



# Large Capacity Float Valve

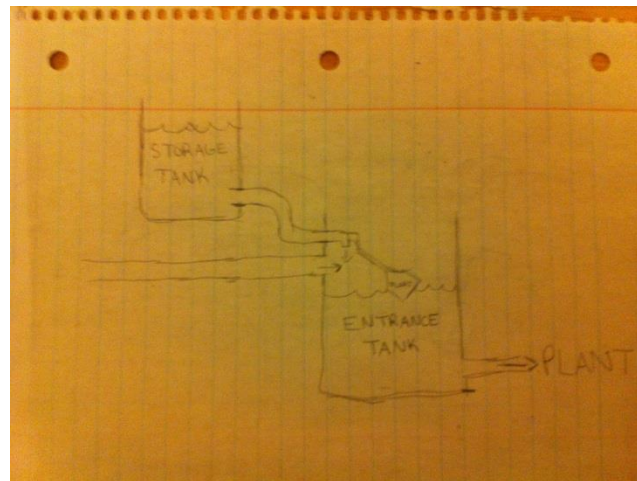
A Fabrication Subteam

Kwabena Nimo



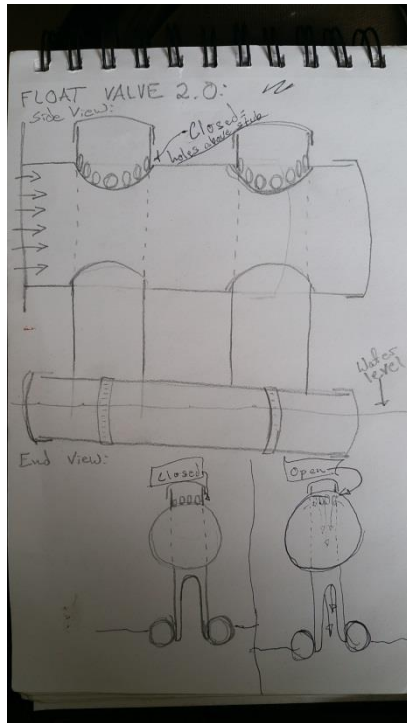
Cornell University

- Problem: Plants with one filter can have trouble backwashing during droughts
- Solution: Add a storage tank and float valve upstream of the entrance tank to maintain design flow rate in the plant

