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(54) Egg container.

(57) The invention discloses an egg container comprised of a base tray (T) and a cover (C), with the base tray (T) having a plurality of egg cells (10), each egg cell (10) having egg-gripping portions (30) therein to hold and cushion the egg. The cover (C) also includes egg-cushioning means (108) thereon.

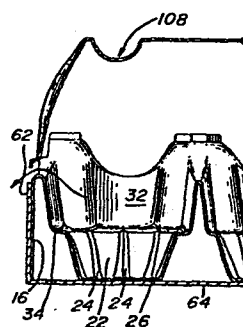


Fig. 5

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1 The present invention relates to an egg
container.

 The use of egg containers is well known in the
art. Conventionally, egg containers have consisted of a
5 tray and cover portion which may be hingedly connected
thereto, with the egg tray having a plurality of egg cells.
The eggs are placed in the egg cells and are not retained
therein; normally, the eggs are free to move to a certain
extent within each egg cell since, for any size of egg,
10 there is a certain variation permitted. This movement of
the eggs in a conventional container, permits a substantial
breakage to occur. Normally, such trays are formed of a
cardboard or a foam material.

 The art also contains various proposals for
15 means to cushion eggs. However, many such proposals have
been deemed to be too complicated to manufacture and too
expensive, and accordingly, they have not gained wide
acceptance in the art.

 It is an object of the present invention to
20 provide an egg container wherein the eggs are securely
held while being cushioned and which tray may be easily
manufactured.

 It is a further object of the present invention
to provide an egg container wherein a single size container
25 is adapted to receive several different sizes of eggs
including variations in any one size.

 According to the present invention, there is
provided an egg container which comprises a base tray and
a cover therefor. The base tray includes a plurality of
30 separate egg-receiving cells. Each egg-receiving cell is
adapted to receive a single egg and is separated from
each other egg-receiving cell. Each cell has a plurality
of egg-gripping means therein, which egg-gripping means
are such that they will adapt to different sizes of eggs
35 while retaining the egg securely spaced from adjacent
eggs and from the bottom of the container. The cover

- 1 portion includes egg-cushioning means for the top of each
egg located in an egg cell.

Preferably, the container includes a further
bottom section adapted to fit about the tray section
5 and which section conveniently may be formed of a card-
board or paperboard or like material. Such a section can
easily be adapted to receive advertising and the like and
adds rigidity to the tray per se.

- The tray, as aforementioned, includes a
10 plurality of egg cells therein with each cell having a
plurality of egg-gripping sections, which sections are
partially deformable outwardly in response to the force
of an egg being placed in the cell such that the gripping
sections exert a restraining force inwardly on the eggs.
15 Due to the deformable nature of the gripping sections,
different sized eggs may be accommodated in a single size
tray.

Locking means on the tray are provided, which
locking means co-operate with locking means on the cover.

- 20 Preferably, the tray and cover portions are made
of plastic materials for reasons which will become apparent
from the description hereinafter.

Having thus generally described the invention,
reference will be made to the accompanying drawings
25 illustrating embodiments thereof, in which:-

Figure 1 is a perspective view of an egg
package of the present invention;

Figure 2 is a perspective view of a portion
of the tray of the egg package of Figure 1;

- 30 Figure 3 is a plan view, with the cover removed
on a portion thereof, of the package of Figure 1;

Figure 4 is an elevational view, partially cut
away, of the package;

- Figure 5 is a sectional view taken along the
35 lines 5-5 of Figure 3;

Figure 6 is a sectional view along the lines
6-6 of Figure 3;

1 Figure 7 is a sectional view along the lines of
7-7 of Figure 3;

 Figure 8 is a sectional view along the lines of
8-8 of Figure 3;

5 Figure 9 is a sectional view along the lines of
9-9 of Figure 3; and

 Figure 10 is a sectional view along the lines of
10-10 of Figure 3.

 In greater detail, the egg package of the
10 present invention includes a tray section T, a cover C
and a base portion B.

 Tray portion T consists of a plurality of egg
cells, each adapted to contain a single egg. In the embodi-
ment illustrated, the package consists of two half-sections,
15 each having six egg cells therein.

