Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME VIII.] NEW-YORK, JUNE 25, 1853. [NUMBER 41.

THE
Scientific American,
PUBLISHED WEEKLY
At 128 Fulton street, N. Y., (Sun Buildings),
BY MUNN & COMPANY.

Hotchkiss & Co., Boston.
Dexter & Bro., New York City.
Stokes & Bro., Philadelphia.
LeCount & Strong San Francisco, Cal
Cooke, Kinney & Co. ditto.
B Dawson Montreal, C. E.
M. Boullemet, Mobile, Ala.
E. W. Wiley, New Orleans, La.
E. G. Fuller, Halifax, N. S.
M. M. Gardissal & Co., Paris.

Responsible Agents may also be found in all the principal cities and towns in the United States.

Terms—$2 a-year—$1 in advance and the remainder in 6 months.

USEFUL RECEIPTS.

To Remove Chemical Marking Ink Stains from Linen.

Nitro-muriatic acid has been recommended for this purpose, but, without entering into the obvious demerits of this agent, which is neither fitted for general use, nor suited for cambric or fine linen, Boettger proposes a concentrated solution of Liebig's cyanide of potassium as a sure and harmless means of removing the stain of marking-ink from linen textures. In the preparation of this salt, it is essential that the ferrocyanide be as free as possible from the sulphate of potash, to prevent the generation of a combination with sulphur during the process of heating, which would entirely defeat the object. Names and marks on linen and wearing apparel, of many years standing, may be totally and effectually removed from the finest cambric, even without the slightest injury to the texture, by rubbing the marking gently with a rather concentrated solution of oxalate of potash. The red and black stains produced on the skin, by the solution of the salts of silver and gold, may be perfectly removed by a solution of the above mentioned salt. It is necessary, however, that the skin should be intact, as this salt produces ill effects if applied to open sores.

Legumin Cheese.

The Chinese prepare an actual cheese from peas, called "tao-foo," which they sell in the streets of Canton. In preparing this cheese, the paste from steeped ground peas is boiled, which causes the starch to dissolve with the casein. After straining the liquid it is coagulated by a solution of gypsum. This coagulum is worked up like sour milk, salted, and pressed into moulds to make cheese.

Florida Paint Root.

This root grows in great abundance in the flat woods, near the streams, and in the savannahs of the counties of Levy, Marion, and South Florida. It has a top similar to the flag, and a root about the size of a man's thumb, of various lengths, running horizontal, not far below the surface. It is very juicy, and of a deep red color. Hogs are exceedingly fond of it, and fatten on it rapidly, if they are black, or have black hoofs. It is said by the old settlers that hogs with white hoofs seem to founder, and their hoof comes off, which causes them to perish unless fed well till they recover. Even when the animal has only one white hoof, and the others black, the white hoof comes off. The root colors the flesh, bones, and marrow, of hogs that feed upon it, and the urine becomes of the color of blood. There is no doubt this root may be substituted for madder, and become a source of no inconsiderable traffic to the people of Florida. Like the arrow root or compta—it grows spontaneously in great abundance and may be cultivated, if thought advantageous.—[Ocala (Fla.,) Mirror.

Little can be done without determination, and no great acquirement without patience and steady application.

SHIP'S SPEED INDICATOR.

Figure 1.

