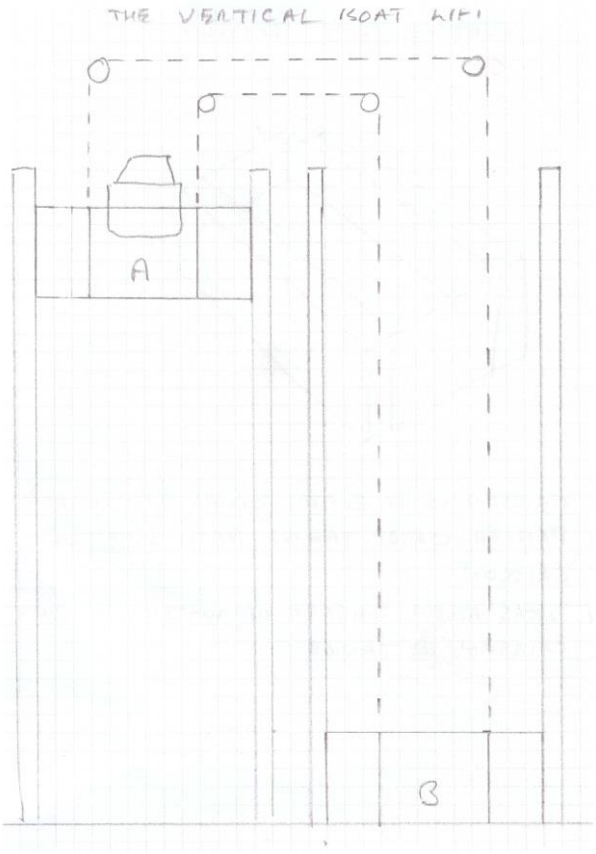
Canal Boat Lift

Two caissons similar to the Anderton Boat Lift are employed in a similar way. The difference being the method to move them. The caissons are fitted with Pannier tanks to both sides. These tanks can connect to the caisson by opening doors to fill or empty the tanks. The caissons are connected to each other by steel cables passing over pulleys.

Method of operation:
1. One caisson is at the top, while the other is at the bottom.
2. A boat enters the caisson, for example, at the top.
3. The lower caisson has no boat.
4. The top caisson is not much heavier due to the boat displacing water from the caisson (caisson A).
5. Both caissons are unlocked allowing travel.
6. Water is allowed to empty from the lower caisson tanks (caisson B) until it is lighter than the top one.
7. The top one begins to lower without needing power until it reaches the bottom.
8. Both caissons are locked to prevent travel.
9. The boat leaves at the lower level.
10. If caisson B is heavier, then water is allowed out of its tanks into the canal. This makes it the lighter caisson.

By altering the water in the tanks each can be made heavier than the other to cause movement. The water could pass from tank to caisson to fill or empty the tanks. Pumps may be necessary to speed up the process, but large doors would also aid speed. Very little power would be needed. Water could be pumped back to the top if necessary. It is also non-polluting in use.



