

REFINING OR DECOLORISING SUGAR AND SIRUP.—E. Beanes, Oct. 12, 1866. In performing this invention the patentee submits sugar, in a dry or moist state, or in solution, to the action of ozone, either with or without pressure, until the sugar, sirup, molasses, or other saccharine solution is decolorised to the desired point. Pure ozone may be obtained by passing dry oxygen gas through an ozone tube or generator in connection with an induction coil and galvanic battery, or by various other means. The inventor only finds it necessary for his object to pass atmospheric air, by preference previously dried, instead of oxygen, through the ozone pipe or generator, as above explained, and from which the ozone is conveyed by a pipe to a vessel containing the sugar, sirup, molasses, or other saccharine solution to be acted upon.

DETECTING APPARATUS, ETC.—J. E. Buerk, Oct. 12, 1866. This invention consists chiefly in the combination with the ordinary parts of a watch or clock of certain registering devices, which are operated by suitable keys to form impressions or perforations upon dials or indexes of card, paper, or other similar material, the exact time at which each impression is formed being shown by figures or other characters upon the said dial representing the hours and other usual divisions of time.

MEAT CUTTER.—W. M. Miller, Tulpehocken Pa.—The circular meat block has a rim, and rotates on a vertical axis upon the bench, by means of cogs on its periphery which are engaged by a spiral flange on a drum: this derives its motion by a band from the axis of the wheels whose cogs lift the spring arms; to these are attached the cleavers which cut the meat upon the rotating block beneath.

EVAPORATOR.—Samuel Page, McAllisterville, Pa.—In this evaporator an adjustable plate or bottom is arranged beneath the receiving or skimming pan in such a manner that the heating flue of the latter may be enlarged or controlled so as to increase or diminish the heat as occasion may require. The finishing pan rests upon the walls of a chamber arranged at one side of the main flue, and a novel arrangement of dampers controls the heat within said chamber, or excludes it entirely therefrom, as may be desired.

SHACKLE BLANKS.—J. B. Clark, Plantsville, Conn.—This invention relates to the construction of a carriage shaft shackle from solid blanks, and to the shape of the dies for forming the same, so that with the least amount of labor and power, the said shackle may be gradually formed into the required shape.

VENTILATING FUNNEL.—Frederick Catlin, Watertown, Conn.—This invention consists in connecting the funnel with a stand, and in arranging a valve in its throat, and also providing for thoroughly straining the liquid.

OIL CUP.—T. Lunkenheimer, Cincinnati, Ohio.—This invention consists in the peculiar construction of the cup whereby it is adapted to the use of tall and other lubricating material, and whereby the chamber which contains the oil or lubricating material, is made air-tight.

MOWING MACHINE.—Caleb Lee, Sandy, Ohio.—This invention relates to important and valuable improvements in mowing machines, and consists in providing a double joint at the forward end of the drag bar in line with the crank shaft. It also consists in the use of a jointed brace, also on line with the crankshaft, and in constructing and locating the crank shaft box so as to strike the frame and cause the outer end of the cutter bar to raise as the elevating lever is forced down, for elevating the same.

SHAFT COUPLING.—N. H. Shaw, Swanton, Vt. Patented May 14, 1867.—The shaft coupling embraced in the present invention, is made in two parts or sections, placed one upon the other and both turning at one end upon one end of the bolt, stirrup or strap, encircling the shaft and forming the means of fastening the coupling thereto; while at other ends between the car pieces at such ends, is hung, by its T-shaped end, the strap or bar secured to the carriage axle, this construction of the coupling enabling the wear of the shaft strap to be compensated for or taken up, from time to time.

GRAIN SIEVE.—H. S. Townsend, Greenvale, Ill.—This invention consists in the application of an additional shoe, outside of and above the ordinary grain shoe of a fanning mill or thrashing machine, whereby the sieve is prolonged, and the grain or seed passed over a larger perforated surface. Thereby the complete separation of the fine from the coarse grain or seed will be effected. The invention also consists in the use of strong wire supports, which are arranged under the wire netting, to keep the same flat, and prevent it from sacking.

HAY GATHERER.—J. F. Swinnerton, Marion, Ohio.—This invention has for its object to furnish a machine for hauling and delivering hay at a stack, simple and durable in construction, easily operated, and which will take the hay from a windrow, rendering the labor of previously cocking it wholly unnecessary.