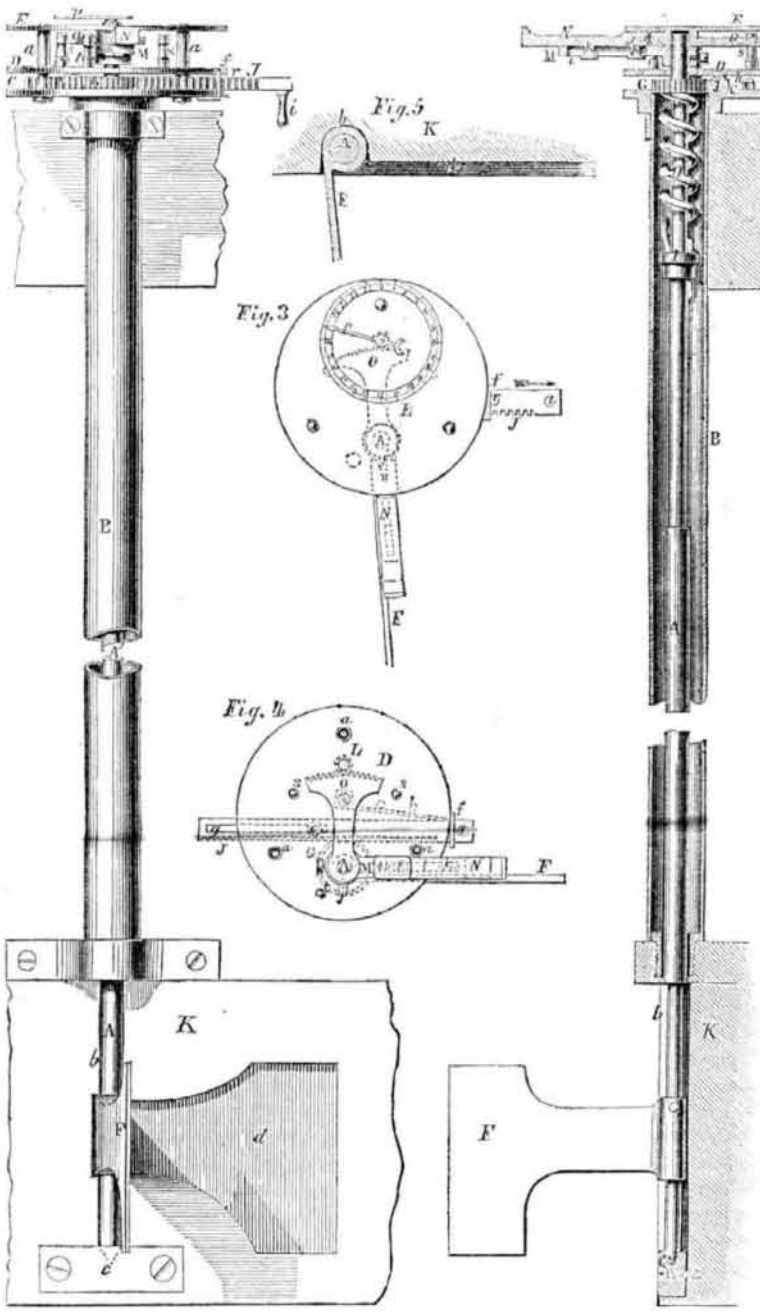

Figure 2.

The annexed engravings are views of an instrument for indicating the speed of ships at sea, or boats on a lake or river, invented by I. Z.A. Wagner, of the city of Philadelphia, who has taken measures to secure a patent. Figure 1 is a side view of this instrument; figure 2 is a vertical section of the same taken through the centre across the vessel; figure 3 is a top view of the same; figure 4 is a top view with the dial plate removed; figure 5 is a horizontal section of the vane, and a part of the keel of the vessel, showing the recess in which the vane is received, when the instrument is not in use. The same letters refer to like parts.

This instrument is a fixed and permanent spring log consisting of a Vane attached to some part of the vessel below the water line, and with a spring attached to it with its tension acting in an opposite direction to that in which it is influenced by the water while the vessel is sailing. This vane is connected with an indicating apparatus which may be placed in the cabin or on the quarter deck, and which tells the speed of a vessel by a pointer moving round on a dial.

