

The linen trade of Dundee, Scotland, was nearly doubled by the American war, and now employs seventy two firms, steam engines of 580 horse power, 300,000 spindles, 8,000 power looms, 6,000 hand looms, and there is worked up in the district 130,000 tons of jute, flax and hemp, making fabrics valued at \$40,000,000 a year.

Latest accounts from the Inter-oceanic railroad of Costa Rica, presents an encouraging prospect. The route is from Port Limon on the Atlantic to Port Caldera on the Pacific. The former port was discovered by Columbus on his fourth voyage, and the town of Trella was subsequently built there, but being destroyed by pirates the knowledge of that old highway became extinct until the beginning of this century.

Recent American and Foreign Patents.

Under this heading we shall publish weekly notes of some of the more important home and foreign patents.

LOOM.—G. W. Firestone, Fredericksburg, Ohio.—In this invention the oscillation of the lathe works the shuttles by means of the mechanism hereinafter explained.

WINDOW SHUTTER FASTENER.—Will. H. Wayne, Philadelphia, Pa.—This invention consists of a new, simple, and convenient device for fastening window shutters together so as to allow them to be adjusted, instantaneously, to a greater or less degree of opening, and without tying or untying a cord.

RAILROAD CHAIR.—B. J. Romaine, Hackensack, N. J.—This invention relates to a new railroad chair, which consists of wrought iron plate bent to inclose the sides of the rails, and resting upon two sleepers, being long enough to reach between them; these plates extend downward below the rail, and are held together and connected by means of bolts or screws passing through these downward projections.

SAFE LOCK.—Rees Lewis, New York City.—This invention relates to a burglar proof lock which is to be used on safes, vaults, and on such doors on which the key is only to be applied from one side, and consists in a novel construction of the key and lock, whereby feeling of the lock is prevented and the insertion of any but the right key made impossible, as long as the lock is not broken.

LIFTING JACK.—Christian Holmes, Washington, Ohio.—This wagon jack is so constructed as to be self-sustaining when placed under the wagon axle.

CHURN DASHER.—John Leaken, Clinton, Ill.—This dasher is of such form that in churning butter the milk is worked from the bottom of the churn to the top, and the gathering together of the butter greatly facilitated.

CARD FOR HOOKS AND EYES.—Maltby Fowler, Northford, Conn.—This invention consists in so puncturing cards for hooks and eyes that a tongue piece will be left in such punctures, whereby the hooks and eyes can be firmly secured to the card.

WAGON JACK.—Wm. Trusty, Philadelphia, Pa.—This wagon jack consists of a foot or base piece, provided with a standard carrying the lifting bar or lever, but in addition thereto has combined with its pawl and ratchet surface for holding the lifting bar in whatever position it may be brought.

OX SHOE.—Hazelton Lake, Shelburne, Vt.—This invention has for its object to improve the form and construction of ox shoes that they may be more securely held to their place upon the feet of the oxen.

CRUET CASTER.—Westel E. Hawkins, New York City.—This improvement has reference to the manner in which the apertures through which the cruet of a table caster pass are formed and completed, and the invention consists in forming the bead on the center plate of the caster by a peculiar and greatly improved method, and of one and the same piece of metal.

LIME KILN.—John L. Livingston, Mount Carroll, Ill.—This invention consists in the peculiar formation and arrangement of parts of the kiln, whereby the process of burning and removing the lime from the kiln is greatly improved and the labor lessened.

BUGGY SPRING.—William Humphrey, Brooklyn, N. Y.—This invention consists in so constructing and attaching the springs of light wagons and buggies that the perch (so generally used) is dispensed with, whereby the middle of the rear axle is relieved of nearly all the weight usually put upon it, and the buggy is made much lighter in consequence.

