

Cosmetic and Protective Covering for an External Fixation Device

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Patent pending

External fixation devices are inherently bulky, uncomfortable and unattractive. Palmetto Biomedical has developed a covering for a wide range of external fixators that will help the patient endure the inconvenience of these devices.

Protective and Cosmetic Covering for External Fixation Devices (Patent Pending)



**External Fixator model
with footplate only**



**Fixator with protective
covering attached**



**Fixator with vented
protective covering**



**Fixator with alternative covering
(tennis shoe for pediatric patients)**

BENEFITS:

- ❖ This new covering is **aesthetically appealing** and will give both adult and pediatric patients an **enhanced personal image and self-confidence**. The covering can even be provided in different fabrics with images or logos to fit personal tastes.
- ❖ This new covering provides **enhanced patient comfort and protection from the elements**. The covering can be fabricated from waterproof material with a drawstring at the top for secure closing. The covering may even be provided with insulation for protection from the cold.
- ❖ This new covering **reduces the risk of infection due to debris and contaminants**. A well recognized complication of external fixation devices is the risk of infection at the anchorage sites. Keeping the extremity and fixation device clean reduces the risk of contamination and infection.

DETAILS OF THE INVENTION:

The present invention contemplates a procedure and device that is implemented following affixation of an external fixation element to the upper or lower skeletal system. The covering is in the form of a fabric sheet having closure elements or fasteners at the free edges of the sheet. The closure elements are configured to allow the edges to overlap as necessary to wrap comfortably about the external fixation device. For the lower extremity covering shown in the figure, a fabric form is shaped to encompass the foot and lower limb, with overlapping panels and closure elements of the type described above. The overlapping panels **accommodate variation in sizes** of the external fixation device for the lower extremity.

One purpose of the coverings of the present invention is to allow for **secure fixation** and **ease of removal** to and from the base plate for lower extremity models. Fixation may be achieved by, but not limited to, a zipper, snaps, buttons, or hook and loop fasteners. If the patient decides that they need to remove the protective covering, the zipper allows for rapid and easy removal. The coverings are made of a **washable material**. Thus, the covering may be made of cloth or vinyl or similar washable materials. As a further alternative, the covering could be made from a material that easily allows permanent decoration, as in the case of patients writing on their casts or screen printing in advance. In one embodiment, the coverings of the present invention may be formed of a waterproof fabric, such as neoprene, or a chemically treated fabric, such as treated nylon. In this same scope, the covering may also serve as a windproof barrier, such as the lower extremity covering shown in the figure.

In another embodiment, the protective covering is **insulated**. Pockets may be incorporated into the covering into which sheets of insulating material may be inserted. In another feature of certain embodiments, the covering may be provided with vents, such as vents shown in the figure, which allow **air flow through the covering** when wrapped around the upper or lower limb external fixation device. The vents may be provided with **flaps** that may be opened after returning to a climate-controlled environment after the patient has been outside in a cold environment or in situations of a warm climate in general. In the outside environment the flaps are fixed closed with a temporary fastener. When the patient is inside, the flaps may be fixed in an open position and an open mesh covering continues to provide for protection from introduction of foreign materials onto the fixation structure. This open mesh may be of fine weave in order to **prevent visualization** of the external fixator within and passage of debris inside the covering.

As previously mentioned, in lower extremity fixator covers, there may be a need to **fix the cover to a base plate** in fixators that are attached to the foot to enable the patient to ambulate. In one embodiment of the invention, a base plate will provide for fixation points to the fixator itself, as illustrated. There will be multiple arrangements or points of fixation to **accommodate the many sizes and styles of fixators**. These fixation points will be modeled so as to not protrude through the underside of the base plate and interfere with ambulation. The base plate is preferably covered with a soling material to provide for a slip-resistant surface. An additional embodiment will be to provide a cushion on the side of the base plate that abuts the foot. This cushion may be padded and made of a washable material. The base plate may also be configured to extend beyond all margins of the external fixator apparatus to provide for protection of the device as well as the foot, as shown in the figure.

CONTACT:

If you are interested in purchasing or licensing this technology please contact us at Palmetto Biomedical Inc.