



Traffic Regulation Support System: Portable Barriers

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Abstract: The barrier which is used normally is made using cemented blocks and because of that it is not easy to move from one place to another. So, we modified that block with a magnesium alloy and nylon ropes. These barriers can also be used by police to stop crowds. We can supply a resistible amount of current to avoid people from touching barriers. This idea came to mind when I was passing through a toll plaza and saw a car stopped working and there was no place they had to move because it got blocked by the cemented barrier from both sides and that car created a big problem for all the vehicles stuck behind it.

Keywords: Nylon Ropes, Portable Barrier, Single Block, Copper Wire.

Introduction:

This Model is related to the barrier which we can see on toll plaza or wherever it is required to block the road. Till now, it is basically a cemented block which is impossible to move for a person even after its use and in toll plaza if any car stops working in a lane, then we have to call a crane to remove that car or the that cemented barrier. So, we invented this modified barrier which is strong when used as a blocker but also easy to fold after its use. After opening, it is a triangular shaped structure made of magnesium alloy with a centre stand which gives more rigidity to both sides. The four feet are equipped with vacuum suction rubber cups. It is fitted to give the stand the more grip which required it to hold it during when any external force applied on the stand. It is 5 feet in height and at each 1 foot there is a place for nylon rope to be kept rolled up. These ropes are joined with spring. Spring is there for the ease to pull out the ropes out of the hole. Each rope is 6 feet long and is connected to the other rope by a buckle, so in this way 2 barriers cover 12 feet. There is a copper wire running within the nylon rope. This will be used when police use barriers to stop crowds during the concert or during riots. The amount of current which is flowing through this wire is easily resisted by humans and only gives a small shock while someone tries to cross that and get in contact with it.

Usage of the Model and the problems it solves:

Existing state of art	Key Feature and Drawbacks in existing state of art.	Overcoming Through our Model and its Key Feature.
Cemented barrier	Used in Blocking of Roads but Very hard to remove after its use.	Make it light weight by use of magnesium alloy material. Very easy to remove after its use.

The objective of this model is making a road barrier stronger and more sufficient for each purpose and also easy to fold and move from one place to another. First, we unfold the magnesium alloy structure and after we pull out the nylon rope from that and bind it with another barrier with the help of buckles. We are solving the problem of portability of the barrier because old cemented barriers are very hard to move from one place to

another. This is lightweight and foldable so it is easy to carry and there is copper wire along with the nylon ropes to avoid people from touching that barrier. It is used for blocking roads on toll plaza and also to stop people from entering some private or restricted area. We are solving the problem of portability of the barrier because the old cemented barrier is very hard to move in general.

Detailed Description:

The barrier is very light in weight and is also easy to carry because it gets folded into a sheet-like shape. When we have to use this barrier, we just have to pull its both sides. It also has a copper wire in the middle of the nylon rope and little amount of current is passing through it. We also use this barrier to stop people or any large crowd because they can't touch this barrier.

