

WEEKLY SUMMARY OF INVENTIONS.

The following inventions are among the most useful improvements patented this week. For the claims to these inventions the reader is referred to the official list on another page:—

SUGAR SKIMMERS.

The object of this invention is to lighten the labor of skimming the sirup in the kettles or pans in the manufacture of sugar. The skimmer ordinarily used, consisting of a shallow perforated bowl attached to a pole, is heavy and can only be used by the strongest hand on the plantation; for being perforated, it does not float on the sirup, and its entire weight has to be supported by the operator, not only in transferring the skimmings from one pan to another, but in letting the sirup drain from the perforations; and in the act of skimming it derives but little support from the sirup. This invention consists in furnishing the skimmer with a float which rests on the sirup will support it during the skimming operation and also while any sirup that may be taken up with the skimmings drains through the perforations back into the kettle or pan. The credit of this contrivance is due to John M. Jones, of New Orleans, La.

COTTON PRESS.

The object of this invention is to obtain a simple, powerful and economical press for the use of planters and farmers; one that may be operated by any convenient power, and be capable of very general application, in fact, susceptible of being adapted for use in all cases where any of the known presses may be employed. The invention consists in the use of rack bars, a lever provided with a suitable fulcrum, and pawls or hooks, arranged and combined in a novel way for the purpose of giving the desired pressure. The invention further consists in a peculiar arrangement of the press by a connexion with the levers and rack bars aforesaid, whereby the cotton may not only be compressed with facility, but also readily removed from the press-box when compressed and bound in bale form. The inventor of this improvement is Edward C. Betts, of Huntsville, Ala.

OYSTER DREDGE.

This invention is an improvement in machines for dredging and gathering oysters from the beds of rivers where oyster tongs cannot be used to advantage on account of the depth of water, or from various circumstances; it consists in supporting and hinging a peculiar shaped rake upon sled runners of sufficient width to prevent their sinking in the sand; and in connection with said rake upon runners, it further consists in arranging in a suitable manner upon the arms of the dredge a deflecting board, which is acted upon by the water so as to force the rake down and keep it upon the bottom of the river. The invention also consists in a peculiar construction of the rake, whereby great strength is obtained, at the same time the head of the rake will not form a barrier to the machine. This improvement was designed by W. L. Force, of Keyport, N. J.

IMPROVEMENT IN TANNING.

The improvement in tanning hides and skins of all descriptions, just patented by Charles L. Robinson, of Waukesha, Wis., consists in the employment of terra-japonica—purified by a very simple process—in combination with certain salts of magnesia and potassa, whereby both upper and sole leather of superior quality is produced. By this process tanning operations may be conducted altogether independently of the oak and hemlock barks of our forests, in any situation where plenty of water can be obtained.

OUR WHALING OPERATIONS.

Our hardy seamen from New Bedford and Nantucket have become as familiar with the Pacific ocean as with the waters of Narragansett bay. In pursuit of their dangerous avocation they generally remain several years away from home, but come in occasionally to refit at some of the Pacific islands. The Sandwich Islands have become completely Americanized, and the port of Honolulu is almost as much Yankee in its population as New London, in Connecticut. The last year's whaling operations, according to reports from Honolulu, were not favorable. The number of American whalers which had entered Hawaiian ports, in 1859, was 176, of which 5 were sperm whalers. It is stated that the whales are annually decreasing in number and size, and

that for the future the number of ships engaged in the business will be very considerably reduced. The whaling fleet in the Pacific for 1860, number 172 ships. The total catch in 1859 was 1,450 barrels of sperm, 102,980 barrels of common whale oil, and 1,312,000 pounds of bone. Various substitutes are now used for whalebone, such as hard india-rubber and dyed canes, so that the decrease in this article is not so much felt.

