

## 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.

The Manchester Cotton Supply Association have lately received a great number of samples of cotton from India, and one of the specimens was of such a superior quality, that Mr. Bazley, M.P., who examined it, stated it was worth 1s. 6d. per lb., and he would give that price for any quantity of it. Mr. Smollett, M.P., who had passed 30 years in India, recently lectured on the subject of cotton in Manchester, and stated that cotton could be raised in any quantity in that country, and at low prices, if there were a reform carried out in the method of taxation. The people of India are taxed in a most arbitrary manner, and industry is thereby repressed.

The British government is making great efforts to develop the natural resources of India and promote her commercial interests, especially by the construction of railroads for inland communication. The statistics of Indian railroads show great development. During the year 1858, the East Indian Railroad carried 1,172,000 passengers, and made an estimated profit of 6½ per cent on its capital. The Great Indian Peninsula Railroad, which is as yet open for a short distance only, shows a net per centage of 4½. The Madras Railroad yields 3½ per cent. The rate of dividend on ordinary share capital in England is 3.06, which is less than the worst of the Indian lines.

The French public is bestowing a great deal of interest and capital upon the isthmus of Nicaragua. A company has been formed at Marseilles, consisting of several large shipowners, who have purchased a grant of considerable land and mines, and valuable timber land, consisting chiefly of ebony, in Nicaragua. They have sent out two ships already with emigrants, consisting mostly of machinists, engineers and a few chemists, to form the nucleus of a colony. Another company is about being formed in the same city for constructing a railway on the isthmus of Rivaz, a tongue of land which separates the lake of Nicaragua from the Pacific. The French are going to make a desperate effort to obtain a foothold in Central America.

It has been found that puddled steel plates, employed in the hulls of steamers, are not suitable material for this purpose, in consequence of their rapid corrosion. The small steam launch which was built for Dr. Livingstone's African expedition was principally composed of this metal, and has proved a failure on account of rapid rusting. Another small vessel of nearly the same size, built of Howell's "homogeneous metal" (a species of steel also manufactured at Sheffield), has proved sound so far as it relates to corrosion; and Dr. Livingstone has stated that such metal is well adapted for boats in tropical climates.

#### INDUSTRY—MANUFACTURES—COMMERCE.

*What we Pay for Silk.*—The total value of silk fabrics exported to the United States from the city of Lyons alone, during the year ending Dec. 31, 1859, and for which invoices were authenticated at the office of the American consul, Joel W. White, was 6,148,808.17 francs; or in United States currency (at 19 cents per franc), \$1,168,273.55. Our total import of silk from France, during the year 1859, was:—Piece goods of silk, \$9,645,111; hosiery, &c., do, \$113,937; floss silk, \$1,074; caps, bonnets, and hats, \$68,979; raw silk, \$32,729; sewing silk, \$23,306; twist, \$3,531; piece goods of silk and worsted, \$672,047; silk manufactures not specified, \$900,147—total, \$11,460,861.

*Virginia Woolen Manufacture.*—The Richmond Enquirer states that a number of new factories are in the course of erection in that city, and that a new woolen mill will be in operation by the first of March next, and will consume weekly from 8,000 to 10,000 lbs. of wool. A large sugar refinery is nearly completed; and four or five gentlemen with abundance of capital are about to establish a great tannery, with which an extensive boot and shoe shop is to be connected. In addition to these a manufactory of fire-arms, in which Col. Colt is interested, will soon be at work.

*Silver from Lead Ore.*—At the Eagle foundry, in Du-buque, Iowa, where lead smelting is carried on by M. Walter, a considerable amount of silver has been taken out during last year. It has hitherto been supposed that there was not a sufficient amount of silver in our western lead ores to pay for any extra cost in smelting, but it has been found that as much silver may be extracted as will pay for the whole cost of smelting. Many of our

lead ores may yet become very remunerative on account of the silver contained in them.

