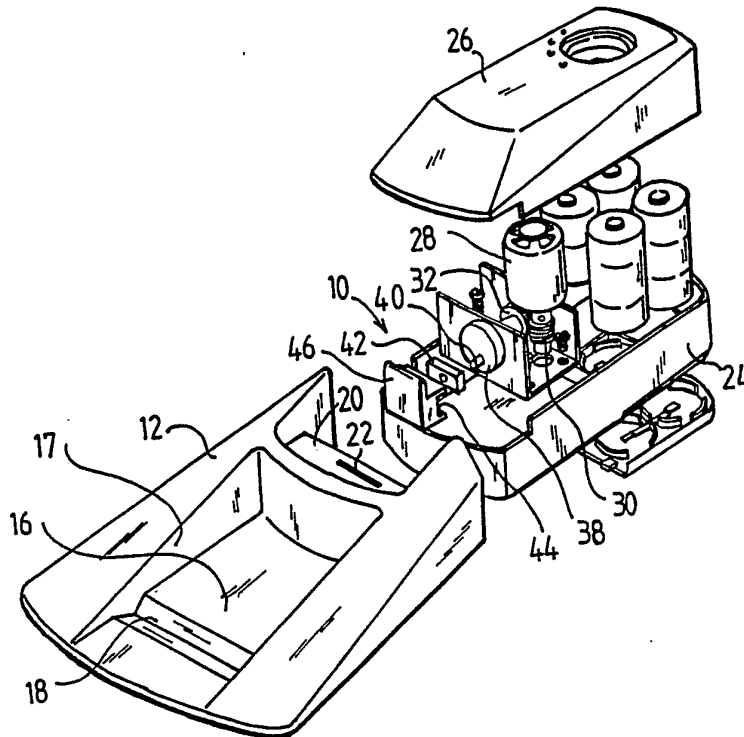




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<p>(21) International Application Number: PCT/GB92/02114 (22) International Filing Date: 13 November 1992 (13.11.92) (30) Priority data: 9124375.8 15 November 1991 (15.11.91) GB (71)(72) Applicants and Inventors: BULKAN, Franklin, Julian [GB/GB]; GROSSMAN, Nigel, Trevor [GB/GB]; The Bungalow, 21A Letchmore Road, Radlett, Hertfordshire WS7 8HU (GB). (74) Agent: CRASKE, Stephen, Allan; Craske & Co., 1 Southemhay West, Exeter, Devon EX1 1JG (GB).</p>		<p>(81) Designated States: AU, CA, FI, GB, JP, NO, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE). Published <i>With international search report.</i></p>

(54) Title: ROCKING DEVICE



(57) Abstract

A device e.g. for rocking an article such as a cot or perambulator, includes a drive unit (10) and a separate shoe (12) for placement beneath a leg or wheel of the article. The shoe (12) has a support plate (16) surrounded on three sides by an upstanding wall (17). The drive unit (10) contains a motor (28) which drives a vertically reciprocable support block (46) via an eccentrically rotating pin (40). The block (46) supports a web (20) of the shoe (12) to tiltably lift and lower the shoe, and has an upstanding locating lug which is received in a slot (22) in the web (20).

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ROCKING DEVICE

TECHNICAL FIELD OF THE INVENTION

This invention relates to a rocking device for rocking an article such as a babies cot, a perambulator or the like.

BACKGROUND

Young babies can be extremely difficult to soothe and parents often spend a great deal of time attempting to get a young baby to sleep.

An aim of the present invention is to provide a device which can be used for this purpose.

SUMMARY OF THE INVENTION

The present invention proposes a rocking device comprising a drive unit arranged to stand on a surface, a shoe member arranged to support part of an article to be rocked, coupling means joining the shoe member to the drive unit such as to allow relative movement therebetween, and the drive unit incorporating motor means which is arranged to reciprocally move the shoe member relative to the drive unit via said coupling

means.

BRIEF DESCRIPTION OF THE DRAWINGS

The following description and the accompanying drawings referred to therein are included by way of non-limiting example in order to illustrate how the invention may be put into practice. In the drawings:

Figure 1 is a general external view of a rocking device of the invention (referred to below as a rocker);

Figure 2 is a partially exploded version of Fig. 1;

Figure 3 is a side elevation of the rocker, in which the casing of the drive unit is shown in transparent outline and part of the shoe is shown cut away;

Figure 4 is a plan view of part of the rocker as shown in Fig. 3; and

Figure 5 is a general scrap view showing the coupling between the rotary drive derived from the motor and shoe support member of the rocker.

