

TAPPAS

PRODUCT DESIGN
FINAL PROJECT
07.02.2017

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>INTRODUCTION

TAPPAS is a product design project developed by the student of Hochschule der Bildenden Künste Saar, Laura Sánchez and guided by Professor Mark Braun.

The project that is presented in the following pages and which aims to cover the entire project process, from the conceptualization of the idea to the manufacture of the product, responds to the proposal for the design and development of a multifunctional kitchen utensil. This idea is achieved thanks to the possibility of putting different covers to the same body.



JUSTIFICATION<

In the XXI century, the multifunctional design is taking a very important role, because very useful elements are obtained by combining functionalities without losing interest in aesthetic design. According to our needs, we can choose many objects. The multifunction in objects consistently solves one or more real needs of the user, but also because they will be more efficient the processes of production of an object, proper reuse of materials, minimization of the workforce production, reduction of product packaging and savings of space in the distribution chains and shopping centers or points of sale. In short, the multifunctional nature of the objects makes possible the optimum cost-benefit ratio of the product and in this sense, the use of fewer natural resources and a better ecological treatment are probably implicit.



>MARKET STUDY

As mentioned, the field of multifunctional design is very broad. The following market study was conducted after focusing the multifunctional theme on the kitchen elements.

(1) It is a cutlery set that gives the possibility of using chopsticks for oriental foods and knife and fork. The method of getting the multifunction is by joining the knife with the fork. The clearest problem to be observed is that one function limits the other. On the one hand, the cutting zone of the knife seems to be very exposed in the chopsticks function. On the other hand, a function can not be used if the other has been previously used and has not been cleaned.

(2) This example is on the end product line. Apparently it can turn out to be a decorative element, but visualizing carefully it is seen as are several utensils of kitchen. It has a juicer, grater, fruit cutter and different peeler.

(1)



(2)



>SURVEYS

First of all, before designing an idea for the kitchen, is to ask possible buyers about their opinion. So, a questionnaire was made to 30 people between 17 and 68 years old. The most of them were between 25 and 50 considering that it focuses more in the age of future shoppers.

1. Name and age
2. Do you cook? What kitchen utensils do you use more to cook?
3. Do you imagine any difficulties utilising kitchenware?
4. Where do you keep your squeezer or your grater?

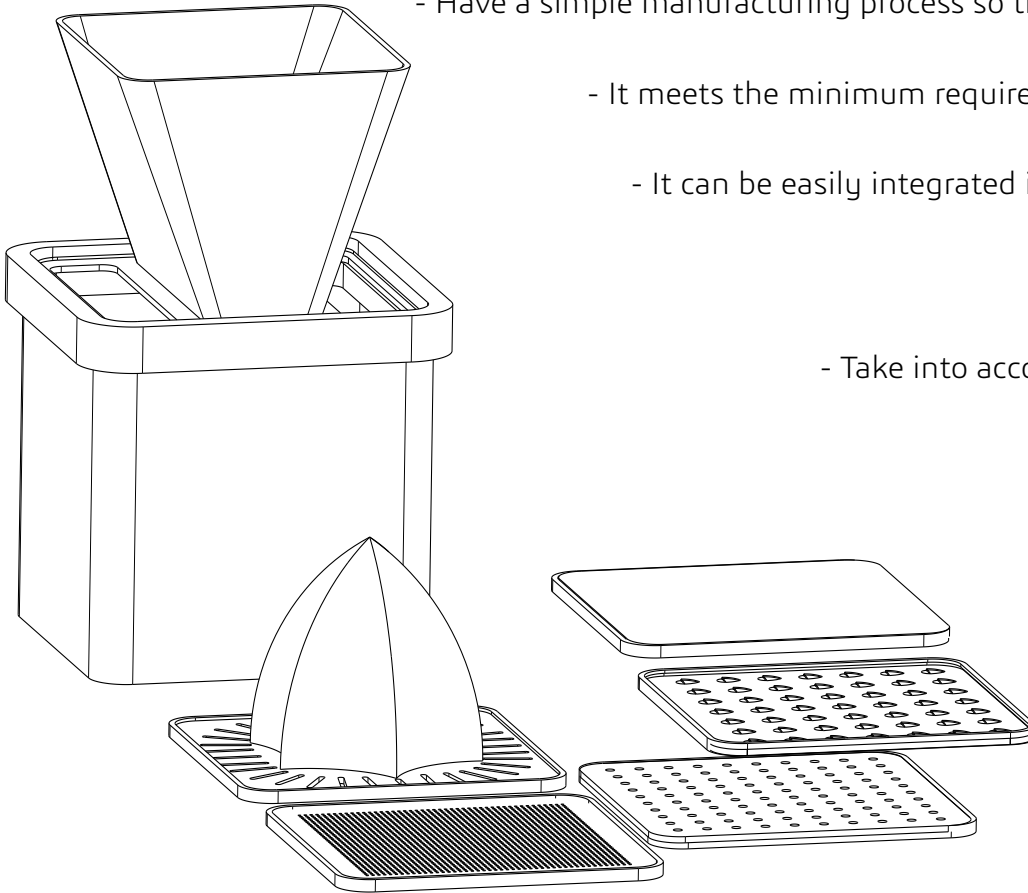
The answers were more similar than it was expected.

