

DECISIONS OF THE COURTS.

United States Circuit Court--District of Massachusetts.

TRADEMARK CONTRACT.—ANDREW COE vs. WILLIAM L. BRADLEY.

[In equity.—Before Shepley, J.—Decided October term, A. D. 1875: To wit, February 17, 1876.]

Shepley, J.: This bill is filed upon a written contract between the parties, dated February 13, 1862. By this contract Coe assigns to Bradley the exclusive use for seven years of his trademark, "Coe's Superphosphate of Lime," reserving a limited right previously granted to the firm of Coe & Co. Coe covenants that he is the exclusive owner of said trademark, with the exception above named. He constitutes Bradley his attorney, irrevocably, with authority to prosecute any suits necessary to make his rights available, and protect himself in their full enjoyment.

These are the only express covenants and agreements on the part of Coe. Bradley covenants to energetically prosecute the business of manufacturing and selling the superphosphate, and continue to make it of as good quality as that before made by him, and so long as the agreements above mentioned shall be kept by Coe, Bradley shall have use of the trademark, to pay him one third of the net profits of the business, and of other "bone business," first reserving out of the profits of the business, as his own compensation, three thousand dollars.

This clause is also to be found at the close of the contract: "Any breach of the agreements above cited by either party or his representatives shall be a release to the other party and his representatives from all obligations by him or them to be performed but for such breach."

By a supplementary contract of May 2, 1862, between Coe and Bradley, and Russell and Coe, and Elmore Coe, the plaintiff's share of profits is reduced from one third to one sixth part.

During the existence of this contract Coe (in violation of his agreement, as implied from his conveyance of the exclusive right of the trademark to Bradley), at Chelsea and other places, manufactured and put on the market a fertilizer of an inferior quality, sometimes under the trademark of "Coe's Superphosphate of Lime," and sometimes "Andrew Coe's Superphosphate of Lime," which last name so nearly resembled the original trademark that it was calculated to deceive and mislead purchasers, and therefore the use of it was as much a violation of his implied agreement with Bradley as the unauthorized use of the words "Coe's Superphosphate of Lime." A court of equity will examine to see if the differences are merely colorable. (Dixon Crucible Co. vs. Guggenheim American Trade Mark case, 559; Kent Com. 13th Ed., §366, cases in note. Meriden Britannia Co. vs. Parker, 39 Conn., 450.)

On the part of the defendants that such unauthorized use of the trademark by Coe himself, in violation of the letter and spirit of the contract, was such a breach of the contract as exonerated the defendants from any liability to account and pay over to the complainant one sixth part of the profits of the manufacture under the contract. In support of this position reliance is placed on the clause in the contract that "any breach of the agreements above cited by either party or his representatives shall be a release to the other party and his representatives from all obligations by him or them to be performed but for said breach." The effect of this clause in the contract is only to enlarge the right of rescission, and enable one party to discharge himself from the contract, and terminate his obligations under it, at his election, in case of the failure of the other party to perform some portion of the contract not otherwise regarded as an essential part of one entire act. (Wallace vs. Shovel Co., 44 N. H., 521.)

But, although Bradley well knew that Coe was manufacturing and selling under the trademark, in violation of his implied agreements under the contract, and of an express agreement under a later and supplementary contract, he did not elect to terminate his obligations and abandon his rights under the contract by rescission, but continued to manufacture in great quantities, and to put the manufactured article upon the market under the trademark. No construction can be put upon the clause which would enable one party to the contract to enjoy the fruits of it without compensation, upon the ground that the other party had failed to perform some stipulation on his part which was not so essential to the contract, but that the breach of it could well be compensated by damages.

The claim of the defendant that the covenants broken by the complainants were of such a nature that no recovery can be had by him of the defendant cannot be sustained. The consideration of the promise of Bradley was the conveyance by Coe of the exclusive right to the trademark, and there is no question but that the conveyance was operative to vest in Bradley the exclusive right to it for the term of seven years, subject only to the exception in the contract itself. The express covenant of Coe was only of exclusive ownership in himself, and that no persons besides the excepted party specified had been authorized to use it. There has been no breach of this express covenant. The implied covenant that he would not himself be a trespasser or infringer on the right and title he had vested in Bradley is the one which he violated, and Bradley had a right to elect to retain the title and claim damages against Coe for infringement of his right, or to rescind the contract under the final clause enlarging his right of rescission.

Where a covenant goes only to a part of the consideration on both sides, and a breach of it may be paid for in damages, it is an independent covenant, and an action can be maintained for a breach of the covenant on the part of the defendant without averring performance in the declaration.

Where the plaintiff's covenants which form the consideration be dependent, yet if part of the consideration be accepted and enjoyed by the defendant, and the plaintiff have no other remedy than on the covenant, and the breach on the part of the plaintiff can be compensated in damages, the plaintiff may recover without averring performance of the residue. (Stevens vs. Curling, 3 Bing., N. C. 354; Cutter vs. Powell, 2 Smith, L. C. cases in note; Fordage vs. Cole, 1 Saund., 320, and Williams' Note; Campbell vs. Jones, 5 T. R. 573; Carpenter vs. Cresswell, 4 Bing., 409; Foster vs. Purdy, 5 Met., 442-44; Wallace vs. Shovel Company, 44 N. H., 521.) These are the well settled rules applicable to proceedings in courts of law.