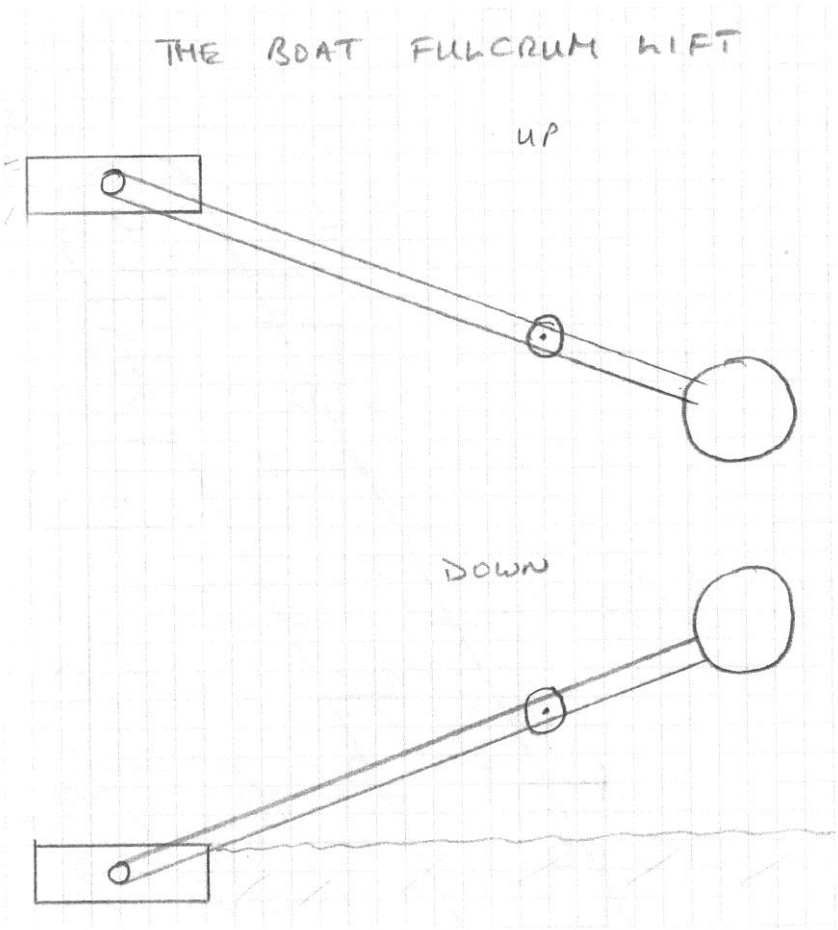
The Boat Fulcrum Lift

This lift works in a see-saw fashion.

Method of operation:
1. A boat enters at the bottom caisson and is made watertight.
2. Water is pumped into the vessel on the far end of the lever arms.
3. When filled enough, the weight of the vessel, now being heavier will cause the caisson to rise to the top.
4. The boat leaves at the top

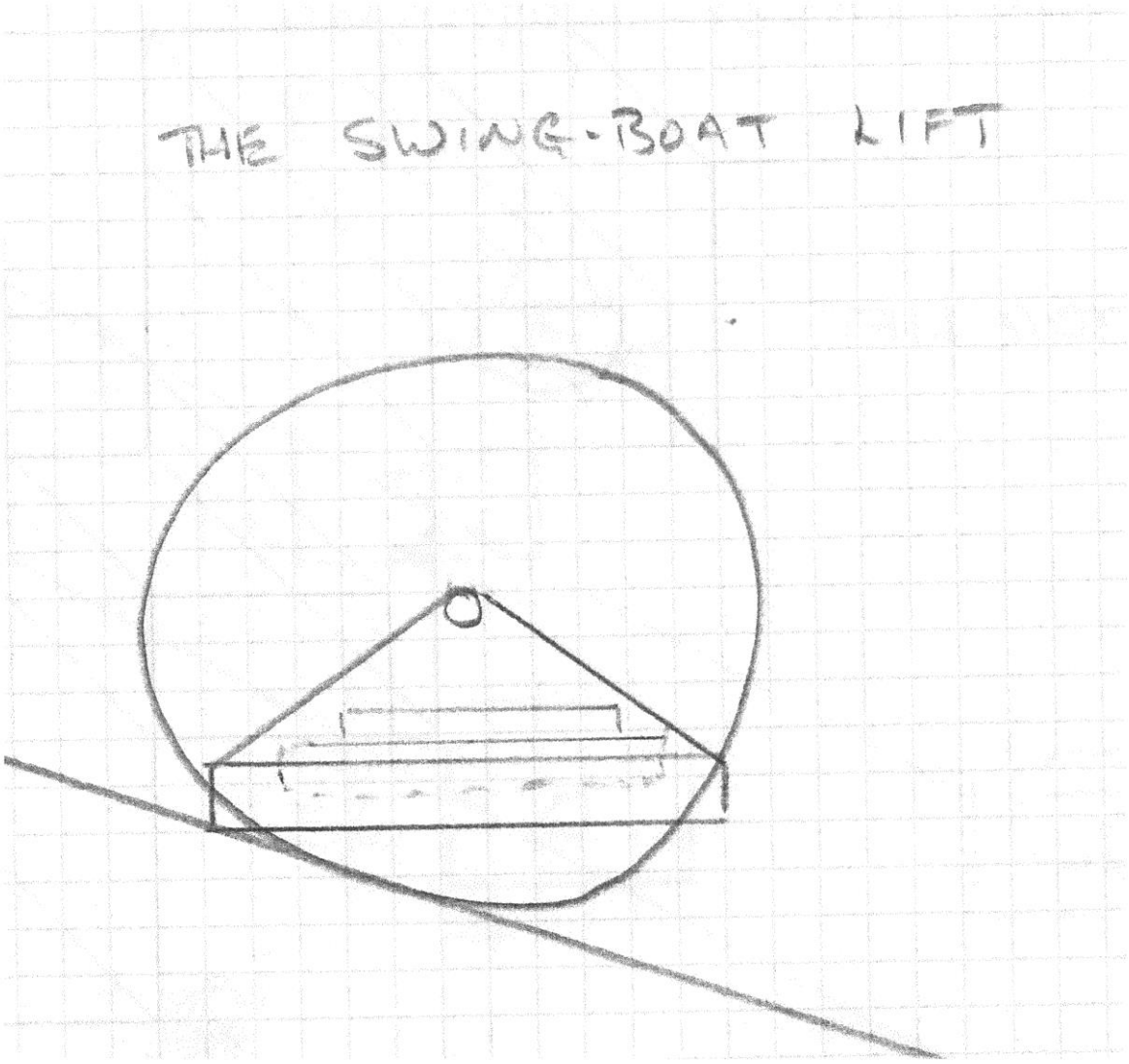
Notes:

