

(12) **UK Patent Application** (19) **GB** (11) **2 408 489** (13) **A**

(43) Date of A Publication **01.06.2005**

(21) Application No: **0327523.7**
 (22) Date of Filing: **26.11.2003**

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(51) INT CL⁷:
B62B 7/12

(52) UK CL (Edition X):
B7B BTC BTF1 BTL2 B407

(56) Documents Cited:
GB 2303104 A **GB 2009057 A**
FR 002592777 A **FR 002486894 A**
US 4265466 A

(58) Field of Search:
 UK CL (Edition W) **A4L, B7B**
 INT CL⁷ **B62B**
 Other: **WPI, EPODOC, JAPIO**

(54) Abstract Title: **Collapsible pushchair having a seat back movable into a baby changing position**

(57) A collapsible wheeled pushchair in which the seat back 5 is folded forwardly from its erected position to its fully collapsed position, the pushchair including releasable locking means 21,22 which retain the seat back 5 in an interim substantially horizontal intermediate baby changing position in which the outer surface 5b of the seat back 5 becomes the upwardly facing baby changing surface.

FIG 5

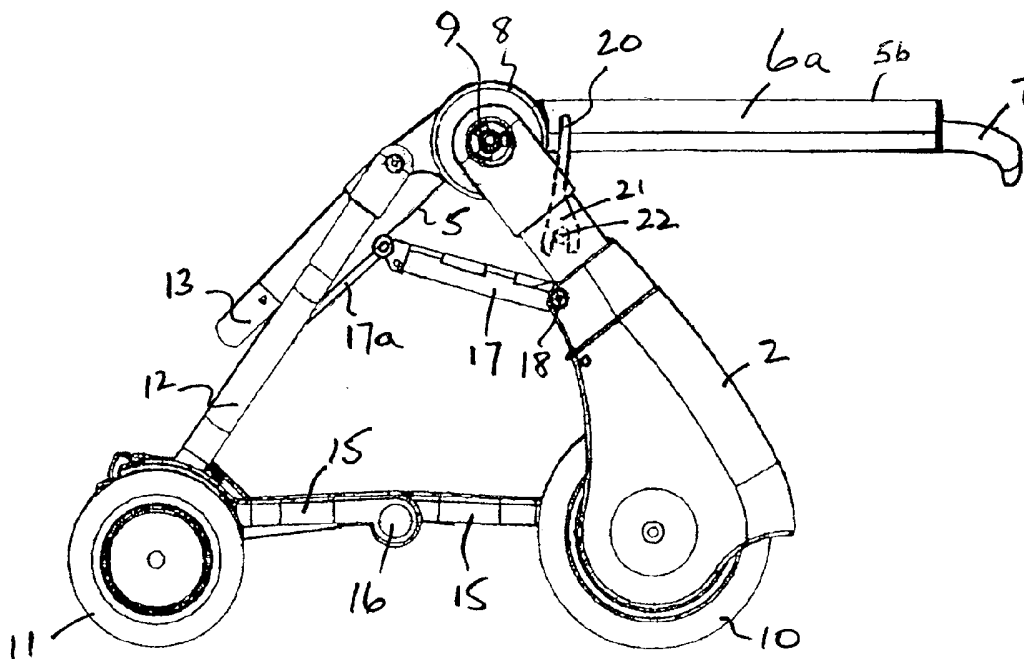


FIG 1

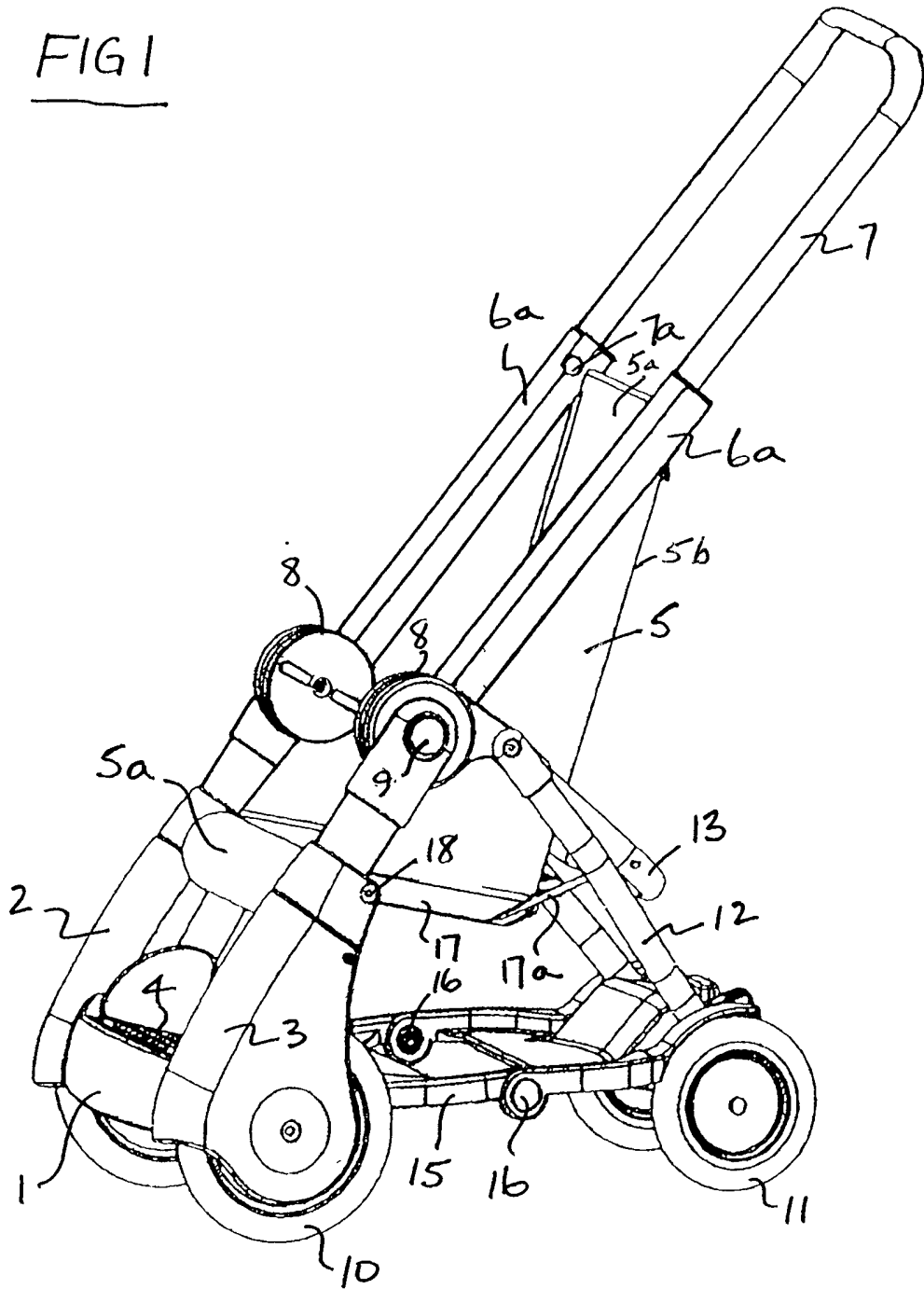
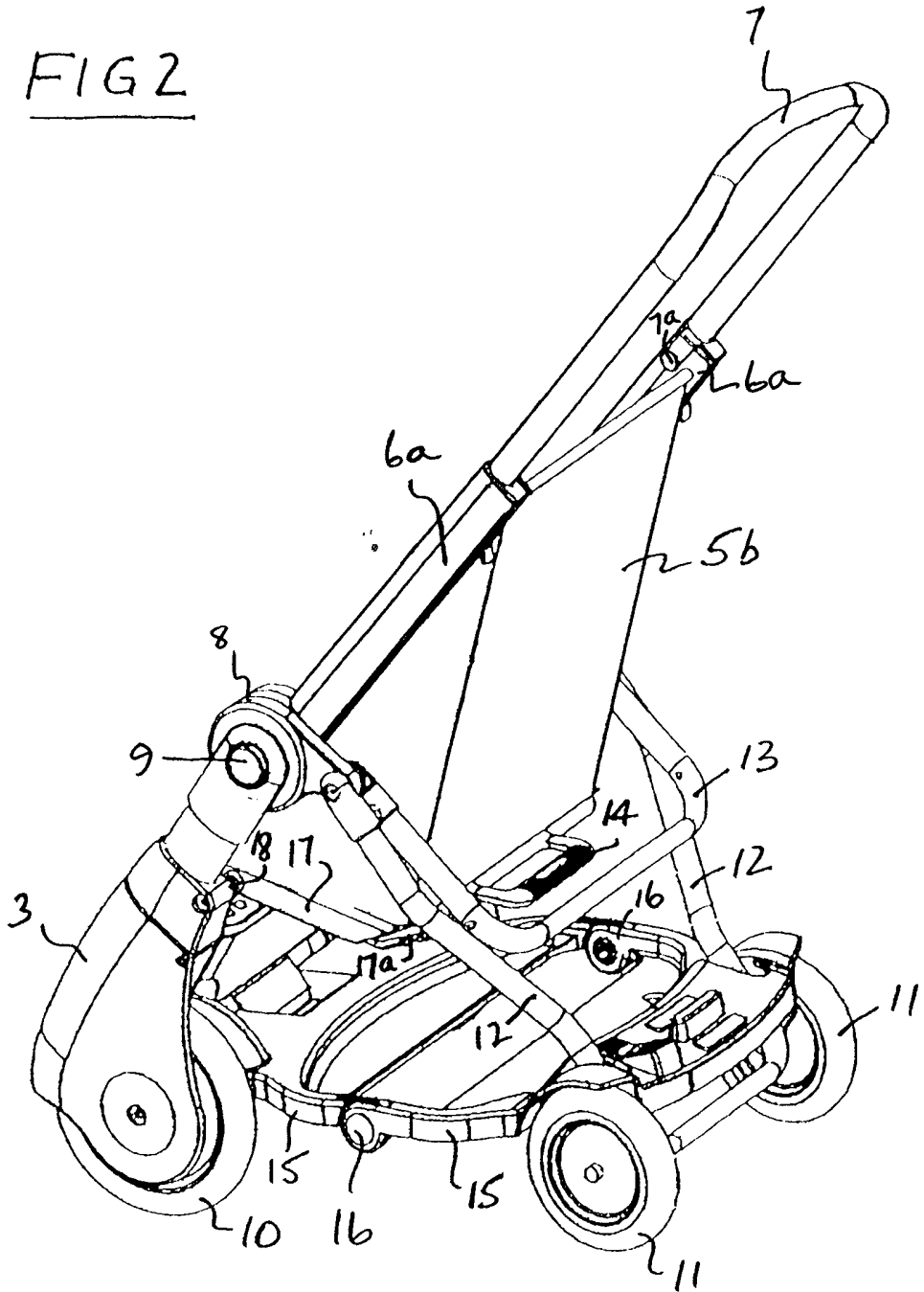


