

fingers as cool as may be. The salt is less than an ounce to a pound; but not generally much less. The balls each weigh one pound, and receive a uniform stamp. On packing for market, each ball is wrapped in a linen cloth, with the name and stall of the marketman written upon it. Our tubs are made of cedar plank, 1½ to 2 inches thick, and lined with tin. On the inner face are projections, on which the shelves rest. The balls are not bruised or pressed at all, and pass into the hands of the customers as firm, as perfect in outline, and as spotless as when they left the spring house.

"We find uniformity to be a prime virtue in the butter-maker. We produce the same article whether the cows stand knee-deep in white clover blooms, or sun themselves on the lee side of the barn in February.

"There is a small ice chamber at the end of the oblong butter tub which we use in summer, so that in dogdays the heat within the tub does not get higher than 60° Fahrenheit. I need not add that we observe a scrupulous, a religious neatness in every act and in every utensil of the dairy. Milk which, upon leaving the udder, passes through an atmosphere loaded with stable fumes will never make butter for which we can get a dollar per pound. No milk sours upon the floor of the milk room; none is permitted to decompose in the crevices of the milk pans; the churn is scoured and scalded till no smell can be detected but the smell of white cedar.

"Our customers take the napkins with the prints, wash, iron, and return them when they come to the stand on market day. These are generally Wednesdays and Saturdays. With these prices we have no difficulty in making a cow pay for herself twice a year; if she cost \$60, we sell \$120 worth of butter from her in twelve months."

It may be remarked that the sour milk is employed by the Philadelphia butter makers as food for swine. It is estimated that such milk will make 100 pounds of pork per cow.

The cows in the district where the Philadelphia butter is made are well sprinkled with the Jersey or Alderney blood, and about a pound per day from each cow is considered a fair average for the best dairies.

The University Athletic Contests.

The annual regatta of the American Universities took place on Saratoga Lake, N. Y., on the 15th of July. An immense concourse of spectators was present. The distance, three miles, was accomplished by the respective crews in the following time and order:

Place.	Time.
	M. S.
1. Cornell.....	16 53¼
2. Columbia.....	17 04¼
3. Harvard.....	17 05¼
4. Dartmouth.....	17 10¼
5. Wesleyan.....	17 13¼
6. Yale.....	17 14¼
7. Amherst.....	17 23¼
8. Brown.....	17 33¼
9. Williams.....	17 43¼
10. Bowdoin.....	17 50¼
11. Hamilton.....	Not taken
12. Union.....	Not taken
13. Princeton.....	Not taken

The victory of the Cornell crew gave great satisfaction to all except the losers.

During the foot races, which took place on July 16, some remarkably rapid walking and running was accomplished. The first trial was a one mile run, in which Messrs. Copeland, of Cornell, Barber, of Amherst, Fort, of Wesleyan, and Shute, of Williams, took part. The Amherst representative won the race in 4m. 44s., coming in about a yard ahead of the Cornell man. The others withdrew during the contest.

Cornell, Williams, Wesleyan, Princeton, and Harvard contested the one mile walk. Mr. Platt, of Williams, won in 7m. 50s. Times of others not given.

The quarter mile run was won by Mr. Culver, of Union, who reached the goal in 55½ seconds, closely followed by Yale and Cornell. The severest contest was the seven mile walk. The record is as follows: Mr. Taylor, of Harvard, won in 65m. 5½s., Mr. Driscoll, of Williams, second—fainted at end; Mr. Boyd, of Columbia, third. The Dartmouth and Wesleyan representatives broke down and withdrew. The half mile run was gained by Mr. Trumbull, of Yale, in 2m. 6½s., against one competitor (Amherst), who came in 50 feet behind. The three mile walk was easily won by Mr. Taylor, of Harvard, in 25m. 23s. Mr. Platt, of Williams, came in second, in 26m. 16½s.; the third competitor (Brown) broke down. Mr. Culver, of Union, won the 100 yard dash in 10½s., Williams second, and Yale third. An exciting three mile run was won by Mr. Morell, of Amherst, in 14m. 17s., the Wesleyan and Columbia competitors withdrawing before the finish. Mr. Maxwell, of Yale, won the hurdle race against three others; no time given. The graduates' seven mile run was gained by Mr. Eustis, of Wesleyan, over Mr. Gunster, of Williams, by ten feet; time 69m. 49½s. Suitable prizes were awarded to the various winners by ex-Governor Hoffman.