The 78% of users cook and the utensils that have emphasized to cook, apart from cutlery, have been the cutting board, the grater, the measuring glass and the colander following the same order.

In relation to the place where“ the things in the kitchen“ have to be put away everyone has answered the same: shelves or cupboards.

OBJECTIVES<

- Make it attractive, simple and light.
- Various functions are, besides recognizable, easy to use.
- Useful, easy to use and comfortable to have at home.
- Have a simple manufacturing process so that it is not expensive.
- It meets the minimum requirements of ergonomics.
- It can be easily integrated into any environment.
- Make it stable.
- Take into account the environment.



>SOLUTION

After the previous study, a solution was reached that largely fulfilled the objectives set. It is a compact kitchen utensil that gives the user the possibility of having 8 different uses that usually prevail when it comes to cooking:

Cutting board



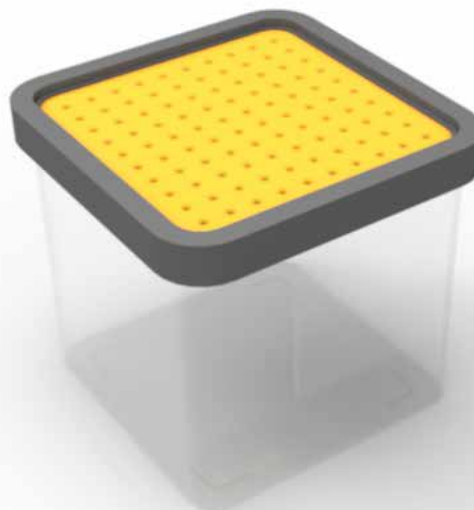
Grater



Tupper - box



Colander



Shells bin



Squeezer



Measuring cup



Wringer



>IDEA PROCESS

The inspiration for the idea was the Coca-Cola advertising campaigns in which bottles were reused. This is the reason, different interchangeable caps were developed for the bottle, providing other functions such as felt-tip pens, weights, lamps, creators of pomps...

Instead of the bottles, it was in mind a non-disposable object, but it could also provide multiple functions: a tupperware.



The first options were related to the kitchen, which is where you usually find the tupper. Then, more functions like a juicer, colander, drainer and dispenser were thought in addition to the tupper function itself.

The main object was the tupper and that restricted a lot, because a tupper is usually used a period of time more or less long. Therefore, in the progression of the idea the function of tupper was rejected, but the appearance of tupper was retained with the advantage of being able to use the body as another more function: measuring vessel.

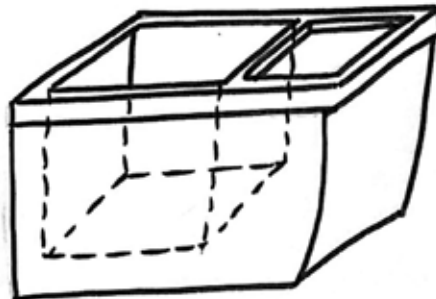
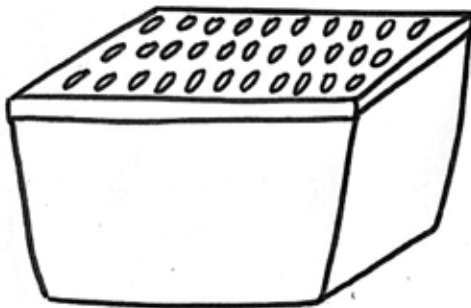
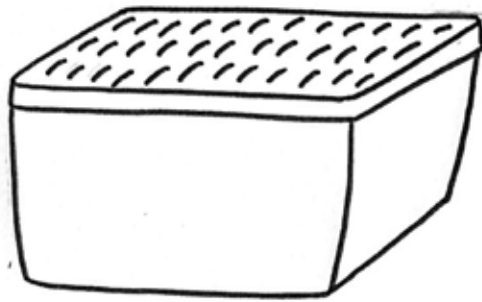
From this new idea new covers were thought, although not all of them developed as it was the case of the ice cap.

