.

Simultaneously therewith, a new plurality of
removable size indicia are molded at 407 and shipped
via channel 409 to the garment manufacturers 405 to be
reassembled with the hanger arriving from product
20 stream 437.

At the present time, it has been found that
the labor and material handling required to sort the
removable size indicia at the recycle center 423 is
more expensive then newly molding the removable size
25 indicia at step 407. Not only are the removable size
indicia molded in a plurality of colors, but each of
the colors may represent as many as ten different
sizes as herein before previously described. In
addition to the sorting, the removable size indicia
30 must be inspected, and reassembled into a magazine or

plurality of stacked caps suitable for automated
1 assembly with the hangers and garments at the garment
manufacturers 405. Consequently, in the normal course
of proceeding, the removable size indicia are ground
at step 427 and sold as scrap at step 433 as indicated
5 by channel 439. However, it is possible for the size
indicia to be sorted at the recycle center 423 and
then shipped back to the garment manufacturers for
reuse.

Presently, a significant percentage of
10 garments sold in the retail stores 419 are
manufactured off shore in areas such as China,
Thailand, India, Ceylon, Turkey and countries of the
Near East. These offshore garment manufacturers are
indicated at 441 and provide essentially the same
15 function as the domestic manufacturers indicated at
405 inasmuch as each of these entities manufactures a
garment, and then assembles a hanger 411, an index cap
from the bundled stack 413 and the garment in an
automated production line to form a product known as
20 G.O.H. (Garment On Hanger) which is ready for display
in the retail stores 419. The G.O.H. garments are
then batched as indicated at 443 and shipped via
international transport, in generally intermodal or
airborne containers, to the regional distribution
25 center 417.

Inasmuch as the hangers, when molded
represent a substantial bulk, it is upon occasion,
less expensive to mold the hangers offshore as
illustrated at 445 and ship the hangers 411 to a
30 regional hanger distribution center 447, than to mold

and ship from the US facility 401. Regional hanger
1 distribution centers 447 may be located in such
diverse geographic locales as Hong Kong, India or
Turkey and intended to serve clusters of manufacturing
entities located within a few hundred miles of the
5 regional distribution center.

Batches or bundles of removable size indicia
413 are also molded at 407 and shipped via
distribution channels 409, 449 and 451 to the offshore
distribution centers 447 or offshore garment
10 manufacturers 441. The offshore distribution center
447 then makes separate shipments of hangers 411 and
bundles of removable size indicia 413 to the offshore
garment manufacturers 441. The offshore garment
manufacturer then assembles one of the hangers, one of
15 the removable size indicia and one of the garments to
provide a garment on hanger (G.O.H.) wherein the
removable size indicia corresponds to the size of the
garment.

Molding the removable size indicia at a
20 single location such as that indicated at 407 ensures
that the colors chosen for the removable size indicia
are consistent when they arrive at the retail stores
419 even though the adjacent garments and hangers may
have been assembled thousands of miles apart from each
25 other. In addition, the bulk and size of the bundles
removable size indicia 413 render them susceptible to
transoceanic shipment and use.

While in the preferred embodiment, the
removable size indicia are all molded in a single
30 location, it would be entirely possible to mold the

removable size indicia in one or more offshore molding
1 facilities, provided precise control is maintained
over the pigments used in the color indexing scheme.

There may also be a flow of returned surplus
hangers as indicated along distribution channel 450
5 and 450a which may be used to augment the supply of
hangers at 435 instead of molding new hangers at 401.

In the preferred embodiment, the hanger of
the present invention is formed from styrene, K resin,
H.I. styrene, polypropylene, other suitable
10 thermoplastic or combinations thereof. The indicator
of the present invention is formed from styrene or any
other suitable plastic material.

While there have been shown and described
15 what are considered to be the preferred embodiments of
the invention, it will, of course, be understood that
various modifications and changes in form or detail
can be readily made without departing from the spirit
of the invention. It is therefore intended that the
20 invention not be limited to the exact form and detail
herein shown and described nor to anything less than
the whole of the invention herein disclosed as
hereinafter claimed.

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THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A system for color coding the sizes of clothing displayed in retail clothing stores having a plurality of clothing lines for a plurality of consumer groups, wherein each consumer group includes individual consumers of similar physiology, said system providing a uniform color sizing code to assist individual consumers in locating items of clothing in different lines of clothing appropriate to their physiology in different areas of the retail store, said system comprising:

(a) a plurality of individual items of clothing to be offered for sale, each item classified into one of a plurality of clothing lines;

(b) a plurality of graded sizes for each of said clothing lines, said graded sizes having a plurality of common size designations that appear in all of said lines:

(c) a common code group having the same code identification for identifying graded sizes in different clothing lines that would be selected by a consumer selecting clothing appropriate for the same consumer physiology;

(d) a plurality of color coded index caps, each of said colored codes assigned to a common code group identified in step (c) above to form a matched set of color coded index caps identifying graded sizes common to a specific consumer physiology;

(e) a plurality of hanger styles for displaying the individual items of clothing, each of the hangers having one of said color coded index caps mounted thereon, the color of said index cap conforming to the assigned common code group,

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whereby a consumer may move from an area displaying one line of clothing to another within said retail store displaying other lines of clothing and find articles of clothing appropriate to their physiology displaced on hangers identified by the same index cap color.

2. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in claim 1, wherein the individual lines of clothing include women's apparel, men's apparel, women's apparel sized by waist, men's apparel sized by waist and plus sized apparel.

3. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in claim 2 wherein the individual lines of clothing further include infant and toddler apparel, youth apparel, and intimate apparel.

4. The system of color coding the sizes of clothing displayed in retail clothing stores as claimed in claim 1 wherein the plurality of graded size designations include S(small), M(medium), L(large), and XL(extra large).

5. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in claim 4, wherein the plurality of graded size designations further include XS(extra-small), M/L(medium/large) and XXL(extra-extra large)..

6. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in claim 1, wherein the graded sizes identified in step (c) are based on large scale consumer physiological demographics, so that in identifying the graded size for an item of clothing

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sized by a waist size, the size identified is common to the graded size of an item of clothing sized by a chest size for the same consumer physiological profile.

7. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in claim 6, wherein a female consumer conforming to an average physiological demographic profile can move from area to area within the retail store, reviewing plural lines of clothing, as for example for slacks, to suits, to dresses, to coats and to intimate apparel and find the size appropriate to her physiological profile identified by the same color coded index cap in each area for each separate line of clothing.

8. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in any one of claims 1 to 7, wherein the plurality color codes used by said color codes index caps are selected from 16 easily distinguishable colors.

9. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in claim 8, wherein the only colors repeated for graded size designations are repeated in clothing lines not worn by the same consumer, as for example in infant/toddler clothing line and a plus clothing line.

10. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in any one of claims 1 to 9, wherein each color coded index cap also visually displays one of said common size designations.

11. The system for color coding the sizes of

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clothing displayed in retail clothing stores as claimed in any one of claims 1 to 10, wherein said color coded index caps may be removed from said hangers to enable reuse of the hanger with a different clothing line.

12. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in any one of claims 1 to 10, wherein said system further includes a means for removing said color coded index caps from said hangers.

13. The system for color coding the sizes of clothing displayed in retail clothing stores as claimed in any one of claims 1 to 10, wherein said system further includes an automatic means for attaching said color coded index caps to said hangers.

FIG.1

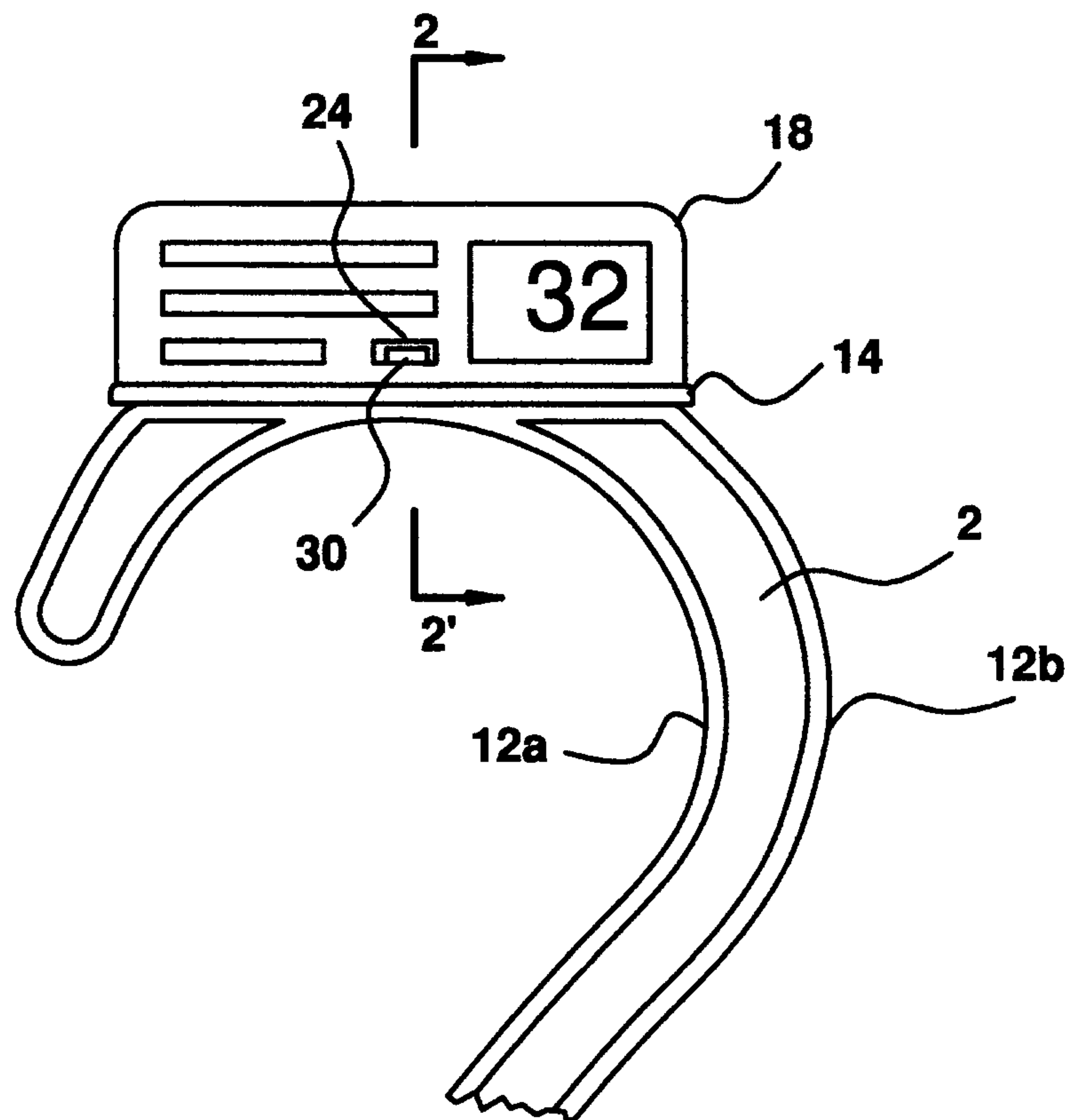


FIG.2

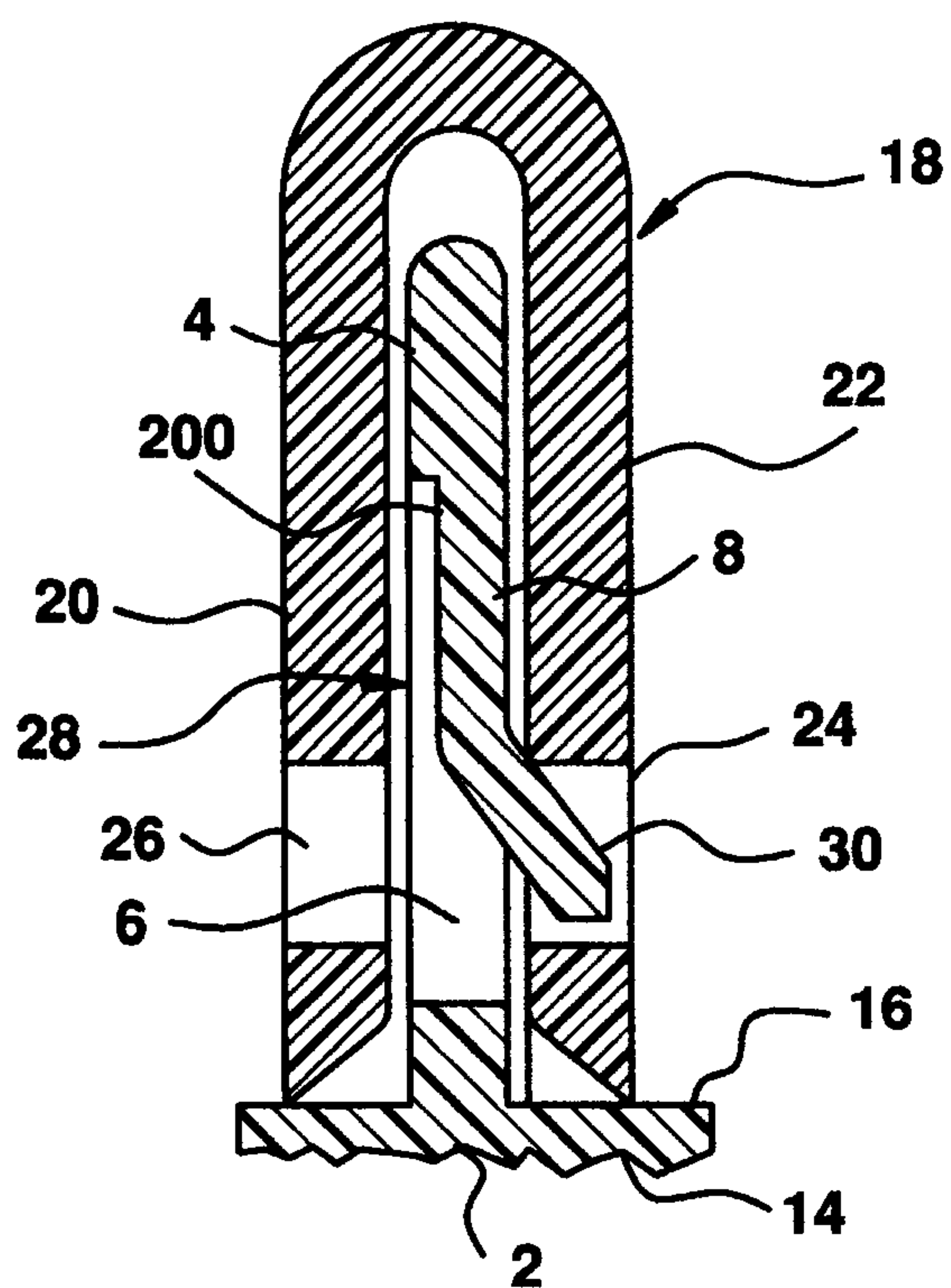


FIG.3

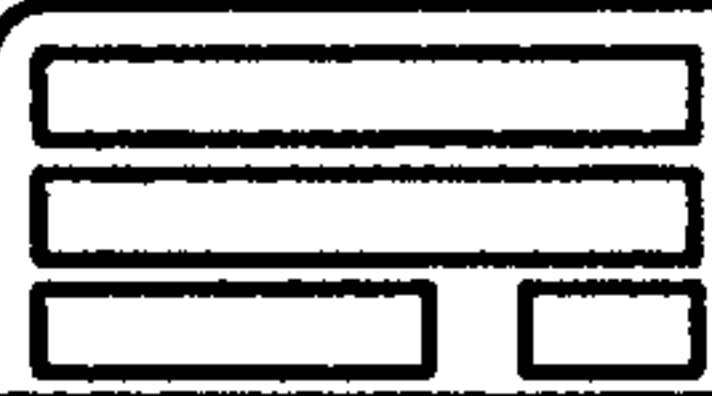
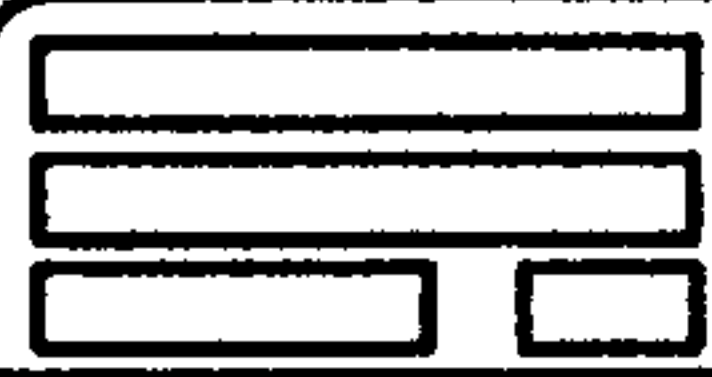
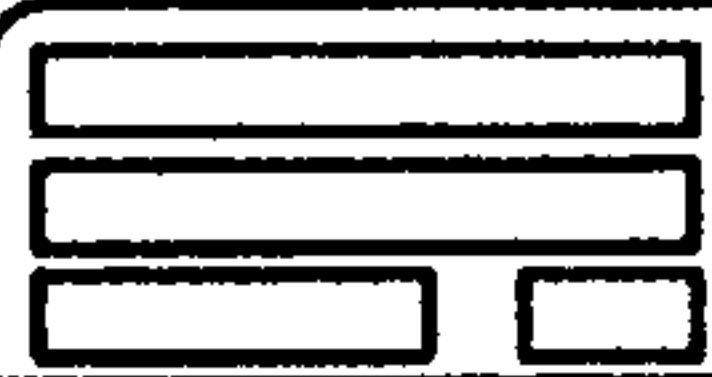
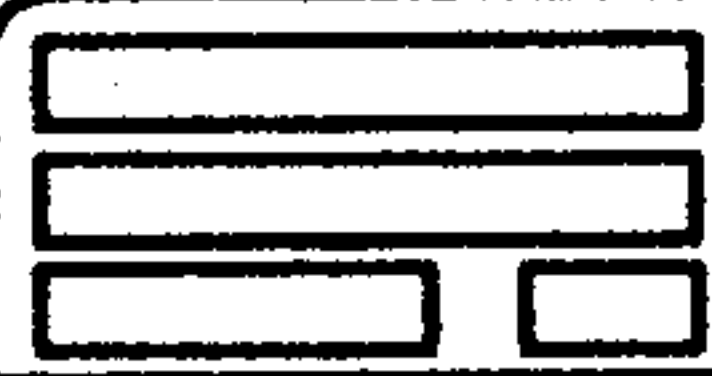
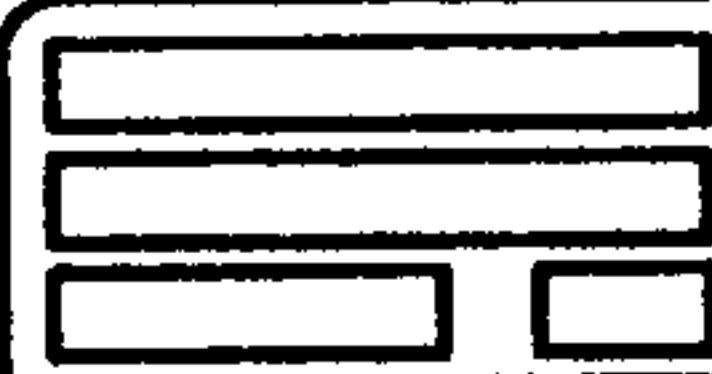
BLUE	
285 U	
	L
	M/L
	24M
	9
	9/10
	24W
	38

