

just as there was during the burning of a metal, the great difference being that the products of the burning in the first case, being gases, will escape unless prevented, while they will not in the second, because they are solids.

EXPERIMENT.—An argand lamp chimney has a piece of wire gauze fitted into it just above the constriction, is filled with sticks of caustic

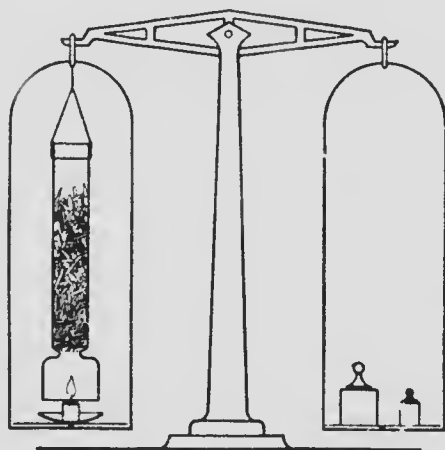


FIG. 1.

soda, and suspended from the top of the bow holding the balance pan, as shown in the figure. A little piece of candle is placed under it. (It is well to have a watch glass on the pan to catch the drippings from the candle and cylinder.) The whole is balanced by means of weights, or otherwise, and the candle is then lighted.

A great many very careful experiments have been made to find out whether matter really

alters in weight when undergoing physical and chemical change, and all the results point to the fact that weight remains the same. This is stated as follows :

Law of Conservation of Matter.—*Matter cannot be created or destroyed ; it can be changed from one form to another, but its quantity and weight remain constant.*

A more exact statement of this fundamental principle of physics and chemistry is as follows: **Law of Conservation of Mass.**—*The mass of a system is not affected by any physical or chemical change taking place within the system.*

There is a similar law relating to the other factor of all physical and chemical change, i.e., energy: **Law of Conservation of Energy.**—*Energy may be changed from one form to another, but it cannot be created or destroyed.*

Now, if we keep this law in mind when thinking about the gain in weight in the experiments just made, we are