The cooler lid consisted of a container with the shapes of the ice cubes so that it could be put in the freezer and then served in the glass. The cubes could be removed by placing the top of the back in the glass and shaking the whole so that they fell all inside.

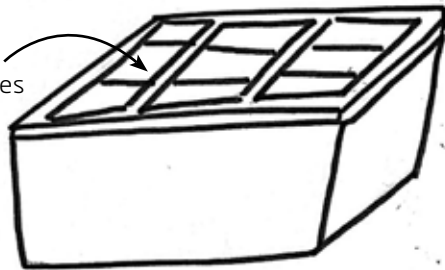
This idea was discarded because it was complicated and did not bring great use.

Another lid was the dispenser lid. This was discarded because a dispensing lid precludes the other functions for a long period of time.

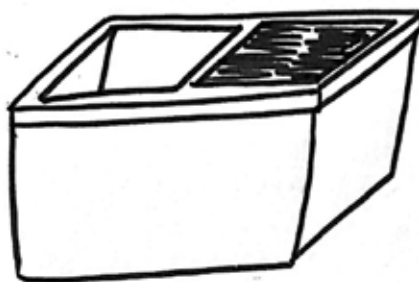
Another idea was the sink lid. One part had a space for water and the other scrub and soap. It was intended for camping trips.



Space for ice cubes



Scrub and soap

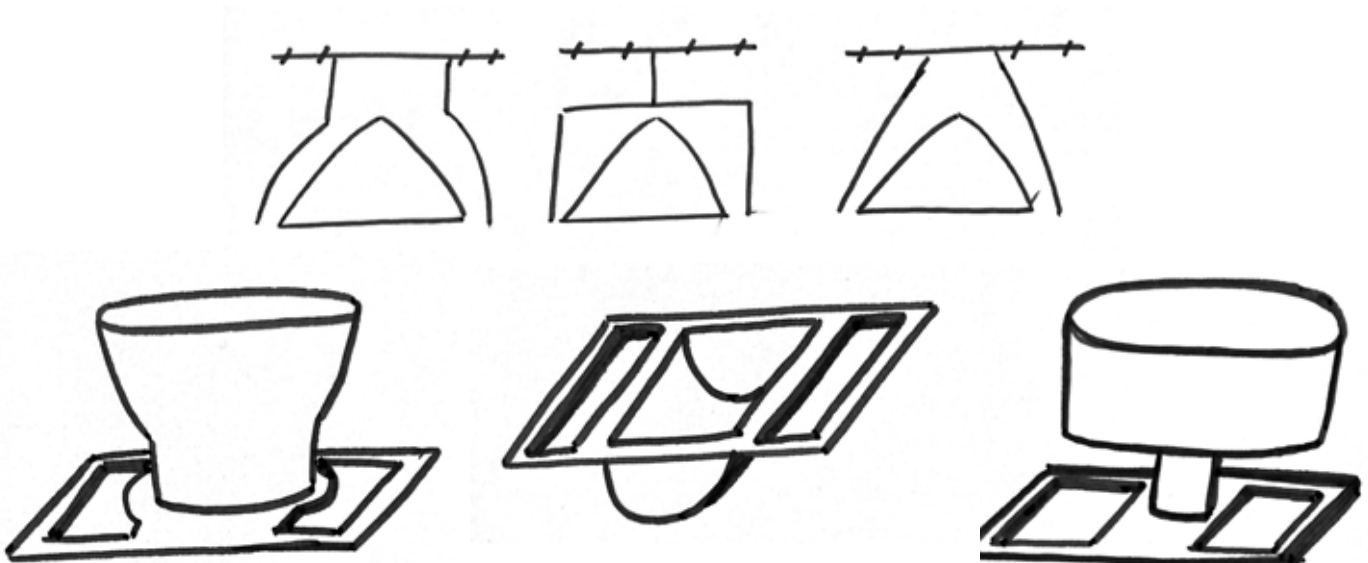


It was also considered some variants in the color and aesthetics of the set. Here are some of them:

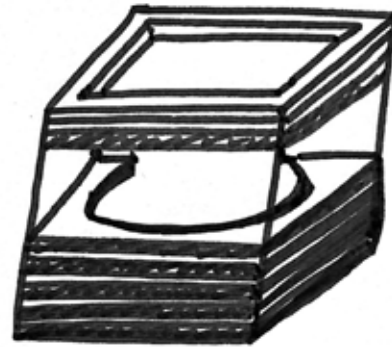
As for aesthetics, the first problem that arose was how to collect compactly and simply all the pieces away. To do this, the idea that the lids were directly attached to the main body was discarded. Thus, it was thought of a main lid on which the rest of the tops would be placed. In this way the lids would be smaller and could be inserted into the body for storage.