FIG.4

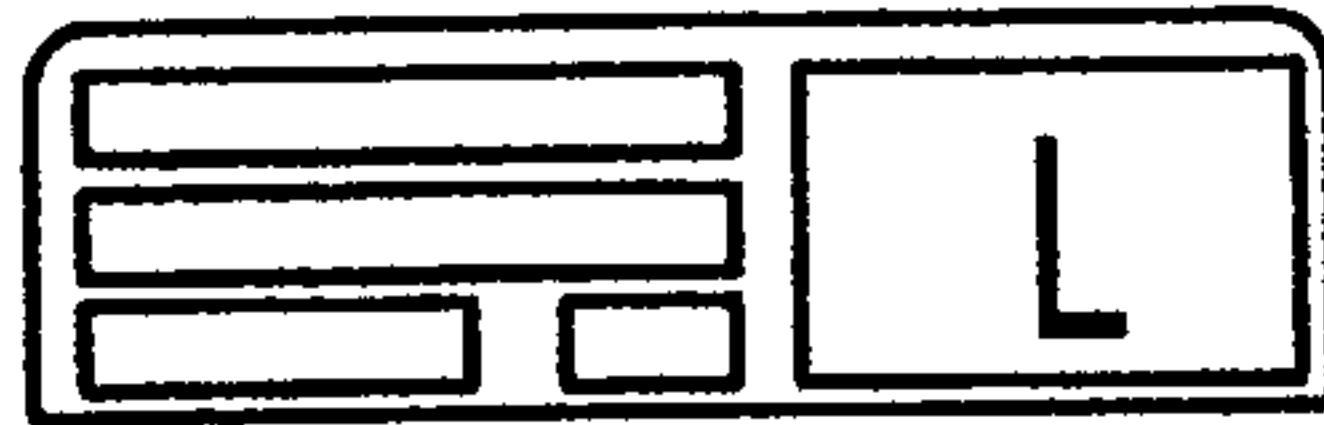
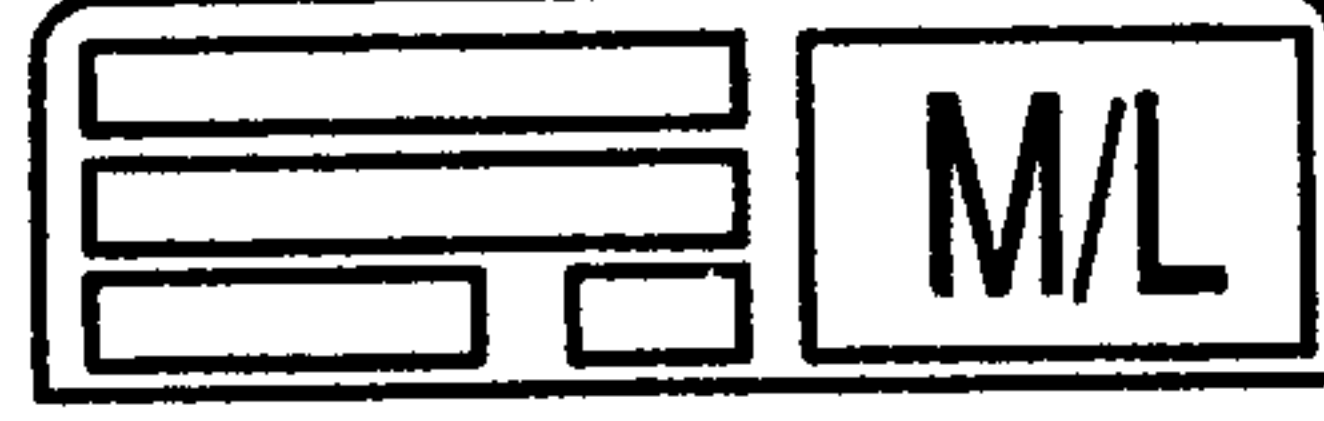
	P 246 U LEMON
	P 2593 U PURPLE
	