FIG 2



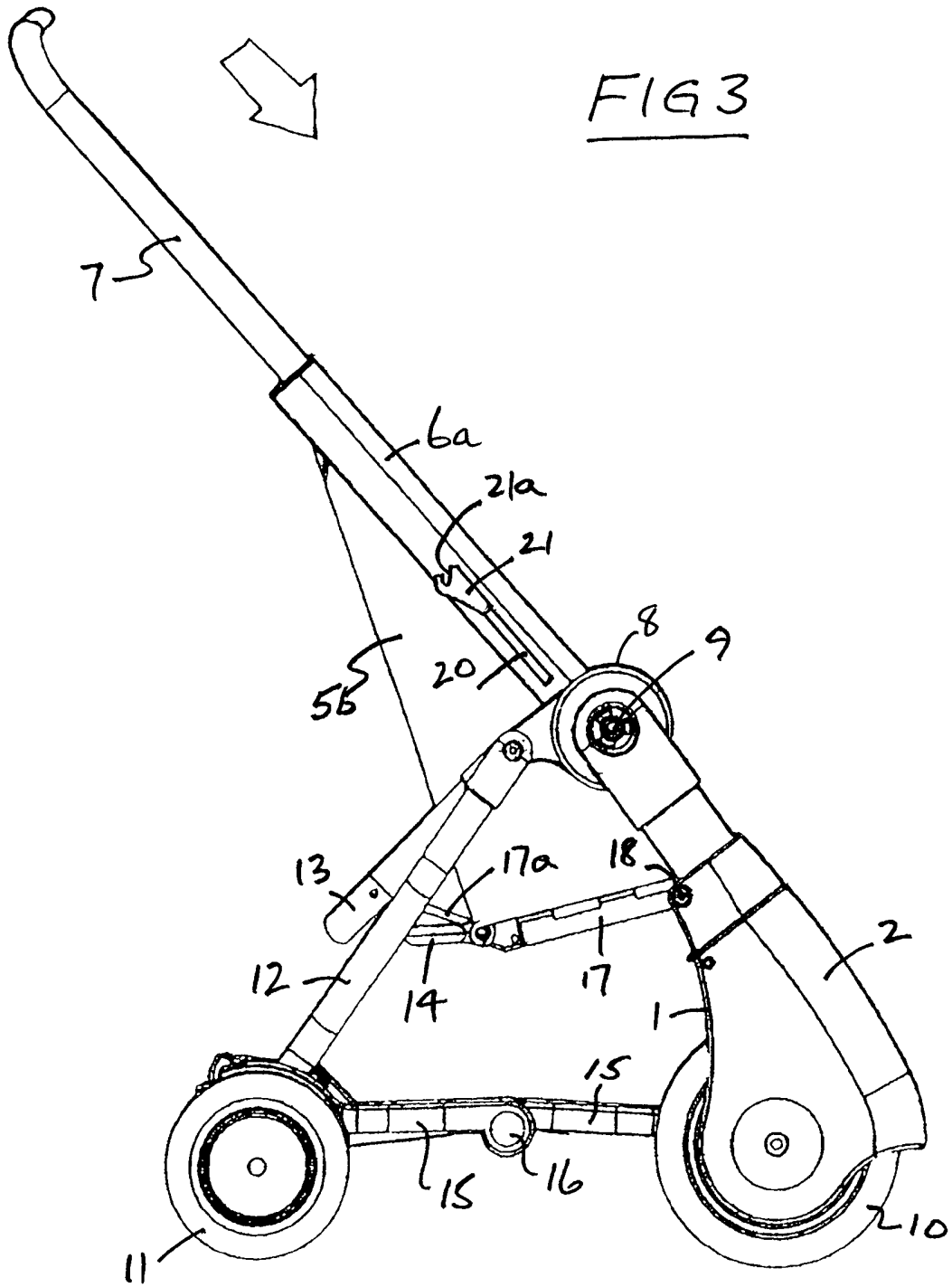


FIG 4

