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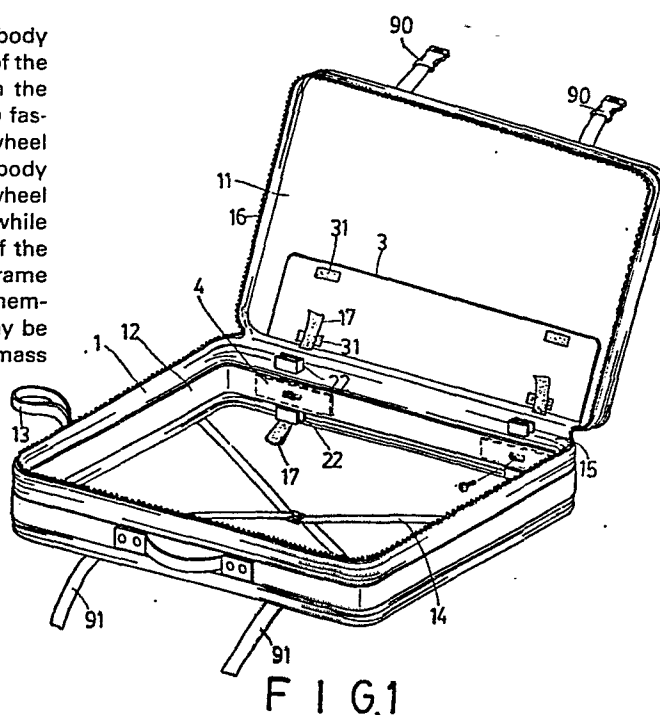
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54 **Improved travelling trunk.**

57 An improved travelling trunk comprising a main body portion (1), a lid (11) permanently attached to one side of the main body portion, a zipper-fastener (16) provided on the main body portion and the lid, a supporting frame (12) fastened on the inner side of the main body portion, four wheel members (231) mounted on the bottom of the main body portion in the way such that the upper parts of the wheel members are disposed in the inner side of the bottom while the lower parts of the wheel members in outer side of the bottom, and two locking plates (4) pivoted on the fixing frame (12) and engageable with the upper parts of the wheel members, whereby when not in use the travelling trunk may be reduced in volume thereby facilitating the storage and mass transportation of the travelling trunk.



TITLE: IMPROVED TRAVELLING TRUNK

The present invention relates to an improved travelling trunk which may be reduced in volume when not in use.

As a result of rapid population growth, many people
5 are engaging in travelling as leisure activity to relieve
day to day stress. Accordingly, the need has arisen for
travelling trunk. However, none of the travelling trunks
on the market can lead to satisfactory results. For
instance, the trunks made of rigid material cannot be
10 diminished while the trunks made of flexible material are
easily damaged at the bottom.

It is desirable, therefore, to provide an improved
travelling trunk which may obviate and mitigate the
above-mentioned drawbacks.

15 It is the primary object of the present invention
to provide an improved travelling trunk the bottom of
which may not be damaged by its wheels.

It is another object of the present invention to
provide an improved travelling trunk the wheels of which
20 may be prevented from separating from its bottom.

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It is still another object of the present invention to provide an improved travelling trunk which may be largely decreased in volume when not in use.

5 It is still another object of the present invention to provide an improved travelling trunk which is convenient to carry.

It is still another object of the present invention to provide an improved travelling trunk which is durable in use.

10 It is a further object of the present invention to provide an improved travelling trunk which is easy to move.

Other objects and merits and a fuller understanding of the present invention will be obtained by those having
15 ordinary skill in the art when the following detailed description of the best mode contemplated for practicing the invention is read in conjunction with the accompanying drawings wherein like numerals refer to like or similar parts and in which:

BRIEF DESCRIPTION OF THE DRAWINGS:

FIG. 1 is a perspective view showing the interior of an improved travelling trunk according to a first preferred embodiment of the present invention;

5 FIG. 2 shows the connection between the wheel member (231) and the bottom (15) of the main body portion (1);

FIG. 3 shows the connection between the locking plate (4) and the engaging members (22) of two wheel members (231);

10 FIG. 4 is a perspective view showing the interior of an improved travelling trunk, with the locking plates (4) engaged with the engaging members (22);

FIG. 5 is an enlarged, partial perspective view showing the connection between a locking plate (4) and two engaging members (22);

15 FIG. 6 is a perspective view showing that the improved travelling trunk is in the condition for use;

FIG. 7 is a perspective view showing the interior of an improved travelling trunk according to a second preferred embodiment of the present invention;

20 FIG. 8 shows the connection between the wheel member (232) and the bottom (15) of the main body portion (1);

FIG. 9 is a perspective view showing the interior of an improved travelling trunk, with the locking plates (5) engaged with the pins (24);

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FIG. 10 is an enlarged partial perspective view showing the connection between the locking plate (5) and the pins (24) of two wheel members (232);

FIG. 11 is a perspective view showing that the improved travelling trunk according to the second preferred embodiment of the present invention is in the condition for use;

FIG. 12 is a perspective view showing the interior of an improved travelling trunk according to a third preferred embodiment of the present invention;

FIG. 13 shows the connection between the wheel member (233) and the bottom (15) of the main body portion (1);

FIG. 14 is a perspective view showing the interior of the improved travelling trunk of FIG. 12, with the rigid supporting board (6) engaged with the wheel members (233);

FIG. 15 is an enlarged, partial perspective view showing the connection between the rigid supporting board (6) and the wheel members (233);

FIG. 16 is an enlarged, partial perspective view showing the way how to engage the connector (61) with the rack (25) of the wheel member (233);

FIG. 17 shows the way how to engage the rigid supporting board (6) with the wheel members (233);

FIG. 18 is a perspective view showing the interior of an improved travelling trunk according to a fourth

preferred embodiment of the present invention;

FIG. 19 shows the connection between the wheel member (234) and the bottom (15) of the main body portion (1);

FIG. 20 is a perspective view showing the interior
5 of the improved travelling trunk of FIG. 18, with the rigid supporting board (8) engaged with the wheel members (234);

FIG. 21 is an enlarged partial perspective view showing the connection between the rigid supporting board (8) and the wheel members (234);

10 FIG. 22 is an enlarged partial perspective view showing the way how to engage the connector (63) with the mounting plate (27) of the wheel member (234); and

FIG. 23 shows how to engage the rigid supporting board (8) with the wheel members (234).

15 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings and in particular to FIG. 1 thereof there is shown a first preferred embodiment of the improved travelling trunk. As illustrated, the travelling trunk comprises a main body portion (1) having a
20 lid (11) permanently attached to one side thereof. Both the main body portion (1) and the lid (11) are made of flexible material such as, for example, leather, plastic, and so on. A closure means (16) such as a zipper-fastener

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(16) is provided on the main body portion (1) and the lid (11) for zipping up the improved travelling trunk. A supporting frame (12) is fastened to the inner sides of the main body portion (1). A number of elastic cords (14) are mounted in the main body portion (1) for retaining clothes or the like therein. The main body portion (1) is provided at one side with a strape (13) which takes the form of a loop so as to facilitate the manual act of pulling the improved travelling trunk. It is noted that the elastic cords (14) and the strape (13) are well known in the art and so need not be described here in detail. A board (3) is rotatably mounted on bottom (15) of the main body portion (1) so that it may be turned up and turned down with respect to the main body portion (1). Four wheel members (231) for facilitating movement of the improved travelling trunk are provided on the bottom (15) of the main body portion (1). Further, two rigid locking plates (4) preferably made of metal are rotatably mounted on the supporting frame (12) and disposed between the supporting frame (12) and the bottom (15).

With reference now to FIGS. 1 and 2, each of the wheel members (231) comprises a roller (23). The roller (23) is pivoted on a frame (21) which is in turn rotatably mounted to an engaging member (22). Each of the wheel

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members (231) is mounted on the bottom (15) of the improved travelling trunk in the way such that the bottom (15) is sandwiched between the engaging member (22) and the frame (21). In other words, the engaging members (22) of the
5 wheel members (231) are disposed in the inner side of the bottom (15) while the frames (21) and the rollers (23) of the wheel members (2) in the outer side of the bottom (15).

With reference to FIGS. 1 and 3 each of the locking plates (4) is rotatably mounted on the supporting frame
10 (12) and disposed between the supporting frame (12) and the bottom (15), so that it may be turned up to engage with two engaging members (22) at the same time, or turned down to conceal behind the supporting frame (12).

In use, first zip the improved travelling trunk open.
15 Turn up the locking plates (4) to engage with the engaging members (22) of the wheel members (231) Then, put down the board (3), engaging Velcro strips (31) of the board (3) with Velcro strips (17) of the bottom (15). Since the wheel members (2) are engaged with the locking plates
20 (4), the forces exerted on the rollers (23) of the wheel member (231) will be first transmitted to the locking plates (4) and then to the supporting frame (12), thereby keeping the bottom (15) flat and therefore, facilitating

the movement of the improved travelling trunk and preventing the bottom (15) from being damaged.

When not in use, first turn over the board (3) by detaching the Velcro strips (31) of the board (3) from the
5 Velcro strips (17) of the bottom (15). Turn down the locking plates (4) to conceal them behind the supporting frame (12). Zip up the improved travelling trunk. Connect fastener (90) with belts (91) and then tie them up to reduce the volume of the improved travelling
10 trunk.