*Fish Oils.*—The inhabitants of Brooklin, Maine, are entirely engaged principally in fishing and seafaring. During the summer season a considerable business is carried on in the manufacture of porgy oil. From 500 to 1,000 bbls. have been made annually, worth from \$15 to \$20 per bbl. The flesh of the fish, after the oil is thus passed out, is very serviceable upon the soil of the town.

*Railroad Cars.*—Since last June, Messrs. Wharton & Petch, car manufacturers, Charleston, S. C., have constructed for the Mississippi Central Railroad, 125 cars—80 of which were built in Charleston and 45 in New Orleans. The cost exceeded \$80,000. They have also built cars for roads in South Carolina to the amount of \$15,000.

*What is the Meaning of "Merchantable?"*—An interesting case has lately been decided in the Superior Court, Boston, in regard to what is called "merchantable" gunny cloth. The suit was by Messrs. Wm. Rice, and others against Messrs. Wm. C. Codman, and others, and the facts were substantially as follows:—The defendants sold to the plaintiffs (in 1858) 100 bales of gunny cloth at 15¼ cts. per yard, by an original invoice which represented its average weight at 2.15 lbs. per yard. The money for the goods was paid, though the goods were then in the government warehouse. The plaintiffs, after their purchase, sold 75 of the bales to a party who weighed a portion of the lot, and found, as was stated, that they only weighed 2.07 lbs. per yard. They shortly afterwards commenced suit to recover the 15¼ cts. per yard, which had been paid, and half a cent on every yard besides, which was the profit they expected to make; the whole, with the interest, amounting to \$4,450. The plaintiffs endeavored to prove that the word "merchantable quality" meant such cloths as weighed 2.125 lbs. to the yard. Judge Lord instructed the jury to return an answer whether the word "merchantable" was understood by Boston merchants, according to a common custom, to mean gunny cloth weighing 2.125 lbs to the yard. The verdict was in the negative; no such meaning was attached to the word in this case. A general verdict was also given for the defendants. They imported the gunny cloth and sold it according to the foreign invoice.

*Flax Manufacture.*—During the past nine years Mr. Stephen M. Allen, of Boston, has been engaged in experimenting with flax, and he has a mill near Boston, where various fabrics composed partly of cotton and flax are manufactured. He lately, in an address to the manufacturers of Rhode Island, stated that he believed flax could be cultivated and treated in such a manner as to make goods from it as cheap as those of cotton. He asks farmers to try the cultivation of flax. The sale of the seed alone would pay for all the labor. In reference to this subject the *Commercial Bulletin* (Boston) says: "The American Flax Company, of this city, have in operation at Watertown a mill where they have perfected their machinery to work up the straw into a fibrous material, which has been successfully spun into yarns, and woven into cloth with the different mixtures of wool and cotton. The straw, after passing through the crusher, comes out the quality of tow; it then passes through the various processes necessary to remove any of the woody substance and the gluten; and from the bleachery comes out a beautiful white, resembling cotton. We have seen plain cloth, calicoes, jeans and hosiery, with a mixture of from 25 to 50 per cent of flax cotton with the cotton and wool. With the former mixture the fabric presents a body superior to entire cotton; and with the latter the presence of the mixture (unlike the mixture of cotton and wool), is hardly discernable."

*Shoemakers' Strike.*—The shoemakers of Lynn and other towns in Massachusetts are now upon a strike for higher prices in most all styles of work. Some of the manufacturers, it is stated, are willing to advance, if all others agree to do so. It is admitted that the prices paid to journeymen are too low; but as there is a large quantity of goods on hand, it is held that manufacturers are not anxious to do much work at present, and that the strike will not affect them so injuriously as the workmen. Dr. Chalmers, in his political writings, counsels mechanics, when prices are low and the market overstocked, to cease from producing, as the best means of affording themselves a proper remedy.