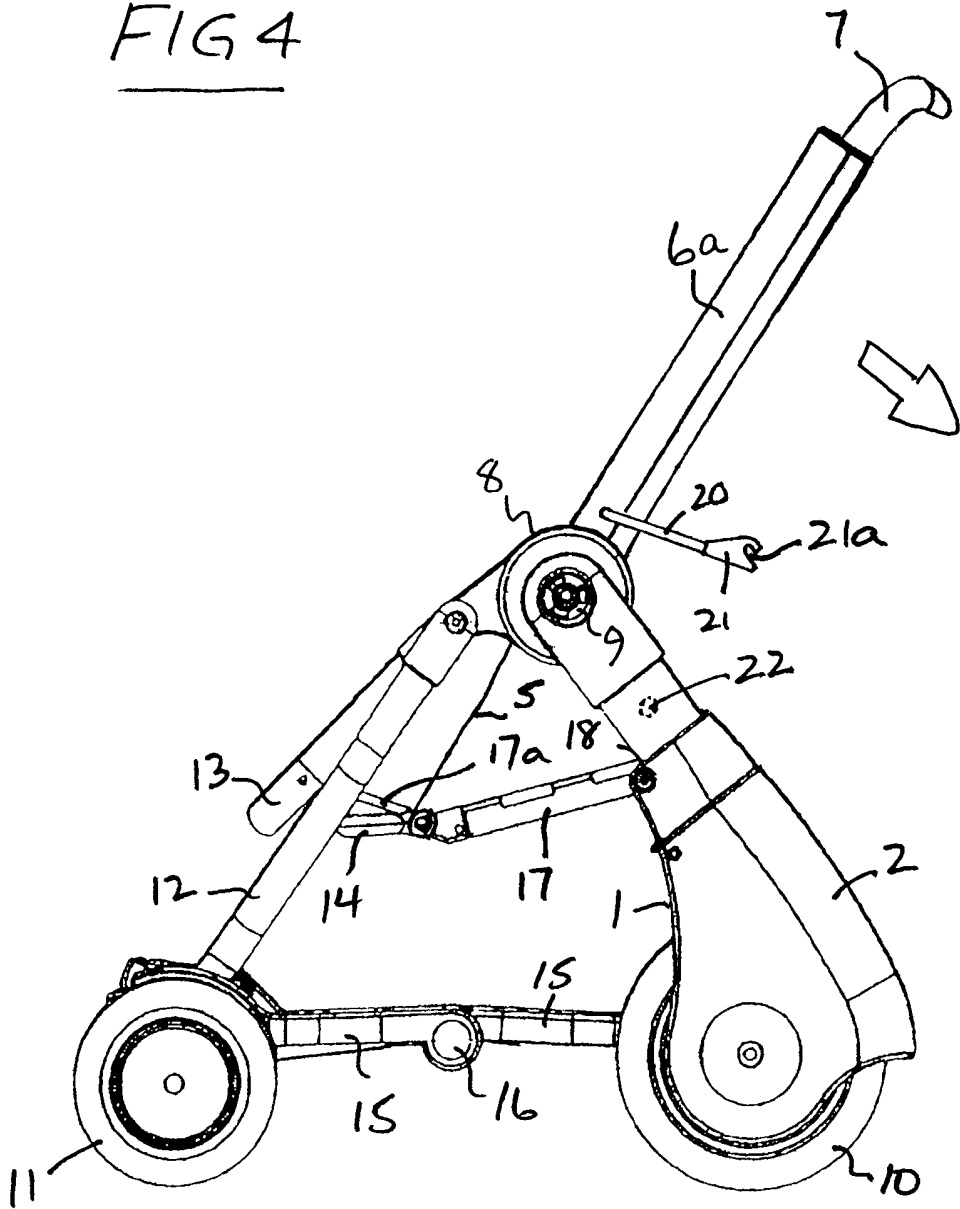
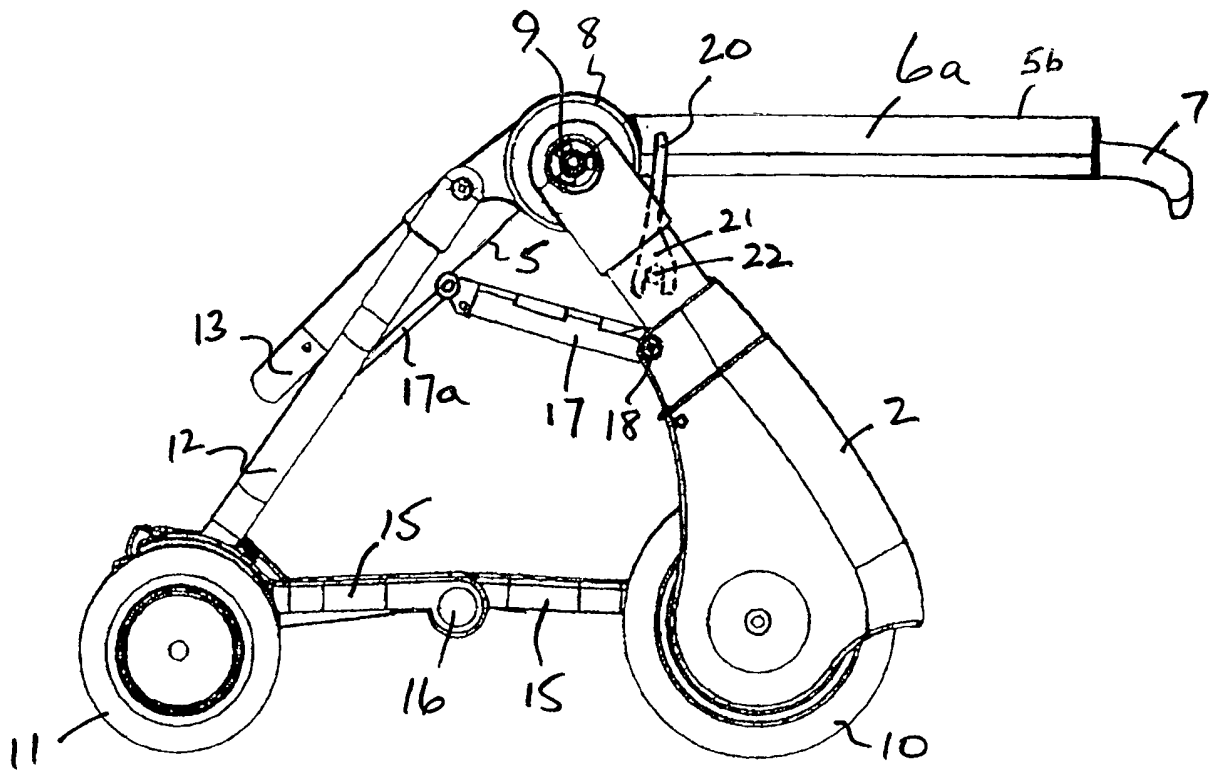


