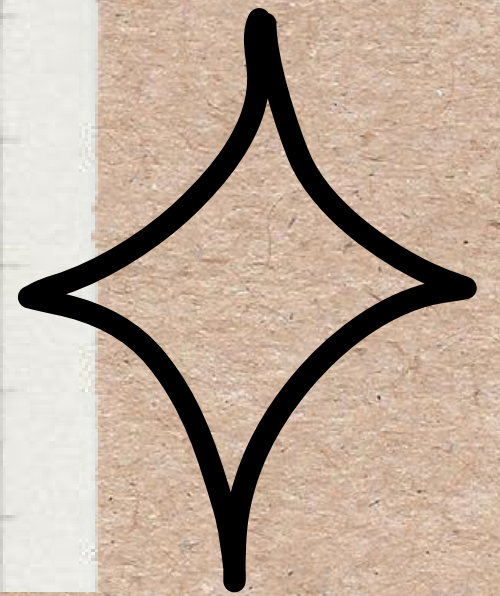
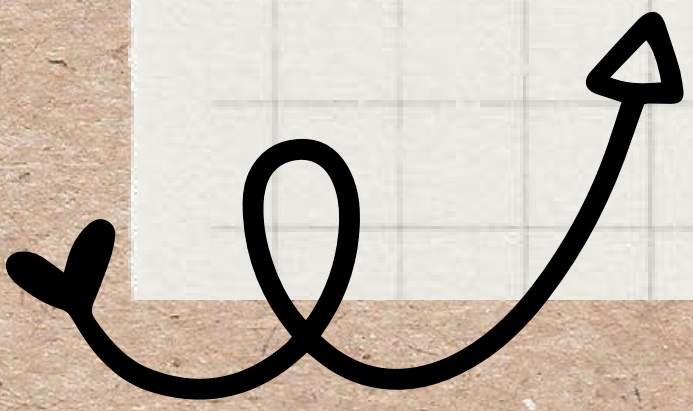


GEHSTOCK

*Made for you, your support,
your best friend*



Product Material Analysis

LIGHTWEIGHT AND DURABLE MATERIALS

These are materials that can be found anywhere, in the home as well as in nature, and are characterised by low density and excellent resistance to impact, external agents and wear. They are materials widely used in everyday objects because they represent the right combination of product quality and cost. examples: Aluminium, carbon fibre, titanium, magnesium and fibreglass.



Ex.

ALUMINIUM ALLOY:

The third most abundant element found in nature, over the years it has become an essential element in many fields of design and engineering.

Lightness: Low density (1/3 lighter than steel) which makes it optimal for reducing weight in complex objects without compromising strength.

Durable: When exposed to air it achieves a strong 'protected' state making it resistant to corrosion.

Cost: Varies according to the size and quality of the aluminium but for standard aluminium the price is between 10-20 euros per 50-100 cm.

Why choose this material for the pole?

It would be an excellent choice because it is functional for use by elderly people due to its lightness, robustness, adjustability and variety of possible designs.

CARBON FIBRE:

This is a material made up of thin filaments of carbon woven together and bonded by a resin. These filaments are very light and strong, characteristics that make this material ideal for design work. **Lightness:** Carbon fibre, as already mentioned, is a very light material, even lighter than aluminium, thus greatly reducing the effort required to transport and use it.

Durable: Despite its lightness, carbon fibre is extremely resistant to shocks and external agents, supporting the elderly person's safety to the fullest.

Cost: While it is a more optimal material than aluminium, it is necessarily more expensive than the latter, costing between 50 and 150 euros per cane, depending on the amount of material used. Why choose this material for the stick? It is a material that offers many advantages, such as lightness and strength, which also brings safety in use to a high level. It also naturally absorbs shocks and is easily modified for one's choice of design.

