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The Capitol Building.

It is said that the walls of the Capitol building at Washington have been recently found too weak to bear the magnificent iron dome which is in process of erection, and that this portion of the work will have to be suspended. The new dome was to have taken the place of the flatter and lighter one previously employed, and a strengthening of the walls would involve almost a reconstruction of the whole central portion of the building. The new houses of Congress, at the extremities of the wings of the building, are proceeding without interruption.

Improved Hay and Stalk Cutter.

The machine represented by the accompanying engravings is the invention of E. G. Cushing, of Dryden, N. Y. It, like many of the best cutters of such material, carries the knives on the balance wheel, and gives them a rapid motion, better adapted to the performance of the work than the slow motions imparted when the same are mounted on rollers. There have been some difficulties, however, in the arrangement and working of machines with knives mounted in this manner, which difficulties this invention is intended to surmount.

The knives are firmly secured on a balance wheel, in an inclined position, forming lines tangential to a small circle, drawn on the face of the wheel, so that the cut is performed with a kind of shearing or drawing stroke. This effect is still further increased by a motion which is imparted to the lower knife, and also to the feed rollers, which will be described below. The motion of the lower knife and rollers is imparted by very simple mechanism, which also, as a secondary result, enables the feed to be very conveniently graduated, so as to cut the material into longer or shorter pieces at will.

Fig. 1 is a perspective view of the whole, and Fig. 2 a front elevation of the working parts alone. The same letters refer to like parts in both the figures. A is the ordinary feed box, and B the ordinary frame supporting the machine. The letter C denotes a casting mounted on the shaft S, so that it may rock transversely, and which carries in suitable bearings, the two feed rollers D and E, which thus rock or oscillate with each movement of C. The front edge of this casting also carries the lower or leger knife. The lower roller E is mounted firmly in C, but the upper roller D simply rests in deep notches at each bearing, and is held down by a spring, as represented, so that it may rise to accommodate the material which is drawn between the rollers. F is the balance wheel, mounted on the shaft L, and carrying the cutters G, which may be one or more. H is a stout arm, projecting from C, and J is a cam or wiper, projecting from L. At each revolution of the balance wheel, the wiper J acts on the under surface of H, and by lifting that extremity of C, imparts one-half the rocking motion desired, while the gravity of C brings it rapidly back to its position, so soon as the wiper has released it. M is a ratchet wheel on the overhanging

CUSHING'S HAY AND STALK CUTTER.

Fig. 1

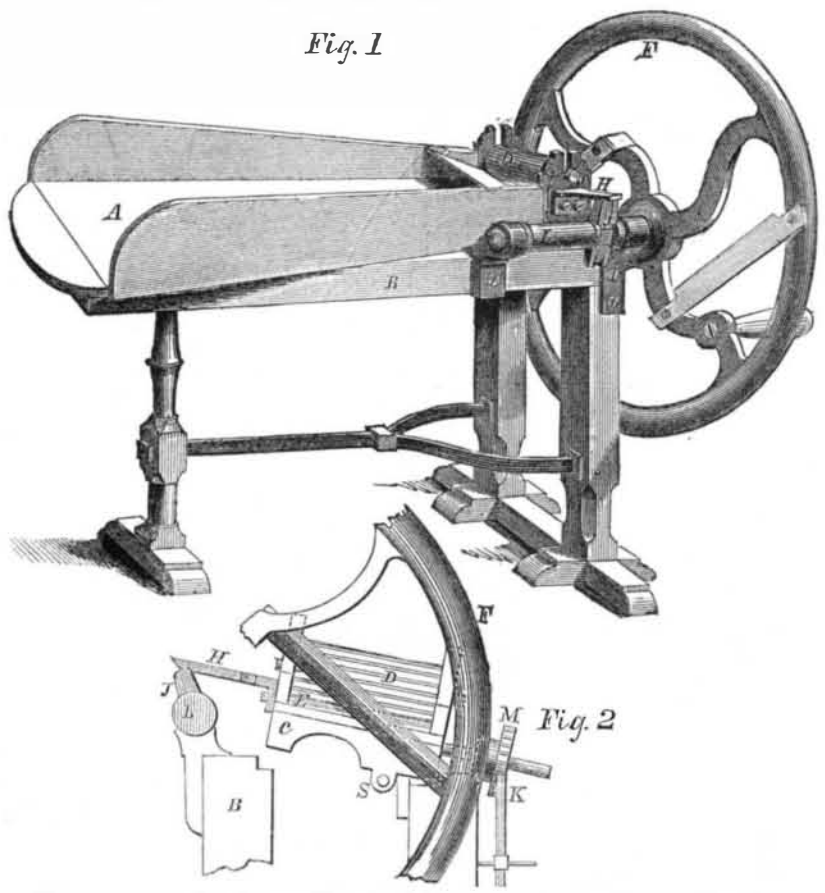


Fig. 2

extremity of the roller E. K is a pawl hinged to the substantial frame B, and impelled by a spring, to catch in the teeth of the ratchet M. It follows from this arrangement, that at each oscillation of the frame C, the ratchet wheel M is moved up and down, past the pawl K, which catches the teeth, and partially rotates it at each movement, thus imparting the necessary feed motion to the rollers. The extent of the feed may be very readily increased or diminished by a simple change of the pawl K. The ratchet wheel M is much longer than represented in our engraving, and allowing H to act on M near the extremity of the shaft, gives M a greater angular motion than when H is allowed to stand close to the machine, and consequently at a point where M has a smaller linear movement.

This invention was secured by letters patent granted on the 5th of May last. For further information, the inventor may be addressed as above.

BELSON'S CAST IRON SKATE.

Fig. 1

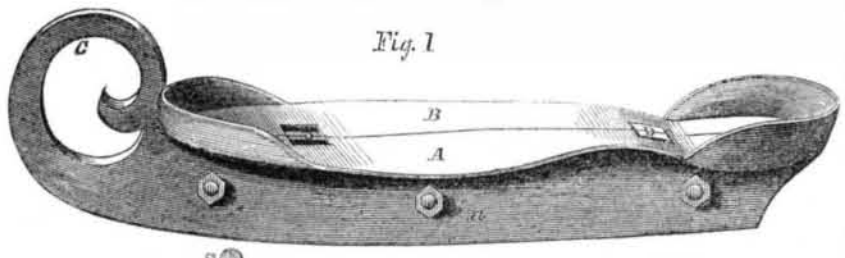


Fig. 3

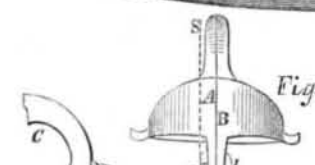
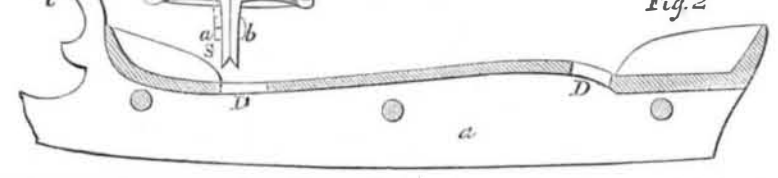


Fig. 2



There are few exercises known to modern civilization and refinement more exciting and healthy than skating. The stimulus of cold air and the facility for extremely rapid locomotion are excitements to a vigorous display of muscular strength which, when combined with the skill acquired by practice, induces the very highest degree of enthusiasm. It is easy to rival the speed of the race horse, with good skates, new ice, and vigorous well trained muscles. Any invention which proposes to cheapen the luxury, and extend the benefits of skating cannot be justly considered as of very trifling importance.

