The study of the short distance locator design

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Abstract. Because of forgetting or other factors, people inevitable lose some important things in life, but electronic locator will help people solve this problem. Electronic locator is composed of a transmitter and several receivers. As long as you press the corresponding button which connected transmitter and the receiver, the receiver will make the sound of "didi" to inform the location of the item you want. Hang the locator on the small commonly used items such as key, remote controller, bottle opener or wallet and keep the locator on the state of working, it will be a great help for peoples' life. The development prospect of such product is very broad too. When you cannot find the items you want, it will light up and tell you its location as long as clap your hands. A variety of senses are applied to this kind of product, reminding people not to forget items and looking for the lost items in a variety of ways.

1. Introduction

With the progress of science and technology and increasing competition, the work pressure is increasing at the same time to most office workers. They hope a kind of office supply which is reliable and convenient to relieve the busy work. Most of the office workers have to hover among a large number of documents. If there is an efficient and simple way to locate the targeted documents, they can save a lot of time. As expected, this kind of product finally came to life. This kind of product not only makes people's life more comfortable and convenient, but also greatly improves working efficiency. This locator solves a major problem which people are headache to face in life. From then on, people do not need to panic about the missing items, as finding it just is so simple. For example, people often look for the TV remote controller at home and looking for it around the house like crazy when the show is on. Not only the commonly used small items, such as remote controller, key, glasses, but also a lot of little other things also needed but easy to lose such as electric card. So as you see, this kind of product will become more and more popular.

2. The research analysis

The function realization of such product: hanging the transmitter on your mobile phone, wallet, children, pets or anything that need to be protected against being stolen or lost, and wearing receiver on yourself at the same time. When the mobile phone, wallet, children, pets or such protected objects are moving away from you more than the set distance, the receiver wearing on your body will make "di di"sound and vibrate at the same time, reminding you to pay attention to the items.

3. Product analysis

Because of the dual mode alarm functions, this product can be set the mode of against losing when transmitter and receiver is separated a certain distance, it can also be set the mode of seeking when transmitter and receiver is close to a certain distance and receiver will alarm.

1）It is divided into a transmitter and a receiver: small one is transmitter using a grain of button battery; big one is receiver using an ordinary battery of No.7. Its free range of security distance is (0-5 meters) (free regulation).

Notice: Even though it is written as 0- 25 meters on some packaging, normally the actual distance is only 0 to 5 meters.

2）The using of “whistle locator” is very simple. As long as sticking the blue part of the locator onto the item such as remote controller, once lost, you can blow the black part of the locator. The blue part will be lightening and make sound to remind you its location.

3) The key locator should hang together with keys, while blowing the whistle you can hear the “BEE BEE” sound, and a red light flashing. Thus, you may find the key at any time.

4) Clap hands locater should be located on the commonly used items such as keys, wallet, turning on the switch when using. When you cannot find the items you need, as long as clapping your hands, they will tell you their locations. The simple way of using is the most convenient point to the product.

5) Acousto-optic locator should be hung together with commonly used items such as key string, remote controller, purse and cell phone, turning on the switch when using. If you cannot find the item you need, just clap your hands or shout out its name, and red flashing light will show you the location of the item.

Through the research about 4 and 5, applying visual and auditory to the locator can achieve a better effect for finding the locations. So, answering device such as the receiver should have better functions for lightening and listening alarms.

4. The goals for design

According to the combination and usage of the basic tools, connecting with practice and empirical analysis of the goals and the model system, the research is with certain theoretical level and practical value.

To explore a new way of operation, enrich and perfect the existing office tools.

A new orientation for the innovation of the existing products will be conducive to the domestic market development of small electronics tools.

Provide an innovation for office supply to improve life in details.

Provide a tool to improve life and work quality for people, open a new field for domestic companies and inject vitality for relevant enterprises.

Open a new field for domestic companies and inject vitality for relevant enterprises.

Learning more advanced electronic positioning technologies, applying this knowledge into certain life subject and solving the problems existing in people’s life.

5. The study of the processing goals during electronic locator working

1) Marking files quickly, simple operation, adopting two inputting approaches of the voice input and text input, zero errors.

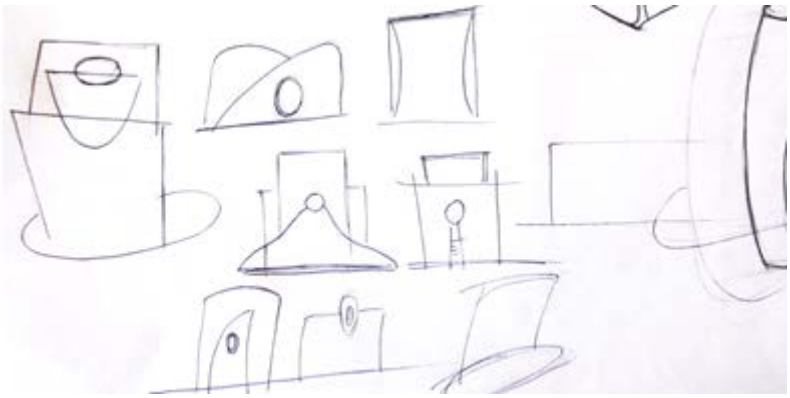
2) Achieving the purpose of finding things quickly, using the principle of sound wave reflection to position labels.

3) Applying screen display and touching screen as operation mode to find files.

6. The study goals about structure problems of the overall modeling

1) The overall modeling is beautiful and it is rich with sense of science and technology.

