66; white beech, 65; black birch, 62; yellow oak, 60; hard maple, 59; white elm, 58; red cedar, 50; wild cherry, 55; yellow poplar, 52; butternut, 52; white birch, 49; white pine, 42.

The Camphor Storm-Glass.

Dealers in philosophical and optical instruments sell simple storm-glasses which are used for the purpose of indicating approaching storms. One of these consists of a glass tube, about ten inches in length and three-fourths of an inch in diameter, filled with a liquid containing camphor, and having its mouth covered with a piece of bladder perforated with a needle. A tall phial will answer the purpose as well as the ten-inch tube. The composition placed within the tube consists of two drachms of camphor, half a drachm of pure saltpetre and half a drachm of muriate of ammonia. pulverized and mixed with about two ounces of proof spirits, The tube is usually suspended by a thread near a window, and the functions of its contents are as follows:—If the atmosphere is dry and the weather promises to be settled, the solid parts of the camphor in the liquid contained in the tube will remain at the bottom, and the liquid above will be quite clear; but on the approach of a change to rain, the solid matter will gradually rise, and small crystalline stars will float about in the liquid. On the approach of high winds, the solid parts of the camphor will rise in the form of leaves and appear near the surface in a state resembling fermentation. These indications are sometimes manifested *twenty-four hours* before a storm breaks out! After some experience in observing the motions of the camphor matter in the tube, the magnitude of a coming storm may be estimated; also its direction, inasmuch as the particles lie closer together on that side of the tube that is *opposite* to that from which the coming storm will approach. The cause of some of these indications is as yet unknown; but the leading principle is the solubility of camphor in alcohol, and its insolubility in water, combined with the fact that the drier the atmosphere the more aqueous vapor does it take up, and *vice versa*.

Steam Engine Improvement.

In a late number of the *Scientific American*, under the head of "Recent American Patents," we find the following notice of an improvement relating to the *steam-engine*:—

"In all reciprocating steam engines heretofore constructed the movement of the piston has produced a concussion or shaking of the bed or foundation upon which the engine has been supported, and a tendency to tear the engine away from said bed or foundation, in many cases to the great detriment of the structure in which the engine is contained. This action has been especially injurious in the case of horizontal engines arranged transversely to the keels of vessels for driving screw propellers, and has been the great obstacle to the running of such engines at sufficiently high speeds to drive the propeller without the intervention of gearing or its equivalent between the crank shaft and propeller shaft. In such engines the weight of the piston and its attached piston rods and cross-head is frequently many thousand pounds, and the inertia of this mass, in the starting of the piston, re-acts against one end of the cylinder and tends to move the cylinder and bed of the engine toward one side of the vessel, and the force required to arrest the piston as it completes its stroke, after having acquired a great momentum, re-acts upon the framing and bed of the engine in the opposite direction to the re-action first mentioned, and tends to move the bed of the engine toward the other side of the vessel. In this way two distinct concussions are produced upon the vessel in a lateral direction during every stroke of the engine or in every stroke of each piston when more than one engine or an engine with more than one cylinder is used. The object of this invention is to counteract the above-mentioned effect or tendency of the movements of the piston of an engine; and to this end it consists in the connection with such piston, of a weight which has a corresponding reciprocating motion, but always moves in an opposite direction to the piston, such weight being equal or nearly equal to the weight of the piston and its rod or rods and their connections with the crank. and moving the same distance or being heavier and moving a correspondingly less distance, or lighter and moving a correspondingly greater distance. John Ericsson, of New York city, is the inventor of this improvement."

Ventilating Ships.

An important part of Dr. Edmonds' ventilating apparatus has been fitted to the "Royal Sovereign" cupola-ship, in which, by a simple arrangement, from 300 to 350 channels actually existing in every ship have been made available for the ventilation of the bilges and timber spaces. This is done by converting the latter into branch channels of one long air-shaft, constructed along each side of the ship. Through this air-trap a draught is created by communicating it into the funnel or ash-pit in steam-ships, or into ordinary ventilators in sailing-ships,—in either case revolving fans, worked by hand or machinery, may be used in connection with this system if an extraordinary amount of ventilation is required, and from its diffused action injurious draughts, which are inseparable from all other plans in use, are entirely avoided. Ship-owners are interested in the success of this system, as it promises to prevent dry rot by the free circulation of air which it creates through the whole framework of the ship. But it serves another equally important object,—that of the removal of all the foul smells usually prevailing between decks, which are engendered by dampness in the timber spaces, and decaying matter lodged in them. This is a very important result to obtain, particularly in troop and emigrant ships, as these are often causes of disease in hot climates. To perfect the ventilation deep air channels are provided, which form part of the deck itself, and act immediately below it, but even without these a very efficient ventilation can be obtained. In the "Royal Sovereign" the efficacy of the plan has been already tested, so far as her present state of equipment admits of it, a very slight increase of temperature in the funnel being sufficient to draw a current of air through the air shafts, and necessarily through the whole framework of the ship, which passing into the funnel is carried high into the open air.