

—is exactly equal to the amount that was originally developed by the burning of the coal. In like manner the heat that was employed to separate the molecules of water into its constituent gases has been given back as sensible heat when the atoms clash together again by the force of chemical affinity to form water. The measure of the heat absorbed in forcing the atoms apart is precisely the measure of that which is given up when they reunite to form water.

The green leaves of the forest have the power to gather up from the air the carbon dioxide and the vapor of moisture. That wonderful laboratory of nature, the chlorophyl of the green leaf, calls to its aid the power of the sunbeam and rends the molecules of water and carbon dioxide, atom from atom, stores the carbon and hydrogen in the woody fiber, and throws back into the air the pure oxygen. It has required energy to produce this chemical separation which is stored in the woody fiber, and when the wood is burned as fuel it gives back in the form of heat the measure of the energy expended by the sunbeam in the growth of the wood. The energy that is stored in wood and coal is therefore energy of position.

Another form of energy of position is seen in electrical separation. If we rub two substances together, such as a silk handkerchief