Cultivate Good Manners.

It is one of the laws of our being that every inward disposition is strengthened by the outward expression which represents it. Besides this, so much of human happiness is dependent upon the manners that no truly benevolent person, if thoughtful, can disregard them. We have all experienced the charm of gentle and courteous conduct; we have all been drawn irresistibly to those who are obliging, affable, and sympathetic in their demeanor. The friendly grasp, the warm welcome, the cheery tone, the encouraging word, the respectful manner, bear no small share in creating the joy of life; while the austere tone, the stern rebuke, the sharp and

acrid remark, the cold and indifferent manner, the curt and disrespectful air, the supercilious and scornful bearing, are responsible for more of human distress, despair, and woe than their transient nature might seem to warrant.

Whether we aim at self-improvement or the well-being of others, success is largely dependent on our outward demeanor. No one can slight it with impunity. It has many counterfeits and shams which are truly despicable; but where pure motives are supreme, and the aims of life are worthy, the culture of manners is an essential means of progress, conferring dignity and grace upon every noble endeavor.—*Philadelphia Ledger.*

At the recent Bunker Hill Celebration in Boston, the National Tube Works Company was represented by some fine specimens of lap-welded wrought iron tubing, drawn by six large black horses on a wagon tastefully draped with bunting. The tubing, some of the specimens of which were very large, was effectively arranged to represent a cannon on a gun carriage. The carriage was made of tubing, six sections on a side, the cannon being represented by a section of lap-welded tubing twelve inches in diameter, said to be the largest manufactured in the world. On each of the tubes of which the carriage is composed is the name of one of the original thirteen States, and on the large tube representing the big gun was inscribed:

"Massachusetts, 1775—Our Union Welded—1875."

To remove fruit stains from napkins, etc., wet the spots with chlorine water.

DECISIONS OF THE COURTS.

United States Circuit Court—District of Massachusetts.

DAVID M. WESTON *et al.* vs. NATHANIEL C. NASH *et al.*—PATENT SUGAR MACHINE.

[In equity.—Before SHEPLEY, J.—Decided April, 1875.]
The fifth claim of reissued patent of David M. Weston for "Improvement in Centrifugal Machines for Draining Sugar, etc.," dated January 14, 1868, (original dated April 9, 1867), namely, "the construction of the openings, I, in the bottom of the cylinder in such machines, and the valve, J, for the purpose of closing the same, substantially as described"—is not limited to such centrifugal machines only as are constructed in all respects like those described in these specifications.

The term "such machines" in this claim means such centrifugal machines as are so constructed as to admit of the application and operation of the claimed devices in substantially the described mode and by substantially the described means.

The unauthorized use of complainants' openings and valves would be an infringement if used in centrifugal machines, to which they could be successfully applied by reason of there being an unobstructed space at the bottom of the machine, into which the sugar could fall, although the cylinders were not suspended as shown in the patent.

The Weston invention is not anticipated by the device shown in the British patent of Hardman, of 1813, in which the openings in the bottom plate of the rotary cylinder are closed by a disk or plate held up against them while the machine is in operation by a nut and spring, and simply lowered, without being removed, so as to leave a free and unobstructed space, when the sugar is to be discharged.

Nor by the Allott machine, described in English patent of February 3, 1851, in which the bearings of the shaft and its foundations are directly under the cylinder, so as to render impossible a free and unobstructed space below the cylinder into which the sugar may be discharged.

Although the defendants' valve is operated by turning on the shaft, and, in this respect, may be an improvement upon the valve of the patent, which moves up and down on the shaft, this is not a substantial difference. It is but another form of the same device, with the same mode of operation, so far as the operation is concerned to which the whole device relates—that of discharging through the bottom of the cylinder the purged contents of the charge.