The figures here presented represent probably the cheapest, and apparently the strongest and most durable form of skate which has ever been manufactured. Fig. 1 is a perspective view, Fig. 3 an end view, seen from behind, and Fig. 2 a vertical section on the line S S, Fig. 3.

The whole is of cast iron. The skate is manufactured in two halves, A and B, secured together by rivets or by small screw bolts and nuts represented. Suitable attachments D are provided for the straps, and a strong but light curve C forms the toe, as represented. To each half A and B is cast half of the blade, or what is ordinarily termed the iron, *a* and *b*. These latter are chilled at their lower edges, and are accurately ground to the proper bevel before being secured together. The result is an extraordinarily hard, sharp, and very smooth running surface to act on the ice, while the whole construction is in the highest degree serviceable. It should be particularly observed that the method of securing the parts together by bolts and nuts allows of the parts being readily separated to be ground, in case of accident to any portion of the running face, or to remedy the gradual deteroration arising from careless use or use on gritty surfaces, so that the user has no excuse for dull skates. The construction forbids a possibility of the parts becoming loose, an accident of frequent occurrence with the ordinary wooden stocked skate.

This skate is secured by letters patent dated June 2nd, of the present year. For further particulars, address the inventor, R. W. Belson, 16th st., one door below Seybert st., Philadelphia, Pa.

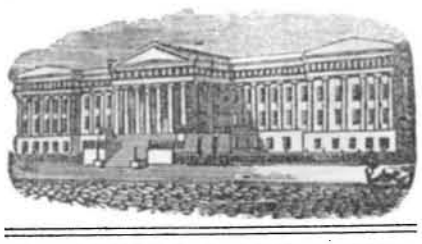
Crape Shawls.

"In our recent article on the enhanced value of teas, caused by the Chinese war, we stated the probability of prices reaching a still higher mark than rule at present, should the aggressive measures of the English extend to other ports than Canton. With respect to crape shawls, however, an unprecedented rise in the value of the stock here must inevitably take place, whether the Chinese war continues or otherwise, simply from the fact that these delicate productions of the loom and hand labor are made only at Canton, and have never been shipped, like teas, from the northern ports of Fuh-chow-foo and Shanghai.

"Crape shawls are not found in stock like teas, matting, fire-crackers, &c., but are only made to order by the Canton men, in the Quantung Province; and even were the looms restored, the produce could never find safe escort through the disturbed adjacent provinces, involving many months of labor and great risk to find an export to any other outlet than Canton. Canton, as we all know, is virtually destroyed—no foreigners now reside there—no foreign trade is carried on—workmen and their looms are dispersed, and a long and unforseen period of peace and traffic must take place ere the manufacture of crape shawls can be resumed. Under these circumstances we may expect to see them before long attain a value heretofore unrealized. Such is the view of dealers and speculators in crape shawls."

The above is quoted from the New York *Times*. It conveys the idea that crape shawls are exclusively a Chinese manufacture, and that this branch of business has been totally destroyed by the bombardment of Canton. This is not so, however; crape shawls rivaling the finest productions of the Chinese looms in texture, colors, and embroidery, have been manufactured in Europe for thirty years, at least. The city of Paisley has long enjoyed a high reputation for the manufacture of crape as well as all other kinds of beautiful shawls. Chinese silk has somewhat advanced in price since the late war in that country, and for this reason, all fabrics made of this material, have advanced in prices also; but although a shuttle was "never more thrown" in Canton, all our marts could be supplied with crape shawls, if the silk for their production could be obtained. The name—*Canton crape*—has no doubt led the writer of the above paragraph into the error which he has propagated, respecting such shawls being made "only at Canton."

At an audience given by Said Pasha, the Governor of Egypt, to several learned foreigners, they politely uncovered, and being desired to put on their hats, the French Consul remarked, "Your Majesty treats these gentlemen as crowned heads." "Yes," replied Said Pasha "as the crowned heads of science."



[Reported officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING JULY 7, 1857.

MACHINES FOR HUSKING CORN—G. W. Bachman, of Clifton Springs, N. Y.: I claim the grooved cylinder, C, wires (b) and knife F, in combination with the reciprocating screen I, provided with clearing teeth, f, and the reciprocating toothed board, J, the whole being arranged to operate conjointly as shown for the purpose set forth.

[This corn husking machine has a rotating cylinder, with longitudinal grooves in its face, and a knife at one side fastened to the frame. The ears of corn are placed in these grooves, (one in each,) with the butts at the end of the cylinder, and they are kept in place by spring fingers until they rotate and come against the knife, which cuts off the butts; the ears then drop and fall on a screen where the husks are taken off clean by a reciprocating board with teeth on it. This is a very simple and efficient husker.]

METAL SEPARATOR—Edward Borlase, of Bristol, Ct: I claim the use of conical reservoirs, A and B, constructed as described, when arranged in connection with the sieves D, and the whole operated in the manner specified.

TRUSS BRIDGES—Josiah Brown, Jr., of Buffalo, N. Y.: I do not claim broadly furnishing the main or counter braces with gains, and passing them between the timbers of the chords.

But I claim providing each of the main and counter braces with two gains at top and bottom, and each of the timbers of the chord with a gain, at a point where the braces are applied corresponding with the gains in the braces, and passing the braces thus formed up between the timbers, with the gains of the braces in such relation to the gains of the timbers, that when the timbers of the chords are brought together, they are combined, and become as it were only one piece, no part of which can be operated upon or affected independently of the other by the downward and upward thrusts common to truss bridges, even if the bolt which passes laterally through and intersects each set of braces and the timbers of the chord were removed, substantially as and for the purposes set forth.

[These improvements made by Mr. Brown are of such a character as to commend themselves to engineers and others interested in the construction of bridges. They lessen the expense greatly, by avoiding the use of metal shoes, tie rods and arches, while at the same time they produce a perfect system of truss bracing which will render the structure as firm as if such devices were used, and will overcome all liability of the bridge vibrating.]