The system of placing the caps on the main lid is by pressure, as is done with the tupperware, but it was also considered to be able to do so by magnets. This idea was discarded because the pressure system was simpler and more functional.

In order for everything to fit, it was necessary to modify the aesthetics of the dustbin so that it would save the negative of the juicer. Here are some options:



For the shape of the whole, the possibility of being cylindrical and prismatic was considered. In the end we opted for the prismatic shape with the rounded corners to make it a more organic form within the functionality.



Colour tests:



FINAL IDEA<

As explained above is a compact kitchen utensil with 8 utilities. Aesthetically it is a simple element with quadrangular box shape with rounded corners. The box itself is formed by body and top. The body is already one of the elements: the measuring vessel. Inside the glass there are some caps (which is what gives the name to the utensil) that are placed in the top that closes the box to fulfill its function. The total measures of the utensil are: 128x128x118 mm.

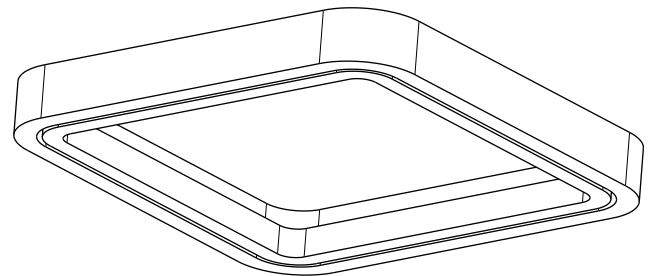
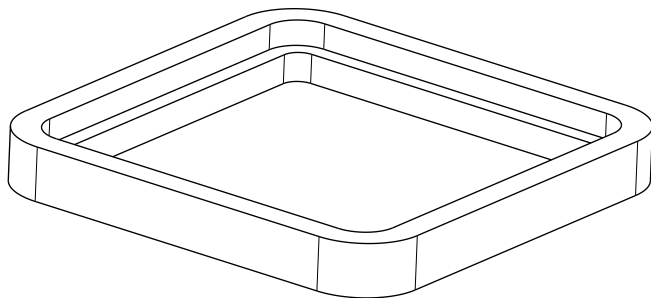


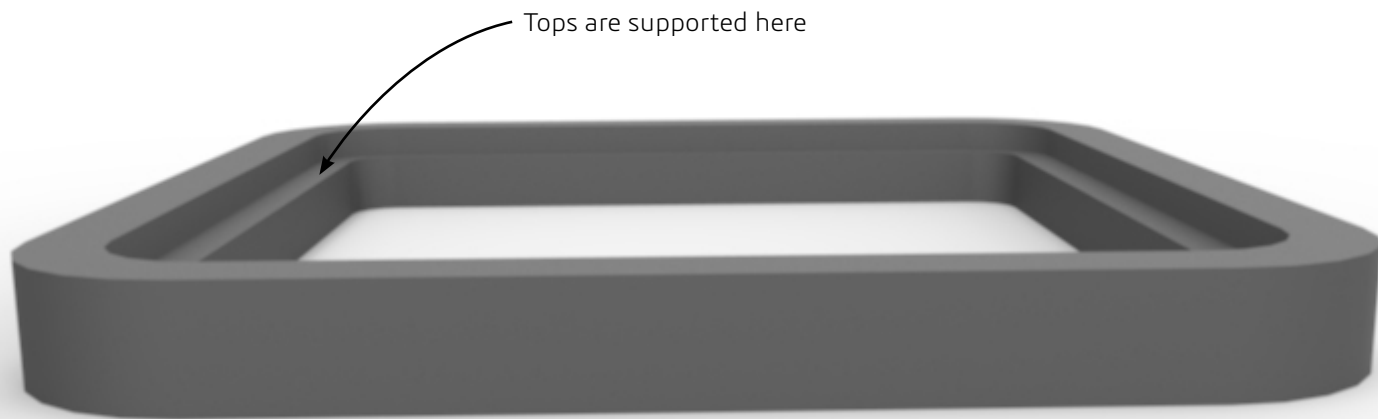
>DESCRIPTION OF COMPONENTS

-TOP:

This element is key in TAPPAS since it fulfills two main functions. It is a profile that makes the main lid and element in which the other covers are anchored to fulfill their functions. For its main cover function has a recess in the bottom with which it is hooked to the measuring cup. Said slit has exactly the same width as the profile of the vessel to fit under pressure and thanks to the coefficient of friction of the material of the cap.