FIG. 7, 8, 9, and 10 show an improved travelling trunk according to a second preferred embodiment of present invention. As can be seen, the bottom (15) is provided with four wheel members (232). Each wheel
15 members (20) includes a roller (23) pivoted on a frame (21) which is in turn rotatably mounted to a fixing plate (28). On the fixing plate (28) is rotatably mounted a pin (24) which is provided with a buckle (29). Hence, the buckle (29) together with the pin (24) may be rotated
20 with respect to the fixing plate (28). Each of the wheel members (232) is mounted on the bottom (15) of the improved travelling trunk in such a way that the bottom (15) is sandwiched between the frame (21) and the fixing plate

(28) (as shown in FIG. 8). Accordingly, the fixing plates (28) of the wheel members (232) are disposed in the inner side of the bottom (15) while the frames (21) and rollers (23) of the wheel members (232) in the outer side of the bottom (15). Further two locking plates (5) each having two notches (51) are pivoted on the supporting frame (12) and disposed between the supporting frame (12) and the bottom (15), so that each of the locking plates (5) may be rotated to engage with two pins (24). Four holes (32) adapted to buckles (29) are provided on the board (3). The holes (32) are designed so that when the board (3) is turned down, the buckles (29) will extend through the holes (32). Consequently, the buckles (29) may be turned to fix the board (3) and the locking plates (5) in place.

When in use, first zip the improved travelling trunk open. Turn up the locking plates (5), causing the notches (51) to engage with the pin (24) of the fixing plate (28). Put down the board (3), ensuring the buckles (29) to extend through the holes (32) of the board (3). Then, turn the buckles (29) to fix the board (3) and the locking plates (5) on the bottom (15). Thus, the force exerted on the rollers (23) of the wheel members (232) will be transmitted to the supporting frame (12), thereby keeping the bottom (15) flat and therefore, facilitating the

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movement of the improved travelling trunk and preventing the bottom side (15) from being damaged.

To collapse the improved travelling trunk, first turn the buckles (29) to conform with the holes (32).

- 5 Turn over the board (3). Rotate the locking plates (5) to conceal behind the supporting frame (12). Zip up the improved travelling trunk. Connect fasteners (90) with belts (91) and then tie them up to reduce the volume of the improved travelling trunk.

- 10 FIG. 12, 13, 14, 15 and 16 show an improved travelling trunk according to a third preferred embodiment of the present invention. As seen particularly in FIG. 12, the bottom (15) of the improved travelling trunk is provided with four wheel members (233). Each of the wheel members
- 15 (233) is provided with a roller (23) pivoted on a frame (21), the frame (21) being in turn rotatably mounted to a rack (25). Each of the wheel members (233) is mounted on the bottom (15) of the improved travelling trunk in the manner that the bottom (15) is sandwiched between the rack
- 20 (25) and the frame (21). That is to say, the racks (25) of the wheel members (233) are positioned in the inner side of the bottom (15) while the frames (21) and the rollers (23) of the wheel members (2) in the outer side of

-11-

the bottom (15) (as shown in FIG. 13). A rigid supporting board (6) having four connectors (61) adapted to the racks (25) of the wheel members (233) is provided for keeping the bottom (15) flat. The rigid supporting board (6) is the same as the bottom (15) in size. The connectors (61) are preferably made of plastic. Each of the connectors (61) is provided with four arms (611) each having a protuberance (12) at its free end. The way to engage the connector (61) with the rack (25) is clearly shown in FIGS. 15, 16 and 17.

In use, first zip the improved travelling trunk open. Engage the connectors (61) of the rigid supporting board (6) with the racks (25) of the wheel members (233). Turn down the board (3) to connect with the rigid supporting board (3) via Velcro strips (31, 17, 65). As a result, the force exerted on the rollers (23) of the wheel members (233) will be transmitted to the racks, thereby keeping the bottom (15) flat and therefore, facilitating the movement of the improved travelling trunk and preventing the bottom (15) from being damaged.

To fold up the improved travelling trunk, just carry out the reverse procedures mentioned above.

FIGS. 18, 19, 20, 21 and 22 show an improved travelling trunk according to a fourth preferred embodiment of the present invention. As may be seen particularly in FIG. 18, the main body portion (1) is equipped with four wheel members (234) at the bottom (15). Each of the wheel members (234) has a roller (23). The roller (23) is pivoted on a frame (21) which is in turn rotatably mounted to a mounting plate (27) having two flanges (271). Each of the wheel members (234) is mounted on the bottom (15) of the main body portion (1) in the way such that the bottom (15) is sandwiched between the mounting plate (27) and the frame (21). Each of the mounting plates (27) may be engaged with a connector (63) fixedly attached on a rigid supporting board (8) which has four Velcro strips (65) adapted to connect with corresponding Velcro strips (17). The connector (63) has a core (631) confined in a base frame (64) having two flanges (641). The core (63) is made of resilient material such as plastic and comes with two protuberance (632) and (633). Between the flange (641) and the core (63) there is a clearance adapted to the flange (271). Accordingly, the mounting plate (27) may be inserted into the connector (63) and kept in place by the two protuberances (632) and (633). To engage the connectors (63) with the mounting plates (27), first engage the connectors (63)

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located at the lower portion of the rigid supporting board (8) with corresponding mounting plates (27) and then engage the connectors (63) located at the upper portion of the rigid supporting board (8) with the other mounting
5 plates (27) (as shown in FIG. 23).

In use, first zip the improved travelling trunk open. Engage the connectors (63) with the mounting plates (27). Put down the board (3) to connect with the rigid supporting board (3) via Velcros strips (17). Hence, the force exerted
10 on the rollers (23) of the wheel members (234) will be transmitted to the fixing frame (5), thereby keeping the bottom (15) flat and therefore, facilitating the movement of the improved travelling trunk and preventing the bottom (15) from being damaged.

15 When not in use, first turn over the board (3). Disengage the connectors (63) of the rigid supporting board (8) from the mounting plates (27) of the wheel members (234). Put the rigid supporting board (8) into pocket (30) (not shown) provided on the rear side of the
20 board (3). Zip up the improved travelling trunk. Connect the fasteners (90) with connectors (91) and then tie them up to reduce the volume of the improved travelling trunk.

Although this invention has been described with a certain degree of particularity, it is understood that the present disclosure has been made by way of example only and that numerous changes in the detail of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

CLAIMS

1/. An improved travelling trunk comprising:

a main body portion;

a lid permanently attached to one side of said

5 main body portion;

closure means provided on said main body portion

and said lid;

a supporting frame fastened on the inner sides

of said main body portion;

10 four wheel members mounted on the bottom of said

main body portion in such a way that the upper part

of each said wheel member is disposed in the

inner side of said bottom while the lower part

of each said wheel member is disposed in the

15 outer side of said bottom, the upper part of

each said wheel member comprising an engaging

member;

two locking plates pivoted on said supporting

frame and disposed between said supporting

20 frame and the bottom of said main body portion,

each said locking plate being engageable

with the upper parts of two of said wheel

members.

2/. An improved travelling trunk, comprising:

a main body portion;

a lid permanently attached to one side of said
main body portion;

5 closure means provided on said main body portion
and said lid;

a supporting frame fastened on the inner sides
of said main body portion;

10 four wheel members mounted on the bottom of said
main body portion in such a way that the upper
part of each said wheel member is disposed in
the inner side of said bottom while the lower
part of each said wheel member is disposed
in the outer side of said bottom, the upper
15 part of each said wheel member comprising
a fixing plate on which is rotatably mounted
a pin having a buckle fixedly attached thereto;

two locking plates pivoted on said supporting
frame and disposed between said supporting
20 frame and the bottom of said main body portion,
each said locking plate having two notches
which will respectively engage with two pins
of two of the wheel members when the locking
plate is rotated upward;

25 a board rotatably mounted on the inner side of

the bottom of said main body portion, said board having four slots each adapted to said buckle and pin of a corresponding one of said wheel members.

3/. An improved travelling trunk, comprising:

- 5 a main body portion;
- a lid permanently attached to one side of said main body portion;
- closure means provided on said main body portion and said lid;
- 10 a supporting frame fastened on the inner sides of said main body portion;
- four wheel members mounted on the bottom of said main body portion in such a way that the upper part of each said wheel member is
- 15 disposed in the inner side of the bottom while the lower part of each said wheel member is disposed in outer side of the bottom of said main body portion;
- a rigid supporting board one side of which is
- 20 provided with four connectors which are engageable with the upper parts of said wheel members, said rigid supporting board having Velcro strips at the other side; and

a board rotatably mounted on said main body
portion, said board having Velcro strips
which may connect with said Velcro strips
of said rigid supporting board.