Courts of equity interpret the interpretation of contracts, allowing a specific performance of a contract sometimes to be enforced at the suit of a party who has not punctually performed the contract on his own part, but has been in default, where the default on his part is such as admits of compensation. In Hayward vs. Angell (1 Vern., 223), the Lord Keeper said "in all cases where the matter lies in compensation, be the condition precedent or subsequent, be thought there ought to be relief." The defendant relies upon certain other contracts set up in his answer between himself and the complainant. Two of these are prior in date to the contract of February 13, 1862, and it is not perceived how that contract is affected by them. The subsequent contracts recognize the right to the trademark which Bradley has under the contract of February 13, 1862, but do not confer upon him such a right independent of that contract. The contract of August 1, 1862, recognizes the existence and validity of the previous contracts.

The case should be referred to a master to report the amount to which the complainant is entitled for his one sixth part of the net profits under the contract, and also to report what sum is to be allowed the complainant in reduction, by way of compensation in damages for the infringement of the defendant's exclusive right to the trademark by the complainant by his use during the term of the trademark "Coe's Superphosphate of Lime," or of the trademark "Andrew Coe's Superphosphate of Lime."

Decree for reference to master in accordance with the opinion to be prepared and submitted to the court. [George S. Boutwell, for complainant. H. G. Parker, for defendant.]

NEW BOOKS AND PUBLICATIONS.

WATER WHEELS, OR HYDRAULIC MOTORS. By M. Bresse, Professor of Mechanical Science at the School of Bridges and Highways, Paris, France. Translated by F. A. Mahan, U. S. A. Price \$2.50. New York city: John Wiley and Son, 15 Astor place.

The author of this book is one of the most eminent of contemporary civil engineers; and his work is the standard authority in Europe on its subject. The value of such a treatise to our professional men cannot be over-rated, as there is no country in the world which is so liberally endowed with water power as ours, nor one in which that grand gift of Nature is so thoroughly and ingeniously utilized. Professor Bresse treats the whole subject in an exhaustive and authoritative manner, and he places before his readers some methods of utilizing water power which are not generally known in this country. The analysis of the turbine is excellently shown in this work, and chapters on pumps form a treatise which will be of value to the many engaged in manufacturing the thousands of these machines sent out every month. Lieutenant Mahan has executed his task with care and fidelity, and has rendered the book more valuable to the general reader by translating the French measures with English.

MODERN AMERICAN HOMESTEADS. Illustrated by Forty-Six Plates.

By Daniel T. Atwood, Architect, Author of "Designs for Country Homes," etc. New York city: A. J. Bicknell & Co., 27 Warren street.

Among the many books on this subject which have reached us lately, there has been none to compare, in excellence and variety of designs, with this volume. The illustrations include cottages and homesteads, dairies and ice houses, stables and outbuildings, as well as residences in all parts of the country, varied to suit different climatic conditions. Full descriptions, specifications, and statements of probable cost accompany the designs. This work will be especially useful just now, as many persons commence building at this season of the year; and to such we cordially recommend the book as a practical authority.

THE TEXTILE COLORIST, a Monthly Journal of Bleaching, Printing, Dyeing, and Finishing Textile Fabrics, and the Manufacture and Application of Coloring Matters. Edited by Charles O'Neill, F.C.S., Author of "Chemistry of Calico Printing, Bleaching, Dyeing," etc. Nos. 2 and 3. Subscription Price, \$12 a year. New York city: John Wiley & Son, 15 Astor Place.

As our printed cotton manufacturers are now opening a large trade abroad, the efficiency of the dyeing processes and the permanency of the tints are matters of especial importance, as their products are to be placed in competition with the renowned fast colors of England and the simple and correct taste with which the French manufacturers ornament their textile fabrics. The publication now before us is likely to be of eminent

use in aiding our manufacturers to improve their wares. It is edited by an undoubted authority, and filled with contributions by the best practical men of the day; and the illustrations consist of pieces of stuff, dyed and finished, affixed to the pages. Although a thoroughly technical journal, it is full of interest, the article on dyeing wool and silk at the celebrated Gobelins factory, near Paris, France, being especially commendable.

THE AMERICAN SOCIALIST, devoted to the Enlargement and Perfection of Home. Published Weekly. Subscription Price, \$2 a year. Oneida, N. Y.: The Oneida Community.

The peculiar views of domestic morality which have made the Oneida community notorious are advocated in this publication with as much temerity as in the Oneida Circular; and they are not likely to find much favor with the world at large, whose wholesome prejudice in favor of conjugal fidelity is the safeguard of society, and who view with especial disfavor any attempt to elevate promiscuous intercourse into a religion.

THE ENGINEERS' AND CONTRACTORS' ILLUSTRATED BOOK OF PRICES OF MACHINES, TOOLS, IRONWORK, AND CONTRACTORS' MATERIAL, FOR 1876. New York city: E. and F. N. Spon, 416 Broome street.

