Recycling Container for Expanded Polystyrene

Expanded polystyrene (also known as Styrofoam) is used for its low manufacturing costs and its versatile physical properties (25 billion Styrofoam coffee cups are being thrown away every year). Polystyrene occupies 20% of waste in the U.S landfills. It is not biodegradable and there are no practical methods for recycling it.

Problem

Expanded polystyrene is 95% air. Because of that empty volume, transporting it to recycling centers is impractical and expensive. Becasuse it's rarely recycled, it occupies 20% of the total volume in landfills in the United States. In addition, polystyrene in landfills emits toxic fumes when it encounters the heat from the sun.

Solution

This invention is a trash-can sized, enclosed system that removes all the air from single-use polystyrene cups and containers. It reduces them to blocks of pure polystyrene. The system can be installed in cafes, stores, schools, or anywhere that the waste is collected. The compressed material can now be economically transported to recycling facilities to be reshaped and reused. Even in the worst case, it can still be sent to landfills, but now occupying 95% smaller volume than before.

The University of Texas Rio Grande Valley
Office of Technology Commercialization

Recycle Container Solidworks image

Value Proposition

This invention is a compact recycle container that drastically reduces the volume of expanded polystyrene into smaller blocks by removing the air component from them. This will in turn reduce the total volume that is occupied by polystyrene in landfills, saving more space, and reducing cost.

Competitive Advantages .

- This system makes polystyrene recycling viable and affordable.
- It can be installed in a distributed fashion wherever waste is created or collected.
- It makes recycling an attractive "in-situ" opportunity.
- Accessible to the public, compact and cost effective

IP Status

- Patent Pending: 17/307,898

Status of Development

- Proof of Concept

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