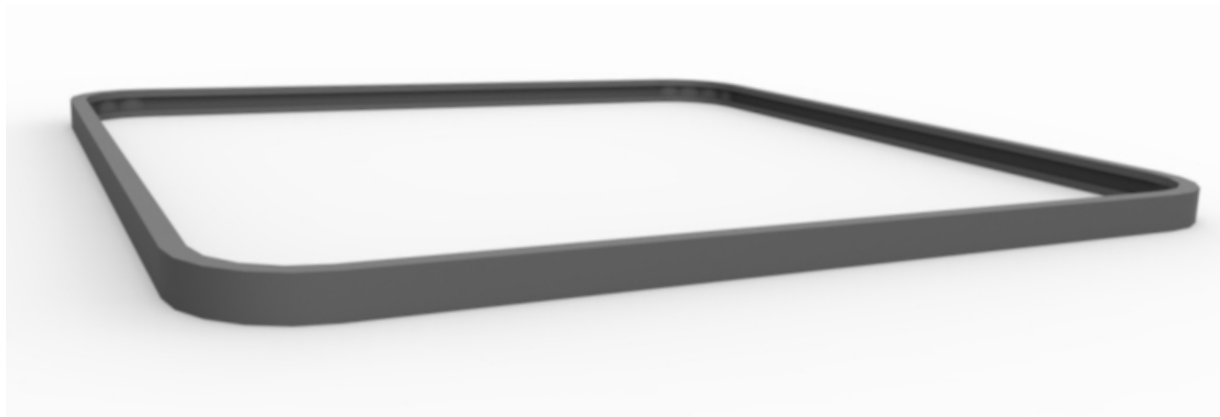
In the upper part there is another slit but in this case free by one of the sides, thus a space is generated in which the other covers can be placed. The form of union of the other lids with the main is the same as that of the lid with the measuring glass: pressure. The other covers have an element, which will be explained below, which makes it possible to attach perfectly to this cover independently of the material of the cover to fulfill its function.





-EDGE:

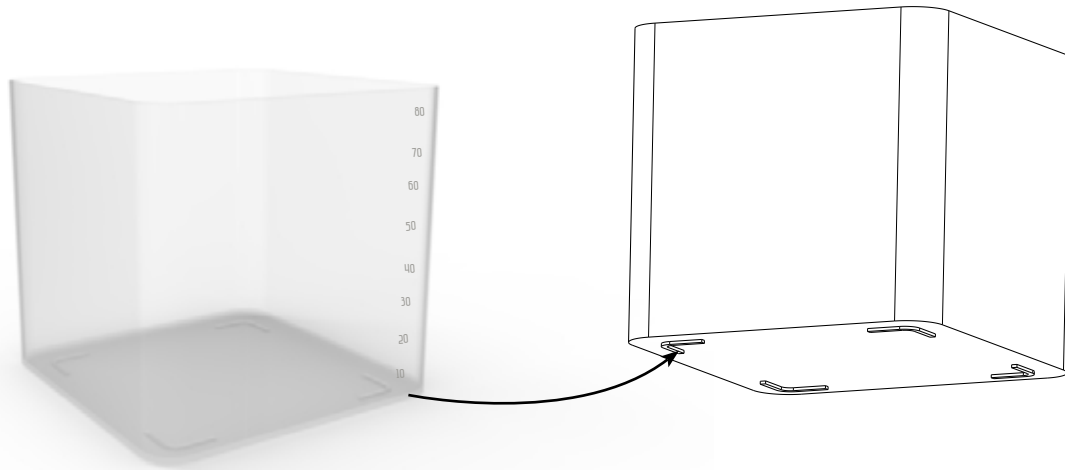
The edge has already been explained a bit earlier. It is a frame for each of the covers so that they are uniform when used in the main lid and can be joined in the way explained.



- MEASURING CUP:

The measuring cup, depending on the function being performed, has different functions. The main one is to be able to measure quantities when it comes to cooking. When you are using the shell ashtray, this piece is where the shells fall. When the squeezer is being used, it is where the juice falls. When the grater is being used, it is where the scratches fall. When the strainer is being used, it is where the strainer falls. And when the squeegee is being used, it is where it remains that which has been drained without what was wanted to drain (water).

Since it is the part that supports the weight and that is in direct contact with the surface, it has 4 supports in the base that help to avoid the wear and stabilize the set.