ELEVATED STREET RAILWAY.—F. A. Williams, Clovesville, N. Y.—This invention relates to a new and useful improvement in elevated street railways its object being to so arrange and construct the posts or pillars, by which the rails are supported, that they do not occupy more space on the sidewalk of the street and are in no manner more inconvenient, than the common lamp posts; so that a railway constructed on this improved plan would be no inconvenience to the pedestrians on the side walks or to the vehicles on the street.

PLANTING HOE.—Augustus Williams, Sebec, Me.—This invention relates to a new and improved method of depositing seeds in the ground, and covering the same.

STEAM BOILER.—Henry McDonough, N. Y.—This invention consists in the arrangement of valves at the ends of a tubular steam boiler in such a manner that the heated gases and products of combustion are retarded and detained in their passage to the chimney, and thereby compelled to part with their caloric.

FRUIT AND POULTRY BOXES.—D. B. Spinning, Brooklyn, N. Y.—This invention relates to a novel manner of constructing boxes of that kind, which are used for transporting fruit, poultry, vegetables or other articles to market, and which are so arranged, that they can be folded together, when to be transported back, empty to the farms or places, whence they were sent. Although these boxes will be slightly more expensive to construct, than those now in use, the reduction of return freight will, it is claimed, in a few trips, more than twice repay the difference.

MACHINE FOR MAKING BUTT HINGES.—Adriaan Rais, Waterbury, Conn.—This invention relates to an improvement in machinery for bending the knuckles of butt hinges, by means of a single die at one operation, instead of two distinct operations with separate dies, thereby simplifying the mechanism and manufacturing hinges more rapidly and economically.

AMALGAMATOR.—J. B. Forissier, New York City.—This invention relates to an amalgamating apparatus in which several baths of mercury are employed in order to obtain a large area of amalgamation. This object is obtained by arranging in an upright cylinder a series of stationary annular pans between which a series of revolving annular pans are arranged; each of the pans containing mercury, and the water with the ore falling from one pan to another. The water falls alternately from the center of the stationary pans, and from the circumference of the revolving pans upon the pan below, thus passing in a zig-zag line from top to bottom of the apparatus, and comes in contact with the whole surface of the mercury in each pan, thereby striking a larger area of mercury than is done by any apparatus now made.

WASHING MACHINE.—M. McEnerney, Birmingham, Ct.—This invention consists in a machine for washing clothes, rags, etc., by means of two circular corrugated plates or disks, between which the clothes are placed, said plates or disks being arranged and hung so that the one can be revolved, and in contact with the other, which is stationary, and thereby produce the desired rubbing or scouring of the clothes.

PILL MACHINE.—W. V. V. Wilson, Savannah, Ga.—This invention consists in the arrangement of adjustable rails on the sides of the board of a pill machine, in such a manner that said rails can be raised or lowered to correspond to the diameter of the pills to be produced, whereby the rolling of the dough is materially facilitated.

SHEEP FEED RACK.—Joel J. Smith, Barnesville, Ohio.—This invention relates to a sheep rack and feeding trough combined in such a way as to facilitate the feeding and economize the feed, and consists of a rectangular box perforated to admit the sheeps' head. The bottom consists of a pair of doors turning on pivots, for convenience in clearing out the rack. The troughs are inside the rack, and when feeding rest upon the bottom, but when not in use are elevated out of the way by a simple lever arrangement by which

they are carried into a position just over the perforations in the rack, and beneath two pivoted shields which serve to protect the troughs and the feed and prevent the latter from being spilled when being placed in the troughs.

CASTER.—James T. Barnes, Hudson City, N. J.—This invention relates to a new and useful improvement in a caster, for which Letters Patent were granted to this inventor, bearing date Oct. 30, 1866. The invention consists in having the shank of the caster at one side of the axis of the wheels, whereby the caster is allowed to turn, so that the wheels, when the article to which they are applied is moved, may adjust themselves in line with the movement of the article. The invention also consists in a novel manner of securing the metal socket or sheath in which the shank of the caster is fitted, in the leg or bottom of the article to which the caster is applied, whereby the socket or sheath may be secured in the leg or bottom of the article with the greatest facility.