DESIGN

Elegant and minimal

Reflective and minimalist patterns:

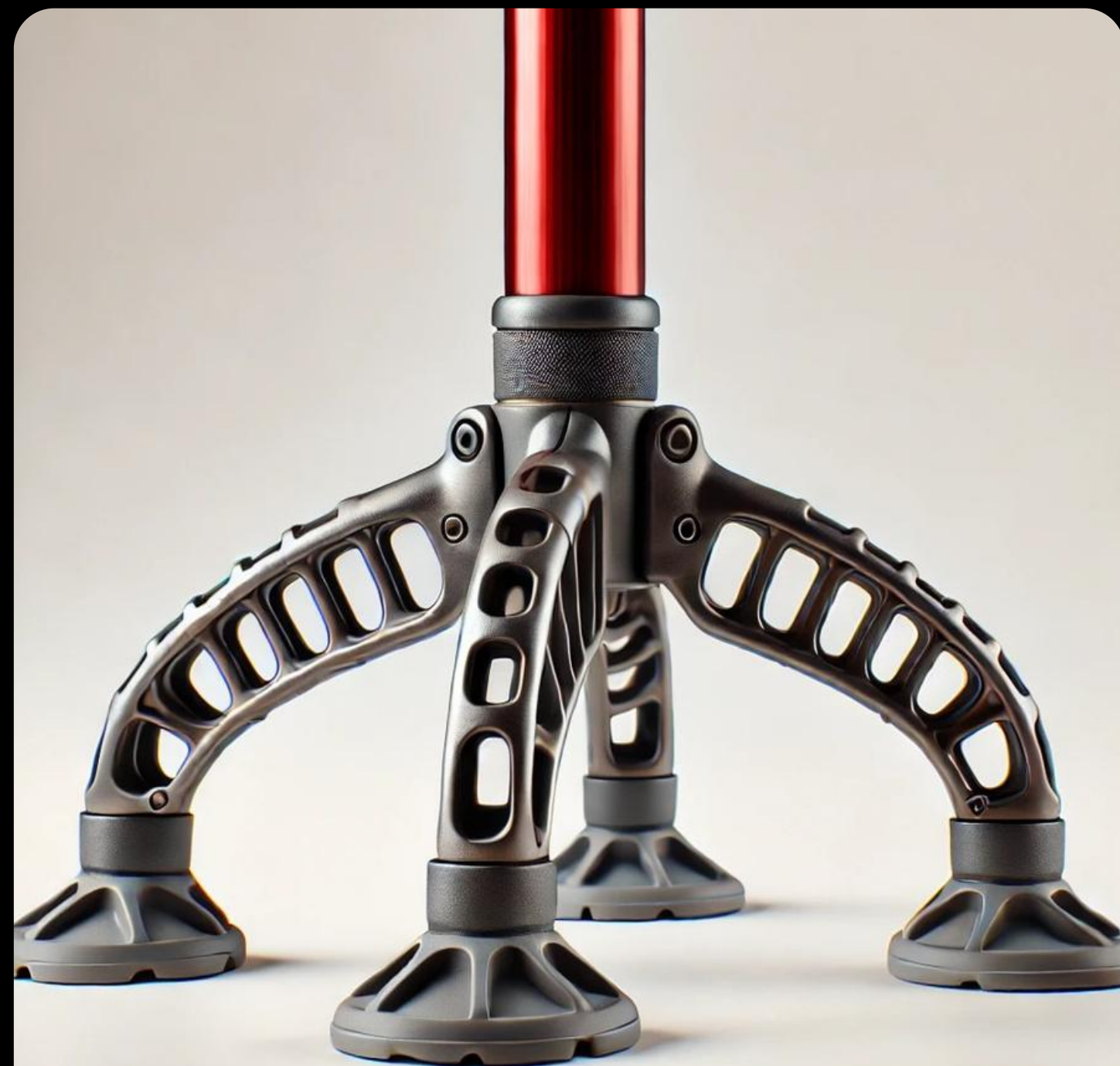
Reflective or opaque aesthetic panels are integrated to make the stick stand out, while maintaining a modern and discreet look. These elements can harmonise with users' outfits or surroundings, avoiding a "medical" look.



Interchangeable and customisable components:

Users can choose modular components, such as the handle and base, available in premium materials such as wood, leather and brushed aluminium. This customisation allows the cane to be adapted to different styles and specific occasions, making it more than just an aid.

STABILITY AND MOBILITY



To promote a more stable and balanced structure, here is the four-footer!

Each foot is made non-slip by the fabric used to make it (possibly rubber).

In addition, to prevent back and limb fatigue, the four feet are slightly flexible to adapt to the user's gait and pressure.