	P 285 U ROYAL BLUE
	
	P 340 U GREEN
	P121 U YELLOW
	P 189 U PINK

FIG.5

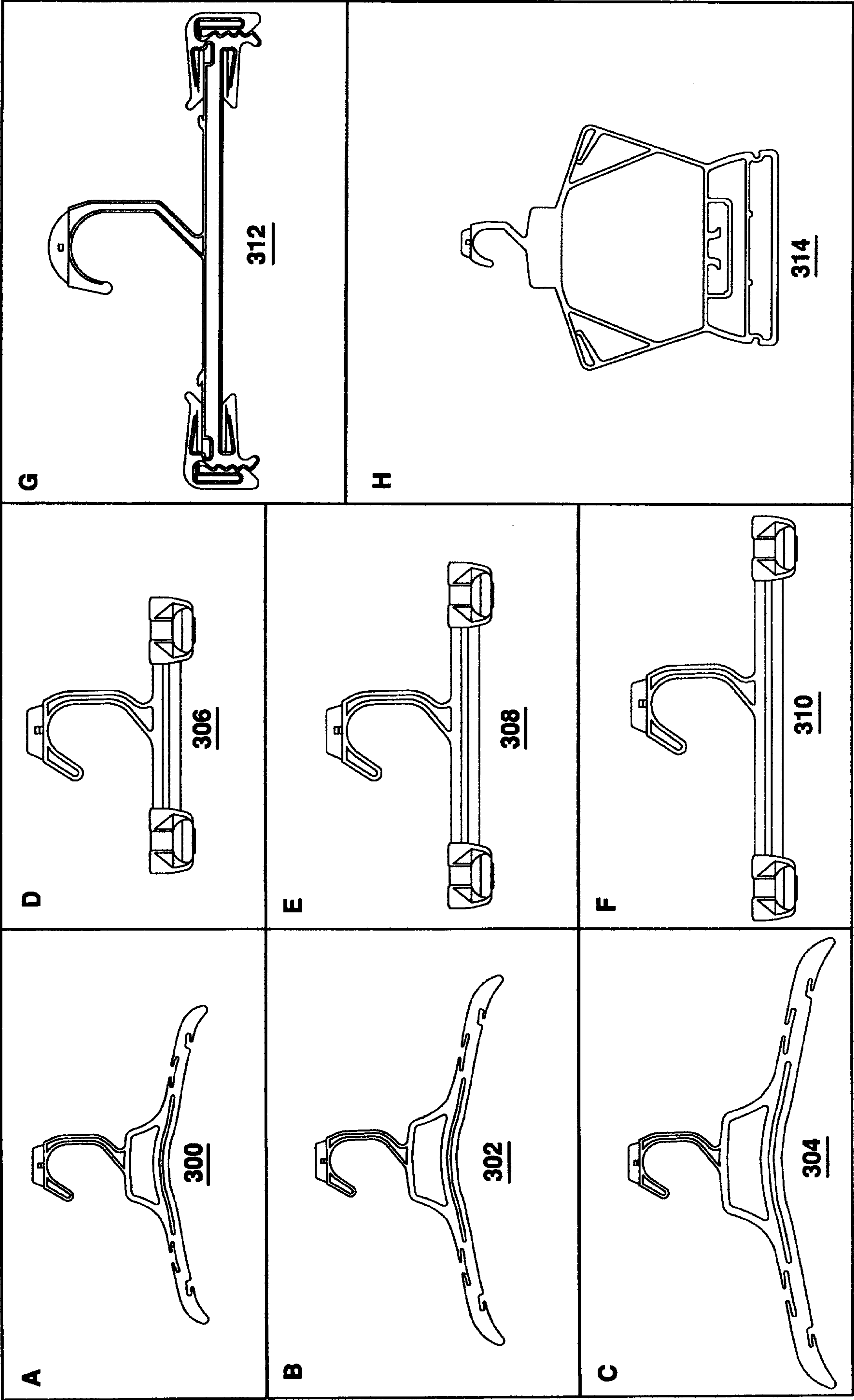


FIG.6A

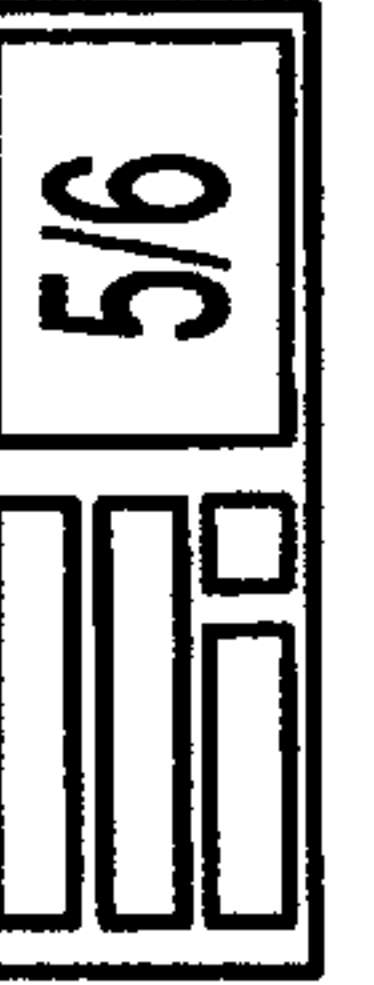
ROW	COLUMN	1				2				3				4				5				6			
		LEMON 101 U				PINK 189 U				AQUA 326 U				RED 192 U				TAN 145 U				YELLOW 121 U			
A	UNIVERSAL																								
B	Tall/Multi																								
C	INFANT/ TODDLERS																								
D	METRIC																								
E	Multi-sizes																								
F	Plus-sizes																								
G	WAIST (imperial)																								

FIG.6B

7	8	9	10	11	12	13
LT-BLUE 306 U	GREEN 340 U	SKY 2975 U	PURPLE 2715 U	OLIVE 398 U	BLUE 285 U	ORANGE 165 U
	M				L	
	S/M		1 SIZE		M/L	LT
	18M				24M	36M
6	7		8		9	10
	7/8				9/10	
	6X/7					
	22W				24W	
33	34	35	36	37	38	40

FIG.6C

14		15		16		17		18		19		20	
PURPLE 2593 U		LT GREEN 375 U		BUR/G 246 U		YELLOW 101 U		AQUA 326 U		TAN 145 U		SKY 2975 U	
XL		XLT		XXL		XXXL		4T		16		5T	
L/XL		XLT		XXLT		15		15/16		18			
2T		3T		14		15		15/16		16		18	
11		12		13		14		15		16		18	
11/12		13/14		13		14		15		16		18	
26W		44		46		48		15/16		16		18	
42		44		46		48		15/16		16		18	