[George L. Roberts, for complainants.
James B. Robb, for defendants.]

United States Circuit Court—Southern District of New York.

WILLIAM WICKES vs. HENRY AND BARBARA KLEINKNECHT.

[In equity.—Before BLATCHFORD, J.—December, 1874.]
Where a machine was licensed for use in a particular territory: Held, that the use of it, by subsequent purchasers, in territory other than that for which it was licensed, was unlawful.

The mere fact that the agent of the patentee, after the transfer of the machine to the unlicensed territory, demanded of the purchasers the back royalties due upon it, conferred no right to use it outside the territory named in the license.
This was an action brought by the complainant, as assignee of certain territory under the patent of George Wickes, granted to the latter June 16, 1863, for a box-making machine. The facts were as follows: The complainant, by assignment, acquired the exclusive right under said patent for the State of New York. The remaining territory was owned by the original patentee, but the complainant was his attorney authorized to collect royalties and grant licenses for said territory. Under this power of attorney he licensed one Oppel to use one of the patented machines in Newark, N. J. Oppel sold this machine to the defendants, who took the same to New York, and there used it. Suit was brought, and defendants pleaded an implied license, which they claim they derived from the complainant through his demand on them for payment of certain royalties due from Oppel at the time he sold the machine.

BLATCHFORD, J., in his case leaves no doubt that the plaintiff is entitled to a decree. By the purchase by one of the defendants from Oppel of the machine in question, and by the transfer from Oppel to such defendants of the rights of Oppel under the written license given by George Wickes to Oppel, neither of the defendants acquired any right to use such machine in the territory belonging to the plaintiff under the patent.

The plaintiff was the agent of George Wickes in respect to the license to Oppel, and he never demanded any license fee from either of the defendants in respect of any other use of the machine than use of it under and in accordance with the terms of the license to Oppel, which did not embrace a use of it in territory owned by the plaintiff.

Oppel had no right to use the machine in the plaintiff's territory, and could convey none. The plaintiff has given no license, direct or indirect, express or implied, to either of the defendants to use the machine in his territory.
[V. Briesen, for complainant.
J. Van Santvoord and F. Forbes, for defendants.]

NEW BOOKS AND PUBLICATIONS.

WILLARD'S PRACTICAL BUTTER BOOK—a Complete Treatise on Butter Making. By X. A. Willard, M. A. Illustrated. Price \$1.00. New York city: Rural Publishing Company.

Mr. Willard has long been known to dairymen and agriculturists as President of the New York State Dairymen's Association, as editor of the dairy department of Moore's *Rural New Yorker*, and in general as a practical butter maker of considerable experience. Hence in the work before us—which we believe is the first ever published devoted wholly to the subject of butter and its manufacture—the advice, practical hints, and suggestions and discussions given emanate from one certainly conversant with his subject in all its branches. The book is, in fact, a complete repository of information for farmers and dairymen, as it treats of everything relating to butter, from the selection, management, and raising of the stock, to the planning of dairies and the merits of the various patented inventions which have been made to facilitate dairy processes. Its low price places it within the reach of every farmer.

HOW TO TEACH CHEMISTRY: Hints to Science Teachers and Students, being the Substance of Six Lectures, delivered at the Royal College of Chemistry, in June, 1872. By Edward Frankland, D.C.L., F.R.S., Professor of Chemistry in the Royal School of Mines. Price \$1.25. Philadelphia, Pa.: Lindsay and Blakiston, 25 South 6th street.

The teachers of physical science are largely indebted to Dr. Frankland for this book, which is an admirable and concise treatise on all the methods of exemplifying the action of the chemical forces. It commences with the very simplest experiments, and does not quit its subject until the most elaborate apparatus and its manipulation are fully described. By careful study of this little volume, lecturers and teachers can learn the whole art of illustrating their discourses.