This book is one of the best trade manuals we have seen for some time. It consists of complete priced catalogues of the manufactures of nearly 100 large firms, printed uniformly and illustrated. Machinists, architects, and builders will find it especially useful, as in it may be found descriptions and engravings of nearly every kind of work in metal, with the price at which each article is now put on the market. It is very creditably got up, and is a handsome volume.

THE STATIONER'S HANDBOOK, a Practical Business Guide for the Use of Retail Stationers and Booksellers. Edited by H. D. Monachesi and A. B. Yohn. Price \$1.50. New York city: Office of the Publisher's Weekly, 37 Park Row.

This volume contains a large amount of practical trade information, embodied in interesting treatises on various branches of the trade. These are supplemented by full and comprehensive price lists of the leading stationers.

THE AMERICAN MECHANIC, an Illustrated Journal devoted to the Interests of Inventors, Manufacturers, and Consumers. Vol. I., No. 1. Published Monthly. Subscription Price, \$1 a year. New York city: Munson & Wilkinson, 239 Broadway.

Another new industrial paper. We hope our young contemporaries are not crowding each other uncomfortably.

PRACTICAL INSTRUCTION IN THE ART OF WOOD ENGRAVING. By Charles W. A. Emerson. Price 50 cents. East Douglas, Mass.: J. Batcheller.

A handy little treatise on a beautiful and useful art.

PSYCHE, the Organ of the Cambridge Entomological Club. Published Monthly. Price, \$1 a year. Cambridge, Mass.: Published by the Editor.

THE METER-DIAGRAM.—This is a neat chart, published by Messrs. A. & T. W. Stanley, of New Britain, Conn., the main object of which is to familiarize the student with the metric system of measurement. A yard measure, subdivided into feet, inches, and fractions, is printed beside a meter measure, also divided, but into decimal portions. This gives at once, by mere inspection, an idea of the relations of the two systems. Besides, the chart includes various tables and explanatory notes. Publications of this kind are both useful and needed, since it is eminently desirable that the public should become familiarized with the metric system. A treaty between this country and the majority of all the nations in the world is now pending, whereby the meter is made a standard of international measure, so that it is reasonably certain that, before very many years, our present clumsy system of feet and inches will have given place to that in which, as in our currency, the fractions are decimal parts of the whole.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From February 4 to March 23, 1876, inclusive.

- BREECH-LOADING CANNON.—J. R. N. Owen, Hamilton, Nev.
- BRIK MACHINE, ETC.—E. R. Gard, New York city.
- CAR.—J. H. Small (of Buffalo, N. Y.), Glasgow, Scotland.
- CAR MOTOR.—A. P. Thayer, New York city.
- CARTRIDGE, ETC.—H. C. Bull, Brooklyn, N. Y.
- CENTRIFUGAL PUMP.—W. P. Andrews, Brookhaven, N. Y.
- COMPASS.—S. Bent, St. Louis, Mo.
- DIAMOND-CUTTING MACHINE.—H. D. Stover, New York city.
- DYEING FABRICS, ETC.—J. Harley, Lowell, Mass.
- FEEDING FURNACES.—W. C. Ford, Brooklyn, N. Y.
- FIRE ALARM, ETC.—W. B. Watkins, Jersey City, N. J.
- FOLDING MACHINE.—S. D. Tucker, New York city.
- GLOVE FASTENING.—C. R. Ferguson, Washington, D. C.
- HEAVING THE LEAD.—C. E. Kirtland, Milwaukee, Wis.
- HORSESHOE MACHINERY.—W. M. Greenwood et al., Cincinnati, Ohio.
- JOINING KNIT GOODS.—J. Bigelow, Boston, Mass.
- LAMP FILLER, ETC.—J. F. Collins, New York city.
- LANTERN.—J. M. Dietz, New York city.
- LIGHTING WITH OIL.—C. Godfrey, Huntington, N. Y.
- LOOM PICK.—H. McManus (of New York city), London, England.
- LUBRICATOR.—N. Seibert, San Francisco, Cal.
- MOWER AND REAPER.—W. A. Wood, Hoosick Falls, N. Y.
- NEEDLE MACHINE.—Cook and Porter Company, Boston, Mass.
- ORE SEPARATOR.—G. S. Redfield et al., Chicago, Ill.
- PRINTING METAL.—L. B. Smith, New York city.
- PROJECTILE.—H. M. Quackenbush, Herkimer, N. Y.
- PROJECTILE.—R. P. Parrott, Cold Spring, N. Y.
- ROTA ENGINE.—T. E. Stewart, Boston, Mass.
- SHIP'S TABLE.—E. P. S. Andrews, Boston, Mass.
- SLIDE VALVE INDICATOR.—J. S. Wallace, Bretland, Ohio.
- SOLAR CHRONOMETER.—M. Wheeler, Big Rapids, Mich.
- SPINNING MACHINERY.—J. Hunter et al., Adams, Mass.
- STEAM VALVE.—E. Cope et al., Hamilton, Ohio.
- STEAM WHISTLE.—C. McKiernan, Paterson, N. J.
- STRAW-SEWING MACHINE.—M. P. Carpenter, New York city.
- TREADLE.—C. Brantner, Reading, Pa.
- VARNISHING AND LINING MACHINE.—G. L. Jaeger, New York city.
- VENERING, ETC.—C. W. Spurr et al., Mass.
- VENTILATOR.—W. H. St. John, New York city, et al.
- WHEEL SKATE.—S. O. Brown (of San Francisco, Cal.), London, England.
- WIRE-BENDING MACHINE.—H. W. Putnam, Bennington, Vt.

