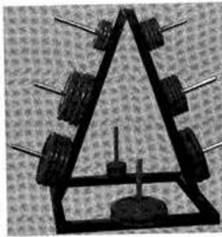


Research 1

The rack that the weights sit on are leaning inwards on an angle. This design has been put onto this device so the weights don't fall off and damage something or someone. I should consider adding a design that also decreases the chance of weights falling and damaging other objects.

This product has multiple racks that can cater for many different sizes and shapes of weights. It is also designed to hold a lot of weight. I am going to place a lot of racks on my own device as well some how.

This product has a few flaws how ever. One of them, is the fact that it is huge and very space consuming. It is also not very attractive and doesn't catch the eye. Another factor is that it appears to be made of materials that will cost quite a lot. All of these things are downfalls that I am going to try to avoid.



It is in the shape of a triangle. This is a shape that is said to be one of the strongest. I think that I should also make my storage product in the shape of something strong.

It is made from metal. Which is a strong and durable material. I should consider making my storage product out of a similar material that is also strong and durable.



Research 2!

This weights rack is made from metal which is very strong. This material is ideal for holding and storing a lot of weight for a long time. I am going to design and build my product out of a material that has all of the same properties.

The footing on this device are splayed wide and have footing attachments to ensure that the rack is sturdy and will not fall over. I am going to insert a similar design of footing on my product to ensure that it will be stable.

This weight racks faults are that it has nothing to stop the actual weights from falling off the horizontal bars. Also the shape of the rack is not a shape that can easily be replicated, it will require a lot of accurate work and could be easily stuffed up. These are faults I will endeavor to avoid.

This weights rack is designed not only to hold weights, but also can cater for the bench press bar, squatting bar, and dumbbells. This is a design the I like and am going to consider applying to my design.

This is a rack that seems to catch my eye and is very easy to look at. I want to build a rack that is also eye sweet and easy to look at.

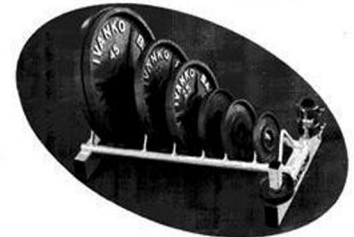
This design has been made to store weights up off the ground so that when you need to access the weights you don't need to bend down and strain your back. This will be a good idea to incorporate into my design because it will help to minimize injury.

The negatives about this device are as follows. You must be able to access both sides which means it can't be by a wall which also makes it very space consuming. You also have a few different materials on this rack which look hard to join together. These are negatives that I will try to avoid.

Research 4

This rack is designed to be a space saver because it is small and compact which is what storage is all about. I am going to try and incorporate this design into my rack somehow.

This weights rack is small and low to the ground which means it can be stored under a bed to create even more space. I am going to try and make my project so that it can do similar things.



This device is built to sit very low on the ground which means that people using the weights need to bend down to access the weights. This can lead to the person getting injury or damage to their back.

This design has been made to hold certain weights. It can't hold lots of different types of weights. Also it can't hold very many weights because it is so small. These are a few faults that I will try avoid.

I know from geometry in Maths and from learning about forces that a triangle is a strong shape. This is because each side is anchored to the other two sides which makes it rigid. Also the forces are supported by the wide base at the bottom. I had a look on the internet and I found out that the triangle is the structural shape of choice for structural engineers because of its strength.

1

Research 3



I had, from the research that I had done earlier, many ideas in my head of different types of weights racks to develop. To help me chose an idea that I would carry out and produce I used sketching to show the wide range of ideas in my head. This made it easier to understand and also mean't that I could show others the extent of my ideas which made it easier to describe to them.

From my sketching I learn't that there were certain racks that had more positives over the others. For example, one of my designs was a low lying rack which was not ideal as I was still required to bend low to the ground to reach the heavy weights. The sketch that my stakeholder thought to be the best and most ideal was a rack that stood self supported vertically and supported the weights at a height and angle that was easy to get at. I decided to take this sketch and further develop it. Also it meant that I was able to decide on the size of the final product. 1500mm high by 1000mm wide by 1000mm deep.

2

The sketching helped me to make these decisions as it enabled me to visualize the weights rack and made it easier to get feedback from my stakeholders. The main risks that it helped me to identify were the fact that it needed to be fully braced. So I drew it offset leaning backwards with a back bar to brace it strongly. It also helped me see that this product was going to take a long time to construct. This meant that I had to be concentrated and on task for the whole year ahead.