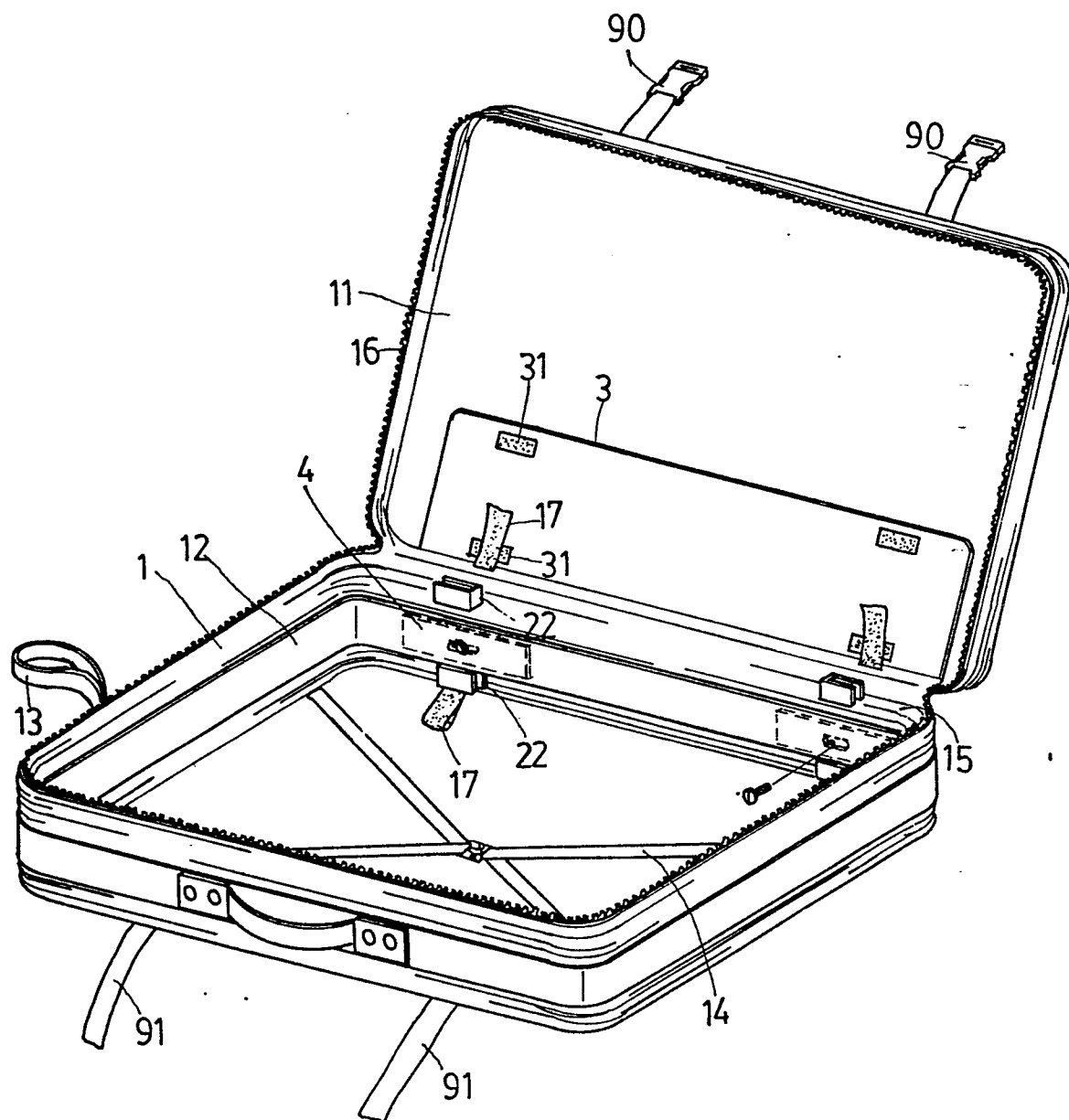


FIG. 1

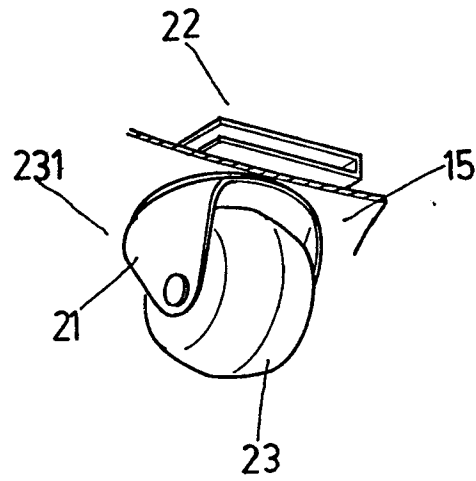


FIG. 2

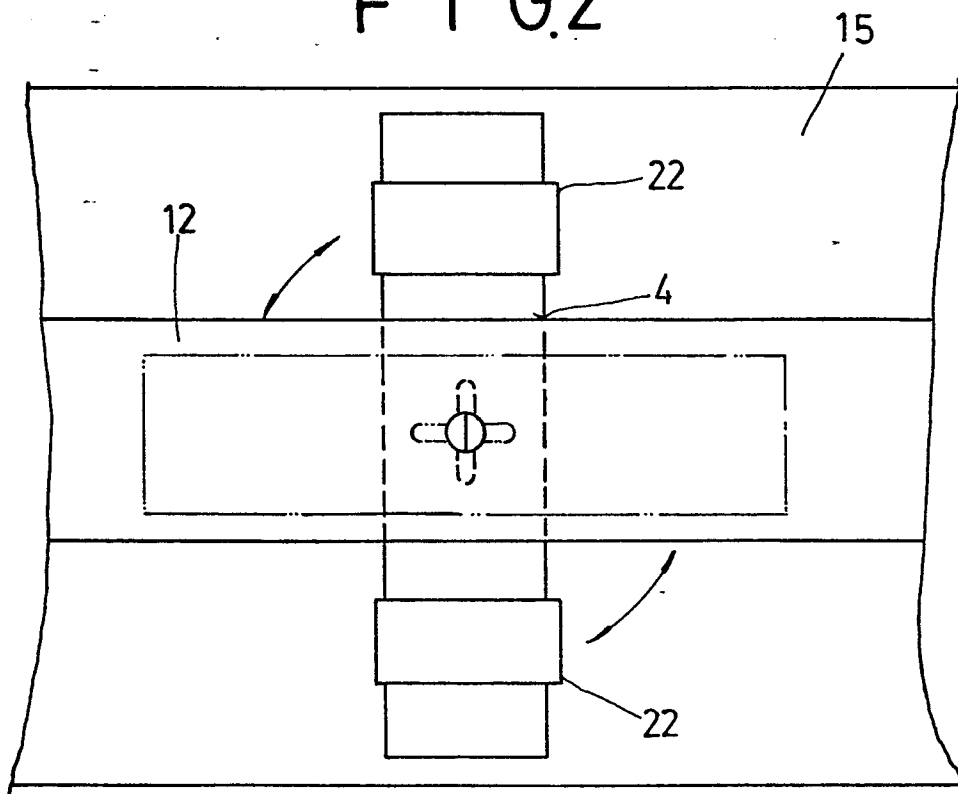


FIG. 3

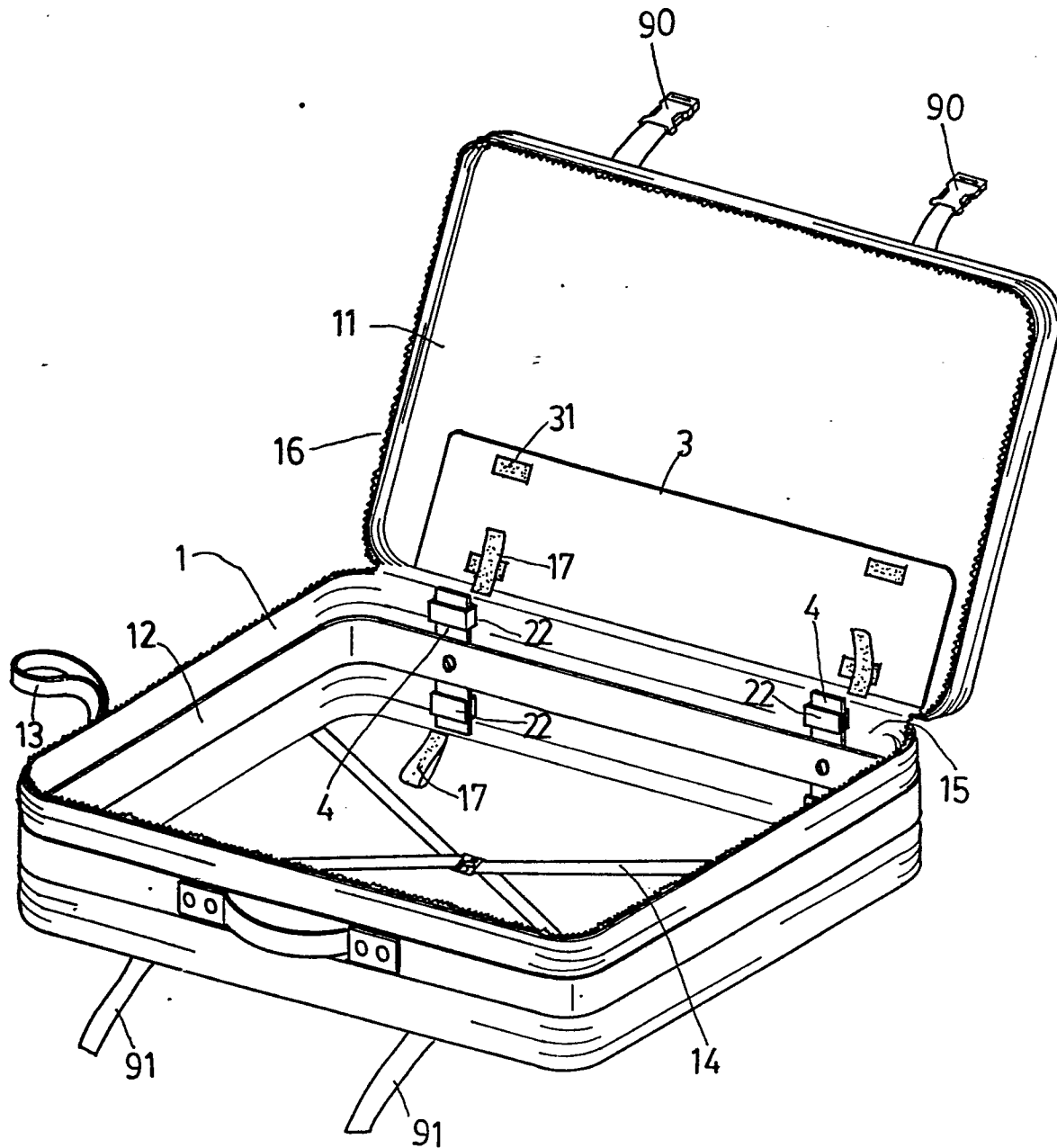


