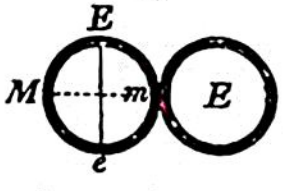
into steam, however, under the ordinary circumstances of atmospheric pressure, it has been found that nearly 1000 degrees of heat are necessary; which large quantity of heat actually becomes latent or disappears; since the temperature of the steam formed, never exceeds 212°, that of the water at the boiling point. What becomes of these 1000 degrees of heat? We may conceive one portion of the heat to become latent, in the first of the two ways described above; that is to say, the water in the act of being converted into vapour, is much augmented in volume; and into this augmented volume, as into a sort of vacuum, a portion of the heat may be supposed to rush, and to become insensible; but another portion of heat obviously goes to augment the molecular polarities of the water; which, in the case of steam (and in all gases), may be imagined to be arranged in some such way as the following:—

Fig. 15 gives a view of two molecules of water,

Fig. 15.



in which the chemical axes, *E e*, and *E e*, are at right angles to each other; the same position as in Fig. 13, and Fig. 14, but otherwise represented. In this position of the chemical axes, as before stated, not only the chemical polarities, but also the cohesive attractions, are exactly balanced and neutralized. The temperature, therefore, which communicates