PASTEBOARD CUTTER—D. Burhaus, of Burlington, Iowa: I claim the employment, in connection with the grooved feed rollers, E F, of a double-edged or V shape cutter f, substantially as set forth.

I also claim the combination of the steadying roller H, with the feed roller F, as and for the purpose described.

[Straight cutters in machines employed for cutting pasteboard to make boxes, pass clear through the material, and leave a rough burr on its edge. The double-edged cutters used in this machine avoid this, each cutter edge only cutting half-way through the pasteboard inwardly, thus leaving a smooth edge. The combination of the feed and stationary rollers gauge the stuff to be cut, and present it to the cutters in a very accurate manner.]

STEERING APPARATUS—D. H. Chamberlain, of West Roxbury, Mass: I claim the nuts N, with their vibrating feathers, q, in combination with the parallel shafts, E, F and G, when the said nuts rest against, and are guided by the middle shaft F, as set forth.

CUTTING BUTTON HOLES—Wm. Chicken, of Boston, Mass.: I claim my improved button hole cutter, constructed substantially as described.

AIR CHAMBER FOR WATER PIPES—Thomas Clark, of Philadelphia, Pa.: I am aware that an elastic medium, in connection with a perforated pipe or head, has been used as a spring to ease the strain on the hose or pipe. This I do not claim,

But I claim the arranging of an elastic or extensible sack or bag in the line of a pipe or water way, when said sack is surrounded with a casing and air chamber for the purpose of effecting an uniform flow of water through pipes.

ALCOHOL BLOW PIPE—Edward Conway, of Dayton, Ohio.: I claim the use of the compound regulator, H I f, of the safety valve, in combination with the tubes, F G, and three way cock, J, of the boiler, all arranged and operating as described, and for the purposes set forth.

[These improvements in the self-acting blow pipe made by Mr. Conway, avoid all danger from explosions, enable a person to regulate with the greatest nicety the amount of pressure through the jet tubes without reducing the size of the inlet orifices of the same, and afford facilities for performing the two processes of soldering and melting at one and the same time by one apparatus in a very expeditious manner.]

GRAIN SEPARATORS—Amasa Curtis, of Lena, Ill: I do not claim the adjustable slats, m, nor the valves, i h, in the fan box, C—that is, separately or in themselves considered, for they or their equivalents have been previously used.

But I claim the auxiliary shoe, D, provided with the adjustable slats, m, in combination with the valves, i h, in the fan box, C, the above parts being arranged as shown for the purpose set forth.

[In this grain separator there is an auxiliary "shoe" provided with adjustable slats, employed in connection with valves applied to the fan-box, by which perfect control is obtained over the blast in directing it to effect perfect separation of the grain from impurities and all foreign substances. This is a very complete arrangement for effecting these objects.]

CORN HARVESTERS—Israel Dodenhoff, of Bloomington, Ill.: I claim, first, The arrangement of the knives, in relation to each other, when combined with the peculiar shape of the teeth for the purposes substantially as set forth.

Second, I claim the armed belt, K, and spring guide bars, L, for holding, guiding and carrying the corn so as to deposit it in the arms of the collector, N, in the rear of the machine, in combination with the cutting apparatus, the whole being arranged in relation to each other, in the manner substantially as set forth.

CUTTING APPARATUS FOR HARVESTERS—Joseph Irwin, of Frankfort, O.: I am aware that spiral cutters have been used before; I am also aware that a continuous spiral bar has been used in combination with stationary cutters, as in the patent of A. Armsden, and I do not claim such devices.

But I claim the spiral cutters, e f, when the same is arranged below, and used in combination with the curved cutting fingers, h h, in the manner and for the purpose set forth.

BOX WINDOW FRAME—J. B. Dodge, of St. Louis, Mo.: I do not claim the balancing of sash by weights, pulleys, and box frame, and therefore I disclaim the original invention thereof.

Nor do I claim the substitution of grooving to form the box for the weights instead of framing, for framing was originally substituted for grooving in window frames to form the box for the weights.

But I claim the employment of the beads commonly used in window frames to hold the sashes to their place to form the box for the weights, using grooves for that purpose on the inside of the jamb and on the underside of the beads placed together, as shown at A, A and B B, forms the box for the weights.

MACHINES FOR HUSKING CORN—Wm. Emery, Jr., of Chester, Ill.: I do not claim separately any of the parts described, as analogous devices most probably have been used.

But I claim the combination of the rotating hub, C, and knife, E, inclined box or trough J, and stripping hooks, o, when the above parts are arranged to operate as shown for the purpose set forth.

[In this husker the nubbins or butts are first cut from the ears of corn by a knife, the ears being placed on ledges on a rotating hub. The ears thus deprived of thei butts fall into an inclined slatted trough, where the husks are stripped off by hooks on a revolving shaft which works through the slats. This is a simple husking machine, and not liable to get out of order]

DRY SAND CORES—Wm. Gage and R. B. Felthousen, of Buffalo, N. Y.: We claim the application and use of glue or blood (either separately or in combination) mixed with sand for the purpose of making dry sand cores for founding purposes, substantially as described.

SELF-PRIMING GUN LOCKS—M. J. Gallager, of Savannah, Ga.: I do not claim the cylinder G, the spiral spring E, or the mode of inserting caps or primers in the hammer for self-priming purposes which was invented by N. E. Safford and others.

But I claim the shipper, H, which relieves the sliding rod, C, and allows the firearm to which the improvement is attached to be used with the ordinary percussion cap without exhausting the primers from the cylinder G, or for the convenience of sportsmen as before described, and without which a self-cupping hammer is valueless to sportsmen.

MACHINE FOR TAPPING NUTS—A. B. Glover, of Birmingham, Ct.: I claim, first, Giving the arbor, B', simultaneously with its reciprocating rotary motion, a longitudinal movement back and forth by means of the collar r, placed on the shaft, G, and provided with the spiral groove, g, and inclined or oblique end S, and the bar H, which is placed loosely on the shaft, G, and connected with said collar as described.

Second, I claim the employment or use of the spring, e, placed within the sleeve, d, and the spring, h', placed on the shaft, N, and connected with the arms, g' g', for the purpose of allowing the arbor B' and arms, g g, an independent movement, and thereby preventing any injury which might therwise be produced by any irregularity in the feeding of the blanks within the tap box.

[The arbor in which the tap is secured in this machine is reversed in its motion; the blank is fed into the tap box, and the tap fed to the blanks by automatic movements. Due provision is also made for any irregularity in the operation of the tap. The devices claimed, and their arrangement for the accomplishment of these important objects, are ingenious, simple and effective.]