DETAILED DESCRIPTION OF THE DRAWINGS

The rocker shown in the drawings comprises a drive unit

10, heavy enough to be supported without moving on a fixed surface such as the ground, together with a shoe 12 on which an element 14 is supported. The element 14 as shown is a leg of a baby's cot, but it could equally well be a perambulator wheel or part of some other device in which a baby can sleep.

The shoe 12 has a flat support plate 16, which is surrounded on three sides by a generally U-shaped upstanding wall 17. The plate 16 has a V-shaped transverse groove 18 in which a perambulator wheel can rest, so that it does not tend to roll off. At its rear end, the shoe has a transverse abutment web 20 formed with a through slot or recess 22.

The drive unit comprises a casing consisting of a body 24 and a removable cover 26, which is so profiled that, for storage and transport purposes, the shoe can be stacked neatly on top of the drive unit.

The casing body 24 carries a low voltage electric motor 28, the shaft of which carries a worm 30 driving a worm wheel 32, which is mounted on a horizontal rotatable shaft 34 carried in a sub-frame 36 secured to the body 24. The shaft 34 carries a crank 38 with an eccentric pin element 40 on which a crosshead 42 is loosely fitted. The crosshead 42 fits in a rearwardly facing transverse slot 44 formed in a shoe support block 46. The latter has an upstanding lug 48 which fits in the slot 22 of the shoe, so that the shoe is removably supported on the block 46 with the web 20 lying on the horizontal upper surface 50 of the block 46, as can be seen in Fig. 3. The block 46 itself has a vertical central hole 52 by which it is freely mounted on a

vertical pin 54 carried by the casing body 24.

The motor 28 is powered by dry batteries 60, carried in the casing and connected to the motor through a variable timer, not shown, which is carried by the casing cover 26 and which is adjustable by means of a knob 62 so as to set a desired rocking time. This controls the speed, length of time during which the motor 28 is energised, and also incorporates an on/off switch.

In operation, the motor drives the crank 38 in continuous rotation, which is converted into up and down motion of the support block 46 by the pin 40 and cross head 42. The shoe 12 is thus caused to angularly move up and down with a simple harmonic motion, gently rocking the baby in its cot or pram.

The speed of the motor can be adjusted by knob 62 so that the cyclic period of the rocking action can be made faster or slower as required.

It will be understood that, although simple harmonic motion is preferred, the motor may be coupled with the shoe in such a way as to produce other forms of motion. For example, the shaft 34 may be coupled to a vertical lead screw carrying a transverse bar which is threaded to the latter and restrained from rotating with it, so that this bar is moved up and down at constant speed by the leadscrew, each end of its travel being detected by a microswitch which causes the direction of motion of the motor to be reversed.

The timer may also be arranged to interrupt rocking for

predetermined periods, so that rocking takes place for a short time, followed by a stationary period, followed by another rocking period. Instead of being powered by batteries, the power unit may be powered by the mains, the motor then being a low voltage motor supplied through a suitable transformer, or a mains voltage motor.

* * * * *

CLAIMS

1. A rocking device comprising a drive unit (10) arranged to stand on a surface, a shoe member (12) arranged to support part of an article to be rocked, coupling means (20, 46) joining the shoe member to the drive unit such as to allow relative movement therebetween, and the drive unit incorporating motor means (28) which is arranged to reciprocally move the shoe member relative to the drive unit via said coupling means.

2. A rocking device in accordance with Claim 1, in which the coupling means (20, 46) is arranged to move said shoe member (12) in a substantially vertical plane.

3. A rocking device in accordance with Claim 1, in which the shoe member (12) is arranged to rest on said surface alongside said drive unit (10).

4. A rocking device in accordance with Claim 3, in which the coupling means (20, 46) comprises a support platform (50) which is reciprocally coupled to said drive unit (10), and an abutment portion (20) which is rigidly coupled to said shoe member (12) and which rests upon said support platform in use to elevate the adjacent end of said shoe member above said surface.

5. A rocking device in accordance with Claim 4, in which said support platform (50) has an upstanding

projection (48) which locates in a recess (22) in said abutment portion (20).

6. A rocking device in accordance with Claim 4, in which the support platform (50) is slidably guided for substantially vertical movement by an eccentrically rotating element (40) driven by said motor means (28).