2) The setup and distribution of each button should conform to the requirements of the ergonomics, as shown in picture1.



Picture1. Drawing

To develop an electronic locator system, it is suitable for daily use in office. This system is featured with extensibility, exploratory and experimental. Undoubtedly, it is a kind of innovation.

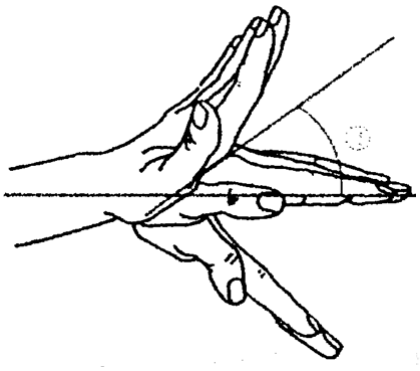
The study of the structure design. Studying the related content of the man-machine engineering system, enhancing the harmony degree between the products and environment, making the product more comfortable for using.

Unique appearance makes the products look friendlier.

7. The function analysis

7.1 The modeling style of middle thin and both sides wide:

This style meets the requirements of the users for clenching and holding, at the same time, the design modeling partly conforms to the hand contour, and basically can make the user feel comfortable. Holding the locator by single hand should prevent the slip off as error. We designed two rows of concave ventilating holes in the back of the locator to prevent slippery. Static measuring coefficient is to measure the wrist bending Angle. When using the locator, the wrist bending problem can be ignored. During measuring the wrist bending angle, it must be the angle between the extend line of the front arm and the palm position at that moment. See picture2. Dynamic analysis is shown in picture3.



Picture2. Ergonomics analysis

picture3. Dynamic analysis

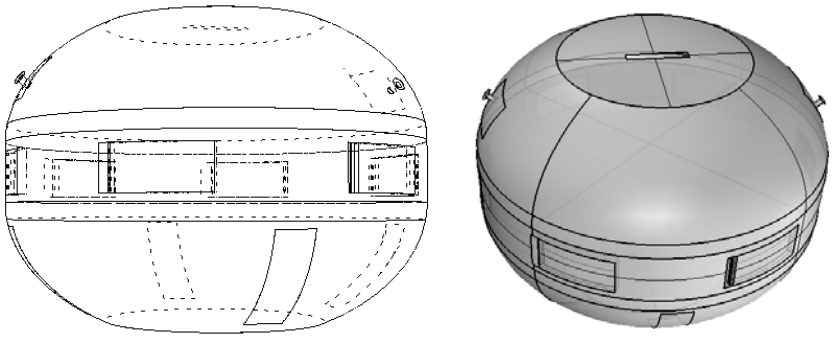
7.2 Flat and wide output screen:

The application of the screen can reduce the excessive buttons, create simple and elegant feelings for the product, and can give the user a simple operation method. Because of the screen prompt functions, with only one simple interface as operating environment not only simplifies the product body but also endows it with human characteristics. Even to those who are not familiar with how to operate the systems are also able to quickly get started. This design is really people-oriented.

8. The main structure analysis:

This model design refers to the modeling features of science fiction spacecraft and space science robot, mainly refers to the prototype sources of existing high-end electronic digital business products. With certain characteristics of modules installation, the structure is combined the knowledge of cell

phone assemble. So my graduation design is also with the features of e-commerce products, such as simple, fashion, leading-edge and finesse. All of these features have created a new advanced concept of innovation. Besides, the design also represents three qualities of the "perfect expectation", "extreme simplicity" and "charming elegance". By predicting the user's feeling and desire, the design overcomes and integrates the form and structure into the design which basically meeting the requirement of structure. At the same time, the design also pursuit the modeling simplification and eliminate the unrelated elements to enhance the simple style. "Elegant" factor to a certain extent is created by two contradictory factors which do not rely on the decoration. See picture4.



Picture4. Sketching and effect picture

1. Upper shell 2.Modules on the left and right 3.Center database 4. Lower shell 5.Lower the main shell 6.Charging socket 7. The touching screen

8.1 upper shell

The upper shell forms the upper structure of locator, and it is an important part to play the role of fixing the lower shell.

8.2 modules on the left and right

Modules on the left and right form the structure of locator, and they are important parts to play the role of fixing the lower shell and internal movements.

8.3 center database

Center database records all the key information of marked files in order to search conveniently.

8.4 lower shell

Lower shell forms the upper structure of locator, and it is an important part to play the role of fixing the lower shell.

8.5 lower the main shell

Lower the main shell forms the upper structure of the locator and inside of it is set with electronic chip parts of the entire operating system.

8.6 charging socket

Charging socket can be closely combined with the charging holder. It can keep the state of no charging no power, and can support the locator system at the same time.

8.7 touching screen

Touching screen is with touching confirmation with high precision. It can display the prompt information. Besides, it is the center operating interface for the whole system. Users can operate the system through it conveniently.

9. Summary

According to the principle of electromagnetic wave reflection (specific see design patent of Qian weidong) used in public office, anti-theft products is made by magnetic stripe as a reference sample. Firstly users should divide the items according to their important level; secondly, label them with different tags or input the data latch into the locator to register and summarize the information of items. If users do not remember the locations of items, it will be easy to find them in the short distance of the workplace. Such product is not only designed for lazy people, but also truly conforms to the principle of people-oriented. Its true purpose is to provide convenience for people. With it, people

will greatly improve the work efficiency, and increase the fun of work. From now on, you never need to be panic for missing a file.

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