The “Inferno Destroyer”

By Haasini
The problem is that firefighters die or get severely injured every year because of the nature of their job. They inhale smoke which leads to a LOT of internal damage. The problem affects a lot of firefighters who are just trying to save lives. This is all because of too much fire, but what if there is a way to decrease the amount of fire so the firefighters wouldn’t have too much stopping them? This robot will reduce the fire. It can ensure that less firefighters get injured or killed.

Source - The Risks of Being a Fireman (chron.com)
What is on the robot?

- There will be a **jetpack** on it’s back to help it get places faster and also it will act as a fire extinguisher.
- **Proximity sensor** (inspired by the Roomba)
- It has an **infrared camera** (for sensing heat and fire).
- It can also shoot **water and carbon-dioxide** (because Carbon-Dioxide takes out oxygen and without oxygen there is no fire) that are transported through pipes connected to it.
- It has **insulation** to withstand hot temperatures.
- It is made of **fireproof rods** so it doesn’t get affected that much from the fire.
- It can **turn 360 degrees** on wheels which is how it gets places (also so it can cover more fire faster).
How the robot will look like:

- Made of Aluminum and insulation
- Infrared Camera
- Off/On
- Jetpack (fire extinguisher)
- Valves for $\text{H}_2\text{O}$ and $\text{CO}_2$
- Wheels can go 360 degrees
Strengths and Weaknesses

Strengths

- It can fly to very high places.
- It can easily detect fire.
- It won’t be affected by fire.

Weaknesses

- It won’t be able to climb stairs.
Prototype Test

Future Improvements
- I could give it special robot legs that can climb stairs
- I could give it a better system for getting $\text{CO}_2$ and $\text{H}_2\text{O}$ through it

How will it be tested?
First I will test it by testing each part of it (infrared camera, jetpack, etc) and then I will put it in a simulation of an actual firefighting scene. I will also put pieces of rubble or cones to see if it can get past that. Basically I would put everything there would be in an actual firefighting scene.
Financial Requirements

Ceramic Fiber Insulation $59.00 x 2 = $118.00 - Can withstand over 1,000 C degrees
Fire extinguisher (jetpack) - $46.00 x 2 = $92.00
Metal Rods - $10.00 x 3 = $30.00
Proximity Sensor $12.00 x 2 = $24.00
Infrared Camera $406.00 x 2 = $812.00
Wheels $16.00 (how it gets around)
Other - About $200.00

Manual Hours: About 150 hours
Total Cost: $1,292
I hope you like my presentation!

Thanks For Watching!!