

have to say. There are conditions under which the one circle of twenty-four hours would certainly be the more advantageous, and clearly it would be well that system only should if possible be used.

As regards clocks, there is the further question of striking the hours. For public clocks we could not go on to twenty-four. It may be a question whether in large towns one stroke only at each hour might not be sufficient indication, though even this rule probably could not be universally applied.

THE PHENOMENON OF ELECTRICITY.

THE question whether or not electricity is a mechanical vibration is interesting at all times, for it must be said there is much evidence which goes to prove the assertion that it is.

It has been demonstrated that, when water and carbonic acid are produced by combustion, chemical affinity is an expansive force. Now, chemical action also causes an expansion in the combustion of iron or zinc with oxygen, for the oxides of iron and zinc are less dense than the metals, and, although the alteration in bulk is very little, yet the force required to produce it is, in comparison, very great, whether estimated by the heat obtained during the change from metal to oxide, or by the cohesion which is overcome. But there is a movement of oxygen as well as metal, and the oxygen must of necessity move faster than the metal, because it condenses from a gas to a solid, while the metal remains a solid and almost without motion; and, having regard to the combining weight, the momentum of the slow movement of the zinc will be overcome by the rapid movement of the oxygen, which will, therefore, give the most powerful mechanical effect. Again, when oxygen unites with hydrogen, it moves into ordinary bulk, while the volume of hydrogen remains constant, so that in this case as well the oxygen is still the moving, and consequently active, mechanical agent.