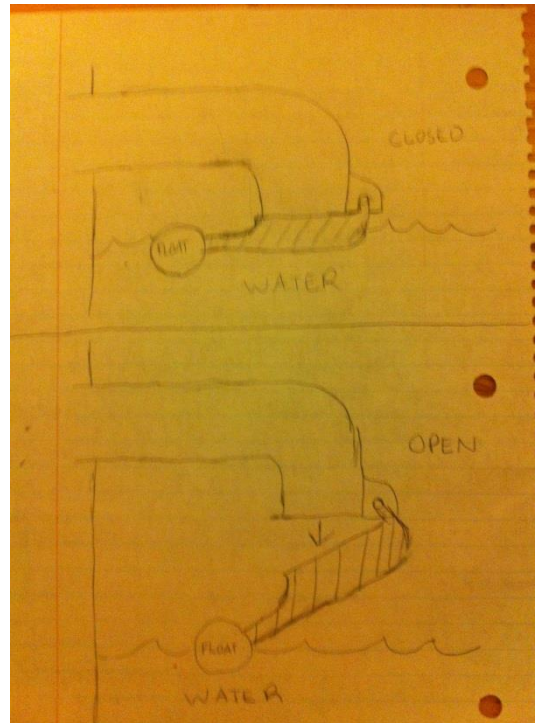


# Initial Design Ideas

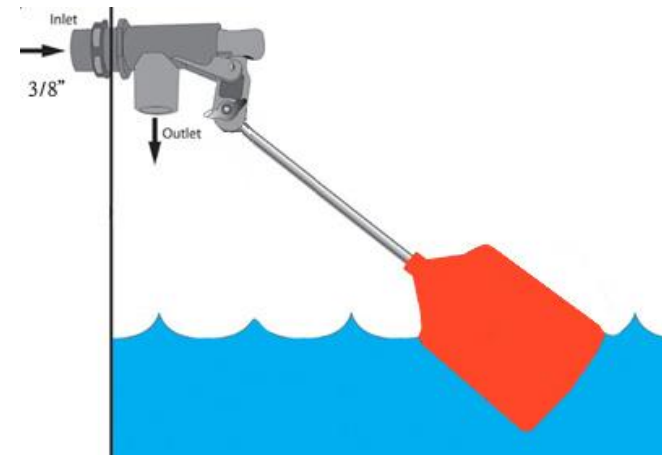
➤ Ethan's

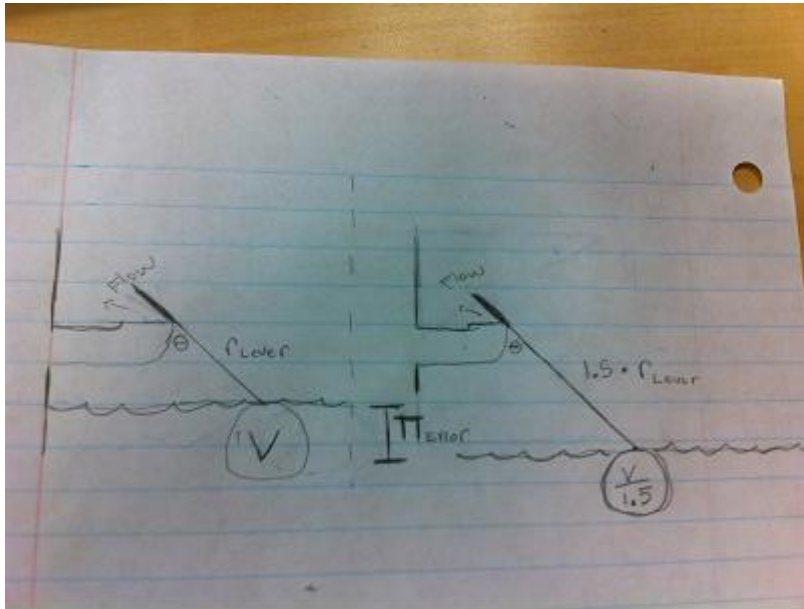


John's



Standard

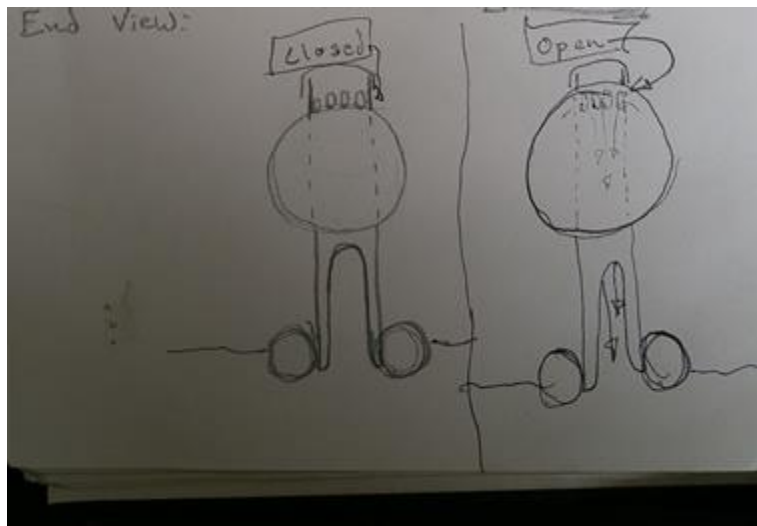




- Takeaway: Using a traditional float would require a float size of 10L with a small lever arm (but then there's the problem of error)
- Conclusion: No good



- Buoyance force doesn't directly oppose force of water = float doesn't have to be huge
- Error proportional to size of holes (smaller)
- Only problem is leaking, which is OK (and estimated to be around 3.5% of flow rate)