Recent American and Foreign Patents.

NEW CHEMICAL AND MISCELLANEOUS INVENTIONS.

IMPROVED BELT FASTENING.

Thomas D. Brady, Baldwin, Pa.—In using the coupling, a certain number of holes are formed in the ends of the belt, which ends are then passed through the cavity of a frame. The holes are then passed over pins on a wedge-shaped bar, which is dropped into place in the cavity of the said frame. As the belt is run upon the belt wheel, this bar will be drawn down to its seat, securely clamping the ends of the belt between its sides and the sides of the frame. The object in view, in addition to providing a strong and secure fastening, is to leave a surplus of perfect belting at each coupling, to provide for the shortening up by breaks, and to leave no necessity for piecing at said breaks.

IMPROVED LAMP FUNNEL

William Bodey, Galion, O.—This is simply a metal funnel for filling lamps, made of conically tapering shape, with a side slot for inserting the spout of the oil can.

IMPROVED COMBINED DATING AND CANCELING STAMP.

Joseph Jay Schofield, Salt Lake City, Utah Territory.—This invention consists in the particular construction of a postmarking stamp and a canceling stamp made in one and the same piece, in combination with a vertically moving handle held up by a spring, which handle is provided with a laterally attached and interiorly screw-threaded tube or sleeve, which, passing down over a screw threaded shaft carrying the canceling disk, causes the latter to revolve, which, being provided with a series of sharp pins, tears a series of concentric circles and blots the postage stamp at the same stroke, at which the postmark is made.

TOOL FOR SHAPING THE NECKS OF GLASS BOTTLES.

John L. Stewart, Elliott City, Md.—This invention relates to the construction of a tool for forming the necks of that class of bottles which are to be closed by a stopper, having a bit upon the lower end, which, when turned, binds against a cam ledge. The invention consists mainly of a pair of jaws carrying a centrally located rod, surrounded by a loose tubular sleeve. The rod and sleeve each carry a key-shaped bit; and as the jaws clamp the neck of the bottle and are turned, the bit of the sleeve, being imbedded in the plastic glass, imparts to the rotating rod (through a cam) a longitudinal movement, which causes the bit of the rod to form a rising and falling cam in the plastic glass, with a keyhole-shaped orifice for the bottle.

IMPROVED CHEMICAL FIRE EXTINGUISHER.

Jacob B. Van Dyne, Louisville, Ky.—This invention relates to certain improvements in that class of chemical fire extinguishers, which are stationary and provided with a standpipe running up through the different stories. It consists in devices for mixing the chemicals from any of the upper stories without descending to the tank, and in devices for agitating the mixed chemicals simultaneously and with the same movement by which they are mixed.

IMPROVED INDEXING ROLLER.

John W. Dirhold and Henry F. Linnemeyer, St. Louis, Mo.—This invention relates to a novel construction of an adjustable indexing roller, or devices for printing the letters of the alphabet upon the margins of the front pages of a book. It consists mainly of a radial series of type-carrying sockets combined with a central adjusting screw, having a tapering middle portion, which, when the screw is turned, projects the type sockets farther from the center and expands the roller, so as to leave a greater space between the type or accommodate a larger size of type. The said type sockets are held in fixed position by a clamping ring with binding screws, and the device is rolled over the leaves to be printed by means of a detachable handle.

IMPROVED METHOD FOR PREPARING HAMS.

Alden B. Richardson, Dover, Del.—This invention relates to an improved method for preparing hams for the market; and it consists in first withdrawing the bone from the ham, and then packing the ham into a specially constructed can, after which it is hermetically sealed, and then cooked until it is sufficiently done to be ready for the table. The ham is thus cooked with all of its natural juices and flavors preserved; and in consequence of packing and cooking, the space left after the bone is withdrawn is perfectly closed, making the ham solid and homogeneous all through, so that the whole ham may be sliced through and through; and with the exception of a slight seam, the manner of preparing leaves no evidence of the former existence of a bone.

IMPROVED METALLIC SEAL.

Alphonse Friedrich, Brooklyn, N. Y.—This invention consists in the combination, with the compressible soft metal disk or button, having holes therethrough, of a loop made of lead, which is of such low degree of tenacity that when the button is compressed upon its ends the connection of the button with this loop is stronger than the tensile strength of the loop, so that the latter will break before it can be withdrawn.