FIG 5



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FIG 6

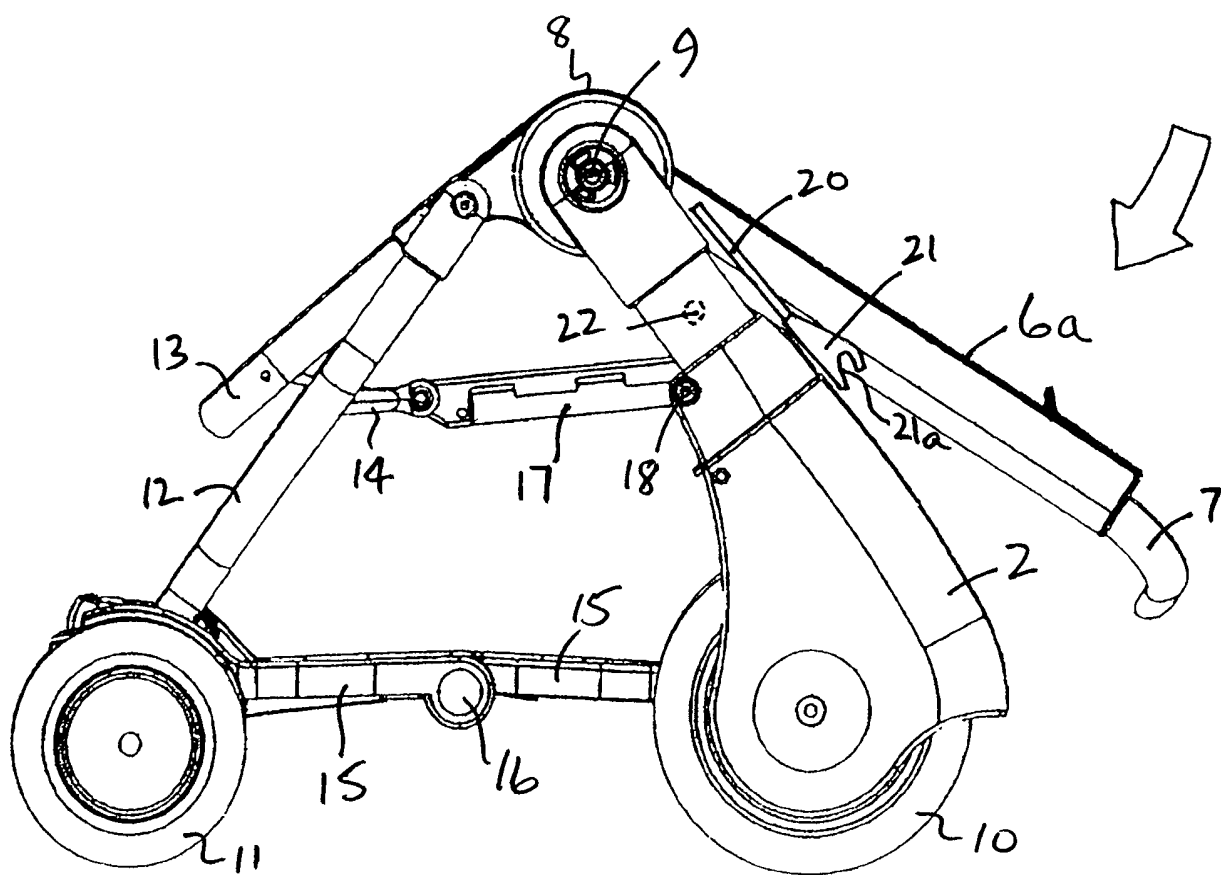


FIG 7

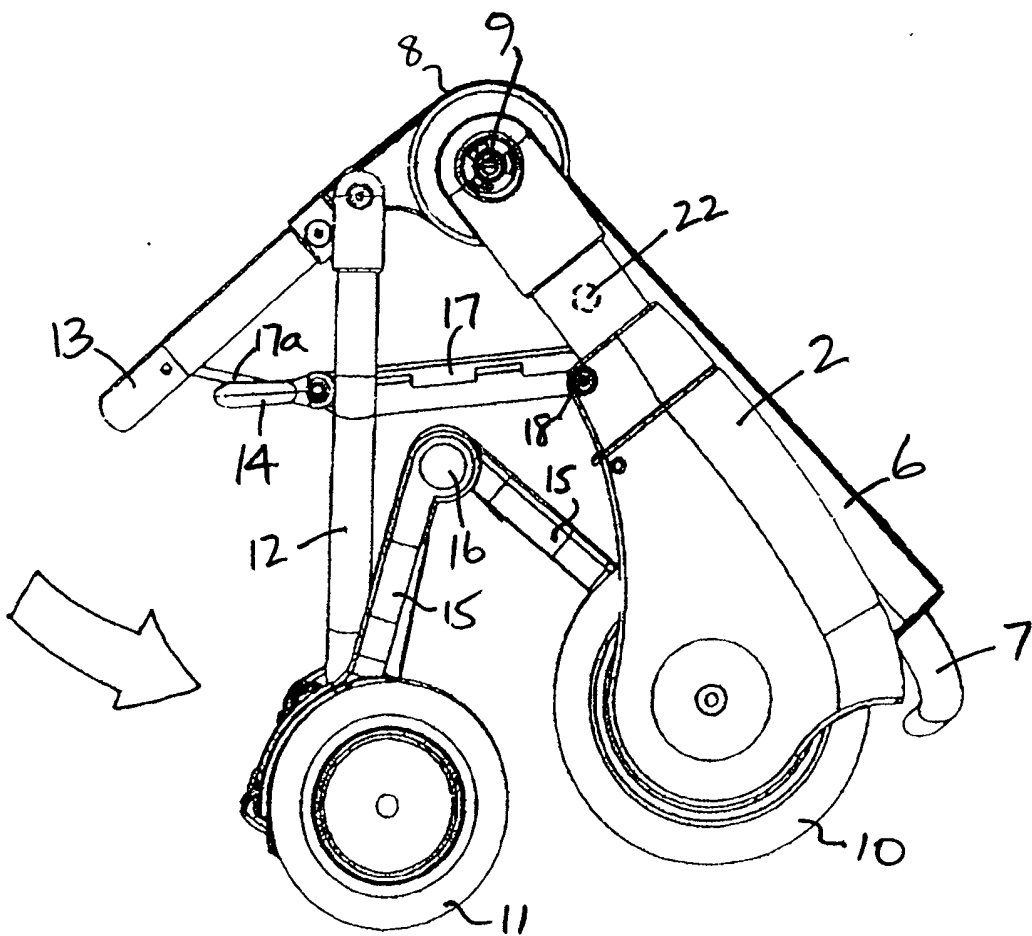
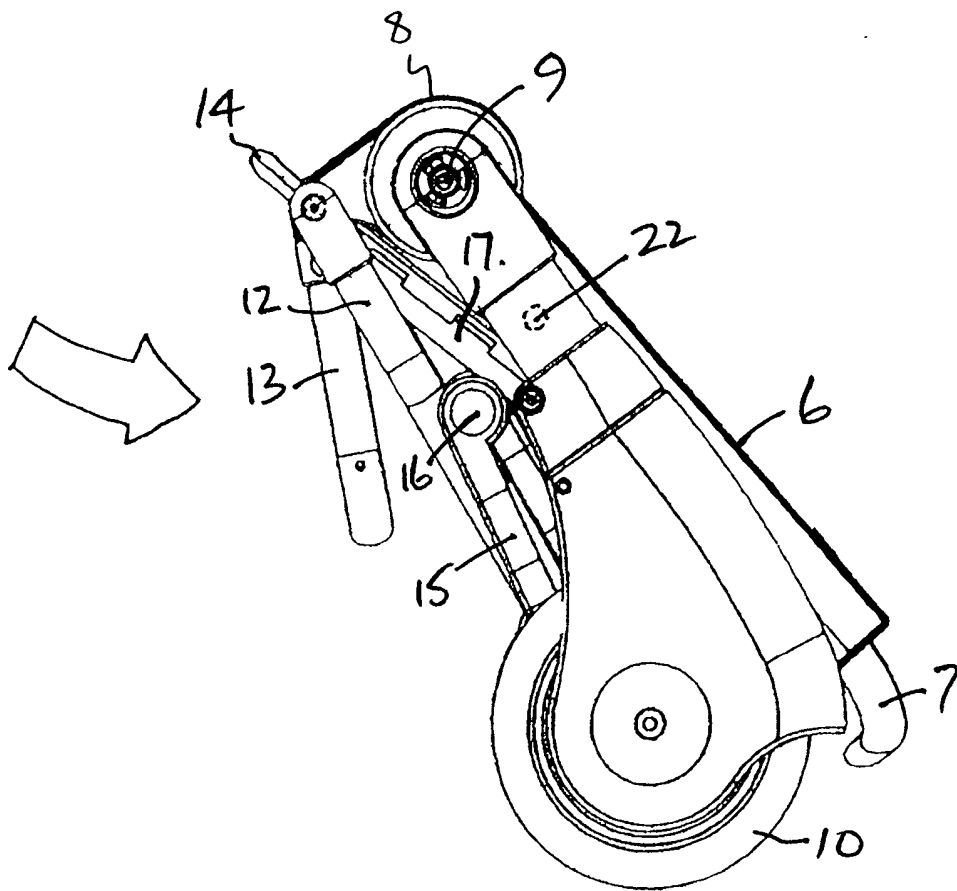


FIG 8



Collapsible Pushchair

This invention relates to a collapsible pushchair and more particularly to a pushchair having a seat back which can be moved into an interim baby changing position.