ACTION OF FROST UPON SOILS.—The soluble part of the soil is the inorganic food of the plants. Rain water cannot come in contact with the soil, or even with a gravel heap without dissolving some of it. Expose almost any stone, or handful of gravel, washed clean, to the action of a quart or so of rain water several days, and upon evaporating the water, it will be seen from the residue left that a portion has been dissolved. Now let these same stones be exposed, covered or partly covered with water, in a saucer, to the action of frost, setting them out of doors for two or three cold nights, taking care that they thaw by day. Pour off the water, rinsing with fresh, and evaporate as above, and it will be seen that a very much larger quantity has come into solution. The reason is, that all stones being somewhat porous, by the action of the frost their outer portion is broken up, scaled and fissured, and a vastly greater surface is exposed to the action of the water, even though this fissuring is not visible to the eye. When land is exposed to alternate freezing and thawing, the same effect must take place.

MACHINE BANDS.—M. J. Haines, of England, has taken out a patent for making bands for driving machinery. The improvement consists in cutting the hides of leather spirally into strips, then straightening them while they are in a moist state, after which they are sewn side by side, longitudinally, to form the driving band.

Literary Notices.

THE FARMERS' JOURNAL. Published by De Montigny & Co., Montreal.

The success of this ably-edited journal, now in its XIIth volume, is a striking proof of the intelligence and enterprise of the farmers of Canada.

PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION. Published at Boston by the Association.

We acknowledge the receipt, from the president of this association of druggists—Samuel M. Colcord, Esq.—of the account of their proceedings at their eighth annual meeting. We are pleased to see that their efforts are principally directed to rooting out the practices of quackery and adulterating from this important and responsible trade. We hope they will acquire more boldness in dealing with the monstrous crime of adulterating drugs.

THE AMERICAN ALMANAC FOR 1860. Crosby, Nichols & Co., publishers, Boston.

This old-established and sterling publication makes its appearance with its accustomed punctuality. It contains the usual mass of varied and reliable information; the names of the several officers of the United States government, and of the separate States, with their salaries; lists of officers of the army and navy, with their pay; the same information in regard to the judiciary and the intercourse with foreign nations; tables of the exports, imports, revenue and public debt of the country and of the several States; similar information in regard to the countries of Europe, with the names and ages of the living rulers of the world; record of events for the past year; American and foreign obituary; astronomical and meteorological tables; besides a long list of other subjects, making it an invaluable work of reference for every family in the land.

MANUAL OF PHONOGRAPHY. By Ben Pitman, Phonographic Institute, Cincinnati, Ohio.

We have recently had inquiries as to where a work on phonography could be obtained, and we are now able to answer. This work is an elegant little volume, of the size of a large pocket-book, and may be presumed to contain a complete account of the subject. The author says: "All the phonographic exercises, title page, &c., are produced by a new process—another application of electrotyping, that wonderful art of molding metals without heat. This new process of engraving has cost me four years of constant experiment. The labor which heretofore has been expended in drawing a design on wood, previous to cutting, suffices, by this process, to complete it in imperishable copper."

EDINBURGH REVIEW. Published by Leonard Scott & Co., No. 54 Gold-street, this city.

The present number of this most able periodical commences a new volume, and it offers an inducement to read its pages by ten essays which it contains, each of which is marked with unusual ability. Two of these have attracted our special attention; one on the "Mortality of Trades and Professions," and the other on the "Coal Fields of North America and Great Britain." The foreign reviews published by the above company contain the ablest essays which are now written in the English language.

THE NEW YORK TEACHER. James Cruikshank, publisher, Albany, N. Y.

This standard publication is in its IXth volume. Every teacher, and every parent who has a child at school, would find a subscription to some good work on education money well invested. Besides the information obtained, it promotes an intelligent interest in this all-important subject.

THE DENTAL REGISTER OF THE WEST. J. T. Toland, publisher and proprietor, Cincinnati, Ohio.