 Tray section T is of a generally rectangular
configuration and has an outer side wall 16 having a
plurality of inwardly extending ribs 18 formed therein to
add rigidity to the wall. At the corners of the wall
20 sections 16, an angled portion 14 is provided as shown in
Figure 2. Extending inwardly from the upper margin of
side wall 16 is an upper horizontal wall portion generally
designated by reference numeral 20.

 Tray section T as aforementioned, includes a
25 plurality of egg cells generally designed by reference
numeral 10. Each egg cell is partially defined by a
generally circular lower cell wall 22 having a plurality
of corrugations or flutes 24 therein. Extending along the
lower margin of lower cell wall 22 is a bottom cell wall
30 26.

 At the upper margin of lower side wall 22 is an
intermediate horizontal wall section 34. Intermediate
horizontal wall section 34 terminates in an upper side
wall portion 32. Forming a portion of upper side wall 32
35 are a plurality of egg gripping sections generally
designated by reference numeral 30. Each cell 10 has four

1 of such egg-gripping sections 30, each of which sections 30
is adapted to flex outwardly when an egg is placed in such
cell 10 and thereby retain the egg in its desired
position.

5 Each section 30 terminates in at least a partial
dome portion. In this respect, in the center of tray T
there are provided five full dome portions 28, each of
which has four egg-gripping sections 30 extending there-
from. Similarly, there are provided twelve half-dome
10 sections 27 which have two egg-gripping sections 30
extending therefrom and at the four corners of the container,
there are provided quarter-dome sections 29 each having a
single egg-gripping section 30 extending therefrom.

Upper horizontal wall section 20 terminates at
15 an upper outer wall generally designated by reference
numeral 38. As may be seen from Figure 2, half-dome
portions 28 are formed in two different alternating con-
figurations. In a first configuration, horizontal wall
section 20 extends inwardly a slightly greater distance
20 than usual and upper outer wall 38 has a projection 36
extending outwardly therefrom. Projection or nose 36
has an arcuate upper surface 37 and a lower substantially
horizontal surface 39. In the alternate configuration,
horizontal wall section 20 does not extend inwardly to
25 the same extent as that previously described and upper
outer wall 38 merely terminates at the drop of half-dome
27 without any projection thereon.

Each half-dome section 27 includes a recess 41
therein, which recess forms a portion of the locking
30 means as will be discussed hereinbelow. As will be seen
from Figure 2, the half-dome 27 formed at either of the
ends of the tray T have projection 36 formed on upper
outer wall 38.

Base portion B which may be made of a suitable
35 paperboard or cardboard material comprises a bottom 60
and walls 62 adapted, by means of glue 64, to adhere to
outer side walls 16.

1 Cover portion C, in the embodiment illustrated,
is divided into two half-sections 100 and 102, each
section being substantially identical and being joined
by an intermediate section 104.

5 Cover C includes an upper horizontal top wall
106 having, at a location corresponding to the top of
each egg cell 10, a dimple or egg-cushioning means
generally designated by reference numeral 108. In
addition, two additional dimples 108 are provided adjacent
10 intermediate section 104. Extending downwardly in an
arcuate manner as will be described in greater detail,
is cover side wall 110. Cover side wall 110, as may be
noted from Figures 5, 6 and 8 through 10, extends out-
wardly and downwardly adjacent cushioning means 108 at a
15 different angle than where recesses 41 are provided.
Adjacent recesses 41, cover side wall 110 extends sub-
stantially downwardly and terminates in an outwardly
extending horizontal portion generally designated by
reference numeral 112.

20 Formed within horizontal section 112 is a male
projection 115 adapted to seat in recess 41. Also, in
those portions of cover side wall 110 corresponding to
where projections 36 are located, there is provided an
outwardly extending flange portion 116 and subsequent
25 undercut 114 which is adapted to receive projection 36
and thus provide a locking means for the cover to the tray.

 Cover side wall 110 includes a plurality of
inwardly extending corrugations or flutes 118 which add
rigidity to the cover structure. In addition, corruga-
30 tions or flutes 118 are provided in intermediate section
104 as seen in Figures 1 and 9.

 Both the tray and cover are preferably made of
a suitable plastic material having the desired flexibility
for proper functioning of the container. Preferably, the
35 cover is made of a transparent material such that visual
inspection of the eggs may be had.