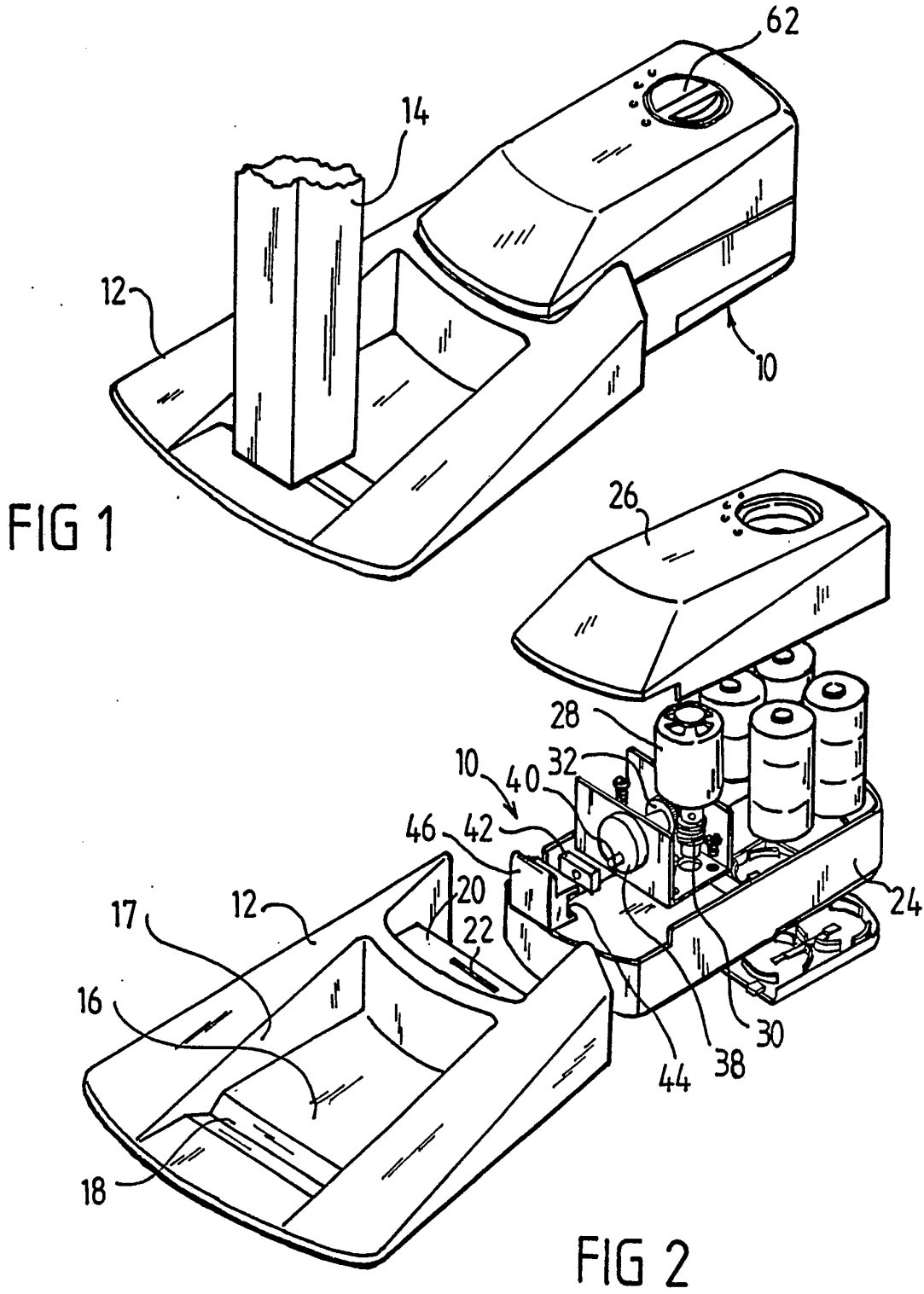
7. A rocking device in accordance with Claim 3, in which said shoe member (12) comprises a support plate (16) for supporting said part of said article, the support plate being surrounded on three sides by an upstanding generally U-shaped wall (17).

8. A rocking device in accordance with Claim 7, in which said support plate (16) includes a transverse groove (18) extending between the opposed sides of the U-shaped wall (17).