## THE RISE AND PROGRESS OF INVENTIONS.

### ADVICE TO INVENTORS.

During the period of Fourteen Years which has elapsed since the business of procuring patents for inventors was commenced by MUNN & Co., in connection with the publication of this paper, the number of applications for patents in this country and abroad has yearly increased until the number of patents issued at the United States Patent Office last year (1859) amounted to 4,538; while the number granted in the year 1845—fourteen years ago—numbered 502—only about one-third as many as were granted to our own clients last year; there being patented, through the Scientific American Patent Agency, 1,440 during the year 1859. The increasing activity among inventors has largely augmented the number of agencies for transacting such business, and at this time there is scarcely a town of 4,000 inhabitants, but has its patent agent, patent lawyer, patent solicitor, or patent attorney, all of which terms are used to convey the same idea—viz., that their services are offered to the inventor or patentee for a pecuniary consideration.

In this profession, the publishers of this paper have become identified with the universal brotherhood of Inventors and Patentees at home and abroad, at the North and the South; and with the increased activity of these men of genius we have kept pace up to this time, when we find ourselves transacting a larger business in this profession than any other firm in the world. Year after year, we have increased our facilities for transacting patent business, by gathering around us a large corps of the most eminent engineers, draughtsmen and specification writers that can be procured. Among these gentlemen are those who have been connected with the United States and Foreign Patent Offices. The latest engagement we have made is the association with us of Hon. Charles Mason, formerly COMMISSIONER OF PATENTS, and favorably known to the Inventor as their friend and advocate. The memory of his acts while holding this high position will be cherished by many an honest inventor with gratitude as long as he lives.

The arrangement made with Judge MASON renders our facilities for prosecuting all kinds of patent business complete, however ample they were before; and without being accused of egotism, we may safely assert that no concern has the combined talent and facilities that we possess for preparing carefully and correctly applications for patents, and attending to all business pertaining to patents, such as Extensions, Appeals before the United States Court, Interferences, Opinions relative to Infringements, &c.

#### FREE EXAMINATION OF INVENTIONS.

Persons having conceived an idea which they think may be patentable are advised to make a sketch or model of their invention, and submit to us, with a full description, for advice. The points of novelty are carefully examined, and a reply written corresponding with the facts, free of charge. Address MUNN & CO., No. 37 Park-row, New York.

#### PRELIMINARY EXAMINATIONS AT THE PATENT OFFICE.

The advice we render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there, but is an opinion based upon what knowledge we may acquire of a similar invention from the records in our Home Office. But for a fee of \$5, accompanied with a model or drawing and description, we have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a patent, &c., made up and mailed to the inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through our Branch Office, corner of F and Seventh streets, Washington, by experienced and competent persons, under the direction of a gentleman who has spent a lifetime about the Patent Office. Over 1,500 of these examinations were made last year through this office, and as a measure of prudence and economy, we usually advise inventors to have a preliminary examination made. Address MUNN & CO., No. 37 Park-row, New York.

#### CAVEATS.

Persons desiring to file a caveat can have the papers prepared on reasonable terms, by sending a sketch and description of the invention. The government fee for a caveat is \$20. A pamphlet of advice regarding applications for patents and caveats furnished gratis on application by mail. Address MUNN & CO., No. 37 Park-row, New York.

#### HOW TO MAKE AN APPLICATION FOR A PATENT.

Every applicant for a patent must furnish a model of his invention, if susceptible of one; or if the invention is a chemical production, he must furnish samples of the ingredients of which his composition is composed for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the government fee, by express. The express charges should be prepaid. Small models, from a distance, can often be sent cheaper by mail. The safest way to remit money is by draft on New York, payable to the order of Munn & Co. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but if not convenient to do so, there is but little risk in sending bank bills by mail, having the letter registered by the postmaster. Address MUNN & CO., No. 37 Park-row, New York.

#### REJECTED APPLICATIONS.

We are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted are invited to correspond with us on the subject, giving a brief history of their case, enclosing the official letters, &c.

#### FOREIGN PATENTS.

We are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business we have offices at Nos. 66 Chancery Lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can safely say that three-fourths of all the European patents secured to American citizens are procured through our Agency.

Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Any one can take out a patent there.

Circulars of information concerning the proper course to be pur-