FIG.7

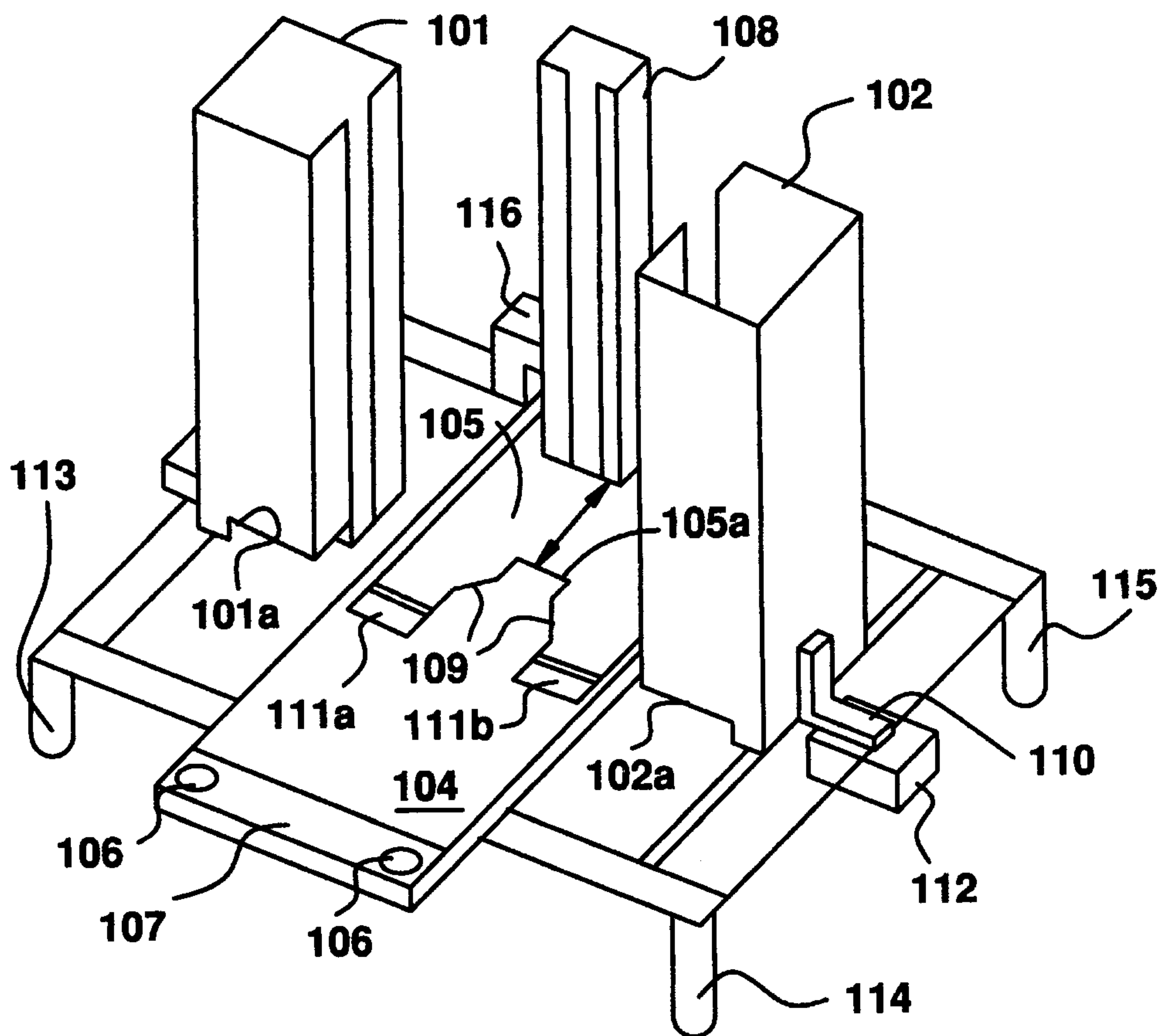


FIG.8

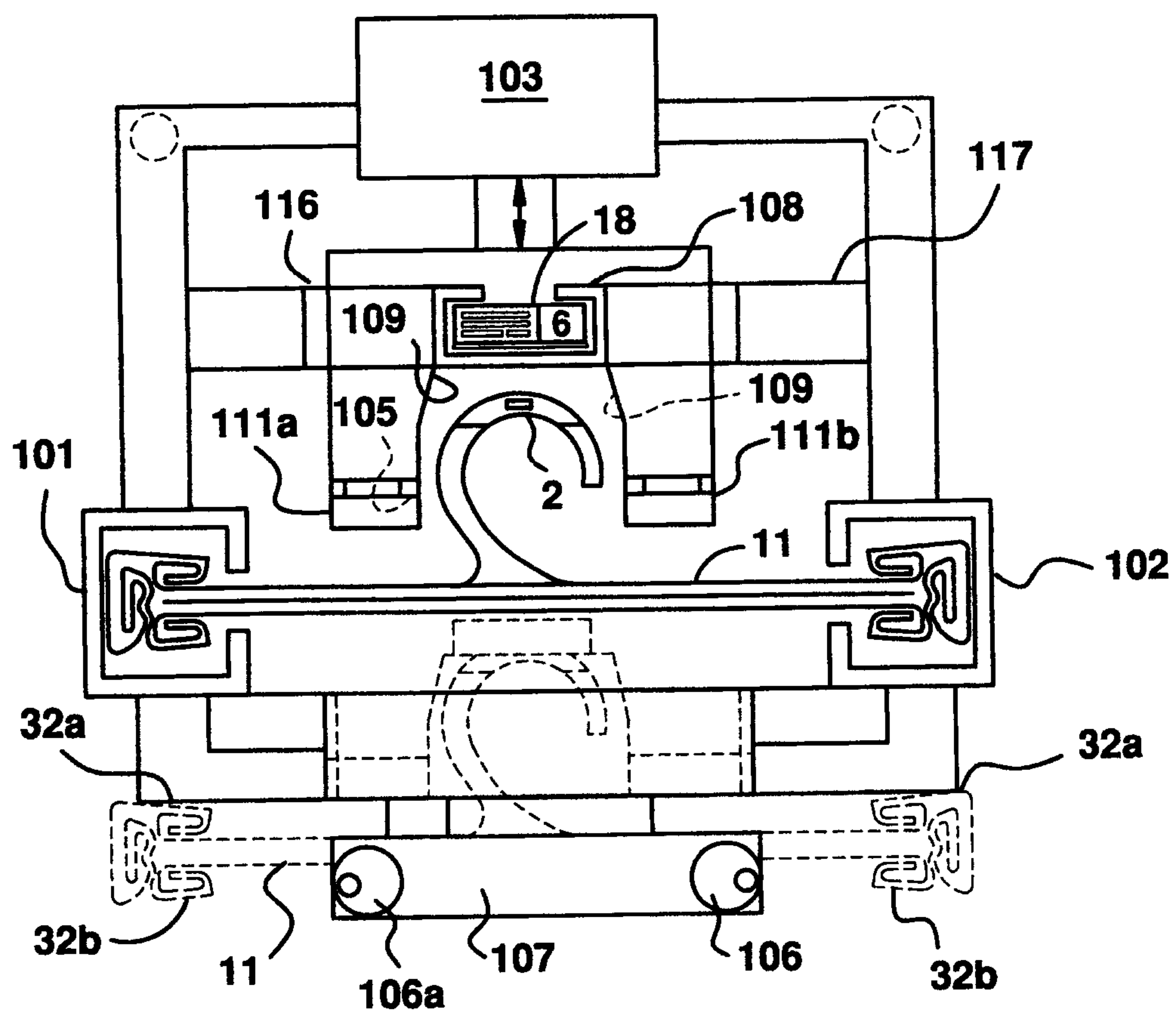


FIG. 9