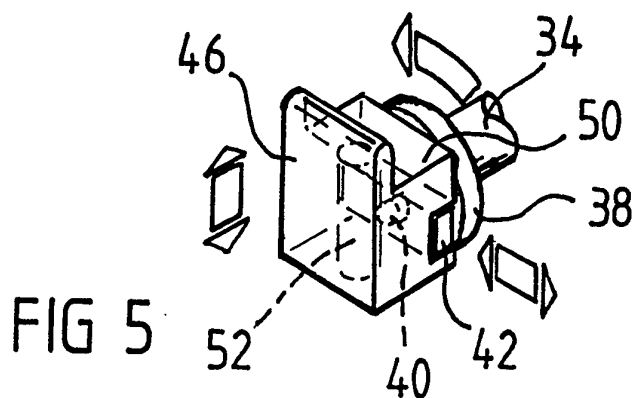
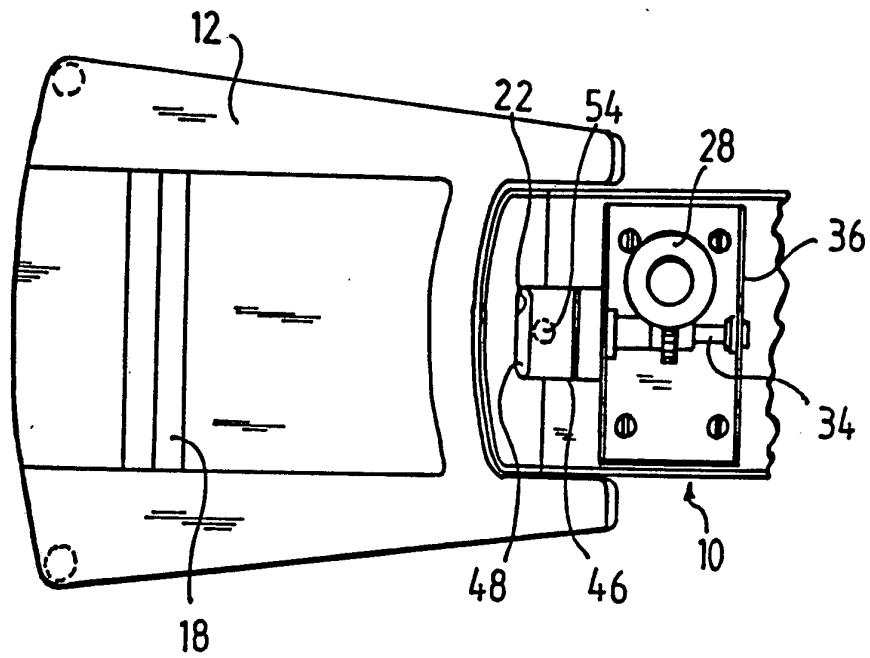
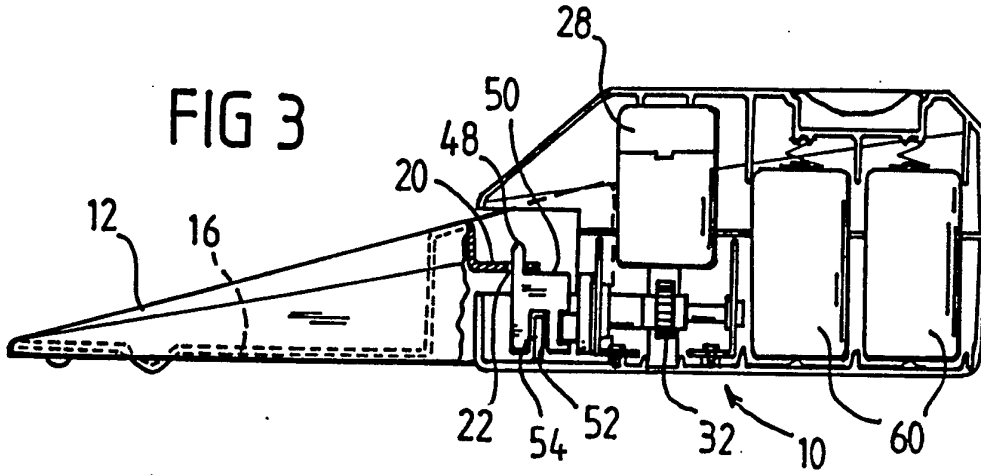
9. A rocking device in accordance with Claim 1, in which the shoe member (12) is arranged to move angularly in a substantially vertical plane.

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INTERNATIONAL SEARCH REPORT

PCT/GB 92/02114

International Application No

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)⁶

According to International Patent Classification (IPC) or to both National Classification and IPC

Int.Cl. 5 A47D9/04

II. FIELDS SEARCHEDMinimum Documentation Searched⁷

Classification System	Classification Symbols
Int.Cl. 5	A47D ; B62B

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched⁸**III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹**

Category ^o	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
X	US,A,4 985 949 (JANTZ)	1,2,9
A	22 January 1991 see column 2, line 12 - column 3, line 12; figures 1,2,4 -----	6

^o Special categories of cited documents :¹⁰

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IV. CERTIFICATION

Date of the Actual Completion of the International Search

12 FEBRUARY 1993

Date of Mailing of this International Search Report

05.03.93

International Searching Authority

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Signature of Authorized Officer

MYSLIWETZ W.P.

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.**

GB 9202114
SA 67608

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-4985949	22-01-91	None	

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