DEVICE FOR SECURING THE STOCK TO THE GUIDE RODS OF JOINERS' PLOWS—Stephen Going, of New York City: Having thus described my invention, what I claim is securing the stock, C, on the guide rods, B B, by means of the bar, D, fitted within the stock, and actuated by the screw, E, substantially as and for the purpose set set forth.

[In common plow planes the stock and the cutter are not readily adjusted for operating in parallel lines to the set of the gage. In this tool the stock is more easily adjusted, and set to any required line on its guide rods, by a screw actuating and pressing a bar or plate in the stock. The common plows have screws on their guide rods, and are set very slowly; the guide rods of this stock are smooth—the stock can be moved along them at once by the turn of a screw behind, thus relieving the pressure bar. The iron, or cutter, of this plow can also be rapidly adjusted for any cut.]

STRAIGHTENING VENEERS—J. H. Goodell, of Bridgeport, Ct.: I claim the reduction or removal of the curve or scroll shape given the veneer in its cut from the log or stick, by the introduction and feed of it endwise, that is transversely to the general direction of the curve assumed by it in the cut between a roller or rollers and carrying and pressing apron arranged for operation together, and on the veneer substantially as specified.

And I further claim, in combination with the several rollers, A B C D, and endless carrying and pressing apron, H, when the same are relatively arranged as described, the adjustable frame, M, to the one roller, D, to give increased or diminished pressure to the apron, H, against the back of the pressing roller, C, or interposed veneer, as and for the purpose set forth.

WRENCH—J. H. Hathway, of Millbury, Mass.: I do not claim the particular forms or arrangements shown and described.

Neither do I claim a sliding jaw when held by a catch, as such principle of holding it is not new.

But I claim making the ratchet or part corresponding thereto of separate pieces between which the catch enters, substantially as set forth.

I also claim the aforesaid ratchet or series of slips in combination with the stationary and sliding jaws, or their equivalents, when constructed and operating substantially in the manner and for the purposes above set forth.

UPSETTING TIRE—Rockwell Hazen and Volney Gibbs, of Homer, Mich.: We claim the sliding blocks, B B, with knives, g g, attached, and the heads, L L, fitted in slots in the plates, n, to which the blocks B are attached, the inner blocks (k) having knives (p) attached, which knives are actuated by the wedges, L, the above parts being used in connection with the plates, I J and the whole combined, and arranged as described for the purpose set forth, it being understood that we do not claim separately either of the parts described, but the whole when arranged to operate conjointly as specified.

[By this machine for upsetting or bending tires for wheels, straight bars can be upset as well as bent ones, and it is adjustable both for long and short bars. The different devices, as arranged for such purposes, upset the tire rapidly, and in a very superior manner.]

LOCKS—Henry Isham, of New Britain, Ct.: I claim combining with the mechanism for throwing the bolt, or any equivalent therefor, a mechanism which rotates with the said bolt-throwing mechanism, and which by such rotation at the end of the throw of the bolt, interposes its periphery to the line of travel of the bolt or some part of it, and thereby prevents the bolt from being forced back until the bolt-throwing mechanism is brought to the required position for throwing back the bolt, substantially as described.

I also claim the combination of the non-cogged sectors, and the cogged sectors on the key-bit, with the cogs and projections on the tumbler slides substantially as described, or any equivalent therefor, whereby the said slides are controlled by the key-bit as set forth.

And finally, I claim the mode substantially as described of imparting an intermittent motion to the key-bit, and stopping the same while the mechanism which imparts such motion continues to move by means of the wheel and pinion, having their engaging peripheries constructed as described.

BACKING ELECTROTYPE PLATES—A. H. Jocelyn, of New York City: I claim backing shells for printing embossing and like purposes by pressing type or other suitable metal down upon the shell while in a fluid or plastic state, substantially in the manner and for the purpose described and shown.

METALLIC PENS—F. A. Wait, of Philadelphia, Pa.: I claim the arrangement of the spring guard, c, and slots, b, in a pen, a, operating as described and for the purposes set forth.

CONNECTING THE PANELS OF FIELD FENCES—S. F. Jones, of Milford, Ind.: I do not claim the brace and bottom slat and notch, as the same has before been known and used.

But I claim the method of connecting the panels of a field fence, by tongues and grooves, g h, and hook, r r, combined as set forth and shown.

BELT SHIFTER FOR MACHINERY—L. J. Knowles, of Warren, Mass.: I am aware that a device employing a single roller, and arranged to be capable of being canted has been used in combination with guard arms on a belt, for the purpose of preventing the belt changing its position laterally upon the pulley, or for causing the belt to traverse directly over the turning point of the roller frame, and for righting the belt in case it should deviate from the center to either one side or the other of the pulley, and I therefore do not claim such an arrangement, as the same was patented by Samuel Sawyer in 1833.

I claim first, Shifting a belt or band from one pulley to another by means of two rollers capable of vibration, so as to be set slightly oblique, either to the right or left, to a line at right angles with the edge of the belt or band, substantially as set forth.

Second, The peculiar construction of the upper roller G, substantially as and for the purpose set forth.

Third, Having the roller, H, capable of sliding on its axle as it shifts the belt, substantially as and for the purpose set forth.

[This invention is a very ingenious one. It consists of simple and effective means whereby belts of all sizes may be rapidly shifted automatically from one pulley to another by a simple adjustment of the shifter, by hand, or through an expansion tube of a boiler, to a position slightly oblique to the direction in which the belt travels.]

SEWING MACHINES—E. T. Lathbury, of Buffalo, N. Y.: I do not claim the employment of a looper with two fingers or a thumb and finger, as described in the patents of W. H. Johnson and L. Jennings, which fingers, or thumb and finger, operate differently to the fingers of my looper to produce a different stitch.

But I claim the looper composed of two elastic pointed fingers, h i, and operating in combination with the needle so that the needle passes through the looper while the loop is extended upon it, then escapes from it by opening its point as the looper is withdrawn from the loop, substantially as and for the purpose specified.

[The looper in this sewing machine operates in combination with the needle and a single thread, to produce a chain stitch in a certain manner, by which the liability of the needle to miss a loop is obviated. This is the grand point to attain in single thread sewing machines. If a loop is missed, the whole seam of stitches is easily ripped out, but when all the loops are secure in a chain such stitching holds very well.]

CUTTING APPARATUS FOR HARVESTERS—John P. Manny, of Rockford, Ill.: I claim causing a series of cutters to cut from right to left and from left to right, between each pair or set of fingers at every single revolution of said series of cutters upon their shaft or journals, substantially as described.

I also claim, in combination with such series of cutters, the recesses, g, in the sides of the fingers into which they may enter, to enable them to clear themselves from the clogging matter that gathers and accumulates—unless some how prevented—in all harvesting machines as set forth.