- CUTTING BOARD:

The cutting board is also another element that fulfills several functions. The main one is like small cutting board because, as the rest of the covers is 112x112 cm.

The other function is to close the box when all other covers are inside or in case you want to use TAPPAS as a box or tupper, taking into account that the insulation is not the one that is specific for a tupperware. Then, when all the lids are collected, the place of the table is on the main lid.

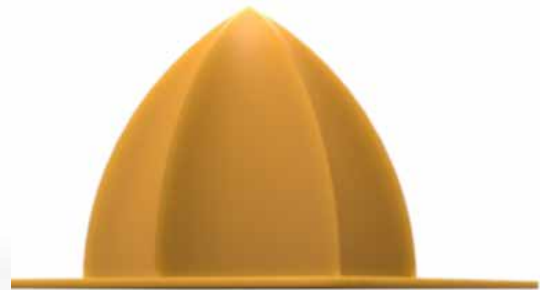


- BIN:

The ashtray of shells is an element that it is placed on the main lid backwards as when it is stored. Its usefulness is not so much to cook as to eat. When food is eaten in shells, such as nuts, they are placed in the upper recess and, through the two holes at the sides, the shells are introduced into the interior as they are eaten. Thus, it offers more ease when eating this type of food, being able to simply clean the interior where all the shells are housed.

- SQUEEZER

The explanation of this piece is very evident. It has the advantage that, as the juice falls in the measuring cup, the exact quantities can be calculated better if necessary.



- GRATER

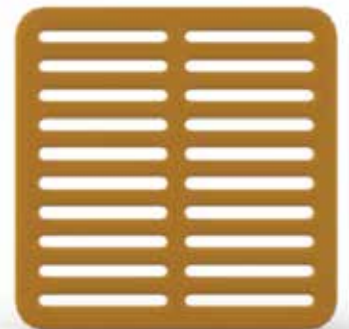
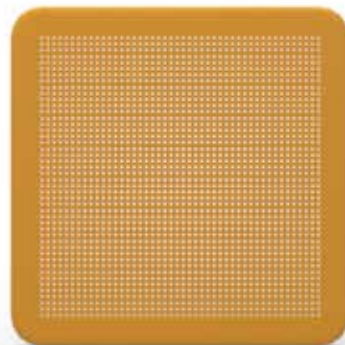
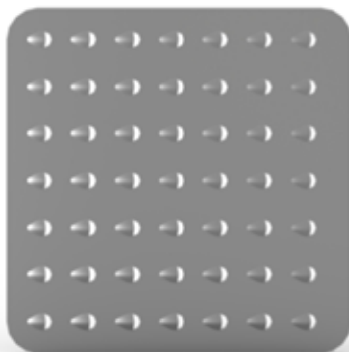
The explanation of this element is very similar to the previous one. The advantage in this case also lies in that the cap being anchored to a vessel is simpler and reduces the efforts of the normal grater. According to this it's very common to grate on top of a plate and it is a process that can be uncomfortable.

- COLANDER:

The strainer function is similar to the one of the grater, it is strained through the slit, from outside to inside. Thus, inside the glass remains what has been strained.

- WRINGER:

For the draining function it is necessary to introduce what is to be drained inside the vessel as it was explained in the function of the measuring vessel.