SETTING TIRES ON WHEELS.—Anders Fagerstrom, Wyoming, Pa.—This invention relates to a new and improved mode of setting tires on wheels, whereby the tire, by a very simple manipulation, may be tightened or loosened on the wheel as the condition of the latter may require—tightened during the summer season when the wheel is dry and the wood consequently contracted, and loosened during the fall or winter, when the wood is moist and consequently swollen. The object of the invention is to have the tire bind at all times properly on the wheel, so as to hold the spokes firmly in the hub and the rim firmly on the spokes, and thereby avoid all working of the parts, which would otherwise be occasioned by shrinkage, and also avoid an undue pressure of the tire by the swelling of the wood, which frequently causes the spokes to bend and gives the wheel too much "dish," either condition being very detrimental to the wheel.

CULTIVATOR.—E. W. Pike, Galesburg, Ill.—This invention has for its object to improve the construction of W. H. Smith's Cultivator, patented January 15, 1861, and numbered 31,132, so as to make it more convenient, reliable, and effective in operation.

BUNK FOR LOGGING SLEIGHS.—James P. Davis, Stiles, Wis.—This invention has for its object to furnish an improved bunk for attachment to logging sleighs, by the use of which the logs of the lower tier will be prevented from spreading while loading the upper tier, or tiers, and which will enable the logs to be bound and unloaded in much less time than is necessary when the logs are bound in the ordinary manner.

RUDDERS.—D. W. Howard, Detroit, Mich.—This invention has for its object to furnish an improved rudder, so constructed and arranged that a slight movement of the rudder will produce as much steering power as a much greater movement of the rudder post in a rudder constructed in the ordinary manner.

DOOR FASTENER.—P. L. Weimer, Lebanon, Pa.—This invention relates to an improvement in door fastenings, and consists of a weighted figure (as of a man carrying a basket), having a side projection to one foot, which is placed under the door and wedged in the required position by the falling back of the weighted figure. The door may be further prevented from falling forward by the body of the figure and the other leg, and from falling backwards by the free arm of the figure, which carries a cross piece, and is held in a strap stretched partly across the door, in which strap it is free to move.

PORTABLE DUMPING AND LOADING MACHINE.—Wm. Goff, Big Flatts, N. Y.—This invention relates to an improved portable dumping and loading machine, and consists in a self-adjusting dump frame, furnished with folding aprons, the whole capable of being readily transported in a wagon, and be ready for use in a few seconds.

FASTENING METAL PLATES UPON DOOR-HINGES.—Wm. W. Whiting, Brooklyn, N. Y.—This invention relates to a new method of fastening the silver-plated, or other ornamental plates, which are used to cover and conceal the screw-heads of door-hinges. The invention consists in so securing the said plate upon the hinge that it can be easily detached for cleaning and other purposes, and can be easily refastened; and that it will be secured without the use of pins or screws, whose heads appear on the face and injure the appearance of the same.

CLOTHES FRAME, OR RACK.—R. D. Chandler, Fairhaven, N. J.—This clothes rack, or frame, consists of a square center post, having pivoted to its sides a clothes frame, so as to swing therein in combination with sliding spring bolts, so applied to such bolts as to hold them in position.

MODE OF TREATING OR PREPARING WOOD, ETC.—Harrison Smith, Phillipsburg, Pa.—This invention relates to the mode of imparting to wood, etc., a smooth surface, before the application of the color, or colors, with which such wood or other material is to be covered or ornamented.

PICKER AND STAFF COMBINED.—William E. Card and Parson Andrews, Phoenix, R. I.—This invention consists principally in so making the picker and its staff as to be one and the same device, and also in using an India rubber cushion within the staff, for the picker to act against.

SEWING MACHINE.—George W. Baker, Hinsdale, N. H.—This invention consists in arranging a bar under the platform of the sewing machine, which bar is pivoted at its rear end eccentrically to a horizontal gear wheel, driven by the main gear wheel of the machine, so that a kind of oscillating motion is imparted to this bar; its front portion, which is below the front part of the machine, is by a spiral or other spring drawn off the needle, against an adjustable stop, and thus, when the aforesaid horizontal gear wheel is turned, the bar will be moved forward and backward, and will have its fulcrum on the aforesaid stop, whereby, as the stop recedes to its front end, and as the diameter of the gear wheel is not large, the side motion of the said bar will be very little; still it will be large enough to make the front end of the bar strike against the needle, when the same is down with thread for a new loop, thereby feeding the cloth before a new loop is formed.