1 In packaging the eggs, each egg is placed in a
cell 10 and a gentle downward pressure may be exerted
thereon. This causes egg-gripping sections 30 to flex
inwardly while exerting a pressure on the eggs. In this
5 respect, it will be noted that egg-gripping sections 30
are arcuate in nature in both directions - i.e. from the
top of dome section 28, they curve inwardly down to lower
cell wall 22. This permits the eggs to be securely held
and the container may be turned upside down without the
10 eggs falling out. The container is sized such that the
eggs do not touch bottom cell wall 26. Preferably, the
placement of the egg is such that approximately 60% of the
height of the egg is below the point of first contact of
egg-gripping section 30 with the egg.

15 Following placement of the egg in the cell 10,
cover C is placed on top. The cover is sized such that
dimples 108 are adapted to just touch the top of an egg
placed in an egg cell 10. Dimples 108 will act as a
cushioning means for the eggs due to the flexible nature
20 of the plastic material forming cover C. As may be seen
from the figures, the mating of projections 36 with flange
116 and undercut 114 forms a locking means to retain the
cover on the tray. In addition, the mating of recesses 41
and male projection 115 prevent the side walls 110 from
25 flexing outwardly when a pressure is put on top 106.

 It has been found that the egg container of the
present invention may be adapted to hold several different
sizes of eggs in a single size container. Due to the
nature of egg-gripping sections 30 and the design of the
30 container, the single size container may serve to package
and hold securely both small and medium (and in some
instances large) eggs.

 As may be seen from Figures 5 and 8, side wall
110 adjacent each egg cell 10 terminates short of horizon-
35 tal wall section 20 to thereby leave an air gap there-
between. This permits the circulation of air to reach
the eggs in the egg cells.

It will be understood that the above-described embodiment is for purposes of illustration only and that changes and modifications may be made thereto without departing from the spirit and scope of the invention.

CLAIMS:

1. An egg container comprising a tray portion and a cover, said tray comprising a plurality of egg-receiving cells, each egg-receiving cell being separated from every other egg-receiving cell, each cell having a plurality of egg-gripping means therein, each egg-gripping means adapted to flex outwardly in response to the insertion of an egg in the cell and to exert a pressure on said egg to retain the egg in the cell, said cover having means for cushioning the top portions of an egg placed in said egg cells, said cover and tray having co-operating locking means to secure said cover to said tray, and said tray and cover providing air vent means therebetween.

2. An egg container comprising: a base tray including,

a plurality of egg cells each of which is adapted to receive a single egg. each of said cells having a wall extending thereabout to define the cell, said wall including a plurality of egg-gripping sections extending inwardly toward the interior of the cell, each egg-gripping section being partially deformable outwardly in response to the force of an egg being placed in the cell such that the gripping section exerts a retaining force on the egg, and locking means adapted to secure the cover to the tray;

said cover including a top wall portion and a side wall portion, said top wall portion having a plurality of egg cushioning means therein, said side wall portion having locking means thereon adapted to co-operate with the locking means on the tray.

3. The container of claim 2 wherein said tray is a one-piece unit formed of a plastic material.

4. The container of claim 3 wherein said cover is a one-piece unit formed of a transparent plastic material.

5. The container of claim 2 wherein said tray includes an outer side wall spaced from said wall defining said egg cells.
6. The container of claim 5 wherein each cell has four egg-gripping sections, each egg-gripping section extending arcuately inwardly towards said cell in two directions.
7. The container of claim 6 further including an outer base portion of a paperboard material.
8. The cover of claim 7 wherein said egg cells are further defined by a bottom wall extending between said wall extending about said cell, said tray being sized such that an egg placed in an egg cell is spaced from said bottom wall.
9. The container of claim 5 wherein said tray includes a plurality of recesses formed on a horizontal section thereof and said cover includes a plurality of male projections adapted to seat in said recesses.
10. The container of claim 9 wherein said locking means includes a projection on a side wall of said tray and a recess formed in said cover side wall to receive said projection.

