BACKPACK CLAMPING DEVICE OBTAINED BY MEANS OF 3D PRINTING

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ABSTRACT

The **Engineering Design and Technological Development (DIDET in Spanish)** group of the University of Alicante has developed a clamping device for drawstring backpacks obtained by 3D printing. The aim is to prevent the backpack's strings from slipping down from the shoulders of people with functional diversity and thus improve their autonomy and quality of life. The group is looking for companies or institutions interested in continuing to develop the device or in designing and manufacturing new ones.

ADVANTAGES AND INNOVATIVE ASPECTS

The clamping device has a number of important advantages:

- It is soft, flexible and pleasant.
- It does not generate pressure on the chest.
- It allows a better and more even distribution of the weight contained in the drawstring backpack.
- The device has a good durability of its main and secondary functions, it is resistant to traction and friction, even to treading on it.
- The design of the device pursues a friendly, integrative and inclusive appearance.
- It can be operated with only one hand, so no external assistance is required.
- The universal attachment of the device allows the use of other personal aid accessories (see Figure 2).

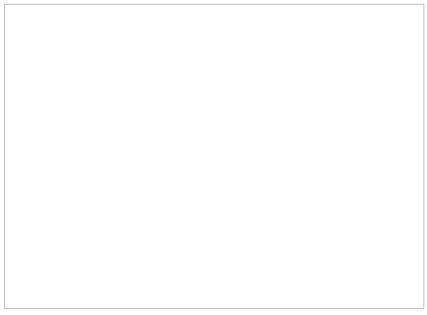

***Figure 2**: Front view of the device*

INNOVATIVE ASPECTS OF TECHNOLOGY

3D printing, together with the use of three-dimensional models, has become an alternative manufacturing process to the conventional one. Its application within assistive technologies opens up endless possibilities for improving the quality of life of people with functional diversity due mainly to two factors:

- Low cost of materials and required equipment.

- Freedom of design that allows to approach the personal needs.

MARKET APPLICATIONS

3D printing is a technique that can be applied to meet any need, in any field, that a person may have. It is especially useful for those people with functional diversity with very personal problems in fields such as medicine, education, work or mobility.

COLLABORATION SOUGHT

The DIDET group is looking for companies or institutions interested in supporting the development of the device or in the design and manufacture of new ones.