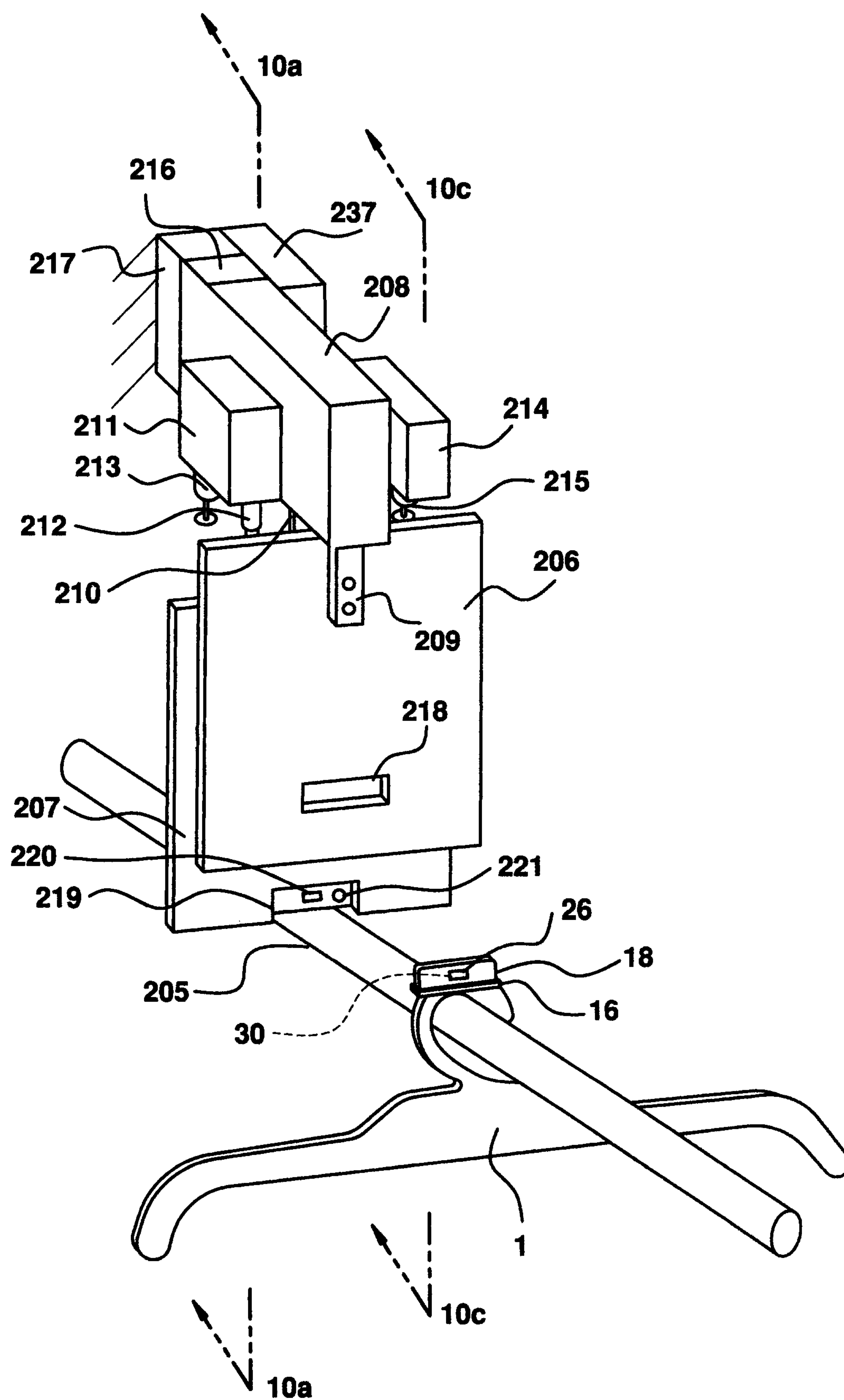


FIG. 10A

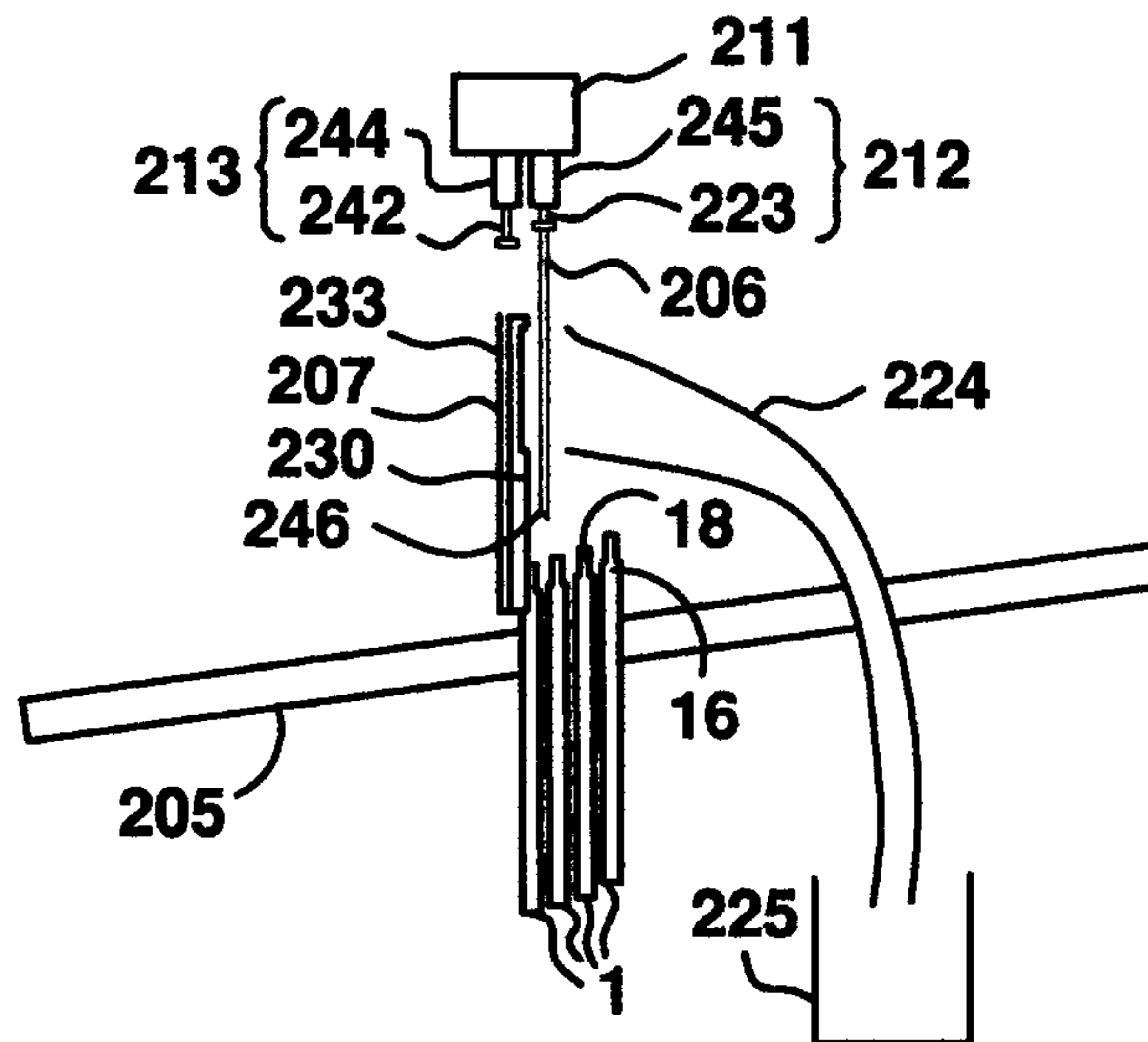


FIG. 10B