TOILET GLASS.—Albert Ober, Beverly, Mass.—This invention relates to a new and improved toilet glass, whereby the back part of the head may be seen. The invention is more especially designed for the use of ladies to aid them in arranging and adjusting the hair at the back of the head. The invention consists substantially of two mirrors, one of which is hung on pivots in a frame, and the latter connected by hinges or joint to a series of frames also connected by hinges, and the outer frame of the series provided with a mirror; all being so arranged that the two mirrors may be adjusted in such relation with each other, that a lady, for instance, by looking into the mirror which is hung on pivots, may see distinctly the back of her head, and be enabled to arrange, adjust, or dress her hair on that portion of her head with the greatest facility.

WIRE FENCE.—Lucien B. Smith, Kent, Ohio.—This invention relates to an improvement in the construction of a wire fence, especially adapted to use in the prairies of the Western States where timber is scarce, and fires frequently sweep over them, destroying every thing that is combustible.

TABLE.—H. C. Hardey, Muncie, Ind.—This invention relates to a new and useful contrivance for aiding in raising and lowering the leaves of an ordinary dining table, and consists in connecting weights to hang under the bed of the table, with the sliding supports usually employed to hold the leaves when they are raised, which weights draw upon the supports at the time the leaves are raised, and throw them out under the leaves to support them.

SAW MILL.—Joseph Hubbell, Zanesville, Ohio.—This invention relates to new and useful improvements in saw mills, and consists in devices and arrangements for operating the head blocks, and setting the logs for a saw with perfect accuracy, to cut boards of uniform thickness.

CULTIVATOR AND COTTON PLANT THINNER.—Geo. W. Chambers and Icham Washam, Talladega, Ala.—This invention relates to an improved machine for thinning and cultivating cotton plants.

PROCESS FOR EXTRACTING AND SEPARATING GREASE AND OILS FROM ANIMAL AND VEGETABLE SUBSTANCES.—Joseph Besso, Philadelphia, Pa.—This invention relates to an improved process for separating and extracting the oils and fatty matters contained in unwashed wool, bones, oil cake, seeds, or other animal and vegetable substances, whereby wool especially is thoroughly cleansed and purified, and the oil it may contain is separated and utilized with great economy, instead of being wasted and lost at great cost in the ordinary method of washing and cleansing wool with soap.

CONFECTION.—E. C. Maltby and Edward Smith, Northford, Conn.—This invention consists in preparing the meat of the cocoanut so that the same may be preserved and kept an indefinite period, and used at any time.

TRAM AND SELF-CENTERING DISH STAFF.—Samuel Mills and J. R. McIrvin, Clinton, Ill.—This invention relates to a new and useful implement or device for centering hubs and scribing the circumference of wheels, and also for dish wheels, which implement I term a tram and self-centering dish staff, and by which wheels of any desired size may be scribed precisely from the centre of the hub and the exact dish given a wheel as may be required.

ANTI-COLLISION AND CODE SIGNAL LAMP.—Joseph Wall, New York City.—This invention relates to a new and improved anti-collision and code signal lamp, adapted for vessels at sea to prevent collisions; and affords a complete method of communicating information of any description between vessels at night.

SHEEP RACK.—John D. Munson, Tyre, N. Y.—This invention has for its object to furnish a simple and convenient rack for feeding sheep with hay or grain, and which can be readily taken apart for storage.

FRAME FOR STRETCHING WET LEATHER.—Ichabod W. Dawson, Newark, N. J.—This invention has for its object to furnish an improved frame upon which hides may be extended for drying, which shall be so constructed that the hides after being extended upon the frame, may be stretched so as to bring out all the wrinkles, folds, etc., leaving the surface of the leather smooth and better prepared for the subsequent operations.

GATE.—J. B. Powell and S. H. Everett, Macedon, N. Y.—This invention has for its object to furnish an improved gate, so constructed and arranged that it may be opened or closed by the driver without getting out of the carriage.

SULKY PLOW.—Israel Wing, Earlville, Iowa.—This invention has for its object to furnish an improved sulky plow, so constructed as to be easily operated, and the plows of which can be easily brought nearer together or spread further apart as may be required.

POTATO DIGGER.—Joel E. Giles and Charles S. McRobert, Meads Mills, Mich.—This invention has for its object to furnish an improved machine, by means of which potatoes may be readily and conveniently dug and separated from the soil raised with and adhering to them.