ELECTRICITY, ITS THEORY, SOURCES, AND APPLICATIONS. By John T. Sprague, Member of the Society of Telegraphic Engineers. New York city: E. & F. N. Spon, 446 Broome street.

Mr. Sprague is well known as a writer of authoritative papers on electrical subjects, and many articles from his pen have been printed in our columns. In collecting the most elaborate of these papers into a volume, he has given us a text book of the greatest value, a manual complete, exhaustive, and practical. The chapter on electrolysis is worthy of special commendation and the section devoted to electro-metallurgy is a complete compendium of the art. The book is handsomely illustrated.

THE CONE AND ITS SECTIONS TREATED GEOMETRICALLY. By S. A. Renshaw, of Nottingham, England. Price 12s. 6d. (\$3, gold). London: Hamilton, Adams, & Co., Paternoster Row.

This is an admirable treatise on the properties of the cone and the great importance of those properties to the art of mensuration. The primary properties of the sections are derived from the cone itself, the author following the example of Hamilton in reverting to the method of Apollonius of Perga, whose treatise on conic sections laid the foundation of the science, and whose system has not been superseded by the thousands of books which have since been written on the subject. Mr. Renshaw has reduced all his theories and problems into propositions of the most orthodox form, and has naturally succeeded in imparting comprehensibility and logical demonstration to a complex subject. He has produced a very interesting volume, and enriched it with illustrations of great value.

POPULAR RESORTS, AND HOW TO REACH THEM, combining a Brief Description of the Principal Summer Retreats in the United States and the Routes of Travel Leading to Them. By John B. Bachelder, Author of "The Illustrated Tourist's Guide," etc. Illustrated with One Hundred and Fifty-Two Engravings. Price \$2.00. Boston, Mass.: John B. Bachelder, 41 Franklin street.

The desire to travel is universal; and the favorite recreation of all classes, in their leisure hours few or many, is found either in visiting the haunts of men, to observe the changes in social life and manners, or in fleeing from cities to view the works of Nature. Mr. John B. Bachelder, whose numerous works on the topography of the battlefield of Gettysburg are widely known, has collected, in the volume now before us, a vast amount of information on nearly all the pleasure grounds of the United States, and has placed it before his readers in a most attractive and readable form. The illustrations are especially commendable, and the work is sure to have a large sale at the present time, to which its intrinsic merits fully entitle it.

HANDBOOK OF LAND AND MARINE ENGINES, including the Modeling, Construction, Running, and Management of Land and Marine Engines and Boilers. With Illustrations. By Stephen Roper, Engineer, Author of "A Catechism of High Pressure or Non-Condensing Engines," etc. Philadelphia, Pa.: Claxton, Remsen, and Haffelfinger, 624 to 628 Market street.

Mr. Roper needs no introduction to our readers as a competent and trustworthy authority on steam engineering; and the present volume will prove useful to all operatives who desire a treatise combining scientific accuracy with a popular style, free from formulas and ultra-mathematical expressions. The tables with which the book is interspersed are numerous and valuable; and there is at the end an interesting historical account of the steam engine.

PRACTICAL GUIDE TO THE DETERMINATION OF MINERALS BY THE BLOWPIPE. By C. W. C. Fuchs, Professor in the University of Heidelberg. Translated by T. W. Danby, M. A., F.G.S., Associate of the Royal School of Mines. Price \$2.50. Philadelphia, Pa.: Claxton, Remsen, and Haffelfinger, 624 to 628 Market street. New York city: D. Van Nostrand, 23 Murray and 27 Warren streets.

This treatise is adapted to the use of any one who desires to easily recognize and comprehend the qualities of any mineral, provided he has an initial acquaintance with chemical manipulation. Although the work is fully descriptive, it is compendious, and will be found well adapted to use in the field.

INSECTS OF THE FIELD. By A. S. Packard, Jr., Editor of "The American Naturalist." Price 25 cents. Boston, Mass.: Estes and Lauriat, 143 Washington street. New York city: Dodd and Mead.

A very interesting little treatise, adapted for students' and amateurs perusal. It forms part 7 of the publishers' excellent series of "Half Hour Recreations in Natural History."