IMPROVED EMBROIDERY FRAME

Ernest W. Karker, College Point, N. Y.—This invention consists of a couple of parallel rollers in a vibrating frame for holding and adjusting the canvas as the work progresses, the said roller frame being pivoted to a stand, which supports parallel rods below the rollers, on which a work box is fitted to slide along the frame from end to end for convenience of the operator. The roller frame is pivoted to the stand by clamping bolts and nuts, which hold the roller frame at any required inclination. The roller frame may also be used for drawing maps and the like, and is adapted for being mounted on a stand, suitable for field use by engineers.

IMPROVED SPONGE CUP.

William Robert Gratz, Baltimore, Md.—The object of this invention is to provide an improved sponge cup which will not become dry so soon and require such frequent wetting. It consists mainly in a sponge contained in a perforated receptacle maintained in an elevated position in a water reservoir, by means of a spring, so that, as the sponge becomes dry, its humidity may from time to time be renewed by simply depressing the sponge, which brings it in contact with the water in the reservoir.

IMPROVED TAG.

Joseph I. Donahue, Brooklyn, N. Y.—This inventor proposes a new metal eyelet for the string, constructed of two metal disks and fastened to the tag, one at each side. On each are tongues struck out of the hole for the string and locked through the hole of the opposite disk, also through the tag. This makes a very simple and secure contrivance.

IMPROVED OIL CAN.

William Young, Clarkston, Mich.—This inventor attaches to an oil can a small cylinder, having a spring piston. The forcing down of the latter drives the oil out through the nozzle of the can.

IMPROVED PIANO PEDAL ATTACHMENT.

Charles F. Cheesman, San Antonio, Texas.—This consists of a stool with foot levers and connecting wires, so constructed that it can be applied to pianos, for the use of children not large enough to work the ordinary pedals, merely by hooking the stool to the ordinary pedal support and setting the connecting rods in little sockets in the piano pedals.

IMPROVED REVOLVING FIRE ARM.

Freeman W. Hood, Norwich, Conn., assignor to the Hood Fire Arms Company, same place.—This consists in a pivoted spring pawl of the hammer with the ratchet of the cylinder, and a pawl stopping recess of the stock, to securely lock the pawl when the hammer is placed in cocked position. The cylinder may be reversed while the hammer is dropped, and the common stop device entering the notches of the cylinder is dispensed with.

IMPROVED BALE TIE.

James S. Herron, Pensacola, Fla., and Charles R. Herron, Savannah, Ga.—This consists of a band end with a closed L-shaped slot, in connection with the opposite band end, having notches at alternate sides, that lock into the slotted end. The notches are drawn through the L-shaped slot until they bind tightly on the bale.

IMPROVED AXLE GREASE

William Peters, Logansport, Ind.—This is a compound of black oil, hard tallow, wood ashes, white lime, salt, sulphur, and black lead.

IMPROVED FEATHER RENOVATOR.

Nathan P. Chaney, Pottsdam, N. Y.—The hollow drum for holding the feathers is constructed in two parts, of which the upper one is detachable and reversible for convenience in operating the machine. In the lower part is a perforated tube for introducing the steam, and a canal for carrying off the water of condensation, the canal being covered by a wire screen to prevent the feathers from falling into it. The drum also contains a revolving shaft with arms for stirring the feathers, and there is a steam jacket to the lower part, to which steam is admitted from a suitable boiler.

IMPROVED ANIMAL TRAP.

Henry F. Barnett and William Carpenter, Weston, Mo.—The animal sees the bait upon a hook through the open front end of a decoy box, and, approaching it, he enters the said box, walking upon the tilting platform. His weight causes the back end of the platform or door to descend, and he is precipitated into a lower box, whence he cannot escape. The door returns to a horizontal position as soon as its back end is released from the weight of the animal, and the trap is reset.

IMPROVED SPIRIT LAMP.

Sylvanus S. Robinson, Holden, Mo.—This invention provides an improved combined spirit lamp and blowpipe for the use of mechanics, chemists, and students. It consists in the particular construction and arrangement of a detachable water receptacle or boiler, located above some of the burners of the lamp, and provided with one or more steam pipes with small orifices, which open near one of the burners, so that the heat of a part of the burners generates steam, which, issuing from the orifices of the steam pipes, forms a blowpipe, which directs the flame of the burner outwardly to a point or focus for convenient use.

IMPROVED GAS REGULATOR.

Leander E. Fish, Washington, D. C.—This improvement rests in the construction and arrangement of purifying pans in the base of a gas regulator for the purpose of eliminating the heavy hydrocarbons which would have a tendency to impair the sensitiveness of the regulator. The pans are formed with inwardly inclined sides, so that each pan forms a support for the next one above, the inclination also affording means for lifting out the pans. The improvement further consists in a tapering water sealing trough, which is made by simply attaching a single strip of metal to the perpendicular side of the tank, thus simplifying and cheapening the construction of the seal, and diminishing the chances of overflow. The regulator proper is also of an improved form, being constructed conformably to the principle of the tapering water seal.

IMPROVED PLANISPHERE.

Paul Kuhnel, New York city.—By this device a view of both the terrestrial and celestial hemispheres is obtained, the course of the sun on the ecliptic (and thereby the increase and decrease of the days and nights during the year) illustrated, and also the distance and latitudes of different places on the earth, as well as the steamship connections of the different parts of the globe, indicated. The invention consists of two centrally pivoted and jointly revolving disks, provided with polar projections of the two halves of the earth on one side, and polar projections of the heavens on the other side. The ecliptic is indicated by arc-shaped grooves, along which a movable carriage, representing the sun, traverses. A graduated scale indicates the latitude and distance of any point on the globe.

