

theory help us in this difficulty, while at the same time rendering an equally satisfactory account of the other facts? To this we are enabled to reply in the affirmative. Two equal *sounds* we know, under certain circumstances, *can* produce silence, as when the two strings which, in a pianoforte, go to produce, when exactly in unison, a uniform and liquid note; if very slightly out of tune, produce what are called *beats*, or a succession more or less rapid (accordingly as the strings are more or less discordant) of sound and silence. The same tide-wave arriving at the same spots in the sea by two courses of different lengths, results in producing *no rise and fall of the water at all*, if the difference of path be such that the high water of one portion shall reach

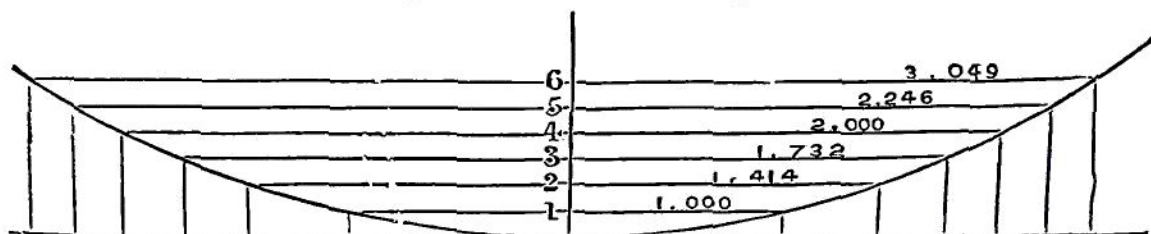


Fig. 7.

the place at the same moment with the low water of the other. This is the case at a point in the North Sea, midway between Lowestoft and the coast of Holland, in lat.  $52^{\circ} 27' N.$ , long.  $3^{\circ} 14' E.$  Its position was pointed out by Dr Whewell from theory, and the fact verified by Captain Hewett, R.N.

(81.) This latter exemplification contains the essential principle of the explanation in question, in nearly its simplest state. If two waves, or rather two regular series of equal waves all exactly like one another, *and all*