and thin, and we may cause it to drive a motor, light a lamp, or perform any one of the many things for which we now use electricity.

Pressure. — Water engineers frequently speak of pressure as equal to that of so many feet of water, that of one foot of water being taken as the unit. A pump of given power may be designed to raise a large quantity of water to a moderate height, or a smaller quantity to a greater height. The electrical unit of pressure is called a volt, and it will be convenient to think of the volt as corresponding to the foot of water pressure. A certain type of electric battery —Daniell's—has the property of raising electricity to the level of one volt for each cell. No matter how large we may make the cell it will never raise the electricity any higher, but a large cell will raise a larger quantity to this height than a small one. If we divide up our large cell into six independent ones, each of one-sixth the capacity of the large one, the electricity will now be raised six times as high, but only one-sixth of the quantity will be available. Consequently if we want a high voltage or pressure we must use a large number of cells, and if we require a large quantity as well, the cells must be large ones. These conditions are exactly the same as apply to pumps for raising water, just as reasonable and just as obvious.

Resistance.—We may now consider the question of resistance by which we may control the rate of flow. Resistances are merely convenient arrangements by which we can introduce longer or thinner wires as we wish and so regulate the current to our requirements. Metals vary in the resistance they offer to the passage of electricity; copper is almost the best conductor we have, while iron offers nine times the resistance of copper. Alloys usually have a higher resistance than the metals composing them, and German silver and platinoid wires are frequently used as resistances, as well as iron which has the advantage of cheapness.