GREATER CHICAGO, Illustrating the Buildings Recently Erected in the Reconstructed City. Price \$1.00. Chicago, Ill.: J. M. Wing & Co., Ashland Block.

This pamphlet consists entirely of illustrations, which are intended to convince the world that Chicago's commerce is on a scale commensurate with her indomitable energy and the public spirit of her citizens. Many of the buildings represented are of considerable architectural merit.

A BRIGHT MOON, SUN, AND STAR SHINING POCKET MIRROR OF THE UNIVERSE. By D. L. Stinchfield, New Richmond, Ohio.

"Our spiritual kingdom of Heaven is three times divided," says our author, "vertically into the three seats, or two antagonistic, positive and negative extremes, and their saving mediator with positive electricity found at the bottom of this great spiritual and pacific and specific ocean of the atmosphere." There is some deep significance in this; and as we feel bound to confess our inability to extract it, we cheerfully resign the task.

STATEMENT OF REASONS FOR EMBRACING THE DOCTRINES AND DISCLOSURES OF EMANUEL SWEDENBORG. By the Rev. George Bush. New York city: E. H. Swinney, 20 Cooper Union.

GRANULATION OF GUNPOWDER. By Commodore J. D. Marvin, U. S. N. Naval Experimental Battery, Annapolis, Md.

THIRD ANNUAL REPORT OF THE BOARD OF MANAGERS OF THE ZOOLOGICAL SOCIETY OF PHILADELPHIA, PA.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

- From May 18 to June 3, 1875, inclusive.
- AMALGAMATOR.—S. F. Clouser, New York city.
- BLANKS FOR SHOVELS.—E. Bluns *et al.*, Pittsburgh, Pa.
- BOILER BATTERY.—G. Crompton, Worcester, Mass.
- BOTTLE STOPPER, ETC.—N. Thompson (of Brooklyn, N. Y.), London, Eng.
- CARDING MACHINE, ETC.—G. S. Harwood, Boston, Mass.
- COMBINATION FURNITURE, ETC.—A. E. Barnes, New York city.
- ELECTRIC ENGINE.—C. A. Hussey, New York city.
- ELECTRIC MOTOR.—H. M. Paine *et al.*, N. J.
- FLOODING TO PREVENT FIRE.—J. H. Morrell, New York city.
- FURNACE BAR.—C. Toop, New York city.
- GAS ENGINE.—D. V. Bruce *et al.*, San Francisco, Cal.
- GAS STOVE.—J. J. West, Chicago, Ill.
- HOIST.—W. D. Andrews, Brookhaven, N. Y.
- LAMP, ETC.—H. G. Moehring, Philadelphia, Pa.
- LATHE.—A. Wood, Worcester, Mass.
- LIQUID METER.—H. S. Maxim, Brooklyn, N. Y.
- MAKING ALKALIES, ETC.—J. Bennett, Mich.
- REGULATING CLOCKS, ETC.—L. Eaton, Worcester, Mass.
- SAIL HANK.—D. G. Low, Chelsea, Mass.
- SREWING PIPES, ETC.—F. W. Allin, New York city.
- SEWING MACHINE.—J. J. Thompson, New York city.
- SHOVEL, ETC.—T. J. Blake, Pittsburgh, Pa.
- SMELTING IRON, ETC.—W. Rogers, Leechburg, Pa.
- SPARK ARRESTER, ETC.—T. Shaw, Philadelphia, Pa.
- STEAM ENGINE.—F. Aiden *et al.*, Pittsburgh, Pa.
- STEAM PUMP.—C. H. Hall, New York city.
- TINNED PLATE.—G. E. Taylor, Philadelphia, Pa.
- TOY MENAGERIE.—C. M. Crandall, Montrose, Pa.
- TREATING WASTE GASES, ETC.—J. Turner, Chicago, Ill.
- WATER METER.—P. Ball *et al.*, Worcester, Mass.
- WHEEL AND AXLE.—R. W. Davis, Flushing, N. Y. *et al.*