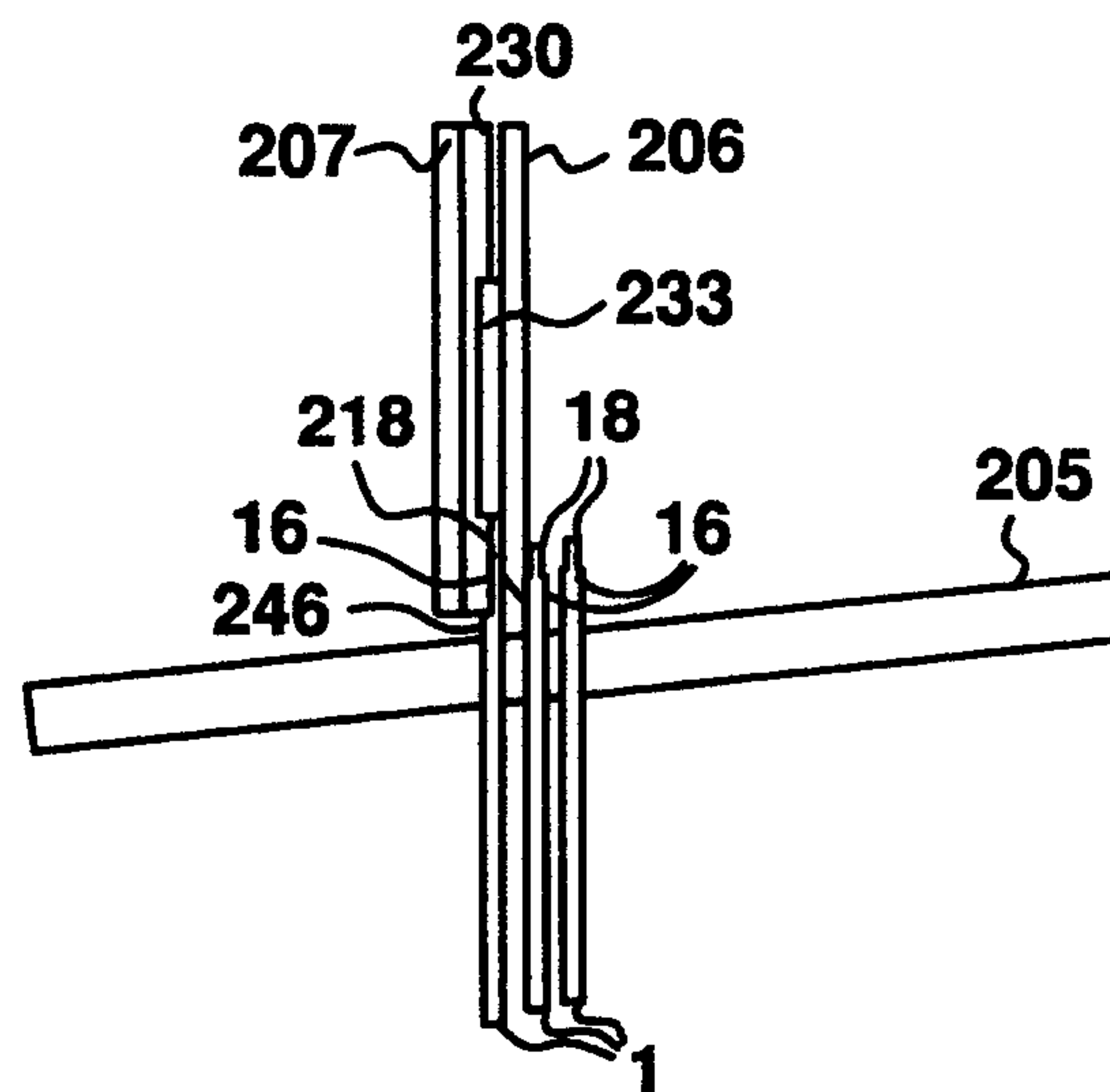


FIG. 10C

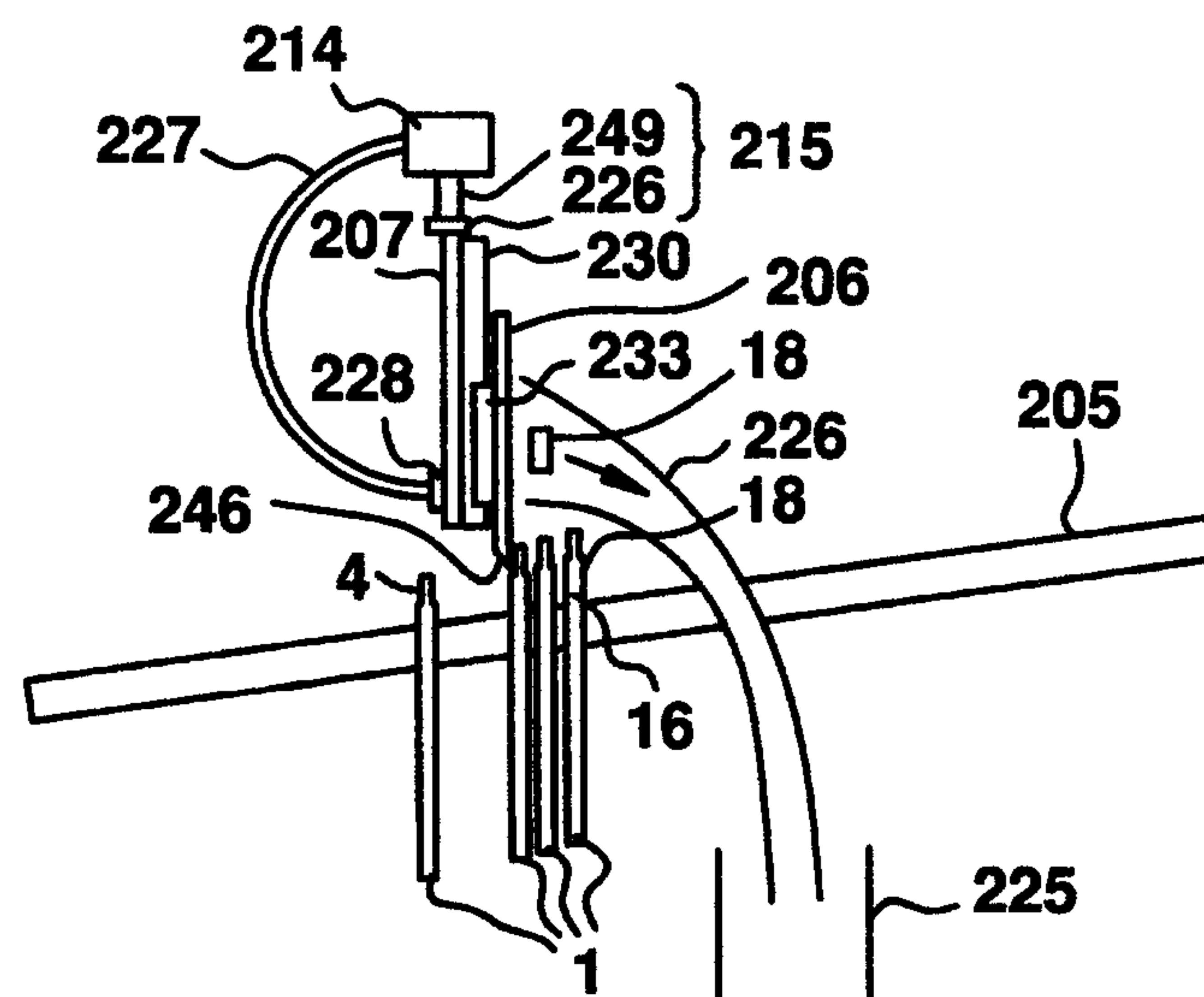


FIG. 11