Fig. 3

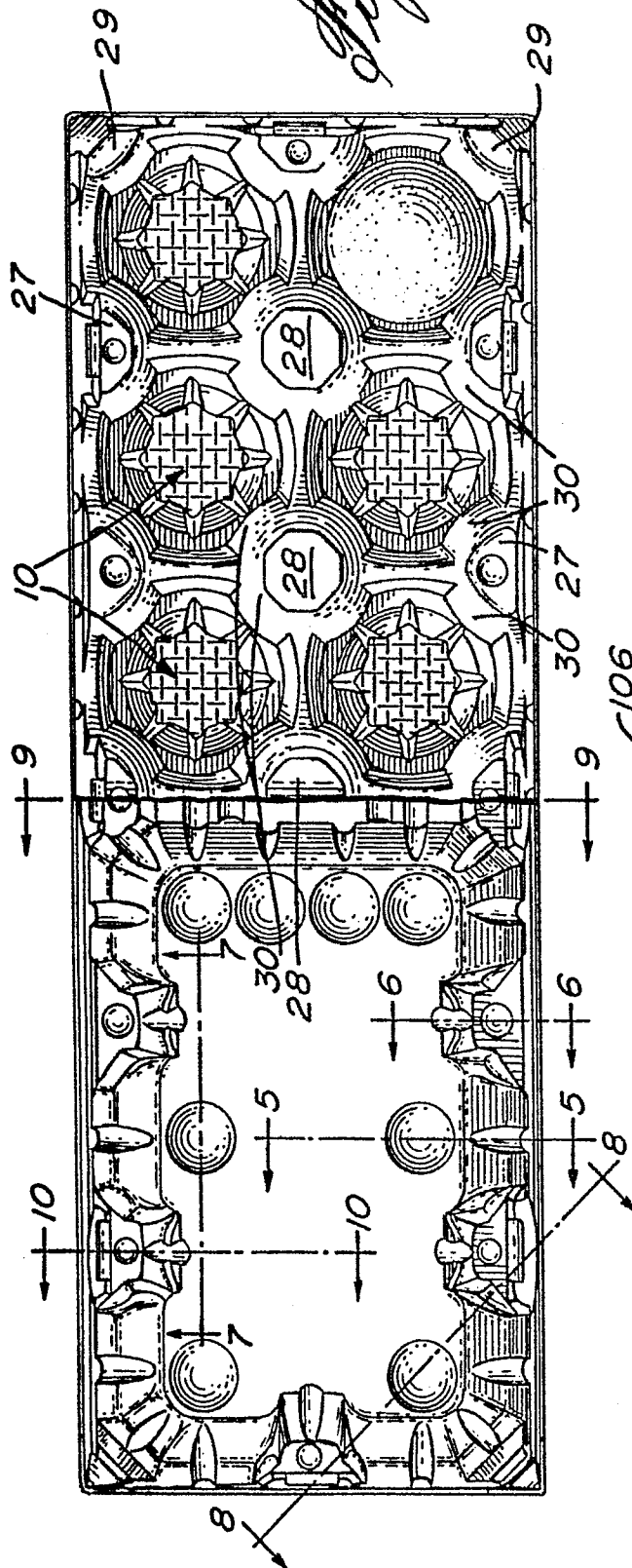
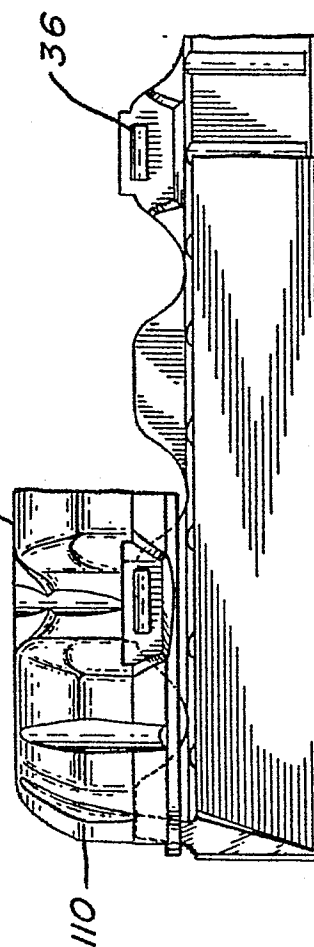