PAPER COP TUBES—Alexander McCausland, of Providence, R. I.: I claim the paper cop tube made of a strip of paper of the form represented, in the manner described, whereby greater strength is given to the base of the tube, while the desired conical form is at the same time attained.

RAILROAD CAR STOVE—James Spear, of Philadelphia, Pa.: I am aware that cars have been heated by a current of air caused by their motion, and admitted through the top of the car to a heater inside, but this I do not claim.

But I claim the combination of the cross tube, H, and its self-acting valves, a and b, with the air tube, E, so constructed and arranged as to conduct the external air to the heater when the cars are in rapid motion, either forward or backward, and to prevent the escape of the heated air when there is no descending current, as specified.

GOLD WASHER AND AMALGAMATOR—T. V. Tavnay, of San Francisco, Cal.: I claim in gold washers and amalgamators the metal plates coated with mercury, the riffles, vanes, and re-acting surfaces, arranged and located substantially as described and for the purpose set forth.

SASH LOCK—Marcus P. Norton, of Troy, N. Y.: I do not claim the arrangement of the window sash lock and fastener at or near the middle of the window frame, and upon the jamb casing, or in any other part of said window frame, for the purpose of controlling the upper sash without interference from the lower sash, or for any other purpose.

Nor do I claim two fastenings upon one plate.

Neither do I claim economy of room or a cheap action upon both sashes.

But I claim making a double window sash lock and fastener with an upper and lower branch, a a, which converge and unite into one at or near the knobs, B B, or upper end.

COOKING STOVES—Wm. Resor, of Cincinnati, O.: I claim the described combination with a customary reverting flue cooking stove of the funnel shaped descending flues, d d', enclosing, a reverberatory chamber, E, communicating with the central or reverting flue, g, on one side of a supplemental oven, and with the escape flue, h, on the other side, substantially as described and for the purposes set forth.

SCROLL WHEEL FOR HARVESTERS—C. D. Rogers, of Utica, N. Y.: I do not claim broadly the construction of scroll wheels in two separate parts.

But I claim constructing scroll wheels of harvesters in two separate parts, when both the adjustable portions, D, and main rim, A, are constructed and arranged in the peculiar manner set forth.

AIR HEATING STOVE—Charles B. Sawyer, of Fitchburg, Mass.: I do not claim the hot air pipes, I, hot air flue, F, ventilating flue, G, and air heating chamber, A, provided with cold air pipe, D, for these arranged as shown have been previously used and patented by John Sawyer.

Nor do I claim either of the parts described separately.

But I claim the pipes, K, for the admission of cold air direct into rooms, when said pipes are made to pass through the ventilating chambers, G, for the purpose of creating the necessary draft as described and arranged and used in connection with the hot air pipes, I, and ventilating pipes, J, as shown.

I also claim the chamber, H, placed over the hot air flue, F, and ventilating chamber, G, when arranged relatively with the flue, F, chamber, G, and pipes, a g, as shown, for the purpose specified.

[The object of this invention is to render the air heating and ventilating devices of Mr. Sawyer more perfect in their operation, to enable the occupants of each room in a building with which the heater and ventilator communicates, to regulate the temperature of their respective rooms, and exercise complete control over the ventilation—each room being independent in its regulating action]

SHAFT COUPLING—Edwin F. Shoenberger, of Germantown, Pa.: I claim the combination and arrangement of the levers, D D, with their half roller, E, box, M, clip, G, and slot, H, substantially as described, for the purpose of being applied to shaft couplings for safety, and to prevent rattling.

WHIFFLETREES—David A. Smith, of Washington, D. C.: I claim the lever, G, attached to a movable full crum on plate o, and sliding in slotted plate F, for operating the spring bars, B and B', alternately, as described, and for the purpose set forth.

BIT OR DRILL HOLDER—Amos J. Smith, (assignor to himself and George W. Otis,) of Lynn, Mass.: I claim the described combination of the sliding key or bar, C, and thimble, D, with the spring, E, and stationary catch or protection, F, constructed and operating substantially as described.

EMBOSSING AND PRINTING PRESS—Saml. J. Smith and Charles Lockle, of New York City: We do not claim a raised metallic counter die for embossing

Neither do we claim gutta percha or other elastic substances for the counter die, because this is well known in various kinds of printing presses. But we are not aware that the metallic counter die, which is necessary for embossing with a hand lever press, has ever before been covered with a thin coating of gutta percha, to cause a perfect impression of the ink from the die simultaneously with the embossing from the metallic counter die.

We claim the arrangement of the inking table, i, die, e, spring, k, roller, g, and its lever, h, substantially as and for the purposes specified.

We claim the raised metallic counter die for embossing when covered with a thin coating of gutta percha, to enable said metallic counter die to give a perfect impression of ink from the embossing die on those parts of the paper that are not raised by the embossing die, simultaneously with said embossing, substantially as specified.

COVERING FOR DRAWING ROLLS—Joseph M. Smith, of Manchester, N. H.: I claim the use of black lead in combination with india rubber, as a material for covering drawing or draft rollers, for the purpose of avoiding the effects of electricity and the adhesion of the cotton to the rollers, as set forth.

MELODEON ATTACHMENT—D. L. Sprague, of Townsend, Vt., and Riley Burditt, of Brattleboro', Vt.: We claim first, The hammers, h, of the harp attachment, arranged between the keys and reeds of the melodeon, and combined substantially as described with the inverted jacks, e, attached to the bottom of the keys, whereby the ordinary keys of the melodeon are made to serve without any extension to play the harp attachment.

Second, The attachment of the string dampers, j, of the harp attachment to the melodeon keys, in a manner to operate substantially as described.

Third, The employment of a bar, G, extending below the whole of the hammers, and operating substantially as described to move all the hammers simultaneously to such a position that the jacks are inoperative upon them.

[This invention consists in employing a harp attach ment in a melodeon. A series of strings, like those of a harp, are played by upon a series of hammers, actuated by the same keys which operate the reeds, so that a reed and a string are played simultaneously, thus producing very bold and sweet tones in unison. The devices for operating the strings and reeds by the same movement of keys are ingenious and simple.]

BRICK MACHINES—Stephen Ustick, of Philadelphia, Pa.: I claim the piston, E', and filling box, E", when connected together as described, in combination with the movable and weighted mold box, G, and lower piston K, when said parts are constructed and arranged to operate in relation to each other in the manner and for the purposes set forth.

FILE CUTTING MACHINE—William Van Anden, of Poughkeepsie, N. Y.: I claim the arrangement of a bed on which the file blank is cut, having a forward positive feed motion, and an independent forward motion against the edge of the chisel, in consequence of the percussion of the hammer, and the difference of the resistance of the metal at the back edge of the chisel, wedging it forward at the time of cutting the teeth of the file, to cause their upsetting, substantially in principle of operation as described.