FIG. 4

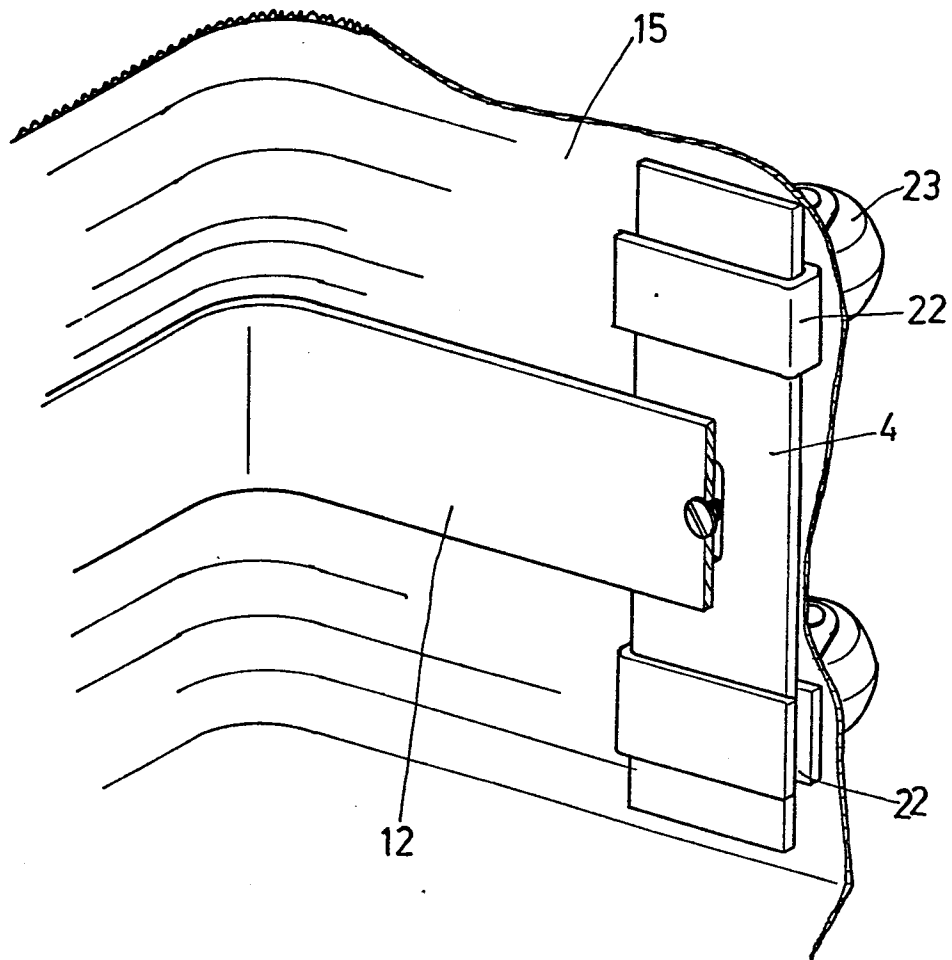


FIG. 5

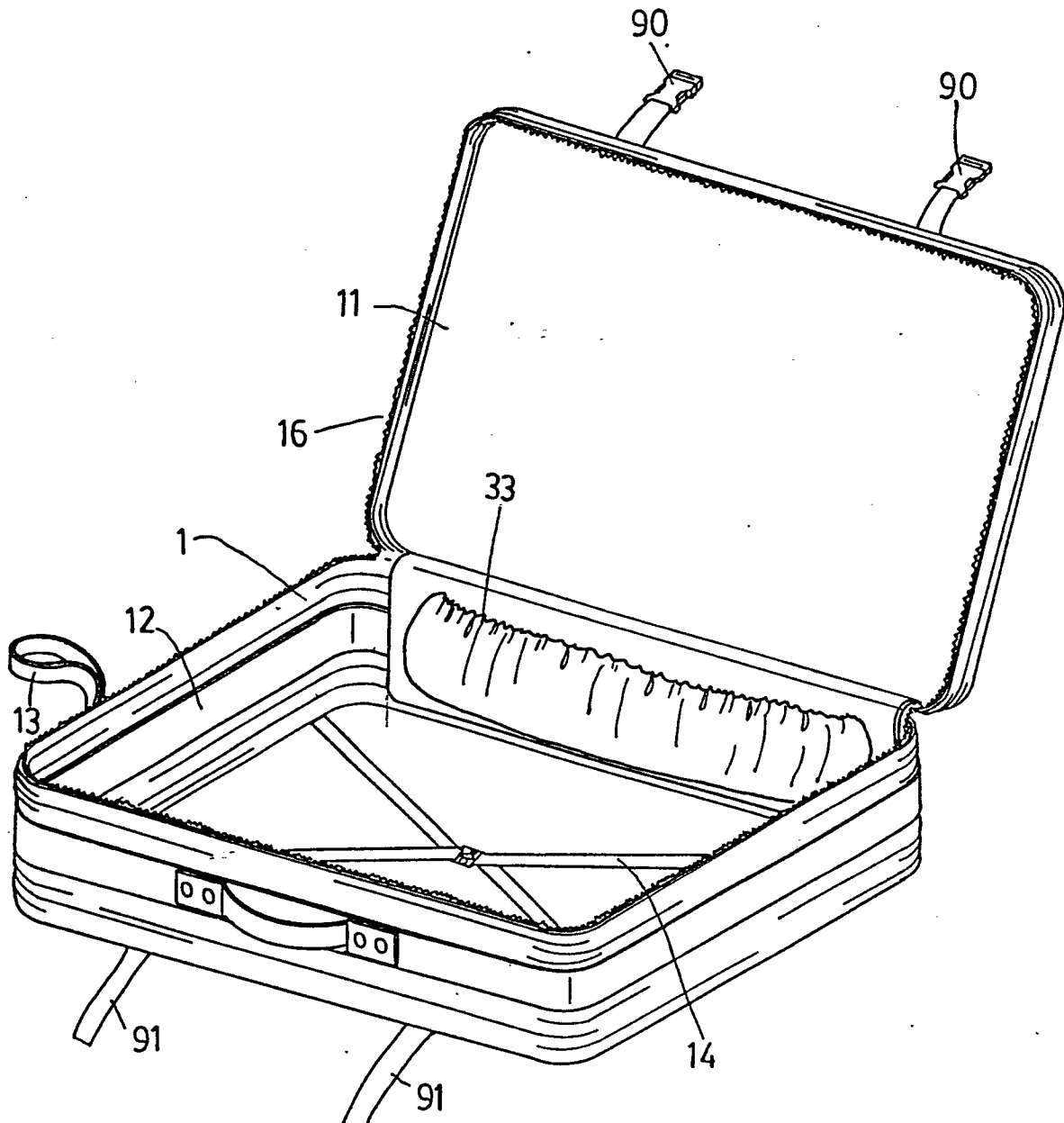
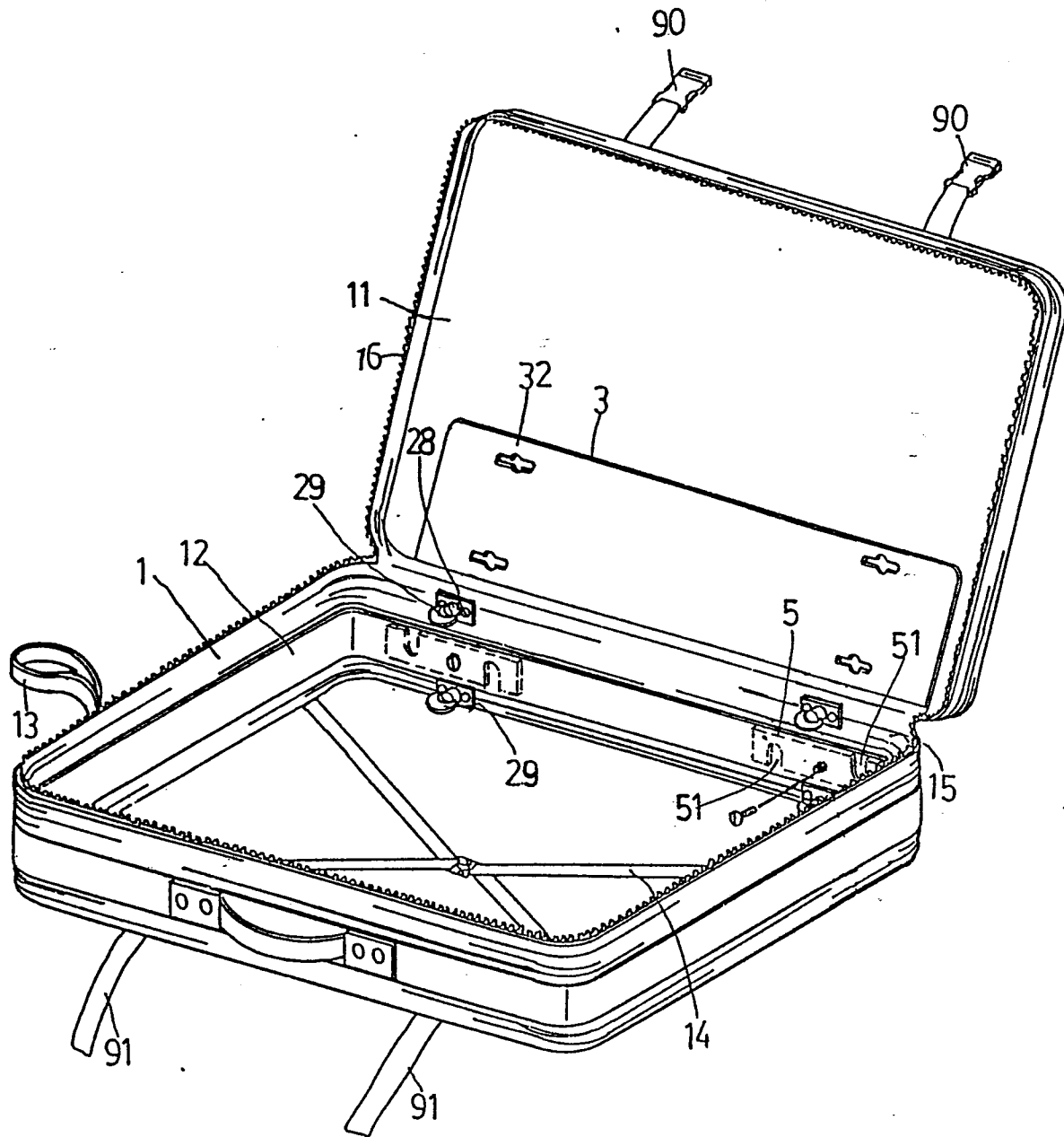
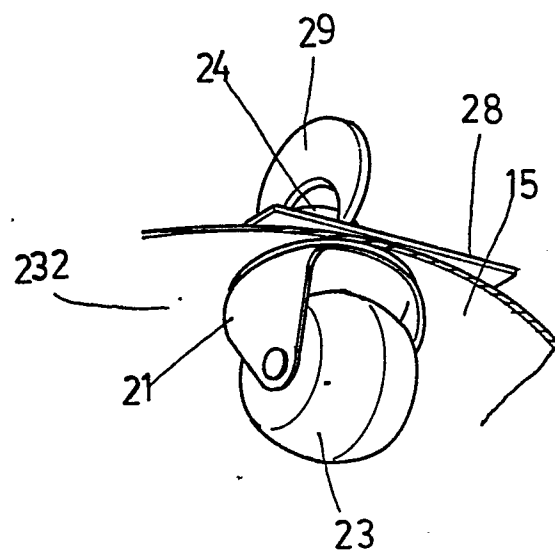