EXTENSION STEP LADDER.—Henry T. Smith, Brooklyn, N. Y.—This invention has for its object to furnish an improved step ladder, so constructed and arranged that it may be extended as desired to adapt it for use in rooms with different height of ceiling, and so that one part may be extended independently of the other to adapt it for use upon a stairway.

GUIDE FOR CARDING MACHINES.—F. W. Albertine and E. T. Albertine, Hanover, Conn.—This invention has for its object to furnish an improved guide for carding machines, by the use of which the carding will necessarily be done all over the cylinder, so that the tumbler, cylinder, and fancy, will be worn even, and not in creases, rendering it unnecessary to grind so often, wearing the carding clothing evenly, and doing better work.

MACHINE FOR SOFTENING OR DRESSING LEATHER OR SKINS.—F. J. Burcham, Racine, Wis.—This invention has for its object to furnish a convenient and effective machine for softening or dressing leather, particularly buckskins, calf-skins, kid, etc., but equally applicable to other kinds of skins, whether having the hair on or off.

SHOVEL PLOW.—Daniel Gilbert, Carbondale, Ill.—This invention has for its object to improve the construction of shovel plows as to increase their strength and steadiness in working, and so as to adapt them to all kinds of work.

MACHINE FOR UNHAIRING HIDES.—Judson Schultz, Ellenville, N. Y.—This invention has for its object to furnish an improved machine, by means of which hides may be unhaird, and leather scrubbed, scoured, or washed conveniently, thoroughly, and rapidly.

MACHINE FOR UNHAIRING HIDES.—Elias Brock, Ellenville, N. Y.—This invention has for its object to furnish an improved machine for unhairing hides, and scrubbing, scouring, and washing leather conveniently, rapidly, and thoroughly.

WASHING MACHINE.—James M. Noble, Delhi, Iowa.—This invention has for its object to furnish an improved washing machine, simple in construction and operation, not liable to get out of order, and combining within itself many of the utensils ordinarily employed in washing clothes.

HANDLE ATTACHMENT FOR BLACKING BOXES.—Thomas S. Robinson, New York City.—This invention is designed to supersede the different holders now manufactured to receive and hold blacking boxes while the same are being used, the holder serving as a handle for the box, and preventing the hand of the operator being soiled by the blacking while charging the brush with the same.

WRENCH.—J. V. H. Seeor, New York City.—This invention relates to a new and improved wrench of that class which are provided with a sliding jaw, and it consists in a novel manner of applying the sliding jaw to the shank of

the wrench, whereby the former may be readily moved on the shank and adjusted to the nut to be turned, and firmly secured in position, after being thus adjusted, and while operating upon and turning the nut.

BACK SAW.—Edward H. Roe, Jersey City, N. J.—This invention relates to a new and useful improvement in what are commonly termed by joiners backsaws, and has for its object the straining, by a simple means, of the saw plate whenever the same becomes bent or "kinked," as it is technically termed, so that it may be brought in a plane and have a straight cutting edge, or one free from lateral bends or kinks. These back saws have their plates, as they are used for fine work, the cutting of tenons, etc., and the plates are consequently very liable to become bent or kinked, so much so as to frequently render it difficult to use them and make a smooth kerf or cut.

Answers to Correspondents.

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

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 50 cents a line, under the head of "Business and Personal."

F. A. W., of Miss.—Supposes that the moon's atmosphere presses on the earth's atmosphere, and hence the tides, etc. etc.

E. J. B., of Wis.—"Why is it that an apple scion, produces fruit of its own kind when grafted into a stock of far different and inferior quality? I do not assume to know anything about it, but would like to understand it." So would we.

C. M. S., of N. Y.—To make whitewash which will not rub off, add to it a little sugar or molasses.

F. F. L., of Pa. has failed lately to get a japan varnish for small articles of iron which gives a good gloss. He ought to try another brand of varnish or manufacture for himself.

G. A. S., of Mass.—Shellac and rubber have the property of toughening fusible cements, also they render them less fluid when melted. We cannot answer you more definitely until you give us farther details of the use of the cement.

J. W., of N. Y.—The questions you send belong to ordinary mensuration and we refer you to any good treatise on arithmetic for their solution.

R. B. N., of Me.—The simplest way to determine the hardness of water, is to observe its effect on soap. The soap test is in fact generally used by chemists. The solid contents of hard water are left on complete evaporation of the water.

