

ounces. Air would acquire is eight hun- e atmosphere s atmosphere,

peity of eight

nts; therefore a height, ex- e root of the

, 332 feet per hich common minute; some

two hundred use of; but

d the Centi- nometer is on quicksilver. 2°, and 32° e space is

55° for tem- 112° fierce ds; $\frac{1}{10}$ of an

therefore, if four feet of of mercury,

ury rises in omes lighter altitude in one inches;

WATER.

STEAM, to be understood, requires a knowledge of water and heat; in the present paper, the first will be considered.

Water, in its ordinary state, is a fluid; it occupies the greatest part of our globe and performs most important duties; it is also found in a combined state in animal and vegetable nature. Chemically considered, an ordinary man would be about made up of one hundred and five pounds of water and thirty-five pounds of carbon and nitrogen, and that five-sixths of his daily food is water.

One volume of oxygen and two volumes of hydrogen, or, by weight, one part of hydrogen and eight parts of oxygen, are required to form water.

Water is thirty times heavier than oxygen gas, four hundred and seventy-eight times heavier than hydrogen, and thirty-four times heavier than air.

Water freezes at 32° F., when its expansive force is exhibited. The expansive power of water is supposed to be derived from the re-arrangement of crystallizing particles in an angle of 60°, or 120° to each other, requiring more space than when in a fluid state, and thus resisting confinement.

Water, being almost incompressible, is made to develop great power, as in Bramah's hydraulic presses, and the hydraulic ram, whereby the strengths of cables, anchors, iron, and other materials are tested, and other operations performed that require force.

Water is the standard of comparison of weights of other liquids and solids; a cubic foot of water weighs one thousand ounces and the Imperial gallon one hundred and sixty ounces, or ten pounds.

In pounds, the weight of a cubic foot of water is sixty-two and one-half pounds, and the cubic contents in feet of any water-tank, or boiler, multiplied by sixty-two and one-half, gives the weight of water required to fill it, and this divided by ten gives the number of gallons. There are 62.355 gallons of water in one cubic foot.