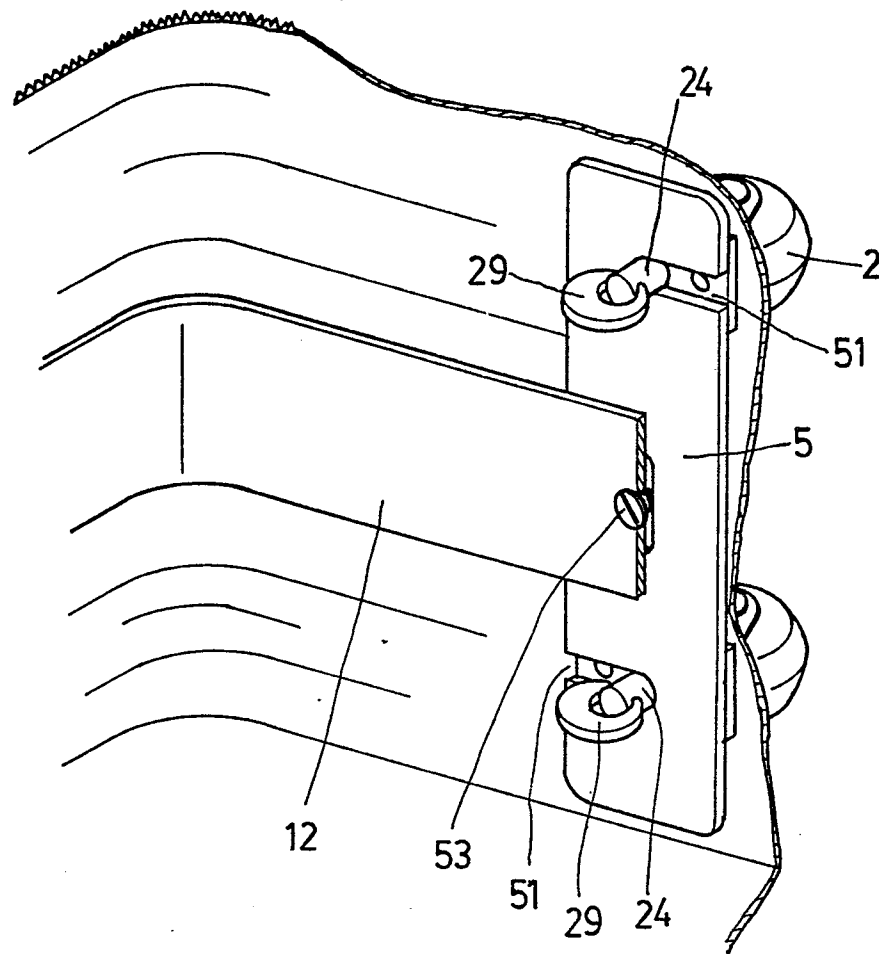
FIG. 6



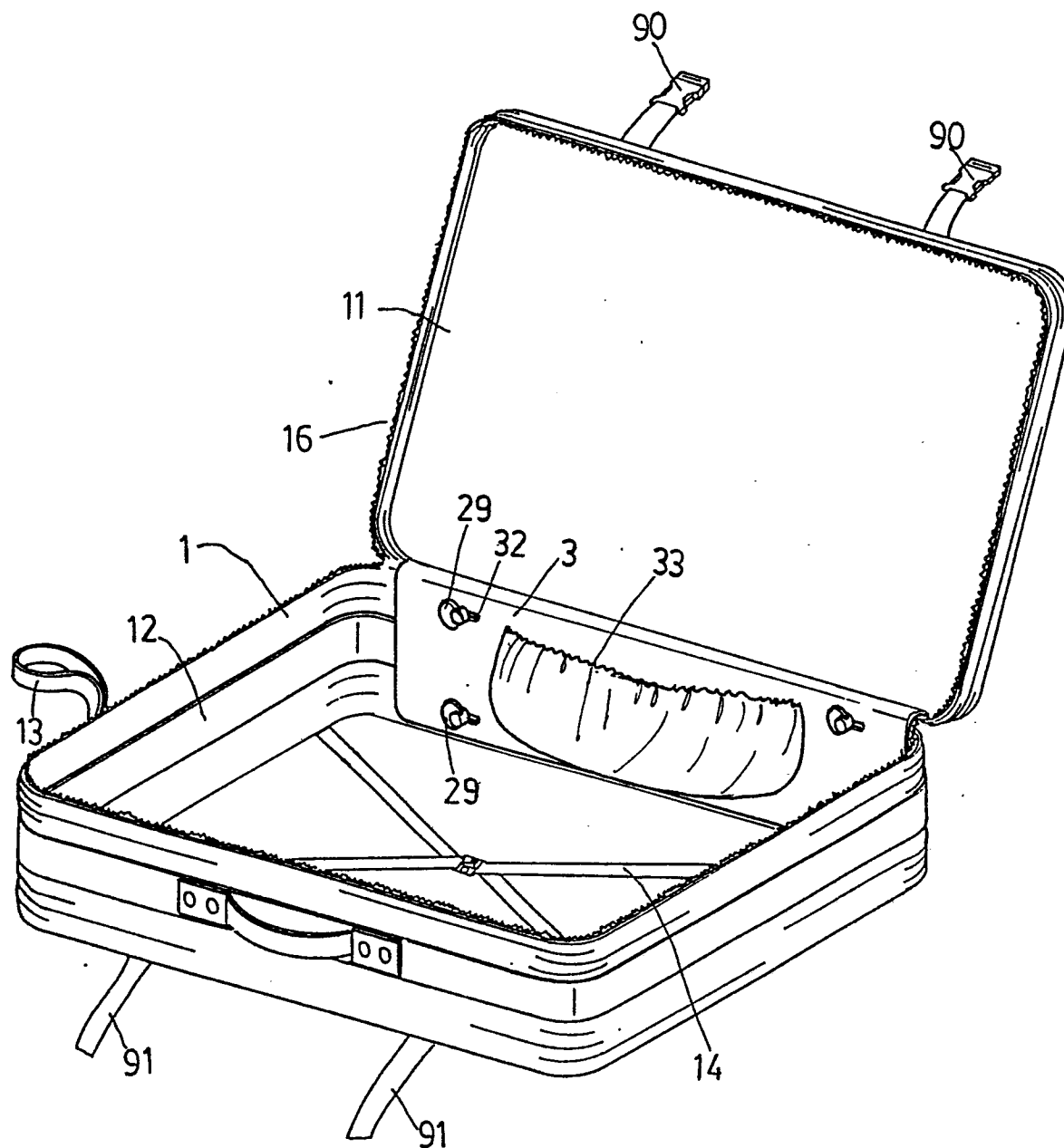
F I G. 7



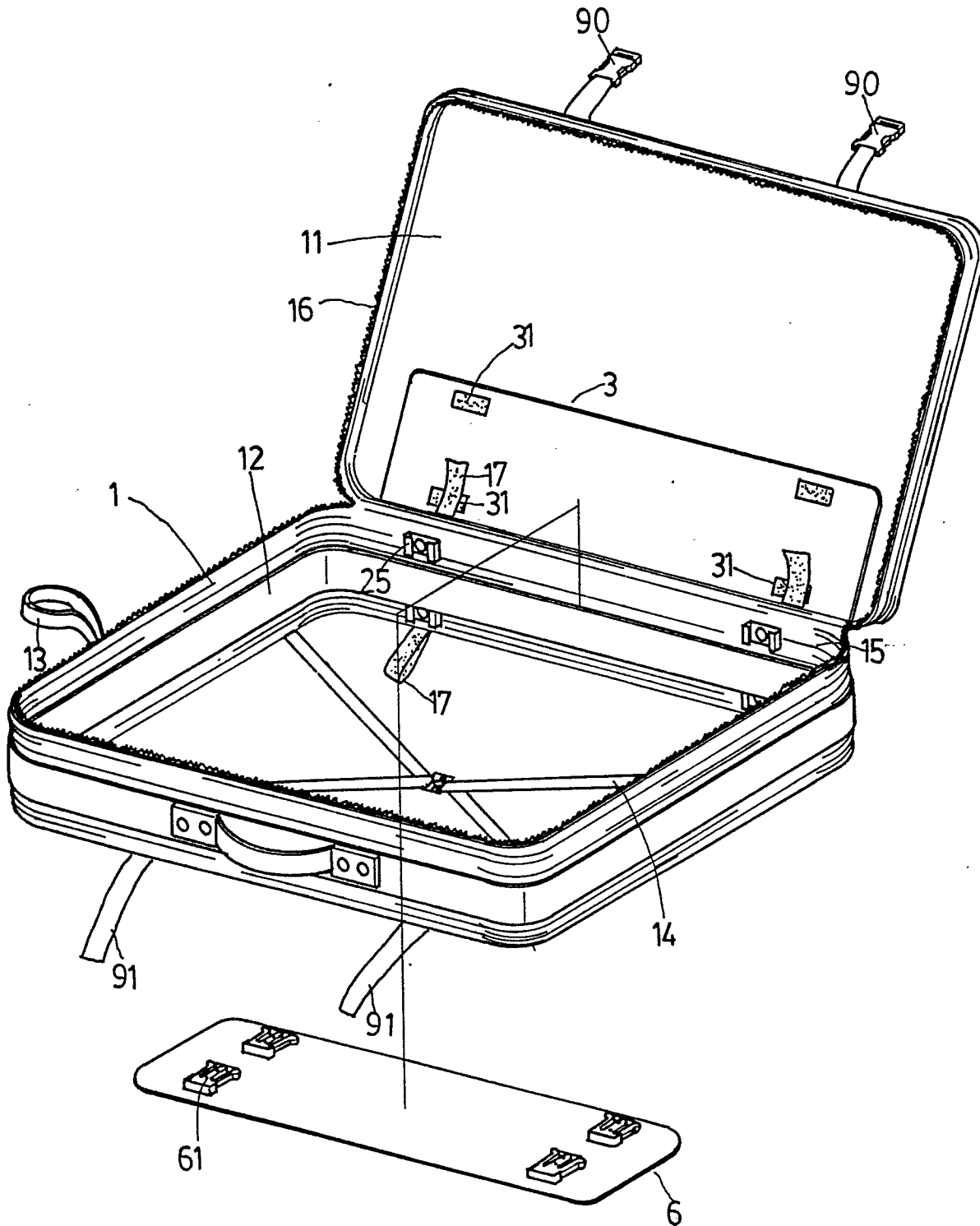
F I G. 8



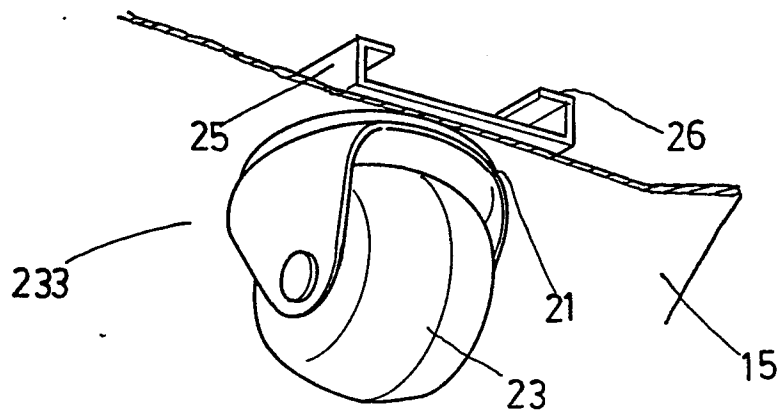