1. A pair of levers on each side of the caisson are necessary. That will allow boats to pass between them to enter and leave the caissons.
2. The counterbalance could be cosmetic in shape with maybe a large cuckoo sat on top. A large figure of Brindley on one and a crooked spire on the other. To attract visitors the whole structure needs to be visually attractive. The arms etc. could be an interesting shape. The rise and fall of Brindley needs to cause interest. The vessel could be an interesting shape. A large vessel on a short arm or a small vessel on a long arm.
3. A pair of lifts could be sited side by side by extending the fulcrum shaft horizontally to accommodate two lifts.
4. A caisson could be installed at each end but that would necessitate an enormous site.
5. An expensive giant statue of Brindley standing with a leg either side of the fulcrum point would get the whole structure noticed.



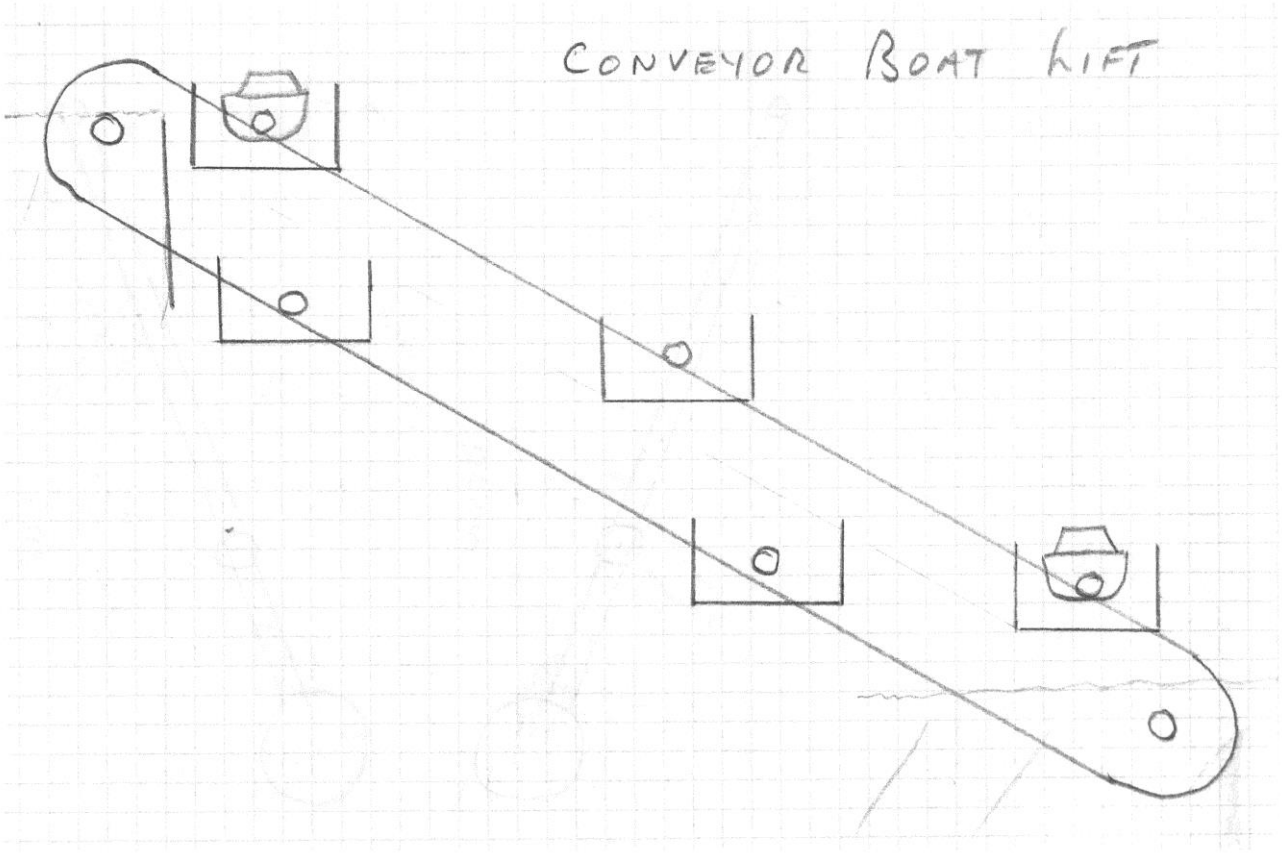
The Swing Boat Lift

This method of Boat Lift consists of a boat in a caisson swinging from the axis of a large wheel. The caisson collects the boat and transfers it to the top using either a winching, funicular system, or a rack railway system, which I feel would be more positive. The giant wheel has the caissons hung from an extended axle of the wheel. For stability the wheel needs to be either wide or a pair of wheels. The wheel runs in a track carrying the caisson. Gravity keeps the caisson level throughout the process. Electric motors driving the wheel could be hidden within the wheel. Considerable power would be required to raise boats, but regeneration could be used when descending. The generation when descending would provide a resistance to travel, which would assist a slow descent and produce electricity.
It would be a huge wheel with caissons hanging from it. This I feel would have a high visual impact. Again, a statue of Brindley could stand on the caisson pivot point.