Fig. 4



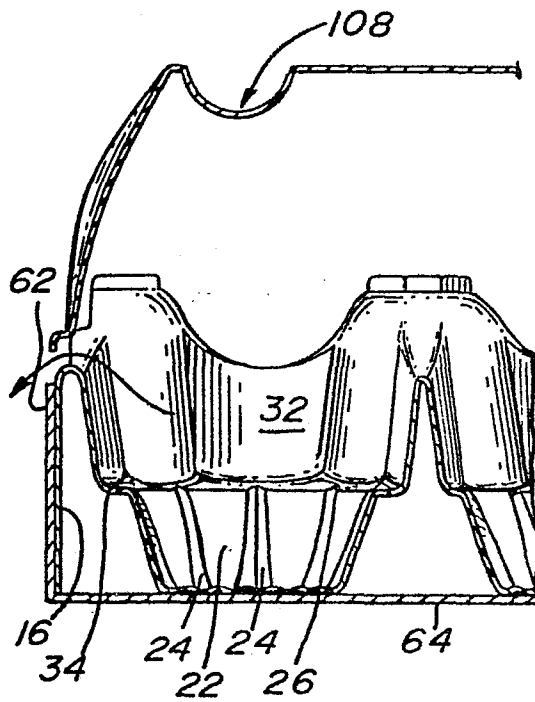


Fig. 5

Fig. 6

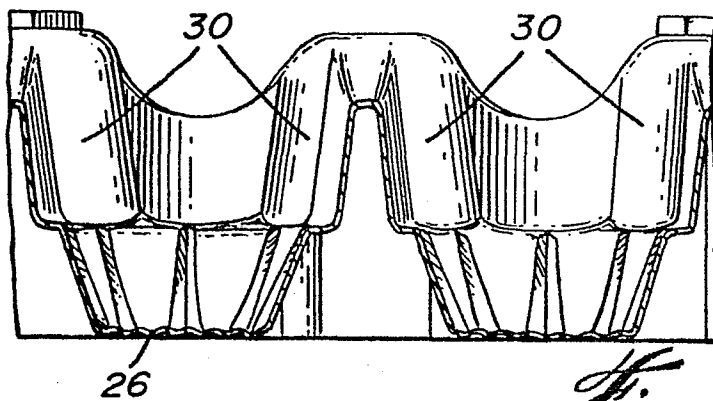
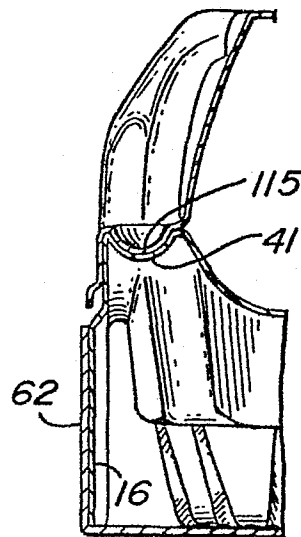