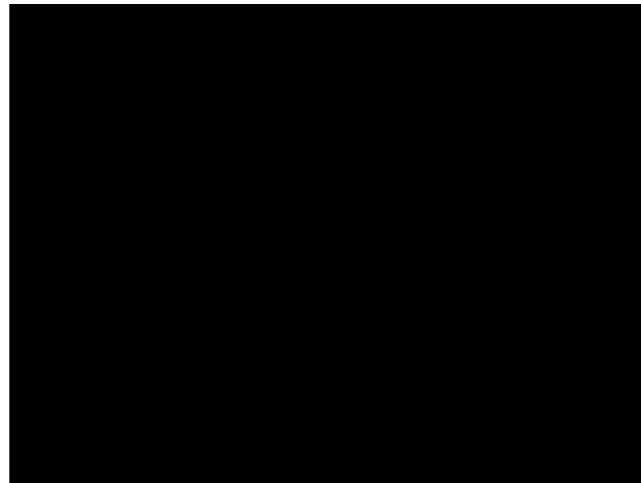






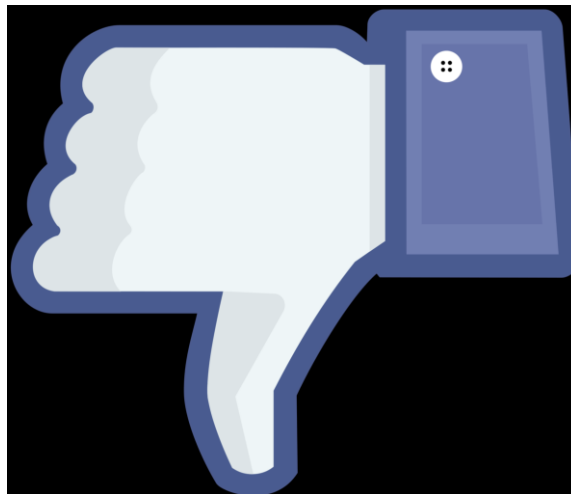
# Video

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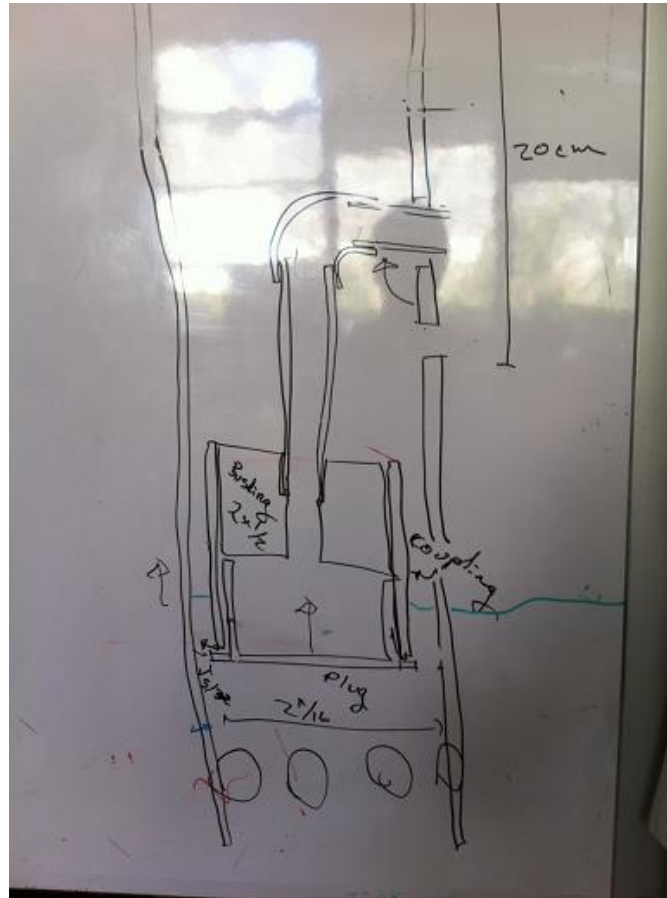


# Prototype 1 Complications

- Misalignment of vertical pipes = didn't slide correctly (would be difficult to fabricate in Honduras)
- Can't be adjusted to account for LFOM (when the storage tank needs to be refilled)







# Final Product?



- Finish building 2.0, test if it can work with two vertical pipes working in tandem, and can properly refill the storage tank
- Try it out in Honduras!



# Questions