IMPROVED FIREMEN'S SUITS.

John W. Ostberg, Stockholm, Sweden.—This is an air and water proof suit that covers the entire body, and is continually flooded with water, which is introduced by pipe connection with the hood, covering the head gear or helmet of the dress. The helmet is tightly applied to the body-covering dress, and the dress strapped to the body, air being supplied to the inside to keep out the smoke by an air supply pipe and pump. The helmet is provided with a hollow valve mask, through which the water is continually flowing, passing by a connecting tube to the hood that is fitted on the face mask and extended over the dress to shed the water over the same.

NEW AGRICULTURAL INVENTIONS.

IMPROVED CORN PLANTER.

John V. Reams, Midland City, Mich.—The essential features are ingenious and novel devices, for throwing the seed-dropping mechanism out of gear and raising the furrowing plows from the ground simultaneously, and also for operating the seed wheel independently, when thrown out of gear with the revolving axle.

IMPROVED PLOW.

William R. Pool, Havana, Ala.—This invention consists in a stock, which is combined with a forked piece, having sharp projections and a pair of blocks. The attachment is used with a narrow share for forming a smooth surface at bottom of furrow for the reception of cotton seed, and the working face is provided with forks that embrace the standards, and are fastened thereto by a bolt or rivet. It has also a shoulder. Small blocks press out the upper part of the furrow, that it may more conveniently receive manure and corn when the same are to be inserted.

IMPROVED FENCE POST.

Eugene Powell, Delaware, O.—The upper ends of wooden blocks inserted in the ground are wrought transversely to receive the cross head, which is made of wrought iron, bent to form eyes, which receive the sharpened ends of the stakes. The ends of the rails of the adjacent panels are placed alternately between the stakes and one upon the other. The upper ends of the stakes are secured to each other by staples.

IMPROVED ANIMAL-WEANING BITS.

Alfred Bartlett and Alfred J. Bartlett, Jr., Toledo, Iowa.—This is an improved anti-sucking bit for calves, etc., which is not liable to be stopped up by hay or grass, and which allows the ready removing of the same without taking the bit out of the mouth of the animal. It consists of a hollow bit, with central perforated swell, stationary end loops, and open ends. It is cleaned by introducing a wire rod through its hollow portion.

IMPROVED PLOW.

Asa H. Piland, Margarettsville, N. C.—This relates to plows of that class in which detachable sweeps are employed, for the cultivation of cotton and corn in the earlier stages of its growth; and it consists in the peculiar construction of a combined moldboard and sweep or bat wing, made in a single piece, whereby, it is claimed, the plow is enabled to stand much greater service and harder strains without requiring repairs.

IMPROVED WIRE FENCE BARB FORMER.

Rheubin H. Pooler and William T. Jones, Serena, Ill.—The object of this is to apply three-pronged barbs to the wires of wire fences. In applying the barbs, the single prong is inserted in the cavity of a pair of pinchers, with the outer side of each parallel prong resting against a jaw of said pinchers. The barb and pinchers are then made to straddle the fence wire, and the pinchers are closed, which forces the parallel prongs across the wire in opposite directions.

The pinchers are then opened and removed, leaving the barb firmly attached to the wire.

NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

IMPROVED CHILDREN'S CARRIAGE.

William E. Crandall, New York city.—The body of the carriage has the two frames of its top, the cover, and sashes in the frames made severally independent and detachable to facilitate packing and transportation.

IMPROVED ADJUSTABLE KEY GUARD.

James S. Wilson, Trenton, N. J.—This device includes a bar which, after the door is locked, is slipped into the keyhole beside the key and is turned partially round. Attachments of the bar are then firmly secured to the key handle, so that it is impossible to turn the key without first detaching the said device, and that cannot be done from the outside of the door.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED SOLDERING TOOL.

August Goetze, Baltimore, Md.—This invention relates to an improved construction of soldering iron especially adapted to capping cans of preserved fruits, vegetables, oysters, and other articles of food. The invention belongs to that class of soldering irons in which the copper block is attached to a hollow tube which is provided with a handle and adapted to be rotated about a central shaft, and also made vertically adjustable thereon. The improvement consists in the mode of attaching the soldering blocks to the tube to insure greater strength and durability.

IMPROVED SELF ACTING GRAPNEL.

Jean Baptiste Toselli, Paris, France.—According to one arrangement, this grapnel is expanded by being suddenly raised while immersed in the water. The second arrangement, on the other hand, is made to expand by the act of lowering in the water; but in both cases the resistance of the water is the agent by which the arms of the grapnel are caused to expand or close together without any mechanical aid. This device, which is as simple as it is ingenious, will be found fully described and illustrated on page 214, volume XXXI of this journal.

IMPROVED TRACK CLEANER.

