

they lose their fat and get thin. Man himself gets fat in summer and grows thin in winter from the demand on this store for heating purposes.

It is from this point of view that the value practically of a knowledge of the height and weight of individuals becomes apparent. When the weight of a person is much below his height, then it may be suspected that some disease has set in, which may go on to the destruction of life.

Within the last thirty years a practice has been resorted to with great success of administering to persons losing weight and threatened with consumption, cod-liver oil, pancreatic emulsion, and fatty substances, as articles of food, for the purpose of preventing or arresting the tendency to loss of fat, which obviously results in the production of fatal disease.

Obituary.—Samuel V. Merrick.

It is with great regret that we are called upon to record the death of Mr. Samuel V. Merrick of Philadelphia, Pa., the Founder and President of the Franklin Institute, and for many years an esteemed client of this office.

A meeting of the Board of Managers of the Institute was held to notice his death, and a series of highly complimentary resolutions were passed in relation to the character and acts of the deceased.

We also notice the recent death of T. A. Wasson, the well known car builder, at Springfield, Mass.

Province of Quebec Fair.

The Province of Quebec Fair of 1870, will be held at Montreal, Sept. 13, 14, 15, 16. \$15,000 prizes.

American exhibitors are admitted on the same footing as Canadians. An entrance fee of one dollar covers all entries and entitles the exhibitor to four tickets to the grounds.

Ridicule.

Sometimes our correspondents make the mistake, in their replies to published letters, of attempting to heap ridicule upon the opinions expressed by other correspondents who happen not to agree with their theories.

WATERING STREETS WITH SALINE SOLUTIONS.—It is stated that, of the two deliquescent salts which have been applied for this purpose—viz, the chlorides of magnesium and calcium—the last-named suits best, the quantity being adjusted at one half a pound per square yard.

How perfectly almanac makers hit it, was verified in the weather word in one of the almanacs against the second Sabbath in August. "Scorching," was its prophecy. It was about the only Sabbath that was not scorching, and was the only one to which it applied that epithet.

CANADIANS can now apply for patents in the United States upon the same terms as citizens. Full information can be obtained by applying to the publishers of the SCIENTIFIC AMERICAN.

In the year 1811 Kirchoff, a celebrated German chemist, discovered that it was possible to convert starch, by means of sulphuric acid, into sugar.

NEW BOOKS AND PUBLICATIONS.

ON MICROSCOPICAL MANIPULATION. Being the Subject-Matter of a Course of Lectures Delivered before the Quekett Microscopical Club, January-April, 1869. By W. T. Suffolk, F.R.M.S. Illustrated with forty-nine Engravings and seven Lithographs. Philadelphia: J. B. Lippincott & Co.

The microscope and the spectroscope are now leading the way to the interpenetration of Nature's profound mysteries. Not that when all that human mind and human hands can do has been done there will remain nothing mysterious, we look for no such consummation; but to these instruments science is indebted for keys by which it has been enabled to enter whole realms of facts utterly inaccessible without them.

THE PRACTICAL AMERICAN MILLWRIGHT AND MILLER. Comprising the Elementary Principles of Mechanics, Mechanism, and Motive Power, Hydraulics and Hydraulic Motors, Mill-Dams, Saw Mills, Grist Mills, the Oat-Meal Mill, the Barley Mill, Wool Carding and Cloth Fulling and Dressing, Windmills, Steam Power, etc. By David Craik, Millwright. Illustrated by numerous Wood Engravings and Folding Plates. Philadelphia: Henry Carey Baird, Industrial Publisher, 406 Walnut street. 1870. Price, by mail, free of postage, \$5.00.

See notice in editorial columns.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address correspondents by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers; not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at \$1.00 a line, under the head of "Business and Personal."

All reference to back numbers should be by volume and page.

M. G., of N. Y., asks whether there would be any power gained by placing a turbine wheel higher in the draft-box—or tube which conveys water to the wheel—than the height to which atmospheric pressure will sustain a column of water in a tube from which the air is exhausted, at the locality in which the wheel is placed, say, as an outside figure, thirty-three and one third feet above the tail water.