Fig. 7

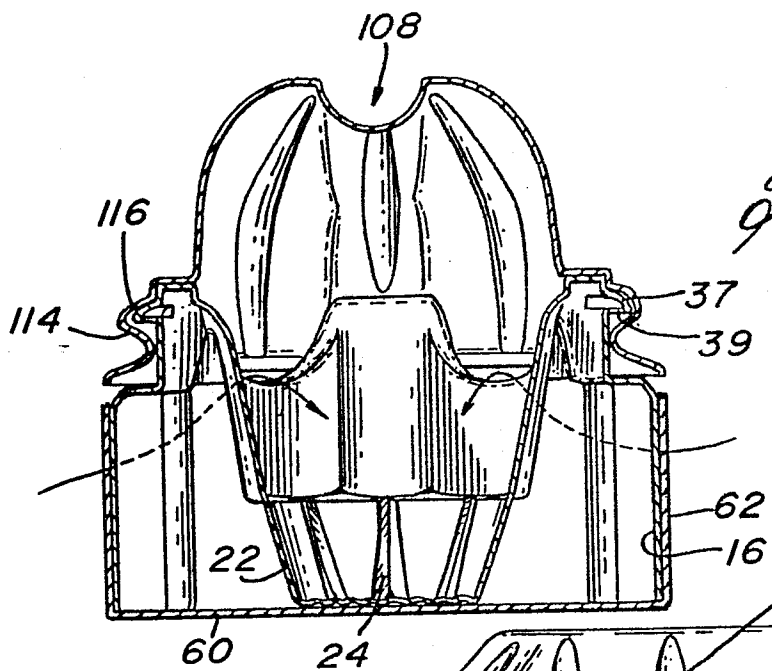


Fig. 8

Fig. 9

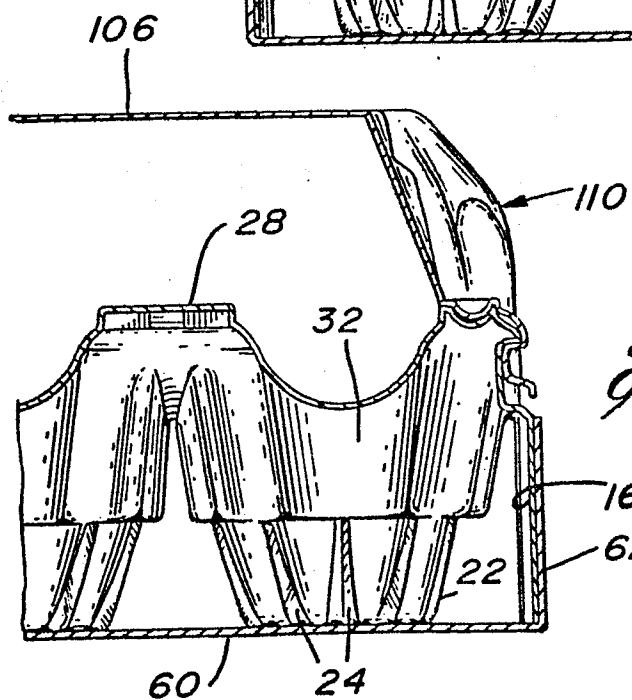
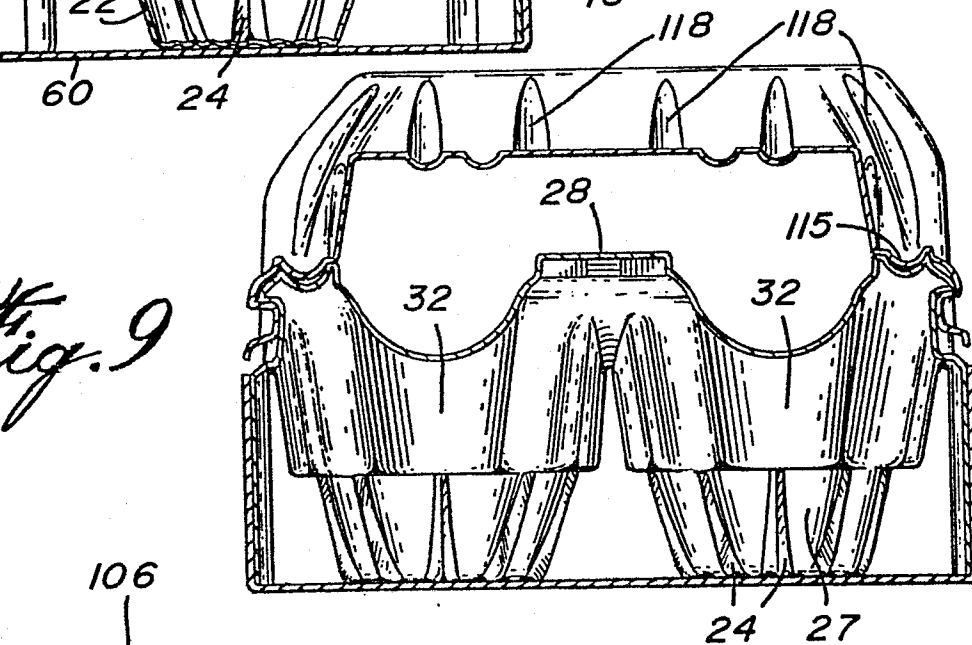


Fig. 10



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Y	US-A-2 939 602 (GRANT) * Column 5, line 73 - column 6, line 40; column 7, line 19 - column 8, line 31; column 10, lines 43-51; figures 1-5 *	1-4	B 65 D 85/32
A		6,9	
Y	--- DE-A-2 209 967 (AUTOBARS VENDABEKA) * Page 7, line 8 - page 8, line 13; page 10, line 19 - page 11, line 18; figures 1-3 *	1-4	
A		8,10	
A	--- US-A-3 643 857 (NOGUCHI) * Column 1, line 34 - column 2, line 18 *	3,4,8	TECHNICAL FIELDS SEARCHED (Int. Cl. ³) B 65 D
A	--- US-A-3 648 916 (COMMISSO) * Column 2, line 53 - column 3, line 30; figures 4-6 * -----	10	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 27-06-1983	Examiner BESSY M.J.F.M.G.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			