Abstract: Fit to ease nursing babies, i.p. laying them down to sleep without interruptive motion, a lifting device (6,7) for cribs (1) is proposed, that would lower a level plate (3) with a mattress on it smoothly from a high position - also suitable for changing diapers - to a safe sleeping and playing position.

Title: BABY CRIB WITH AUTOMATIC LIFTING DEVICE
BABY CRIB WITH AUTOMATIC LIFTING DEVICE

FIELD OF THE INVENTION

This invention relates to baby cribs and more particularly to a crib, the mattress of which might be positionend on lower sleeping and safety cradling position and changed to a top position, so to function as a diaper changing table. Further defining the invention is an automatic level adjustment, that may be controlled by a foot pedal.

BACKGROUND OF THE INVENTION

Laying babies down to sleep might be cumbersome, particularly for young women, who are still a little handicapped from spinal loads during the late months of their pregnancy. The reason is, that the baby must be put down onto a position, where it is safe from falling out of the crib. But this is a rather low position and so the mother must be leaning wide over the cod's sidewalls, particularly if the baby is asleep and should be moved carefully, so not to wake it up.

The almost same situation appears when a baby is to be taken out of a crib - where it is necessary to lean wide over to support it on its back and at the same time to support its head from falling back.

INVENTIVE STEP

The inventive step for solving this problem is to use an automatic height control for the crib's mattress, that is running as smoothly as not to interfere with baby's sleep.

With it, the baby may be put down on a mattress, positioned as usual like on a diaper changing table (a function, it may also be used for) and then to run it down to a safe position - and vice versa.

PRIOR ART

There are, however quite a few cribs known with height-adjustable mattresses. So in CN201996048, comprising a parallelogram-type mechanism on its front and back side. Howver this must be manually adjusted - what may not be easily
performed simultaneously and with a baby on one's arms. By contrast, in CN 201996048 a mechanical mechanism is disclosed with four open mandrels, which lift a baseplate while turning through their four nut threads.

The drawback here is, that these mandrels must be without cover, so that they can pass through the threads. This however is not only dangerous in case of baby's fingers to get into it, but it also would inevitably stain the sheet and mattress, since these kinds of mechanism must be well greased to work properly (see drawing on this patent's site).

Besides these, there are a lot of propositions to heightening and locking mechanisms for baby cribs, as in US 5165124, US 5214808, US 6594834 and DE 9314319. However, all of these refer to manual adjustment that is impossible to be performed with a baby on one's arm.

**DESCRIPTION OF THE INVENTION**

The here disclosed solution comprises a double-legged scissor jack, mounted within a space between base plate and mattress support. This lift may either be driven by a pedal-controlled electric motor, by hydraulic steering or simply pneumatically with a foot pump, that comprises a release valve and action cylinder between the scissor legs. It allows to lay the toddler smoothly and effortlessly down on the lifted mattress in its diaper changing position and to lower it down slowly unto a safe sleeping or playing position - or to lift it up and take it on one's arm without leaning far over.

**CLOSER DESCRIPTION ALONG TO THE DRAWINGS**

Fig 1 demonstrates a baby crib 1 with its surrounding bars 2, the level plate 3 (hatched, mattress thereon not shown) in top position for diaper changing and bedding toddlers, the ground plate 5 with the scissor jack 6 mounted on it, driven by an electric motor 7 and carrying the level plate 3.

Fig. 2 demonstrates the effect of the lifting mechanism on the same bed like in Fig. 1, only that the level plate 3 is in lowest position, slightly above the ground plate 5, only with some distance to the ground plate due to the minimum retraced height of the scissor jack 6.
WHAT IS CLAIMED IS:

1. A baby crib with automatic lifting device, wherein the lifting device is at least one double-lever scissor lift in an extra space between a base plate and level plate with the usual mattress thereon.

2. A baby crib with automatic lifting device as to claim 1, wherein the scissor lift is driven by an electric motor, working on a split threaded rod through both loose horizontal hinges.

3. A baby crib with automatic lifting device as to claim 1, wherein the motor control is managed by pedal-controlled drive.

4. A baby crib with automatic lifting device as to claim 1, wherein the scissor lift is driven by a hydraulic cylinder between the two loose horizontal hinges.

5. A baby crib with automatic lifting device as to claim 2, wherein the hydraulic pump is operated by an electrical, pedal-controlled motor drive.

6. A baby crib with automatic lifting device as to claim 1, wherein the scissor lift is driven by a pneumatic cylinder between the two loose horizontal hinges.

7. A baby crib with automatic lifting device as to claim 1, wherein the pneumatic cylinder is operated by a pneumatic foot pump with release valve.
INTERNATIONAL SEARCH REPORT

A CLASSIFICATION OF SUBJECT MATTER

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<tr>
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Further documents are listed in the continuation of Box C. [X] See patent family annex.

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Date of the actual completion of the international search: 15 July 2013
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