T. S. K., of Ill., and several others, write in regard to the balancing of shafts and pulley systems, all agreeing that pulleys should be balanced separately, if they are to be run together, and also that the heaviest sides should be placed opposite each other on the shaft, so that centrifugal force shall act equally on opposite sides.

W. H. S., of Va.—Thin rubber, of the kind you describe, and used for tying over the tops of jars, as well as for other purposes, may be obtained at all the dealers in rubber goods. It is, however, not wholly impervious to water when long immersed, and gases will also pass through it.

J. D. B., of Pa.—It is impossible, without knowing the exact consistency of the varnish you have invented, to advise you what material added to it will make it dry more rapidly. If the vehicle is alcohol, it ought to dry quickly without such addition; if siccativ oils are used, acetate of lead or litharge will make it dry quicker.

H. B. D., of O.—Wheels for ordinary canceling presses are made of composition, and cannot be used for perforating. Perforating stamps should be made of steel, and hardened, and it is better to make the figures separate, and set them in, so that in case of falling or breaking, they can be taken out and replaced.

H. W. G., of Mich.—To clean brass or silver, and polish the same, use aqua-ammonia and rotten stone, followed by rouge, applied with soft leather.

D. S., of Md.—The steam plows in use in this country are very few, and, so far as we know, have been imported from England. We do not think they can be obtained in this country.

F. H., of N. Y.—What is called "lodestone" is simply a species of magnetic iron ore.

G. L., of Kan.—We cannot give you the address of an emery and crocus cloth manufactory.

S. S. H., of Ala.—English flint glass expands 1 part in 1,248 in length, and 1 part in 316 in bulk, in heating from 32° Fah. to 212° Fah. Brass expands under the same treatment 1 part in 536 in length, and 1 part in 179 in bulk. Iron, 1 in 846 in length, and 1 in 282 in bulk.

J. F. G., of Mass.—In computing the power and resistance that will produce equilibrium in hydraulic presses or accumulators, it is the areas of pistons only that is taken into account, the areas of the supply pipe sections have no bearing upon the subject, other than that if too small they will increase the friction.

Business and Personal.

The Charge for Insertion under this heading One Dollar a Line. If the Notices exceed Four Lines. One Dollar and a Half per line will be charged.

The paper that meets the eye of manufacturers throughout the United States—Boston Bulletin, \$4.00 a year. Advertisements 1c. a line

For Sale—One half the interest in McGee's Patent Self-boring Faucet. Address T. Nugent, Morristown, N. J.

The best selected assortment of Patent Rights in the United States for sale by E. E. Roberts & Co., 15 Wall st., New York. See advertisement headed Patentees.

Wanted—A good Steam Engine of from 80 to 100-H. P. Address, with particulars, Box 1969, New York.

Every Reader of the Scientific American, who will send his address to S. R. Wells, 389 Broadway, New York, with 15c., will receive a specimen of The Phrenological Journal, a first-class Family Magazine published at \$3 a year, 20 cents a number.

John Dane, Jr., Newark, N. J., builds the best Hand Lathes slide rests, presses, all kinds, Jeweler's rolls, models, dies, all kinds of light machinery and work, to order. Send for circular.

Six new and perfect Automatic Gas Generators, Wood's Patent at a low price. Or will sell the air pumps alone. Address David Street, 273 Franklin st., Cleveland, Ohio.

Owners of Worthington Pumps can hear of something to their advantage by addressing Jno. Clark, Water Works, Harrisburg, Pa.

Crampton's Imperial Laundry Soap, washes in hard or salt water, removes paint, tar, and grease spots, and, containing a large percentage of vegetable oils, is as agreeable as Castile soap for washing hands. "Grocers keep it." Office 84 Front st., New York.