I also claim the combination and arrangement of the bed on which the file blank is cut, operating in the manner substantially as set forth, with the triangular feed gate and side rails of the machine frame, or substantially their equivalents, for the purposes set forth,

I also claim the combination and arrangement of the ratchet wheel spring and detent pins, or their equivalents, in combination with the pawls for operating the same, for the purposes substantially as set forth.

I also claim the use of the compound self-adjusting chisel holder stock, in combination with the chisel, whereby it is held rigidly in its place under the blow of the hammer, in manner and for the purposes substantially as set forth.

I also claim the use of the triangular gate, as a feed motion to my compound bed, in combination with the apparatus for operating the same, substantially as set forth.

OPERATING RADIAL CUTTERS IN LATHES FOR BEADED WORK—George W. Walton and Henry Edgarton, of Wilmington, Del.: We are aware that cutters for cutting beaded work have been arranged so as to be operated automatically, and a patent was granted to A. H. Brown for a machine having an automatic cutter head We therefore distinctly disclaim all parts on our machine which may be considered equivalent to those of the aforesaid and other machines, intending thereby to limit ourselves to the combination and arrangement of parts shown.

We claim the rotary pattern, K, bent lever, E', arms C' C', connected to the sliding collar, A', in combination with the swinging or oscillating cutter stocks, X X, arranged substantially as described for the purpose specified.

[Beading or similar ornamental turning on wood is executed automatically in this lathe by improved and simple devices, whereby such work is performed with great facility and accuracy.]

APPLYING R. R CAR BRAKES—Ira J. Webber, of Salem, Mass.: I claim the apparatus described, for the purpose of applying railroad car brakes, consisting essentially of the sliding bolt, B, and the dogs, E, or their equivalents, operating in the manner substantially as set forth.

LIFTING JACK—Heber G. Seekins and Chas. H. Goss, of Elyria, O.: We do not claim the application of a wedge for the purpose of supporting the lever.

But we claim the concave and convex surfaces of the wedge, in combination with the concave surface of the upright, for the purpose of equalizing the direction of the pressure, as described.

MACHINES FOR TRIMMING HEDGES—Wm. Wimmer, of Billingsville, Ind.: I claim the duplex arrangement of shears, substantially as described, both sets being actuated from the same driving wheel, and being adapted to trim simultaneously the top and one side of the hedge to any desired uniformity, hight and pitch.

ROCK DRILLING MACHINES—Lemuel P. Jenks (assignor to George A. Gardiner,) of Boston, Mass. Antedated Jan. 7, 1857: I do not claim india rubber springs.

Neither do I claim the use of metallic springs in rock drilling machines.

But I claim the use and application of the india rubber K, when interposed in such manner that its expansive force shall operate the drill in rock drilling machines, substantially as described.

ROCK DRILLING MACHINES—Lemuel P. Jenks, of Boston, Mass, and George A. Gardner, of New York City, (assignors to George A. Gardner, aforesaid): I claim the peculiar combination and arrangement of the devices described, whereby the rotation of the mandrel and drill, as well as the gradual and proper advancement of both drill, mandrel and frame, or either of them, is effected by means of a single eccentric on the cam shaft, B, in the manner and for the purpose set forth.

GAS STOVE—Patrick Mihan, (assignor to Robert B. Fitts,) of Boston, Mass.: I claim the combination and arrangement of the deflector, f, with the conical or tapering cap, b, the gas receiving case, E, and the air passage, e, the whole being substantially in manner, and so as to operate as described.

I also claim the combination and arrangement of the perforated open tube or conductor, G, and the secondary top, H, with the oven, substantially as specified, and so as to operate therewith, and not only improve its baking powers, but render it capable of applying heat to a kettle or other article placed in or on said part or tube, G, as specified.

PUMPS——Henry Pease, (assignor to Eckler, Buswell & Co.) of Brockport, N. Y.: I claim the guide rods, m m, constructed and arranged as described, for the purpose of preventing the rotation of the piston, and of facilitating the attachment and detachment of the shaft to and from the crank, o.

BIT BRACE—Henry W. Porter, of Rothsville, Pa., (assignor to Samuel G. Porter, of West Earl, Pa.: I claim combining the knob, h, with the bit holder J', by means of the auxiliary handle g, whenever it may be necessary

to bore holes in situations where it is impossible to rotate the bit brace, substantially as set forth.

And in connection therewith I also claim the double ratchet wheels on the spindle, a, when arranged in such manner in relation to the detent, e, as to enable the necessary connections and disconnections to be effected between the bit holder, and the permanent and auxiliary handles of the brace, substantially as set forth.

GAS STOVES—Thomas Watters, of Boston, Mass., (assignor to Stephen Sherlock, of Eastport, Me.): I claim the combination of the main chamber of combustion, B, its air and gas burner or burners, C, and the auxiliary chamber of combustion, D, made to communicate—by one or more passages, F,) with the main chamber B, and having pipes E, extending through the chamber, B, and arranged so that air in passing through the said pipes may be heated by the heated products in the chamber B, as specified.

I also claim the air and gas burner, G, and supply pipes, H, in combination with the main and auxiliary chambers of combustion, B and D, made to communicate with each other, as specified.

I also claim the combination of the reverberating bell or dome, K, with its auxiliary chamber, D, and the main chamber B, when furnished with burners, and connected with one another and the external atmosphere, as specified.

HAY RAKES—S. W. Wood, of Washington, D. C., (assignor to Lewis H. Parsons, of New York City: I claim a hay rake, consisting of a loose revolving tube, c, in combination with a segment wheel, F, placed upon an axle, A, said tube being provided with the teeth, D, of any desired form or material, the whole being arranged and operating in the manner substantially as described.

RE-ISSUES.

CUTTING OUT THE UPPERS OF BOOTS AND SHOES—J. Chilcott and R. Snell, of Brooklyn, N. Y. Patented Sept. 13, 1853. Patented in Belgium, Sept. 16, 1852: We do not claim, generally, the manufacture of boots without crimping.

But we claim cutting, or otherwise making the leather or other material, to form the upper of the boot by folding without crimping of the form substantially as shown in Fig. 4, and having its characteristics herein fully described, whether the said form be produced by a single piece of material, or by the union of two or more pieces

[The fronts of boots have all to be crimped or stretched—if made in one piece—on an instrument made for this purpose. This operation is tedious and laborious, and besides it weakens the leather. It also precludes the use of an inelastic material in boots, such as patent leather, unless the fronts and backs are made of separate pieces. This improvement dispenses with the crimping process, owing to the peculiar form in which the material is cut; and the uppers can be made in one or more pieces, so as to fit the boot to the shape of the foot with perfect accuracy.]