Silas T. Bentley and Jacob Estep, Union, Iowa.—This invention relates to a novel construction of machine mounted upon a platform car, to be used for cleaning snow from railroad tracks whenever the same become blockaded by drifts. It consists in the particular construction of a derrick mounted upon a platform car and pivoted in the center so as to turn readily to one side, with the devices operating in connection therewith. Said derrick carries at one end a frame work in which is pivoted a scoop which may be raised and lowered by a windlass with pulleys and a cord attached to a bale on the said scoop. To the derrick above the scoop is pivoted a frame carrying a cut-off for the scoop after it is forced into the snow bank, which cut-off divides the snow in the scoop from that outside, and is operated through a cord, pulley, and windlass. The rear of the frame carrying the scoop is provided with a spring catch, with cord and windlass for dumping and restoring the scoop to its proper position upon its pivots.

IMPROVED RAILROAD RAIL.

Samson Sutton, Lisbon, Iowa.—This is a railroad rail constructed of two symmetrical rail sections joined in longitudinal direction and having a central wooden core. As the joints of the rail sections reach only half way across the rail head, the other half bears the wheel, and allows the wheels to pass thereby over any shrunken joint without battering, jolting, or breaking.

MACHINE FOR DESCRIBING AND CUTTING REGULAR CURVES.

Frank A. Polsley, Jackson Court House, W. Va.—In using the machine to describe a curve, a cone is so adjusted that, when revolved, the edge of a wheel may describe the required curve upon the face of the said cone. The paper upon which the curve is to be drawn is secured to the table, and the pencil is adjusted to rest upon it. Then, by turning the table, the point of the pencil will describe the desired curve. When the curves are to be cut, a table substituted which has two dovetailed grooves formed across its face at right angles with each other, and intersecting each other at the center of the table. In these grooves are inserted four dovetailed blocks, to which are attached two pins at a little distance apart, to receive and hold the object to be cut. The blocks are so adjusted that the cutter, while cutting the curve, may pass between the pins.

IMPROVED PISTON PACKING.

William W. St. John, Pisgah, Mo.—This consists of a piston packing wider on the under side than elsewhere, for the purpose of bearing the weight of the piston and piston rod, in addition to the packing pressure, without greater wear than in the other parts.

IMPROVED WATER WHEEL.

Nelson M. Prince, Concordia, Kas.—This is a contrivance of two gates, so pivoted on opposite sides of the wheel and connected together that the water pressure is balanced. It is claimed that the gates work easier, and the form is such that each one makes two chutes, through which the water enters upon the wheel tangentially, giving good results.

IMPROVED BOOT HEEL AND EDGE POLISHING MACHINE.

Leopold Graf, Newark, N. J.—This is a polishing machine for finishing the edges of the heels and soles of boots and shoes, whereby two polishers—one for the heel and the other for the sole—are operated by one and the same driving shaft, in such manner that both operations may be carried on at the same time. There is, beside, a simpler and better contrivance of the gear by which the polishers are operated; an arrangement for obtaining a better action for the polishers, and a higher speed of them for a given speed of the driving shaft, an improved contrivance for gaging the polishers to edges of different thicknesses, and of an improved clamp frame for holding the shoe.

IMPROVED HOLDER FOR GRINDING NEEDLES.

Henry M. Dixon, Brooklyn, E. D., assignor to himself and Robert E. Dunham, Jamaica, N. Y.—This consists of a little tube with notches in the side, suitably shaped for inserting sewing machine needles, so that the points will project at the end suitably for grinding them. The tube forms a holder, which can be held and turned uniformly, so as to grind the points round and true.

IMPROVED FIRE ENGINE.

Clinton W. Clapp, Wappinger's Falls, N. Y.—This consists of a couple of receivers for carbonic acid gas and a steam pump, so combined and fitted with hose and nozzle for discharging the water and the gas that, by alternately charging the receiver and working off the gas through the pump, the gas can be employed as the motive agent for the pump, and, at the same time, the exhausting gas can be used separately or together with the water for extinguishing the fire.

IMPROVED MIDLINGS SEPARATOR.

Morris N. Elwell, Oneonta, N. Y.—This inventor proposes a verti-

cal draft box, in the upper part of which are a number of inclined slats, for breaking and distributing the stream of middlings and the current of air. Said slats are at the entrance of a horizontal box, along which the particles carried over from the vertical box are carried over a hopper, into which the final separation is made by a lighter current up the spout. The middlings are fed into the upper end of a box from a hopper, shoe, and regulating slides, and the bran is discharged through a fan. Below this apparatus is a duplicate set, in which the middlings are treated again in the same manner by air currents set in motion by another fan.

IMPROVED WATER WHEEL.

Henry Waltner, Hamilton, Ohio.—This invention consists of buckets hinged to the periphery of the wheel to close in for passing cut-off partitions, employed to utilize the dead pressure of the water. The said buckets are provided with an arm which extends inside of the periphery of the wheel and strikes a stud on the lower part of the case. This throws out the bucket so as to take the water immediately after passing the cut-off. Among the advantages claimed is that the device works with any head of water, also under back water. It employs the whole periphery of the wheel for the utilization of the water power, and gives the advantage of the full pressure of the solid column of water of a given head of water, without the necessity of an accelerated motion.