Enterprising men wanting a genuine Patent Monopoly, please address, immediately, C. H. Hudson, 174 Washington st., New York.

Wanted—Salesman in the mechanical branch of business. Only experienced need apply at S. Firuski & Co.'s, 20 Cedar st., New York.

See advertisement on New Work on "Soluble Glass," published by Dr. L. Feuchtwanger, 55 Cedar st., N.Y. Price \$3.12, mailed free

Dickinson's Patent Shaped Carbon Points and adjustable holder for dressing emery wheels, grindstones, etc. See Scientific American, July 24th, and Nov. 20, 1869. 61 Nassau st., New York.

Peck's patent drop press. Milo Peck & Co., New Haven, Ct.

"507 Mechanical Movements."—Over 18,000 copies of this book have been sold. This is by far the largest illustrated table of movements ever published. An invaluable aid to mechanics, inventors, etc. Price \$1. By mail, \$1.12. Address Theo. Tusch, 37 Park Row, New York.

Best Boiler-tube cleaner—A. H. & M. Morse, Franklin, Mass.

A Good Machinist, with about \$3,000, can have an interest and entire charge of a paying manufacturing business. Address Machinist, Box 507, Baltimore, Md.

Tools and Machines for special uses built to order. Chas. N. Trump, Port Chester, N. Y.

For Sale or to Lease—A never-failing water-power at Ellenville, N. Y., 1/2 mile from depot of the Ellenville Branch N. Y. and O. Midland R. R., and only 80 miles from New York city, by rail. For full particulars address Blackwell, Shultis, Gross & Co., Kingston, N. Y.

Gatling Guns that fire 400 times per minute are now made at Colt's Armory, Hartford, Conn. Send for pamphlets.

Pictures for the Library.—Prang's latest publications: "Wild Flowers," "Water Lilies," "Chas. Dickens," Sold in all Art Stores.

Japanese Paper Ware—Spitoons, wash basins, pails, milk pans, etc. Perfectly water-proof, and will not break or rust. Send for circulars. Jennings Brothers, 352 Pearl st., New York.

"Your \$50 Foot Lathes are worth \$75." Good news for all. At your door. Catalogues Free. N. H. Baldwin, Laconia, N. H.

The Best Hand Shears and Punches for metal work, as well as the latest improved lathes, and other machinists' tools, from entirely new patterns, are manufactured by L. W. Pond, Worcester, Mass. Office, 98 Liberty st., New York.

Wm. Roberts & Co., Designers and Engravers on Wood, 36 Beekman st., New York, would respectfully announce that they are now prepared to receive orders from Manufacturers, and others, for engraving of machinery, views of stores, factories, trade marks, etc., etc.

One 60-Horse Locomotive Boiler, used 5 mos., \$1,200. Machinery from two 500-ton propellers, and two Martin boilers very low. Wm. D. Andrews & Bro., 414 Water st., New York.

For solid wrought-iron beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Keuffel & Esser, 116 Fulton st., N.Y., the best place to get 1st-class Drawing Materials, Swiss Instruments, and Rubber Triangles and Curves.

For tinmen's tools, presses, etc., apply to Mays & Bliss, Plymouth st., near Adams st., Brooklyn, N. Y.

Glynn's Anti-Incrustator for Steam Boiler—The only reliable preventative. No foaming, and does not attack metals of boiler. Liberal terms to Agents. C. D. Frederick, 587 Broadway, New York.

Cold Rolled—Shafting, piston rods, pump rods, Collins pat. double compression couplings, manufactured by Jones & Laughlins, Pittsburgh, Pa.

For mining, wrecking, pumping, drainage, and irrigating machinery, see advertisement of Andrews' Patents in another column.

It saves its Cost every sixty days—Mitchell's Combination Cooking Stove. Send for circular. R. B. Mitchell, Chicago, Ill.

To ascertain where there will be a demand for new machinery or manufacturers' supplies read Boston Commercial Bulletin's manufacturing news of the United States. Terms \$4.00 a year.