BOMB FOR KILLING WHALES—Nathan Scholfield and Wm. W. Wright, (assignors to Nathan Scholfield,) of Norwich, Conn. Patented March 10, 1857: We claim, first, Inserting the end of the fuse through a short pipe or collar e, and securing it firmly therein, by compressing the same, and driving or forcing this within the end of the fuse pipe, having a conical enlargement at its rear end.

Second, Enlarging the end of the fuse chord, by winding it with twine, or its equivalent, so that it cannot be drawn through the pipe, either with or without the fastening pipe e, and putting gypsum, brimstone, or wax, around it, within the nut A, to hold it securely.

Third, We claim the application of the sliding collar h, on a projectile, carrying a cylindric metallic plate covering the projectile, and either slit, to form wings K, or unslit as a cylinder case, and so constructed that the said collar with the case or wings shall slide to the rear, after being discharged from the gun, either by the action of the spring, or the resistance of the air to guide its direction.

Fourth, We claim so constructing and applying these wings K that they may concide with the cylindric surface of the projectile while in the gun, and that their rear ends may be thrown up therefrom, by their elasticity, after being discharged, so as to stand in positions diverging from that surface in the rear.

Fifth, The application of helical or spiral springs S, on the surface of a projectile, to force to the rear a collar h, (either with or without the guide E,) after leaving the gun substantially as described.

DESIGNS.

STOVE ORNAMENTS—Samuel D. Vose, of Albany, N. Y. Three patents.

STOVES—John C. Smith, of Troy, N. Y., (assignor to W. Resor & Co., of Cincinnati, O.)

STOVES—S. W. Gibbs, (assignor to Rathbone & Co.,) of Albany, N. Y. Three patents.

GRATE OR STOVE FRONTS—John E. Bendix, of New York City, (assignor to S. B. Sexton & Co., of Baltimore, Maryland.

ADDITIONAL IMPROVEMENTS.

WINNOWING MACHINES—Joseph Keech and Stephen Stilwell, of Waterloo, N. Y. Patented June 13, 1854: We do not claim, broadly, the passing of a screen across a blast trunk: but we claim as additional to our patent of June 13, 1854.

The arrangement of the inclined perforated diaphragm S", within the removeable blast trunk C, as and for the purposes set forth.

Snake Bites.

MESSRS. EDITORS—In the 7th vol. of A. J. Downing's *Horticulturist*, page 188, there is an article on what was then called the "Snake Plant of South America," and if the statements it contains are facts, it is certainly a wonderful plant, and should be more generally known. The best remedy I ever tried for a snake bite was whiskey and red pepper, a table spoon full to half-pint of whiskey, for one dose, to a grown negro man; two doses made him drunk, and cured him. This remedy has been often tried with success, in this region. E. J. C.

Centerville, Miss., July, 1857.

Renovating Articles of Wearing Apparel.

The art of removing stains from clothes produced by acids, grease, mud, coffee, wine, &c., is denominated scouring. To carry the process to perfection requires not only vast experience, but some practical knowledge of chemistry. Our observations upon this subject must therefore be only received as applicable to the ordinary cases of stained fabric; because so much modification of the process is required to be subservient to the various colors and materials worked upon that nothing but practice can teach.

The commonest marks are grease spots, and to scour them out of silk or satin the best materials to employ are oxgall or pure turpentine. If gall be used, it should be quite fresh, unless it is purified, of which we will speak hereafter. If turpentine be employed, it should be distilled, and perfectly free from resin. The preparation called "scouring drops" is pure turpentine, perfumed with essence of lemons. Either of these substances may be applied with a piece of sponge, or with a remnant of the same material that is being cleaned. When the grease spot is large, the greater part may be removed, in the first instance, by the application of blotting paper and a hot iron.

If the stain upon silk or satin is produced by an acid, such as from fruits, and that upon black or dark colors, the best re-agent is liquid ammonia (strong hartshorn) rubbed in till it disappears. For plain and figured silks, of delicate colors, we cannot give a general applicant, and therefore leave them to be operated upon by the professed *degraisseurs*. To obliterate grease spots from white silk or satin, we may proceed as directed for colored silks; but fruit, ink and glove marks require a different treatment. These marks are generally removed by damping the part with oxalic acid dissolved in water; about the eighth part of an ounce in a wine-glassful of water is strong enough. The common salts of lemons in water also answers well. Coffee stains, mud splashes, &c., will mostly give way to the use of soap and water. Curd soap should be applied for this purpose.

For grease spots upon cloth and all kinds of woolen goods, soap and water may be used without fear, provided it is well washed out afterwards. Fuller's earth, or powdered French chalk, made into a paste with water, and laid upon the part, is however the best applicant, to be brushed out when dry.

Paint marks are removed with turpentine, the smell of which may be quickly dissipated by hanging the article upon a line in the air.

The clarified bile, or gall, as it is termed, of the ox is invaluable to painters in water-colors: it not only increases the brilliancy and durability of the colors, but makes them spread better upon paper, and especially ivory. When purified it is also much used by scourers for renovating the delicate colored silks and satins. In its natural state it contains greenish coloring matter, and is then only applicable for restoring the brightness of dark materials. It is discolored thus:—Take one pint of gall; boil and skim it; then divide into two parts; to one half pint add half an ounce of salt, to the other add half an ounce of powdered alum; each part is to be heated till the additions are dissolved; then pour into separate bottles, and allow them to stand and clear (in a quiet place) for a month or eight weeks, even longer if not bright. The clear portions of both are then to be poured gently off the sediments and mixed together; the coloring matter coagulates and falls, from which the transparent gall is finally separated by filtering through blotting paper. In this state it will keep any length of time with its qualities unimpaired, and free from odor. S. PIESSE.

Fermented Bread.

The following are a few extracts from a work recently published in England called "Acton's English Bread Book." They are sensible and instructive, and are worthy of consideration by all those who eat fermented bread in any country:—

Wholesome and Unwholesome Bread.—Whether it be made with wheat flour or meal only, or with a portion of sound floury potatoes, or of well-cooked rice, bread will be perfectly wholesome, provided it be sweet, light, and thoroughly baked, though it will be more or less nutritious. This will be the case also if it be composed in part of rye, or Indian corn meal, or oatmeal, or even of barley meal, unless it should be for very delicate eaters, to whom the Indian corn meal aud barley are not so entirely adapted as flour or wheat. Hot, or quite new bread, is exceedingly unwholesome. Heavy bread is dangerously so. That which has become sour, either from having been over-fermented in the making, or from having been ill-managed afterwards, is very objectionable, and mouldy bread also is unfit for food.