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Collapsible pushchairs or strollers are well known and are constructed to be erected from a fully collapsed space saving configuration to a fully erected configuration.

When a mother is out walking with her baby, she may need to change its nappy/diaper. This necessitates her trying to find a suitable place to do this. Some

10 stores or public toilets have a dedicated baby changing horizontal surface in them but many do not so the mother has to leave the baby in its soiled nappy/diaper which can cause distress to the baby.

It is an object of the invention therefore to provide a collapsible pushchair which
15 allows the user to change its configuration to provide a horizontal baby changing surface.

According to the invention, there is provided a collapsible wheeled pushchair with a pushchair handle and a seat having a foldable seat back movable between an erected
20 position and a fully collapsed folded position, the seat back having an inside and outside face and being additionally movable into a substantially horizontal intermediate baby changing position, the pushchair also including releasable locking means operable to retain the seat back in said intermediate position.

25 Desirably, the seat back is movable forwardly from its erected position to its intermediate position thereby providing ready access for a baby to be placed on the outside surface thereof which is now upwardly facing. This allows the user uninterrupted access to the baby on the upwardly facing outer seat back surface which is not impeded in any way by the pushchair handle

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Preferably, the locking means engage automatically to retain the seat back in its interim position as the seat back is being moved between its erected and collapsed folded position.

In a preferred embodiment, the seat back is suspended from a seat hanger pivotally attached to the pushchair, the locking means being mounted on the seat hanger.

Preferably, the seat hanger is substantially horizontal when the seat back is in its interim baby changing position thereby providing a user with uninterrupted access
5 to the seat back from above.

Preferably, the locking means is a stay having abutment means at its distal end which engage with a stop on the pushchair to retain the seat back in its horizontal intermediate position. Conveniently, the abutment means comprises a forked
10 member which engages with the stop.

A locking stay can be provided at each side of the seat if desired..

In the preferred embodiment, the pushchair has a pair of front and rear wheels, the
15 centre of gravity of the seat back in its intermediate horizontal position being located above said front wheels when a baby is placed thereon.

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

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Figure 1 is a front perspective view of an erected pushchair of the invention;

Figure 2 is a rear perspective view of the pushchair shown in Figure 1;

Figure 3 is a side view of the pushchair shown in Figures 1 and 2;

Figure 4 is a side view of the pushchair shown in Figure 3 but with the seat hanger and push handle mounted thereto in its initial phase of the collapsing/folding
25 process;

Figure 5 is a side view of the pushchair shown in Figures 1-4 but with the seat hanger and seat back attached thereto in its interim baby changing position;

Figure 6 is a side view of the pushchair shown in Figure 5 but with the seat hanger and seat back attached thereto just before it reaches its fully folded collapsed
30 position;

Figure 7 is a side view showing the pushchair of Figure 6 with the rear wheels thereof partially folded towards the front wheels of the pushchair; and

Figure 8 is a side view showing the pushchair of Figure 7 in its fully folded collapsed position with the rear wheels stored between the front wheels.

Referring to the drawings, there is shown a collapsible pushchair comprising a
5 chassis 1 having sides 2,3 and a footrest 4. A pair of front wheels 10 are rotatably mounted on the chassis 1. A pair of smaller rear wheels 11 are rotatably mounted on a collapsible sub- assembly 15, the front end of which is pivotally attached to the chassis 1 between the wheels 10. The sub-assembly 15 is foldable in known manner about pivots 16. Stays 12 extend between the rear wheels 11 and a respective
10 mounting assembly 8 on each side of the upper end of chassis 1. The free ends of a U-shaped safety support stay 13 are also pivotally attached to a respective mounting assembly 8 at each side of the chassis 1. Each mounting assembly 8 has a spring biased release button 9 therein whose function will be described hereafter.

15 A seat hanger comprising a pair of arms 6a is pivotally attached to the mounting assembly 9 at each side of the chassis 1. A U-shaped push handle 7 is telescopically fitted in the seat hanger arms 6a in known manner. Release buttons 7a (only one is visible in Figs 1 and 2) release locking detents (not shown) to allow the handle to be telescoped into the arms 6a in known manner.

20 A foldable U-shaped seat base support 17 is pivotally attached at 18 to opposite sides of the chassis 1. A carrying handle 14 is attached to the rear of the seat base support 17(see Fig 2). Each rear corner of the foldable seat base support 17 is pivotally connected by a stay 17a to a respective rear stay 12 intermediate its ends.

25 The side edges of a flexible collapsible seat 5 are attached, preferably releasably ,to the seat hanger arms 6a and suspended therefrom. The bottom side edges of the seat are attached to the seat base support 17 and the front edge is attached to the front of the chassis 1 in the region 5a. The seat 5 is preferably made from a natural or
30 synthetic textile material and has an inside surface 5a and an outside surface 5 b (see Figs 1-3).

A locking stay or arm 20 is pivotally attached at one end to the right side hanger arm 6a, its free end having a locator 21 thereon formed with a cut-out 21a which engages with a locator pin 22 (see Figures 3-8) on the chassis 1. An identical locking stay 20 (not shown) may also be pivotally attached to the left side hanger arm 6a but this is not essential.