F I G.10



F I G. 11



F I G 12



F I G.13

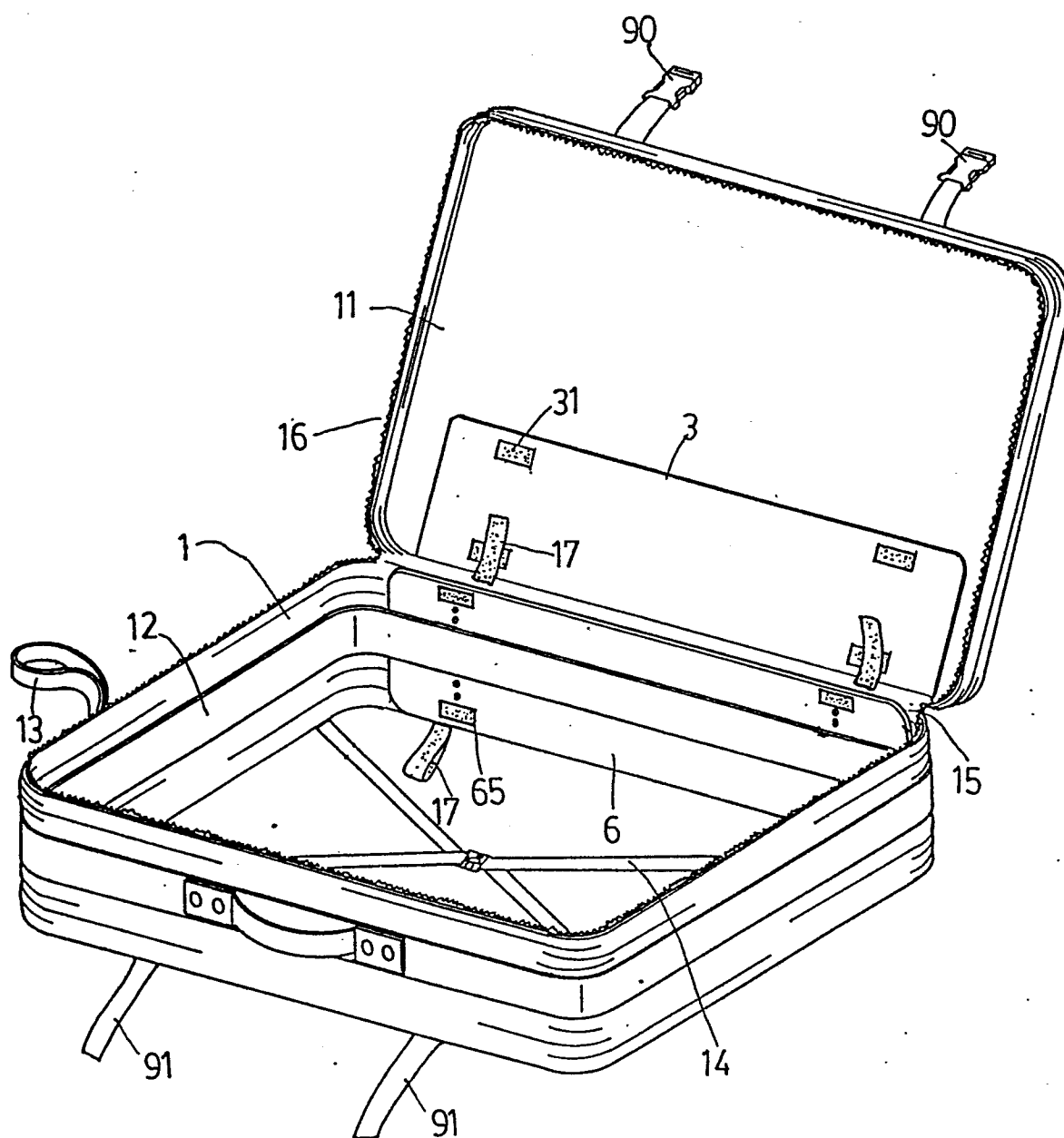
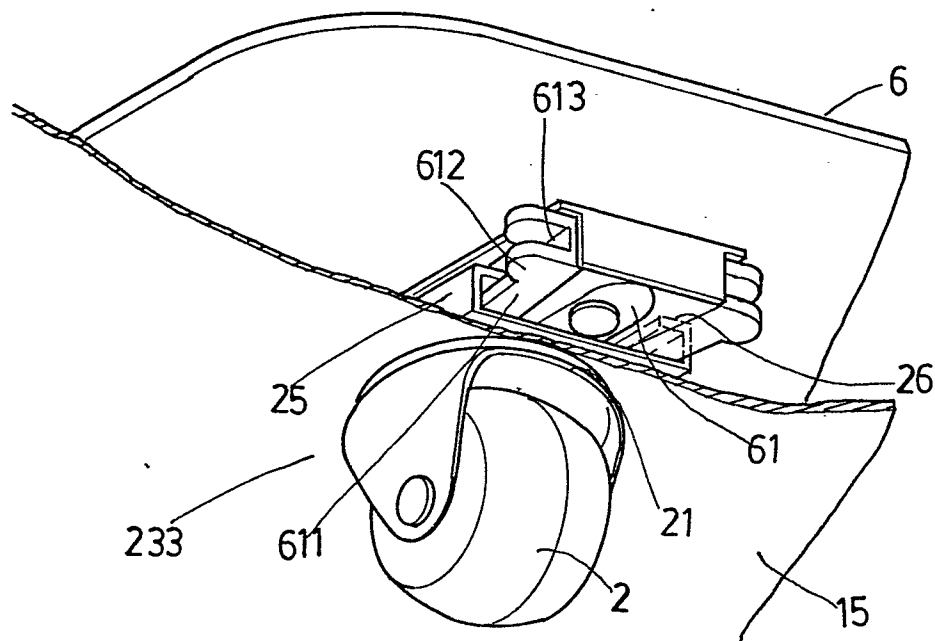
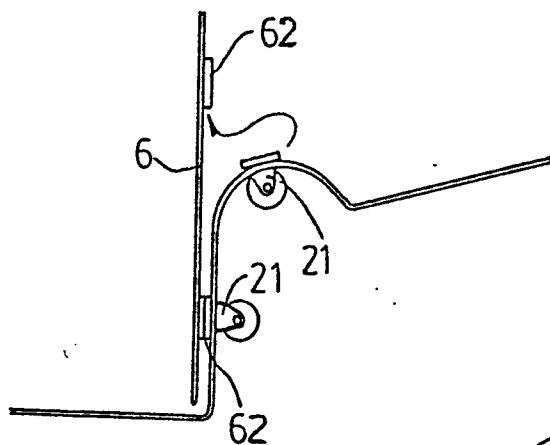