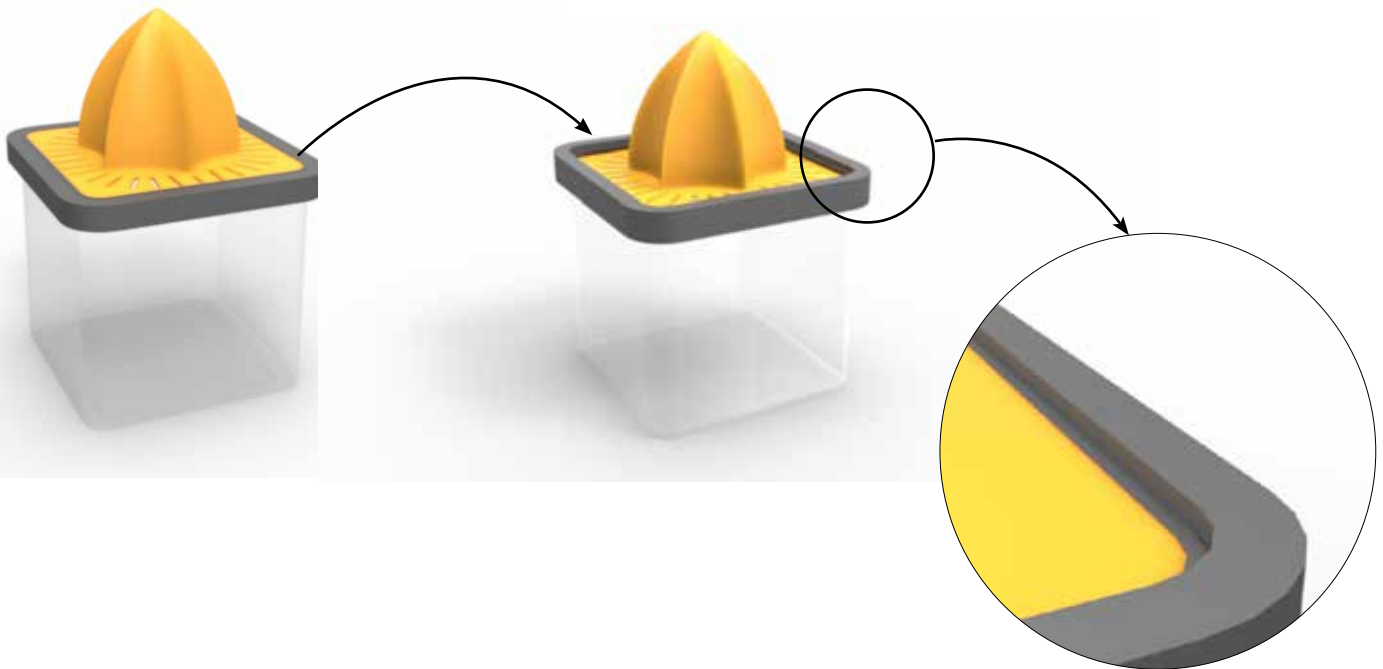


After having this main idea, a cardboard model was built to check the dimensions and a second survey was carried out to 13 users to find possible improvements.

This survey highlighted the possibility of spilling juice in the juicer as the lid flush the surface and the unmanageability of the glass with one hand.

For the first problem the main lid was enlarged so that the lids did not remain flush, but in the interior.

For the second problem, a handle was difficult to include so it was thought to place some non-slip strips on the sides.



MATERIALS<

The set will be composed of two different materials. For the squeezer, trash, colander, drainer and table PLA has been used in the 3D printer, although at industrial level one would think about the possibility of using colored polypropylene. Likewise, the glass is made in the model with PLA, but also polypropylene would be useful because this material supports high temperatures and it could be used in a microwave. In addition, its density is the lowest of all plastics, with a low price and ease of admitting loads. It has great resistance to heat, it melts at 1600C and it's very resistant to shocks.

For the edges and the main lid has also been used PLA in the 3D printer but the idea material would be some rubber, like for example EVA rubber. It has good resistance properties to acids and alkaline substances, water repellent, thermal and electrical insulation, low resistance to oxidation and it's very economical.

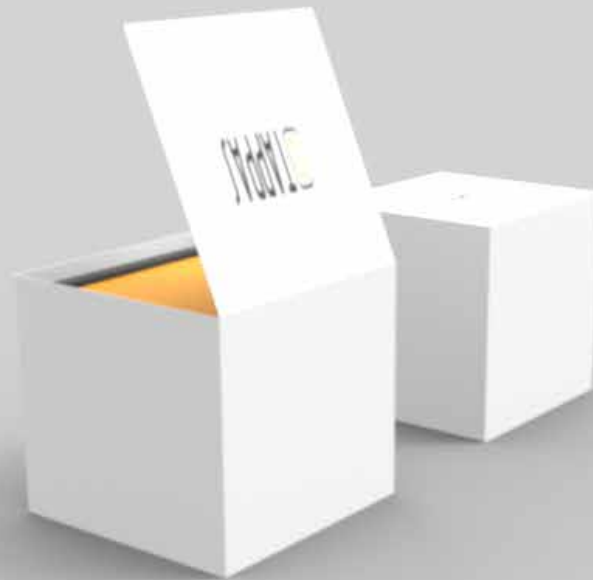


>PACKAGING AND ASSEMBLY

Packaging should protect, identify, transport, store and inform its content to the latest consumers.

For the packaging of TAPPAS a box of cardboard of double wave of 130x130x120 mm has been chosen.