A is the spindle of a vane, F; B is a tube in which is enclosed the said spindle. The length of tube and spindle should be from the bottom of the vessel to the cabin or deck, where the dial and indicating parts are to be situated. The tube terminates with a water-tight joint at the bottom; C is a circular plate on its upper end forming the base of the indicator and firmly secured to it. This plate supports two other plates, D E, of similar size and form, by means of pillars, *a a*. these three parts form the frame for the indicating mechanism. A recess, *b*, is made in the side of the keel, K, of the vessel, to receive a part of the spindle, A, not confined in tube, B. The bottom of the spindle rests in a step, *c*, within the keel, and its upper end works through a guide bearing in plate, D; it is further held steady by a guide to the bottom of the tube. The vane, F, is secured to the protruding part of the spindle, and when it is not in use (the vessel being in port or sailing) it is received into a recess, *d*, in the keel, (as shown in figure 1.) abaft the shaft. A toothed pinion, G, is fitted to plate, C, and is capable of turning freely. This pinion is supported by the said plate, which is slightly recessed to receive it, and is connected by a strong spiral spring, H, which surrounds the spindle with a collar, I, which is fitted to the spindle or shaft, A, at some distance below the pinion, in such a manner as to slide freely up and down, but not to turn. The spring is coiled in such a direction that if the pinion were held stationary, the influence which the vane receives in passing through the water would wind it up. The toothed pinion, G, gears with a rack, J, which is movable on the plate, C, to which it is connected by a screw, *e*, passing into the plate, and a loop, *f*, secured to the edge of the plate; a slot, *g*, is made in the rack to receive the screw, *e*, and allow of the longitudinal motion of the rack. The loop, *f* is just wide enough to allow the rack to pass through it freely, but a spring, *h*, is secured to the plate, C, and applied to the back of the rack in such a manner as to force its face against one side of the loop, which is thus made to enter a space between two teeth, and will hold the rack firm in any position.

When the log is in use it occupies a position nearly at right angles to the keel. The vane is brought into position for action by drawing the rack towards the right (as in fig. 3.) by a handle, *i*, provided for the purpose. The rack, J, being held by loop, *f*, holds the pinion in such a way that it cannot turn, hence the vane cannot move without winding or unwinding spring, H. The indicator dial is described upon plate, E, and the pointer, *p*, is attached to the upper journal of a toothed pinion, L, which works between the plates, D and E. The movements of the vane are transmitted to the indicator by an expanding lever, M, which has a toothed sector, O, at one end gearing with the pinion, L. That part of the lever which carries the sector is loose upon the spindle of the vane, so that it can be released when desired; it is also furnished with a tongue, *j*, by which it is connected with the other portion of the lever. The part, M, is firmly secured to the vane spindle and a piece, N, is fitted to slide longitudinally on it, being confined by studs, *k k*, working in a slot, *l*. The inmost end of the piece, N, has a notch, *n*, to receive the tongue, *j*, of that part of the lever carrying the sector, O. When the the tongue is in this notch the indicator is in communication with the vane, but when the piece, N, is withdrawn far enough to leave the tongue, *j*, free, the indicator is released; stops, *s s*, are secured in the plate, D, to prevent the sector working out of gear with the pinion, and the indicator thereby losing its proper relation to the vane. A stop, *t*, is secured in the same plate to prevent the lever, M, being forced by the spring, H, or the action of the water upon the vane, to such a position as to carry the pointer backwards past the zero point on the dial.

To take an observation to determine the speed of a vessel through the water, the rack, J, requires to be drawn out (as in fig. 3) to such a position nearly at right angles to the keel; also when the indicator is connected, the spring, H, will be free from tension at ° or zero point on the dial. The rack, J, is secured in this position, either by the side of the loop engaging between two of its teeth, or by a pin inserted through it close to the edge of plate, D, to prevent it moving inwards. The sector is then connected with the lever, M, by sliding the piece, N, to make it receive the tongue *j*, in its notch. The resistance encountered by the vane in passing through the water will be in proportion to the speed of the vessel, and will cause the vane to turn its spindle, and wind the spring, H, to such a tension as will exactly balance the pressure on the vane, when all the parts of the instrument will become stationary. The pointer will then indicate the speed of the vessel in knots per hour, according as the dial is laid out. When the observation is made, the vane can be turned back in its recess. The vane can also be properly adjusted to indicate the velocity of favorable or adverse currents, when the force of said currents is known. It can easily be attached to any vessel, and is both a neat and ingenuous instrument for the purpose intended.

More information may be obtained by letter addressed to the inventor, No. 29 Arch street, Philadelphia.