Bed adapted for a patient with burn injuries

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BACKGROUND
For successful wound healing of extensive burn injuries, air circulation around the wound and drainage of wound secretion is inevitable. Therefore, typically extensive burn injuries are treated by using a specifically adapted hospital bed (e.g. Clinitron AF). The patient is bedded in a mass of micro glass balls, which are swirled by the application of a strong air current to support the patient in a floating condition. Furthermore, the micro glass balls facilitate the absorption of liquids such as exsudates and excessive liquids can be transported away from the patient. Lumps, generated during the healing process are heavier than the micro glass balls and therefore descent to the bottom of the hospital bed.

However, the solution based on floating micro glass balls entails a number of disadvantages, including an extremely high mass of the bed (~1000 kg) and high costs. Moreover, patients regularly suffer from motion sickness as a reaction to the floating support provided by the micro glass balls.

TECHNOLOGY
A bed insert is configured to partially replace a standard hospital mattress and thus adapting a standard hospital bed for an improved supporting of a patient with burn injuries. The bed insert consists of a finely woven net stretched over a chrome plated metal frame. The partial mattress and the bed insert constitute a spatially complete but adapted mattress with no loss of functionality (Fig. 1). Positioning of the burn patient after skin grafting on the air-permeable net enables air to circulate around the wound and wound secretions to drain; this improves the graft take-rate and therefore wound healing (Fig. 2). In case of open burn wound care this bed insert has markedly favorable effect on wound healing process as well. All used components of the bed insert can be sterilized and hence reused. Furthermore the adaption of a conventional hospital bed into the adapted bed can be made quickly and without interfering the original function of the bed, e.g. intensive care properties.

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ADVANTAGES
- Quick and easy adaption of a conventional hospital bed into an adapted bed for burn injuries
- Improved burn injury healing conditions
- No loss of functionality of the bed, e.g. intensive care properties
- All components can be sterilized and reused
- Low costs

COLLABORATION DETAILS
- License agreement
- Partner should provide support in manufacturing, marketing, advertising and distribution of the technology

DEVELOPMENT PHASE
- Prototype

Fig. 1. Bed insert for improved treatment of burn injuries. Partial mattress and bed insert constitute a complete mattress with no loss of functionality.

Fig. 2. Treatment of burn injuries of both legs with the adapted mattress. The air-permeable net enables air to circulate around the wound and drainage of wound secretions.

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