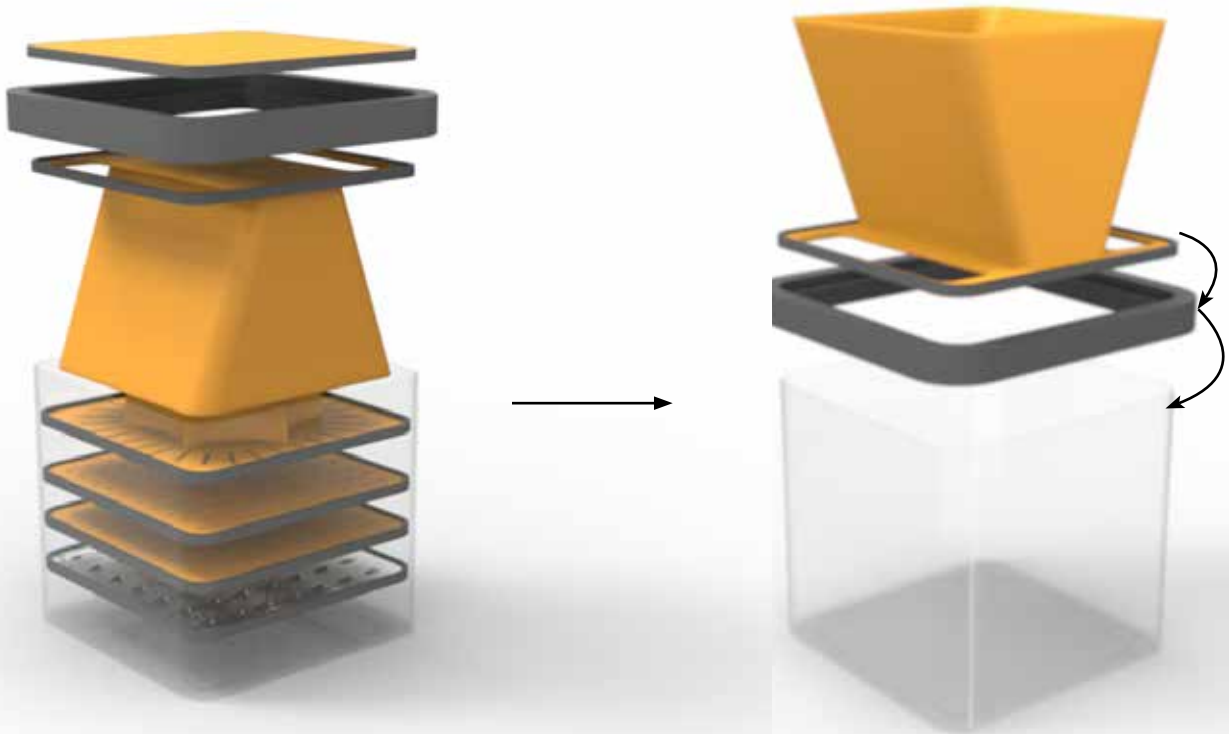
Being a very compact and collected element, makes that a box with similar measures is the most optimal way for its packaging. The clearance of the utensil with the box is 1 mm per side and 5 mm at the top because it will be the area where a small instruction book is included.



INSTRUCTION BOOK<

Inside the package, we also find a small and simple instruction book to clarify how they are used and to serve each of the functions.

At the end of the same, it is also explained the system of placing the covers with the main lid.



>CORPORATIVE IMAGE

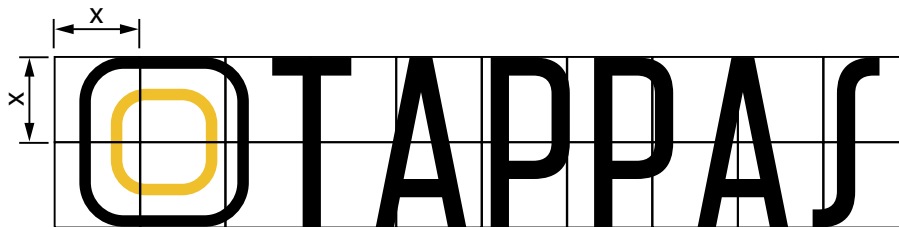
For the brand name, TAPPAS has been chosen because it is a wordgame. On one hand, it refers to the Spanish word "tapas" that means "tops" and refers to the main game of this utensil, which combines different tapas to achieve the different functions

On the other hand, it reminds to the word "tupper" that was the initial idea which TAPPAS arose from.

The name of the brand is accompanied by a logo, equally simple and direct. These are two concentric squares with rounded corners that resemble the plan view of the object where it looks like a cover goes inside the main cover. The colors chosen are black and ocher yellow by similarity with reality.

The chosen font is Saniretro Regular.

Logo and name can be framed in a grid of 10x2 units as it is seen in the image.



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