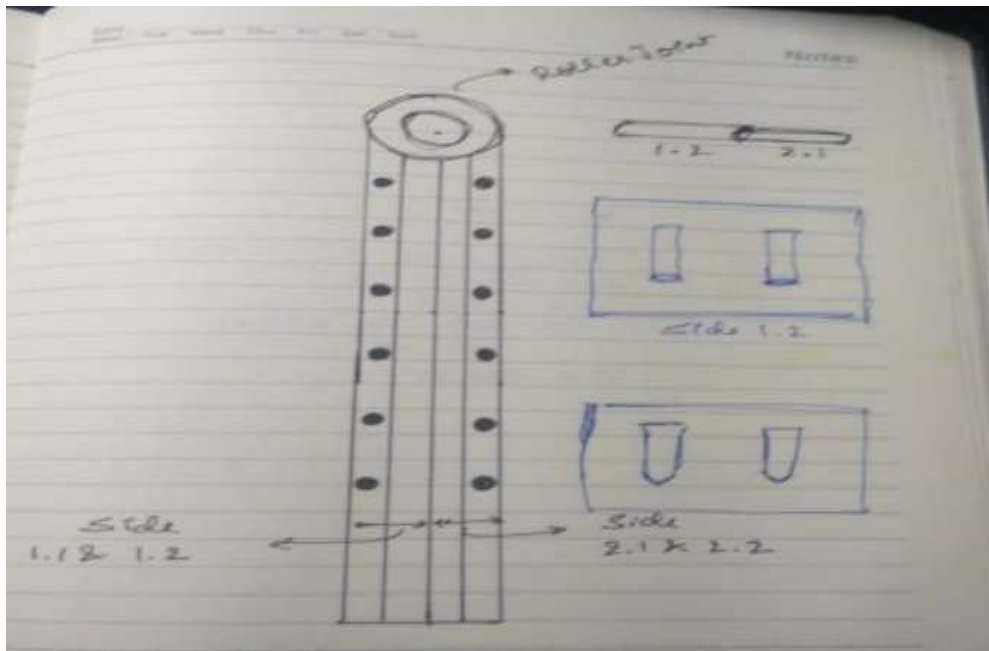


Fig: - Folded structure

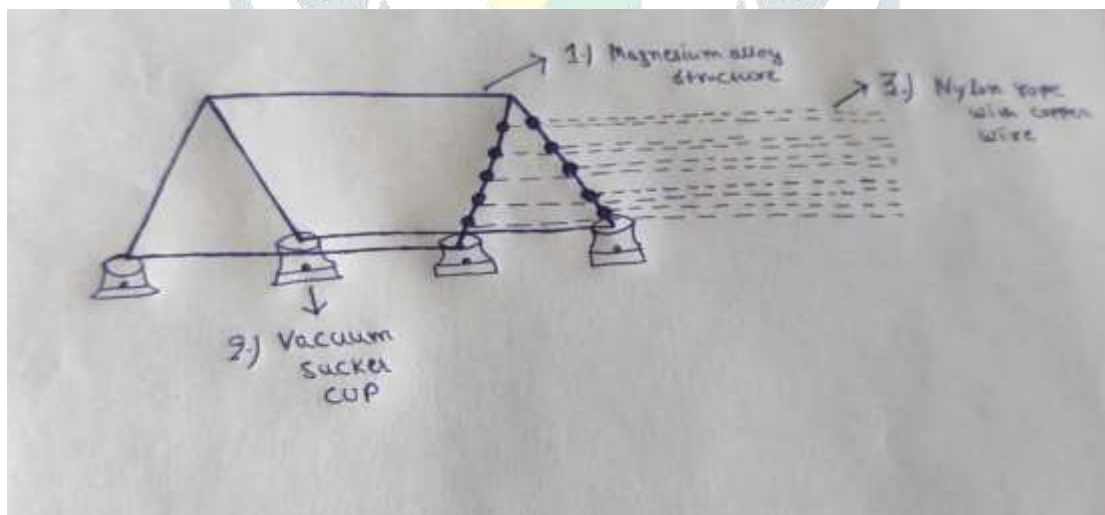


Fig: - Single block

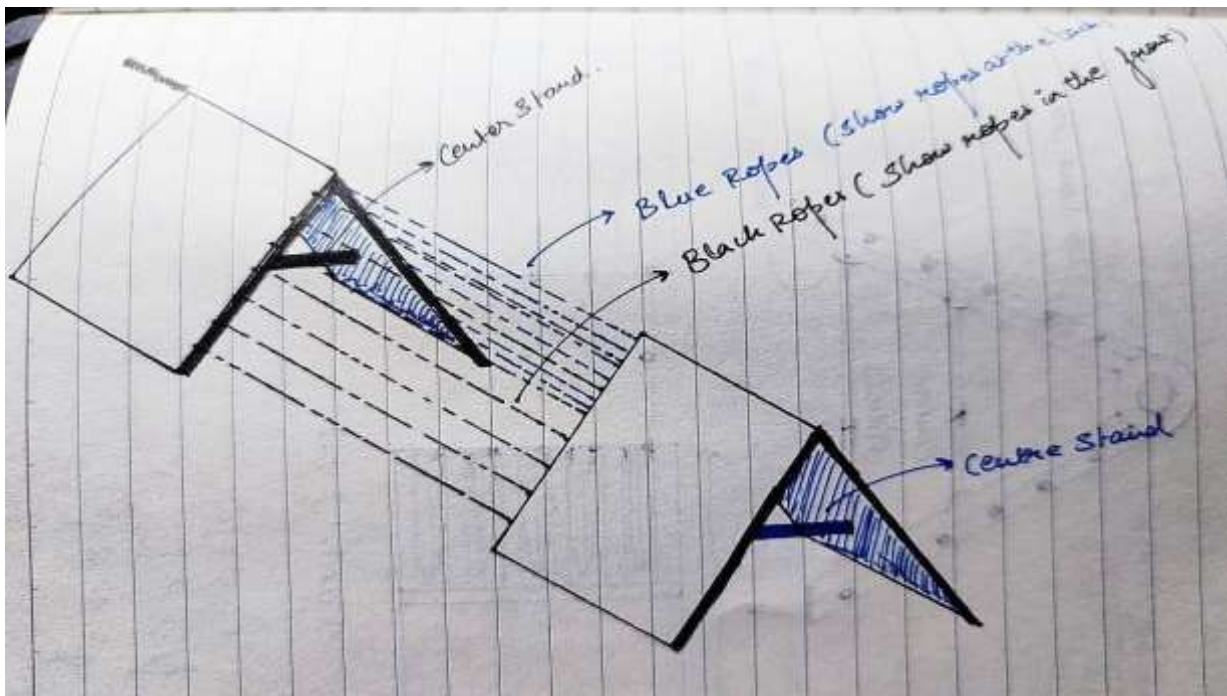


Fig: - opened structure and joined with another block

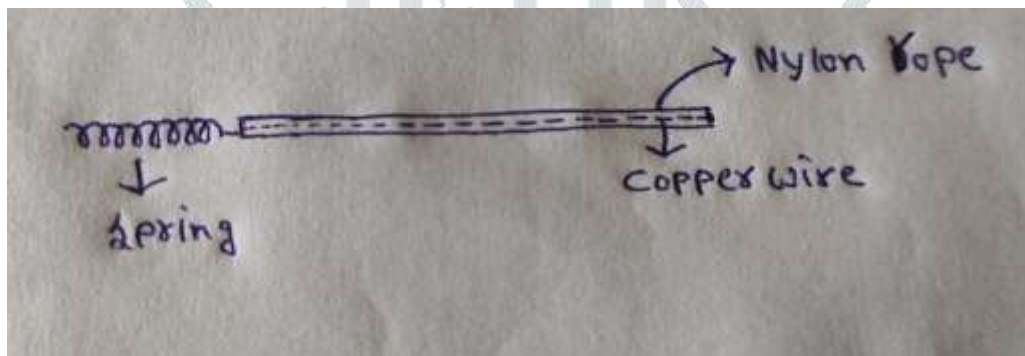


Fig: - Nylon rope with copper wire in middle

Conclusions:

The Portable Barrier is a lightweight and easy to use barrier that can be transported at will, unlike the concrete barriers that are mostly used around toll booths. These barriers can be easily folded for easier transportation. The base of these barriers has four feet with vacuum suction rubber cups to provide extra grip. The lightweight design is due to the materials used, like the structure made of magnesium alloy. A foldable centre stand is integrated into the structure to provide extra rigidity. The barrier also has a 6-foot-long nylon rope attached to it, which can be connected to another barrier of the same kind using the buckles at the ends. When two barriers are connected together using the ropes, both the barriers together can be extended to 12-feet. The nylon wires also have copper wires running inside of them, which can be supplied with electricity and can provide a mild shock to the person who touches the wire. This provides extra security in case someone tries to cross or remove the barrier without permission. These barriers can effectively be used for security purposes, and can be used by the police for various purposes like blocking the roads or for crowd control during riots.

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