T. R., of N. Y.—We do not understand the construction of pegging machines sufficiently to explain the method of finishing the cams. . . Jessop's, or Sanderson's are excellent brands of tool steel. Some American steel is also recommended. . . A set of ten taps such as you desire from one quarter to one and a half inches, is worth six or seven dollars.

E. C. H., of N. H.—The iron pavement you speak of as having been used in Court street, Boston, has been tried here, and remains of it are still to be seen in Cortlandt street, this city. It is not satisfactory, being displaced easily and breaking. We do not think your plan of making the sections of extremely hard iron would improve it.

E. W. N., of Mass.—Your rule for ascertaining the area of a circle where diameter and circumference are known, by multiplying one half the diameter of the circumference by one-half the diameter is only another way of stating the rule given by Rowland Hill on page 876, of No. 24, Vol. XVI. Either of them are sufficiently correct for ordinary practical purposes.

H. M. C., of Pa.—This correspondent wishes to drive a circular saw by one man's power which requires four horse power now to drive it! He proposes a wooden fly wheel 30 feet in diameter having on its shaft a pulley to run the saw, and asks if he can gain the necessary power by turning the concern with a crank by the hands of one man. We reply by asking another question: If power can be gained by the use of a fly wheel where is the limit, and what is the necessity of steam power for any purpose?

J. C. S., of Iowa.—Of course it is the duty of steamboat men as pilots, engineers, etc., to inform themselves as to the laws that govern steam vessels. We have no space to publish the laws on this subject; they may be found in the proper official documents.

W. H. H. H., of Pa.—If we understand your query it is this, when simplified: "Can I get more power to overcome obstructions—as unevenness of surface on land—with a traction engine, double cylinders, 7-inch diameter, 100 lbs. pressure, 135 strokes per minute, by gearing down to 15 revolutions (1-9 on the main shaft of my machine, than I could by using a cylinder of nine times the area—nearly 21 inches—same length of stroke, pressure of steam, etc., and attaching connections directly to cranks on the machine shaft, which must, of course, make only fifteen turns per minute." We reply that for the purpose intended—a "plowing machine"—we think your swiftly running engine, if properly connected would be better adapted to the work, as you would gain momentum of the driving parts to assist surmounting occasional obstacles.

J. B. R., of Pa. says he was on board the U. S. sloop of war *Dale* in 1857 and that it was a common practice to rub a greasy rag around the muzzle of the guns before firing salutes, in order to secure well formed smoke rings. The greasing process was very effective and certain.

L. G. G., of N. C.—The mineral sent by you is iron pyrites. The pyrites of your State always contains gold.

T. M. Jr., of O.—The popping of corn is explained by the expansion of air or gas contained within the kernel; it is a case of explosion. The substance of the kernel at the instant of the explosion appears to be tough and plastic.

Business and Personal.

The charge for insertion under this head is 50 cents a line.

Wanted—Parties to engage in all kinds of manufacturing at Coloma, Ill. See advertisement and address A. P. Smith, Sterling, Ill. Publishers of Weekly Newspapers send specimen copies with advertising terms to Joel K. Reiner, Line Lexington, Pa.

For Sale Cheap—One French Pin-escapement Regulator and a small Foot Lathe. Address James H. Flynt, Shelby, Ohio.

The United States Patent Office issued, among other Letters Patent for Sewing Machines to JOSEPH W. BARTLETT two patents for "new and useful designs for sewing machines." One of these patents is for a circular form, the same as that first used in the Bartlett Machines, the other for an elongated long arm form, it being found that this latter form possessed advantages over the circular form, giving greater space to the "work," etc., and from a similarity of the Bartlett patent circular form to that of the Willcox & Gibbs. Mr. Bartlett, therefore, being desirous to give as distinct a character as possible in the best form to his machines, determined, some fifteen months ago, to adopt the use of the "long arm" form, caused the models to be made and their manufacture begun. They are to be seen at the General Office, No. 509 Broadway, New York City. SEE ILLUSTRATION OF THE MACHINE IN "HARPER'S WEEKLY," July 6. **J. W. Bartlett** :—DEAR SIR: At your request we state that the same brought by us was only to prevent the use of the letter "G" form, and does not affect or interfere with your right to make or sell Sewing Machines in the form patented by you published in the SCIENTIFIC AMERICAN Nov. 13, 1866. Signed WILLCOX & GIBBS S. M. CO. NEW YORK, June 8, 1867.