IMPROVED PUMP.

Benjamin Eby and Jacob S. Fiester, Kinzer, Pa.—To the pump barrel beneath the frost line is attached a right angled spout, against the mouth of which is pressed a valve. The valve is pivoted to an arm attached to the spout, and to its inner end is attached the lower end of the connecting rod, which is pivoted to a trigger, which is pivoted to the pump barrel in such a position that, when the handle is lowered, it may strike and press it downward, uncovering the mouth of the nozzle and allowing all the water above the frost line to flow out, so that it cannot freeze. As the handle is raised to work the pump, the valve plate is again raised against the spout by a spring, to prevent the entrance of air into the pump barrel.

IMPROVED LIFTING JACK.

David Hiltabidle, York Road, Md.—This invention relates to that class of lifting jacks in which two lifting links are pivoted to an oscillating lever upon opposite sides of its fulcrum, and are arranged to operate alternately upon opposite sides of a double ratchet bar to lift the load. The invention consists in the construction and arrangement of devices operating in connection with the links for the purpose of releasing them from the ratchet bars.

IMPROVED PROPELLER FOR BOATS.

John W. Dolch and George Haydn, Baltimore, Md.—This invention belongs to that class of propellers in which a long spiral propeller is arranged to revolve in a cylindrical channel in the bottom of the boat, which channel opens into the water at both ends, and through which the water is discharged by the revolutions of the propeller to urge the boat forward. The invention consists in making the cylindrical channel with a detachable upper half, which is fastened by means of bolts to the said lower half, the upper detachable portion being provided with hangers, in which the ends of the propeller shaft are journaled so that the propeller is removable with the upper section of the channel.

IMPROVED SHINGLE MACHINE.

Moses Stewart, Dallas, Texas.—The object here is to improve the construction of the shingle machine known as the Everts rotary twelve-block shingle machine, in such a way as to prevent the blocks from jumping when the dogs strike them. The invention consists in an incline formed upon the rear ends of the guide plates for the stems of the dogs to slide down upon, so that the dogs may take hold of the blocks gently and without moving them from their place.

IMPROVED RUDDER-INDICATING APPARATUS FOR VESSELS.

Justus A. Briëbach, Clapton, England.—This is a device operated automatically by the rudder for the purpose of showing, at a distance, the position of said rudder, and, consequently, the direction in which the vessel is steering. The rudder is connected by rods to colored glass slides in a lantern, located in the forward part of the vessel. When the rudder is amidships, the slide carrying the colored glasses will be in its central position, and an equal amount of light of each color will be exhibited through the opening of the lantern; but when the rudder is moved over in one or other direction, the slide will be raised or lowered, and a greater amount of one or other color will be exhibited.

IMPROVED SAFETY APPARATUS FOR RAILROADS.

John B. Prohias, New York city.—This invention consists of an elevated rail at each side of the track and hook-shaped or grooved roller projections attached to the car. In case the main rails sink or otherwise fail, or the car wheels or axles break, the cars will catch on these side rails by the projection, and thus be prevented from injury. The contrivance is also designed to be such that, in crossing places where the ordinary rails cannot be well laid, the cars may run altogether by the grooved wheels on the guard rails, the latter being firmly supported on piles, and the wheels being suitably connected with the power.

IMPROVED MACHINE FOR FINISHING BARRELS.

Edmund W. Gillman, Long Island city, N. Y.—This is an apparatus for evening the staves, pressing on the hoops, dressing off the ends, and crozing and chamfering the barrels. The barrel, having truss hoops, is rolled into position between the presser rings, which at the time rest between the pushers. The latter are then pushed forward so as to press the ends of the staves strongly between the rings, to even the staves lengthwise. Pressure is next applied against the hoops, for pressing them on and tightening up the joints of the staves. As soon as the staves are pressed endwise and evened by the rings, they are dressed off true by a rotary cutter. A gage then runs against the ends of the staves to gage the distance of the evening, crozing, and chamfering tools from the ends, said tools being carried by a rotary cutter head.

IMPROVED GOVERNOR.

Bernard W. Johnson, Barry, Ill., assignor to himself, Joseph D. Partello, and John M. Ryan, same place, and Miller T. Greenleaf, Quincy, Ill.—Through the lower part of the valve stem passes a lever pivoted to some suitable support. The lever passes through a cage, in which is inclosed a glass cylinder half filled with mercury. The governor is so adjusted that the cylinder may be in a horizontal position when the governor is running at its proper speed, with about half the machinery to be driven in gear with the engine. If, now, some of the machinery is thrown out of gear with the engine, the rise of the balls tends to close the valve, and also raises the outer end of the cylinder. This causes the mercury to flow toward the inner end of said cylinder, and changes the leverage, so that the engine does not have to keep up its speed to keep the valve closed. If, on the other hand, more machinery is thrown into gear with the engine, the balls lower, and the outer end of the cylinder is depressed, causing the mercury to flow toward the outer end of said cylinder, giving more leverage against the centrifugal force of the balls, and bringing the engine to its proper speed quicker than the balls could do alone.