We have received from Messrs. Rudd & Carlton, No. 130 Grand-street, this city, the following books just issued by them:—"Answer to Hugh Miller and Theoretic Geologists," by Thomas A. Davis. "The Habits of Good Society," a hand-book for ladies and gentlemen, instructing them how to prepare for proper behavior in society; printed from a London edition. "Edgar Poe and his Critics," a beautifully printed volume of 80 pages; by Sarah Helen Whitman. It is a pleasant defense of the unfortunate poet.

COVERING ZINC WITH BRASS OR COPPER.—To give zinc a coat of copper or brass for the purpose of a subsequent silvering or gilding, the following solutions are used:—For copper alone, a solution of vitriol, saturated at the common temperature, is mixed with a solution of cyanide of potassium, adding as much of the latter as is necessary to dissolve the precipitate thrown down at first. The prussic acid disengaged during this operation must be carried off by a draught or flue. When the mixture is clear, one-tenth or one-fifth of its volume of *aqua ammonia* is added, and diluted with water to density of 8° Beaume. For brass, blue and white vitriol are used in equal proportion, and prepared as before. Two parts of sulphate of zinc and one of sulphate of copper give a bright brass coating. Previous to their dipping, the articles of zinc are rubbed off thoroughly with finely-powdered pumice-stone and rinsed in water, after which manipulation they are placed in a bath and remain there for 24 hours. After that time they are again rinsed in water and simply wiped off. The copper or brass covering has a very bright look, as if polished, and adheres perfectly. The thickness of the coat may be increased afterwards by the aid of a battery.—*Le Technologiste.*

FOREIGN NEWS AND MARKETS.

A paper was recently read before the Institution of Mechanical Engineers—Birmingham, (Eng.)—on superheated steam, by J. N. Ryder, of London. By the use of superheated steam apparatus, the quantity of water required for boilers has been reduced, together with a considerable saving of coal and power. Two steamboats with superheating apparatus have been running on the Thames for several months, and a saving of 30 per cent of fuel has been secured in them, with a gain in the number of revolutions of the engines, and the cylinders remained bright and in good order. The steam was superheated from 212° to 400° Fah., and satisfactory have been the results, that a number of other boats are about adopting the same arrangements. No danger need be apprehended from superheated steam any more than common steam. The only advantage, and it is a great one, which is secured by the superheating method, is the conversion into true steam of all the molecules of water which generally ascend with common steam, rendering it very moist and liable to sudden condensation on the side of the cylinder.

The large submarine cables which have been laid down in Europe, as well as a new one connecting Australia with Tasmania, are said to be operating badly. The Channel Island cable, the one in the Mediterranean between Malta and Cagliari, and the one between England and the Isle of Man, are all failures to a certain extent. Some have attributed this to defective insulation in the first place; while others affirm that it is all owing to the rocky bottom on which they were laid, and the under currents to which they have been subjected. It is asserted that every submarine cable laid down in a muddy bottom has been successful, while those laid in shallow sea and on hard rocky bottoms, without being made enormously thick to prevent abrasion, have all failed. In all likelihood, the truth lies between the two opinions.

There are several voluntary associations of manufacturers and others in England, who use steam power, the objects of which are the employment of competent inspectors to examine their boilers regularly, report their condition and management, and give advice. These are noble institutions, and exhibit an amount of sound economy and good sense on the part of Englishmen which deserves to be copied in every part of the world. Every member pays so much into the treasury, and his boilers are regularly examined; and if a gage is defective, a valve out of order, a stay bent, or anything the matter to jeopardize the safety of his boiler or factory, he knows it, and provides a remedy. At a late meeting of the Huddersfield Boiler Association, the case of a boiler explosion was reported as having been the result of a defective arrangement exactly like that on the boiler which recently exploded at the hat manufactory in Brooklyn. There were four boilers coupled together with a stop-valve between the boiler and the safety-valve. This is a most objectionable and dangerous arrangement. The inspector of the Huddersfield Boiler Association condemns the practice of relying entirely upon self-acting floats to determine the level of water in boilers; he says they may be used as safety adjuncts in connection with good glass water gages, not otherwise.