The “Redstone Torch” - The Parallel Plate Problem:

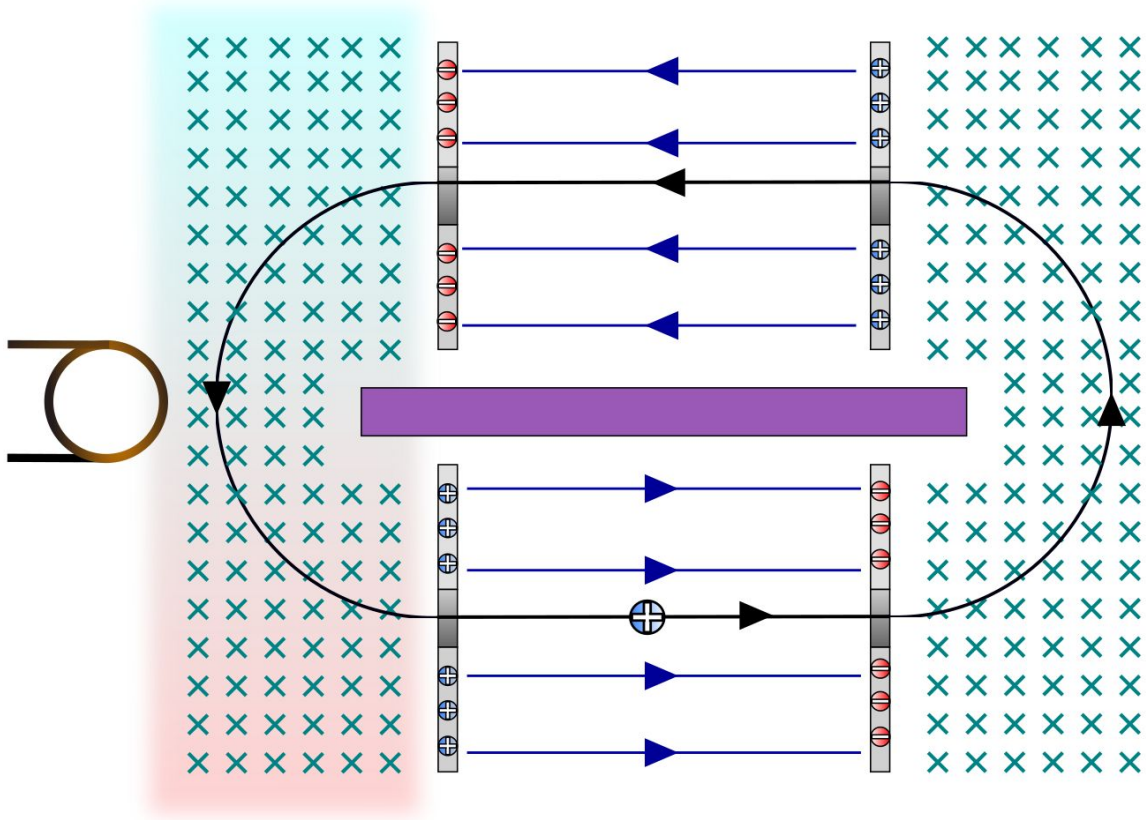

Figure Not to Scale

The setup above is as such: there are a total of four stationary, highly resistive plates with circular holes in the center set up in a vacuum, with two plates uniformly positively charged, and two uniformly negatively charged. On the right there is a constant magnetic field. On the left there is a magnetic field that changes only with position. Also on the left is an inductor coil connected to some resistance. Between the two sets of parallel plates is some sort of resistive material.The distance in between each set of parallel plates is much greater than the distance between the two sets. The radii of the holes is much less than the size of the plate.

The conundrum is as follows: if one were to shoot a positive particle into the bottom left plate with enough energy to overcome the repulsion of the plate and enter into the space between plates, it would accelerate to the next plate, which it would then accelerate through, with a speed dependent only on the distance between the plates.This is because there is a (close to) uniform electric field between the sheets, which in turn leads to a uniform force and acceleration between the two. Therefore, the longer the particle is in the field, the higher the velocity. With a stationary magnetic field of some set value, the particle should surve into the other set of parallel plates, with enough speed to penetrate and curve into the left field. The particle passes by the induction coil, which is magnetised by the charge passing and connected to some resistance,

pulling off the excess kinetic energy and returning the particle to its original launch speed, and thereby starting the whole cycle again.

There is a very obvious issue with this: it breaks conservation of energy, as it sends electricity through some resistance with the energy seemingly coming from nowhere. The solution to this issue must not simply disprove one solution, it must disprove all possible modifications of the proposed apparatus, as all variables proposed are arbitrary (nor can it simply say "it breaks conservation of energy" because that's not particularly informative of why it doesn't work). Some examples of a modification would be adding more coils, removing the central nonconductive plate, moving the magnetic field, etc.

If you have an answer, please send it to my email at harper.chisari@gmail.com with the subject line "Redstone Torch Problem".

Good Luck,
Harper Chisari, CEO Charlie Founding Company