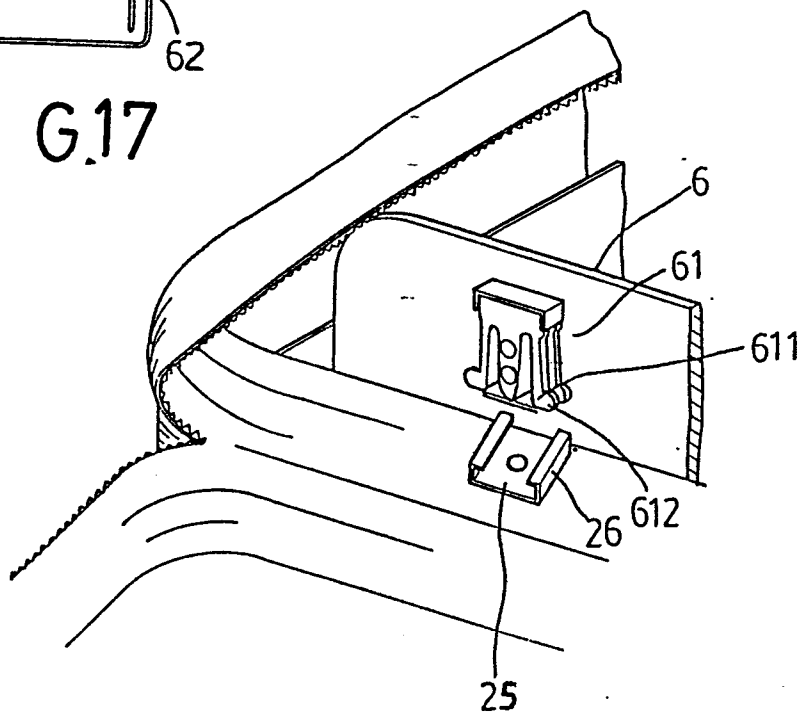
FIG. 14



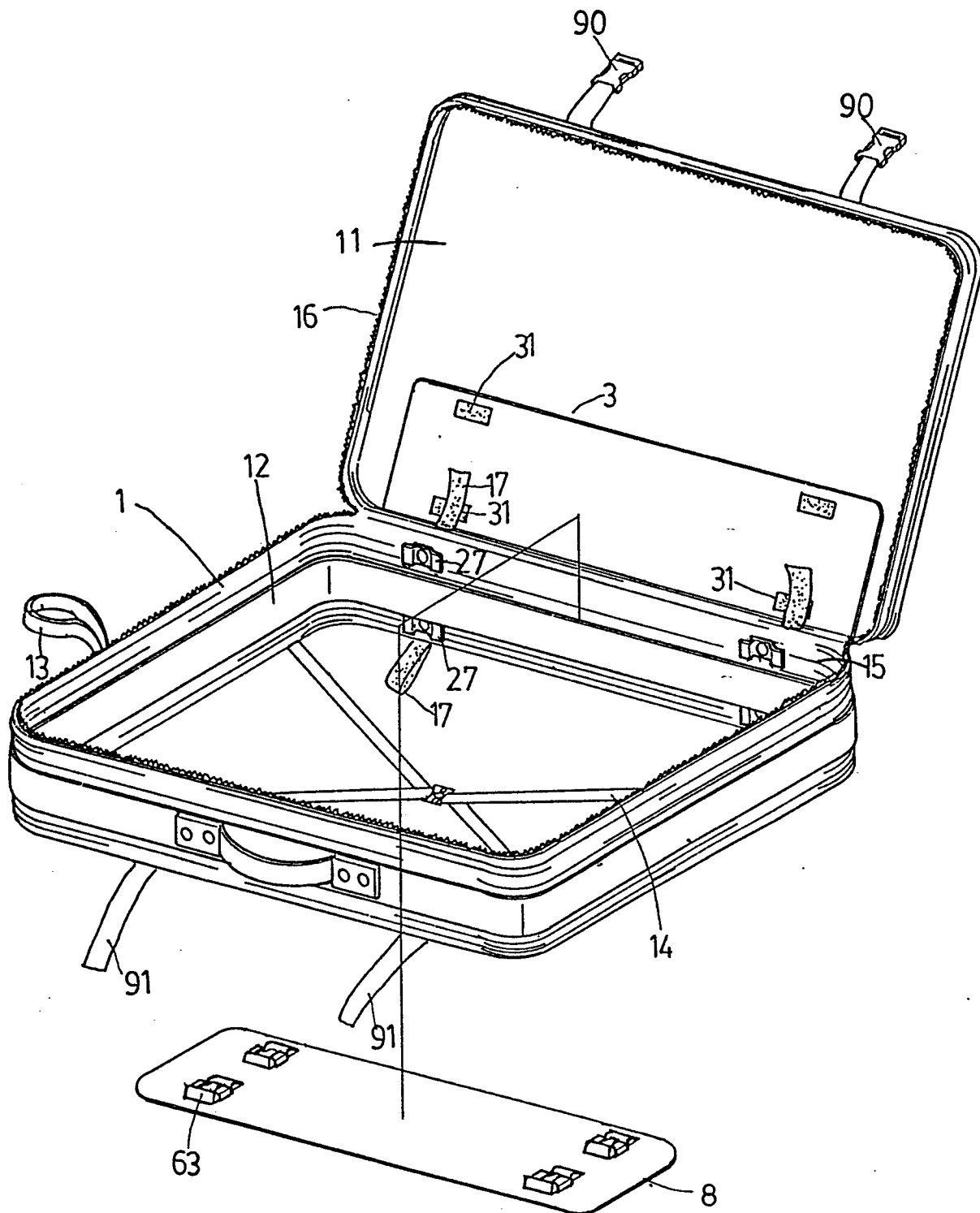
F I G 15



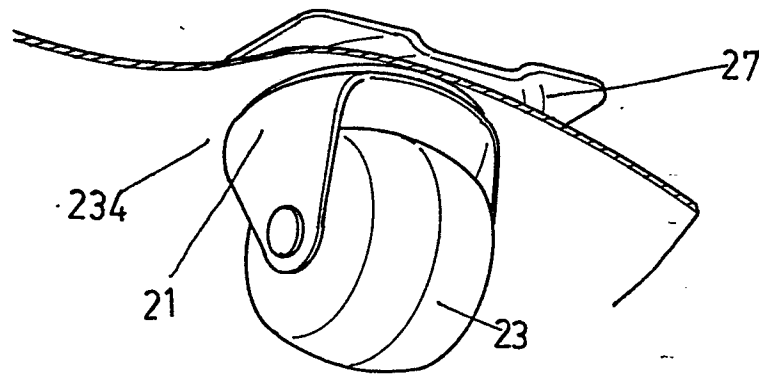
F I G.17



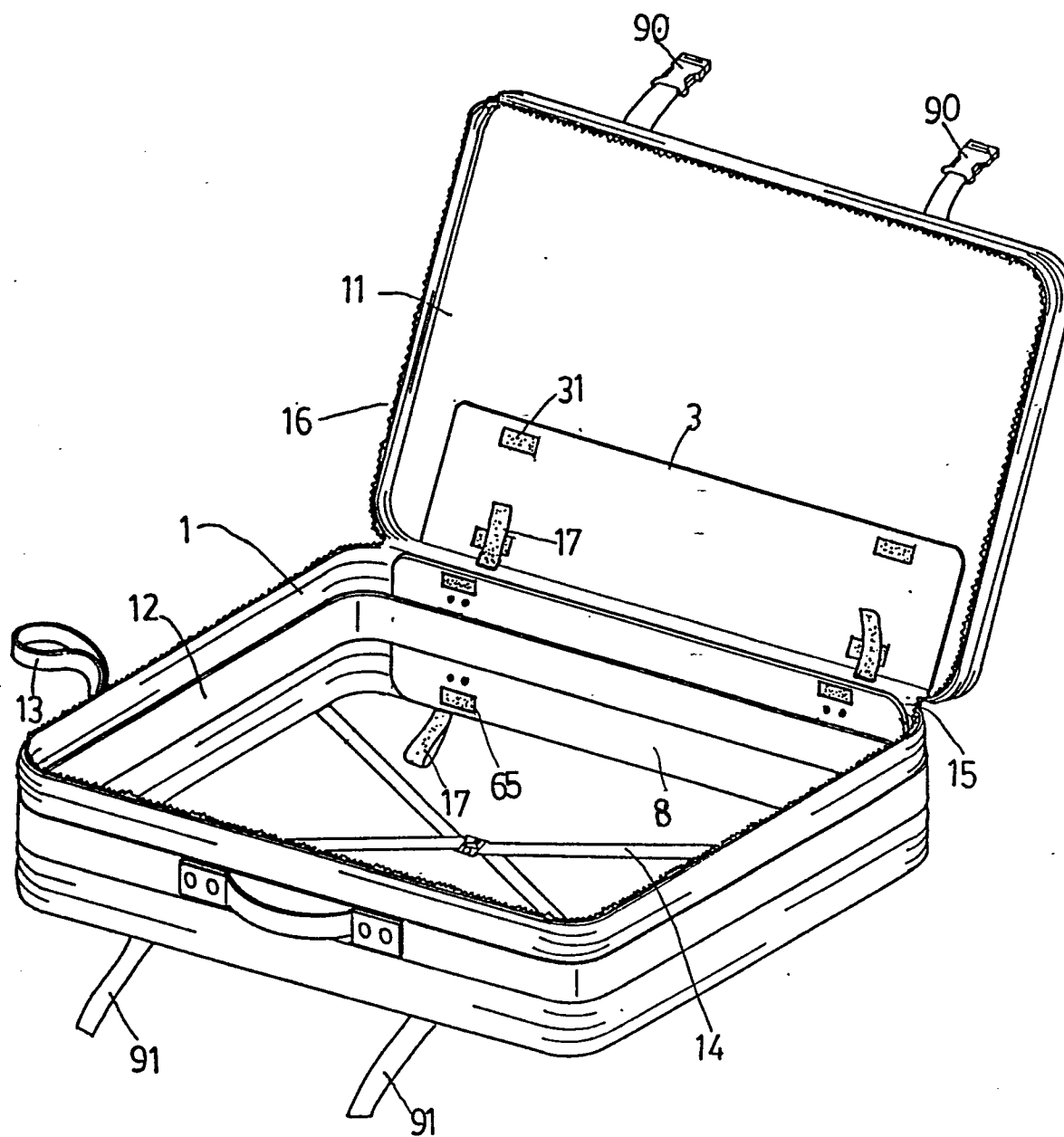
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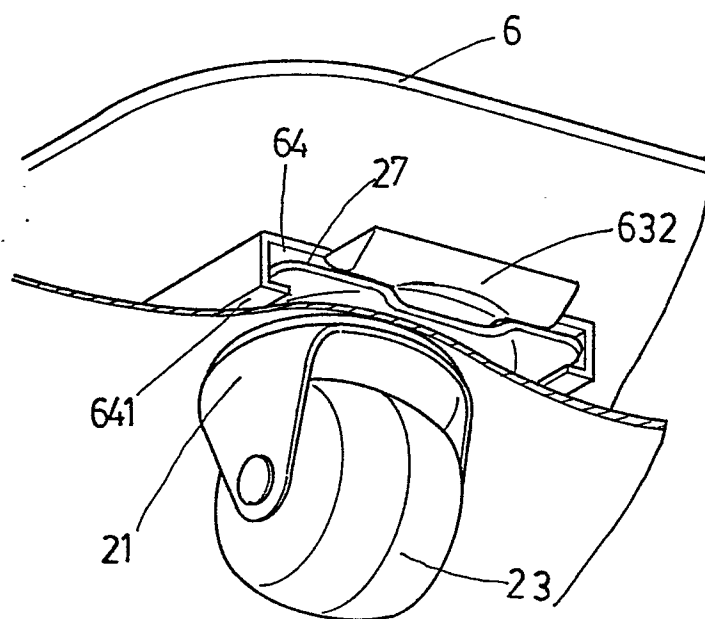
F I G. 18



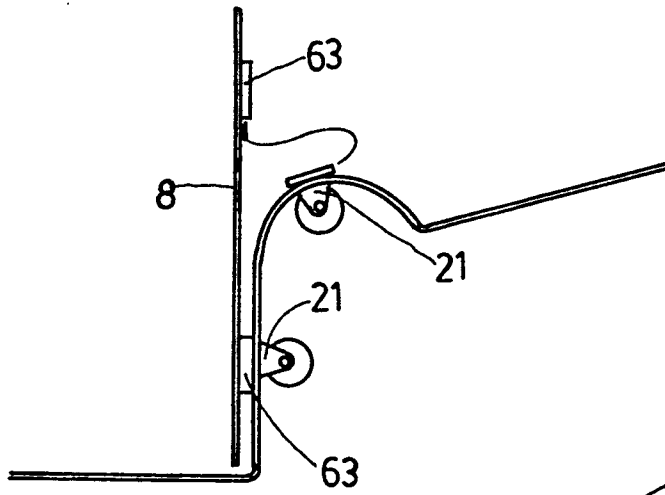
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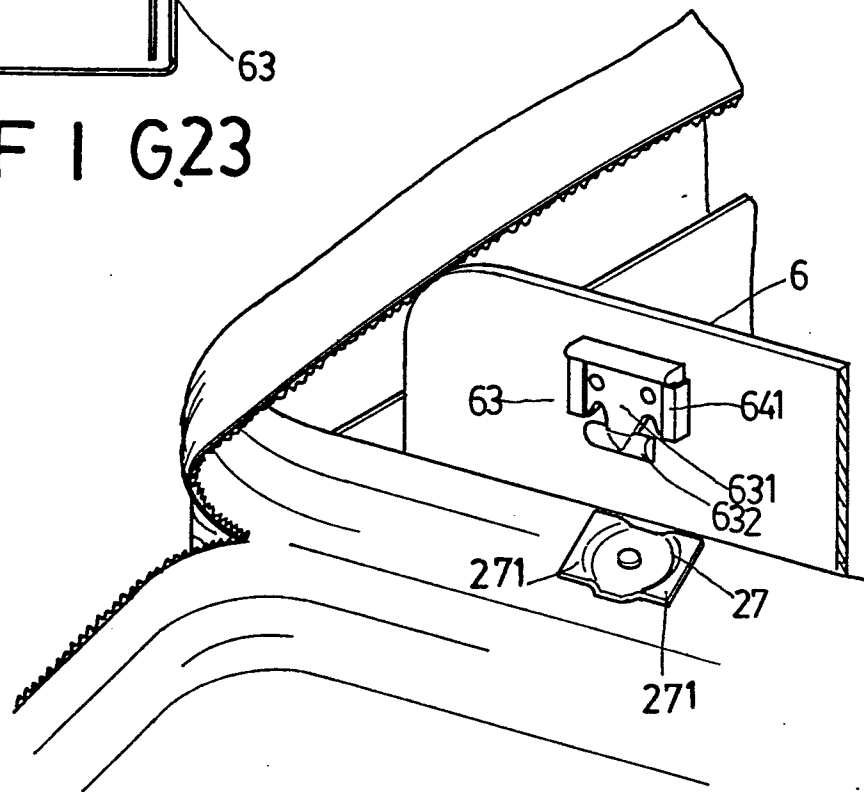
F I G. 20



F I G. 21



F I G.23



F I G.22



European Patent
Office

EUROPEAN SEARCH REPORT

0157968
Application number

EP 84 30 2321

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.4)
A	US-A-4 418 804 (BRADLEY) * Whole document *	1	A 45 C 5/14 A 45 C 7/00 A 45 C 13/36
A	--- BE-A- 852 646 (RODELLE) * Page 3, line 26 - page 5, line 19; figures 1,2 *	1	
A	--- US-A-2 465 847 (COFFEY)		
A	--- US-A-3 592 314 (JACOBSON)		
A	--- FR-A-1 598 071 (ROPIAND) -----		
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.4) A 45 C
Place of search THE HAGUE		Date of completion of the search 16-11-1984	Examiner SIGWALT C.
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			