It should be noted that the design of the pushchair is such that once the rear wheels 11 are released from their parked position between the front wheels 10 in the chassis 1 (see Figure 8), the sub-assembly 15 drops under gravity into its overcentre position shown in Figures 1-4 which maintains the rear wheels 11 in the illustrated unfolded position until released. At the same time, the seat support 17 drops under gravity into its position shown in Figures 1-3, the stays 17a maintaining the seat support 17 in its illustrated erected position until released. The seat hangers 6a can then be unfolded by depressing the buttons 9 to release the lock and rotating them upwardly from their stored position in the chassis 1 until they reach their fully erected position shown in Figures 1-3 when the locks engage again to retain them therein.

The feature of the pushchair of the present invention which distinguishes it from known pushchairs is that its seat back can be folded into an intermediate baby changing position (see Fig 5) in which the seat back is locked in a substantially horizontal position whereby the previously upright outside surface 5b of the seat 5 is now horizontal and upwardly facing ready to receive and support a baby. It should be noted that the pushchair handle 7 has also been pivoted into the horizontal position so a user has uninterrupted access to a baby placed on the horizontal seat back surface 5b.

In order to collapse the pushchair from its fully erected position shown in Figure 3 to its intermediate baby changing position shown in Figure 5, the user first of all pushes the buttons 7a to release the locks (not shown) which keep the U-shaped handle in its erected position. The U-shaped handle 7 can then be pushed in the direction of the arrow in Figure 3 so that it telescopes into the arms 6a.. The user then depresses the release buttons 9 on either side of the chassis 1, each of which releases a known locking mechanism (not shown) holding the arms 6a in their

erected position. The seat hangers 6a can now be moved forwardly in the direction shown in Figure 4 as a result of which the stay 20 also pivots forwardly under gravity as illustrated. The user then continues to push the seat hangers 6a forwardly until the cut-out 21a in the locator or yoke 21 at the end of the stay 20 locates on
5 pin 22 to retain and support the seat back in the illustrated horizontal "baby changing" position shown in Figure 5. It should be noted that the central area of the horizontal seat back 5 is located directly above the front wheels 10 so the pushchair is very stable in this intermediate position because its centre of gravity when a bay is placed on it will pass through the wheels 10 .

10

To collapse the pushchair from its intermediate "baby changing" position shown in Figure 5, to its fully collapsed position shown in Figure 8, the user needs to release the buttons 9 and lift the seat hangers 6a upwardly to disengage the stay 20 from the pin 22. The user can then push the arms 6a forwardly so that they move
15 downwardly in the direction of the arrow in Figure 6 until they assume their fully collapsed stored position in which they lie directly against the chassis 1 as shown in Figure 7. The user then pushes the rear wheels 11 forward in the direction of the arrow in Figure 7 until they assume their fully stored position shown in Figure 8 in which they are located in the chassis 1 between the front wheels 10.

20

Claims

1. A collapsible wheeled pushchair with a pushchair handle and a seat with a foldable back movable between an erected position and a fully collapsed folded position, the seat back having an inside and outside surface **characterised in that** the seat back is additionally movable into a substantially horizontal intermediate baby changing position, the pushchair including releasable locking means operable to retain the seat back in said intermediate position.
5
- 10 2. A pushchair as claimed in claim 1 wherein the seat is movable forwardly from its erected position to its intermediate position in which the outside surface of the seat back becomes substantially horizontal and upwardly facing.
- 15 3. A pushchair as claimed in claim 1 or claim 2 wherein the locking means engage automatically to retain the seat back in its intermediate position as the seat back is being moved between its erected and collapsed folded position.
- 20 4. A pushchair as claimed in any preceding claim wherein the seat back is suspended from a seat hanger pivotally attached to the pushchair, the locking means being mounted on the seat hanger.
- 25 5. A pushchair as claimed in claim 4 wherein the seat hanger is substantially horizontal when the seat back is in its intermediate baby changing position thereby providing a user with uninterrupted access to the seat back from above.
6. A pushchair as claimed in claim 4 or claim 5 wherein the locking means is a stay having abutment means at its distal end which engage with a stop on the pushchair to retain the seat back in its horizontal intermediate position.
- 30 7. A pushchair as claimed in claim 6 wherein the abutment means comprises a forked member which engages with the stop.

8. A pushchair as claimed in claim 6 or claim 7 wherein a locking stay is provided at each side of the seat.

9. A pushchair as claimed in any preceding claim wherein the pushchair has a pair of front and rear wheels, the centre of gravity of the seat back in its interim horizontal position being located above said front wheels when a baby is placed thereon.



INVESTOR IN PEOPLE

Application No: GB 0327523.7
Claims searched: 1 to 9

Examiner: Guy Robinson
Date of search: 27 January 2004

Patents Act 1977 : Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1, 4 & 5	GB 2303104 A (GLEN) whole document
X	1, 4 & 5	FR 2592777 A (BERCHET) abstract & figs
X	1, 4 & 5	FR 2486894 A (AMPAFRANCE) abstract & figs
X	1, 4 & 5	GB 2009057 A (AMPAFRANCE) figs & page 1 lines 56 to 62
X	1, 4 & 5	US 4265466 (KASSAI KABUSHIKIKAISHA) figs & column 8 lines 13 to 44

Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art
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& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

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

B7B; A4L

Worldwide search of patent documents classified in the following areas of the IPC⁷:

B62B

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

WPI, EPODOC, JAPIO