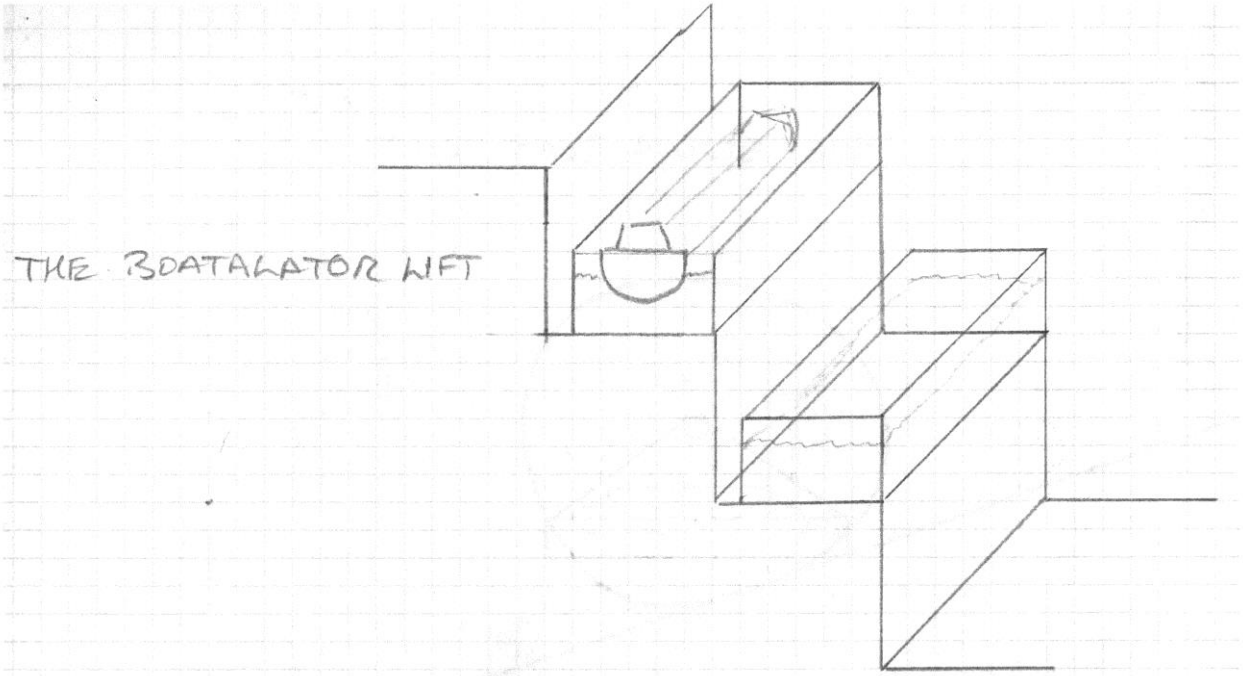
Conveyer Boat Lift

This is a method to raise and lower boats between different levels using a method akin to a conveyor. Imagine a Falkirk Wheel with more caissons fitted, then being squashed to make it shaped as two long parallel runs with relatively tight radius at each end shaped like an elastic band, see diagram. This is then tilted between the two levels. More caissons can be accommodated than the Falkirk Wheel. Boats enter into caissons as in other lifts as above.
I am not going into detail as I see this method as a non-starter. It is offered as just one more approach to the problem.
1. The design needs complex engineering solutions which would be prohibitively expensive.
2. There are problems if more caissons are fitted as it would extend the time for boats to travel due to other boats on the system being loaded and unloaded.



The Boatalator Boat Lift

This Lift would require a large boatalator connecting the two canal levels. The bottom end of the boatalator would be submerged allowing a boat to enter and moor in an exact position. As the boatalator moves, a caisson would begin to rise out of the deep bottom pound. The caisson would have front and rear sides which would raise at the same time as the caisson came out of the water. The boat would now be moored to the caisson. The boatalator can be imagined to then work in the same way as an escalator, with a caisson on each step. The levels rise to the top pound to allow the boat to leave on the higher level.
This again is a fanciful scheme that would not be built.
1. The complex engineering would be difficult and very expensive to construct.
2. The movement could generate wash within the caisson causing instability.
3. The caisson entering the top pound would cause wash.
This would however be an intriguing installation to both watch and travel in.



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