The Tests of well-made Bread.—Good bread will feel *light in the hand* when lifted, which will not be the case with that which has been imperfectly kneaded. Good bread when cut will resemble a fine sponge of uniform texture, and be equally free from the spaces caused by large air-bubbles, and from the dark streaks which show either that it has been inattentively prepared, or too heavily kneaded when it was made up for the oven. The loaves also of well-made and well-baked bread will retain their shape, and not spread about into unsightly forms, as they will when the dough has been rendered too moist. They will also be equally browned, but not dark-colored, and the crust will be firm and crisp, without being thick and hard. Loaves which have been carelessly baked are sometimes burned in one part, while the dough is scarcely set in another.

Cleanliness in Breadmaking.—If instead of being satisfied with the aspect of the loaves exhibited in the windows of the bakers' shops, we were to descend into the offices where they are made, and witness the want of cleanliness and wholesomeness which attend their fabrication; could see here a reservoir of water *which is never changed*, there supplies of flour exposed to the influence of an impure atmosphere, either too damp or over-heated; and above all, sickly, perspiring men in contact with our food, we should turn away with a very legitimate feeling of disgust. These are revolting pictures, but they are true; yet much which repels us in them is beyond the control of the bakers themselves, arising from the want of space, and fitting accommodation for the trade they follow. How can the air of the ill-ventilated underground premises in which their operations are carried on generally in populous or crowded cities be otherwise than most unhealthy, foul, destructive to the men employed in them, and having the worst effects on the food which they prepare? No article of our nourishment requires more scrupulous nicety in everything connected with its fabrication than bread. Its value—which cannot well be over-estimated—is *dependent on its purity*; and this can be preserved (even when it is composed of *genuine* ingredients) only by the utmost *cleanliness* in all the details of its preparation, and the absence of every unwholesome influence in the locality where it is effected.

Black on Wool.

The *London Engineer* describes a new process for dying black on wool, by Mr. A. Neunheffer. It is conducted as follows:—Into a vessel (boiler) containing boiling water, add 1.75 kilograms (a kilogram is 2lbs. 3oz. 5 dr.) of the tartrate of potash (crude tartar) 1.75 kilograms of the bi-chromate of potash; 0.75 sulphate of copper, and 0.75 sulphuric acid. The woolen yarn or cloth to be colored is allowed to boil in this mordant for an hour and a half; then it is taken out, cooled in the air, rinsed in cold water, and is fit for the next operation. Into another bath of clean boiling water, twelve kilograms of logwood and one of fustic are added and boiled for an hour. The cloth or yarn is then boiled in the clean liquor (the chips having been removed) for three quarters of an hour, when it acquires a deep and durable jet-black shade.

This quantity of chemicals will color 60 kilograms of cloth or wool. It is quite a common process to dye black on woolen cloth, by using the chromate of potash, and crude tartar only, for the mordant, the rest of the process being nearly similar to that given above.

It is not stated what the superior results (if any) are, which are obtained, by the use of the sulphate of copper and sulphuric acid. The old method of coloring black on wool, was by the use of the sulphate of iron and copper.

In all dying operations, electricity, no doubt, plays an important part. If woolen cloth be boiled in a strong decoction of logwood, without a mordant, it will not be colored black.

In all likelihood, the fibres of the wool become polarized by the preparatory process, and they acquire an electric affinity, for attracting the coloring matter held in the solution, and thus forms a new chemical compound, which adheres firmly to the wool upon the same principle that metals are deposited by or precipitated on metalic surfaces, in the art of electrotyping.

Improvements in Drying Glue.

In the manufacture of glue, large drying sheds are employed, in which the glue in thin cakes is exposed on netting to a current of air, flowing through the slats or grating, Glue manufactories are very conspicuous constructions, on account of their long drying sheds; some of which are over four hundred feet long. During damp, warm weather, this method of drying glue, is very precarious the glue being liable to rot, and spoil, because it is a very putrescent substance. A patent has recently been taken out in England by E. Tucker, of Belfast, Ireland, for an improvement on the old air-drying method. The new process is simple; instead of first running the boiled glue from the kettle into wooden troughs, as in the old process, then drying it on suspended nets in the air, he runs the glue into small thin drying pans, and disposes these on racks in a stove room or heated chamber. In its liquid state, in these pans, the glue is subjected to a heat of from 140° to 160° Fah., and at the same time, while the pans are thus heated, thorough ventilation is going on, either by fans or blowers, so as to evaporate all the moisture from the glue very rapidly. By this method, it is stated that the glue is more effectively and more rapidly dried than by the old process, and large sheds are not required for the purpose. The fuel for heating the stove room and the mechanical power required for operating the fans are extra expenses, as compared with the air-drying process; but on the other hand, less labor is necessary in attending the glue in drying, and there is not that liability to loss, by putrification, so that on the whole, the process appears to be an economical improvement.

Alumina in Purifying Sugar.

Alumina unites with coloring substances forming combinations known to painters by the name of *lakes*. The alumina used in their preparation, unites with coloring matters held in solution, and forms a precipitate, thus purifying the water of its coloring ingredients. The office thus performed by alumina has been applied by M. Mene, chemist, of Creusen, Germany, to the purification of sugar syrups, for which animal charcoal is now exclusively used. He takes a solution of alum, and decomposes it with a solution of carbonate of soda, then washes the precipitate in a filter, and allows it to dry; this is the substance which he employs to decolorize sugar syrups. One quart of molasses in water was discolored with seven grains of this alumina preparation; it required 125 grains of animal charcoal to produce a like effect with a similar quantity of molasses. Sugar syrup is decolorized by making it to flow very slowly through animal charcoal, great quantities of which are required for this purpose in sugar refineries. If this preparation of alum proves to be only of equal purifying power to the charcoal—all other things being equal—it will be a useful improvement in sugar refining.

Stand for Umbrellas in Carriages.

A patent has been issued to C. H. Dilke, of London, Eng., for a peculiar stand for holding umbrellas in railroad carriages. To the door of the carriage, he applies two studs, and the stand is slotted to fasten on to them. The sides of this stand are bevelled off so as not to incommodate passengers; it is made of galvanized iron, and perforated at the bottom, so that the drippings from the umbrellas may escape from it by an outlet to the outside, and thus preserve the floor of the car dry in rainy weather.

Sun Stroke.

This is the season for *coup de soliel*, or sun stroke. A cotemporary recommends to laborers in the sun, the employment of coarse palm leaf hats, with a moist sponge in the top. We believe that very nearly as efficient protection may be obtained by filling the top of the hat with cotton, as is practiced in some localities. It has been affirmed that no one was ever known to be affected with these fits who wore a thick bat of cotton over his head. A remedy so simple deserves to be generally known.