FOLDABLE OR TELESCOPIC DESIGN



*Components of the Folding Mechanism or to make it telescopic:
about 2-5 euro for joints and springs.*

Ergonomic Handle: adds 1-3 euro for non-slip materials.

Precision Manufacturing: about 1-2 euro for stability.

Estimated total per folding design: 4-10 euros per piece.

Production Volume:

Small Volumes (500 pieces): no economy of scale, cost per stick 15-20 euro.

Large Volumes (10,000 pieces): cost reduced to 10-12 euros due to economies of scale.

In summary, foldable or telescopic design adds about 4-10 euros, while large-scale production can reduce the total cost by 20-30%.



FOLDABLE HANDLE



At times when it may be needed, this type of handle can break down and open.

Useful when standing up to distribute the load and not fatigue the limbs, but also when taking a break during a walk, to be able to lean comfortably with both hands, distributing the load and increasing stability and balance.

ADDITIONAL FUNCTIONALITIES

Integrated lighting



The cost of adding LED lights to a walking stick can vary depending on several factors, including the type of LED, the quantity of lights, the on/off system, and the type of power supply (e.g. replaceable or rechargeable batteries).

- In general, approximate costs can be:*
- 1. Basic LEDs: Approx. 1-3 € per cheap small LED, including wiring and basic installation.*
- 2. High-quality LED lights: 4-10 € for higher intensity LEDs with features such as water resistance.*
- 3. Batteries and power supply: 3-8 € for rechargeable or interchangeable batteries. Adding a USB charging port can cost another 5-10 €.*
- 4. Installation: Depends on the complexity of the design, but usually around 5-10 € per stick.*
- Thus, the total cost of adding LED lights to a stick could range from 25 to 50 € per unit in production, taking into account components and installation.*

Brightness sensors



Adding a light detector for an automatic LED switch-on involves an additional cost, which varies depending on the quality of the sensor and its integration into the design of the stick. On average, the costs are as follows:

1. Basic light sensor: A simple photosensitive sensor costs about €1-3 per unit.
 2. Control system: In addition to the sensor, a small circuit is required to switch on the LEDs automatically in low light. The cost of this circuit and the control system is around 3-7 €.
 3. Installation and configuration: The integration of the automatic system requires a more sophisticated assembly, which can increase installation costs by 5-10 € per unit.
- In total, the addition of a light detector could cost 10 to 20 € per stick, including sensor, circuit and installation.

STAND UP OR SIT DOWN SUPPORT

To support getting up or sitting down, we thought of an idea outside the walking stick, unobtrusive, cheap but very functional.

An external support to be applied at the points of interest (bed, sofa, etc.), with an internal magnet.

This allows the user of the walking stick to be able to approach the holder and be able to both help himself with the stick (attracted by the magnet) and the holder.

In addition, the user will have no problems with where to leave the walking stick, as it will remain waiting in the exact spot where it was left ready to be used again when needed.

In order to ensure that the walking stick is attracted to the magnet, we have come up with a solution in 'iron', one of the cheapest ferromagnetic materials.

Inside, so as not to spoil the aesthetics of the design, and a minimum quantity so as not to weigh down the stick, but to allow it to be well stable next to the magnet.





And now, the innovation that in addition to the utility factor combines an emotional factor with the walking stick.
The walking stick user's friend.

We are a group of aspiring psychologists, and therefore in addition to the ergonomic and design factor, we are very interested in the social and cognitive component in the tool-user interaction.

We have thought of a possible addition that we could apply to the walking stick, to give it a social component to encourage a healthy object-user relationship and incentivise a healthy sporting activity, such as walking...



小皇帝

Xiao Huangdi



小皇帝, our Little Emperor, is designed to become the best friend of our walking stick user, elderly or not. The avatar inside the small screen will only 'feed' if the cane is in motion, i.e. during walks, to encourage the user to exercise as much as possible during the day. Our little friend will also have a step counter function. When the stick is stationary, the avatar will have a simple interaction to go to rest. Last but not least, it will have a built-in GPS so that family members, should they wish, can ascertain the location and well-being when the user is taking a walk.

POSSIBLE APPLICATIONS, AT DIFFERENT
GRIPS, ON DIFFERENT WALKING STICKS





A SUMMARY OF THE KEY POINTS OF OUR PROJECT