LAMP BURNER.—George K. Osborn, Brooklyn, N. Y.—This invention relates to a new and useful improvement in lamp burners of that class which are designed for burning coal oil and other hydro-carbons which require a large amount of oxygen in order to support proper combustion for illuminating purposes. The invention consists in the application of a jacket to the upper part of the wick tube constructed and arranged in such a manner that a current of air is supplied to the base of the flame all around the top of the wick.

REMOVING CARBON FROM GAS RETORTS.—B. E. Chollar, Leavenworth, Kansas.—This invention relates to a new and improved method of removing the carbon which is deposited in retorts used for generating gas for illuminating purposes, and it consists in providing for a supply of air within the retort whereby a more perfect combustion is produced.

COAL SCREEN.—George Whittle, New York City.—This invention consists in constructing a cylinder screen and revolving the same in a tight box and in constructing the box in a peculiar manner so that the parts thereof are rendered otherwise useful.

PNEUMATIC SPRING.—W. A. Dripps, Fort Wayne, Ind.—This invention consists in confining compressed air in a chamber and thereby taking advantage of its elastic character for forming springs for various purposes.

PORTABLE BODKIN AND TWEEZERS.—William Quail, New York City.—This invention relates to a new and useful device whereby certain instruments which are in constant use by printers are combined and rendered portable.

BREECH-LOADING FIRE-ARM AND CARTRIDGE.—S. S. Rembert, Memphis, Tenn.—This invention consists in various improvements in the breech-loading gun, especially in the manner of moving and holding the barrel, the construction of the cartridge case and in extracting the same from the barrel.

CHURN.—William Newberry, Clarksville, Mo.—This invention consists in arranging an upright shaft with wings or dashers attached thereto which are revolved within the churn, and also in the arrangement of stationary crosses and wings in the angles of the churn.

HEATER.—Thomas Shipton, Newark, N. J.—The object of this invention is to construct a heater which will make use of the heat generated therein.

TRY SQUARE.—N. Hamblin, Flatbush, N. Y.—This invention has for its object to so improve the construction of a try square that the workmen may be able to see whether his work is exactly true by simply looking at the top of the square.

PAINT BRUSH.—Joseph M. Estabrook, Milford, Mass.—This invention relates to a new manner of connecting the bristles of paint and paste brushes with the handle of the same, and the object is to so arrange the devices by which the bristles are held that the bristles may be firmly clamped by a conical ring against the outside of a wedge projecting from the handle, without the use of cement or other similar material, and so that the bristles can be cured to the handle by any person not experienced in brush-making.

DOOR STOP.—Geo. F. Atkinson, Seymour, Conn.—This door stop or bolt is so constructed that it can be set for operation or put out of operation as may be desired.

DEVICE FOR MEASURING HORSES' FEET.—Moses S. Woodward, Marshallton, Pa.—This invention relates to a device by which the exact measurement of horses' feet can be taken, and which can be used for fitting horse shoes to the feet, so that the same may be very accurately adjusted without burning or cutting the feet.

CAR BRAKE.—A. Z. Long, Scranton, Pa.—This invention relates to a new and improved brake, designed to prevent a retrograde or back movement of a car or a train of cars, when the same is on an incline or rising grade. The invention is more especially intended for cars on roads having great inclines, or steep grades, up which the cars are drawn by a rope and stationary engine, and is designed to hold the cars perfectly stationary on the grade in case the rope should break, a contingency of not unfrequent occurrence, and which is frequently attended with serious accidents both to life and property.

STAINED GLASS.—John C. Millward, New York City.—This invention consists in laying a piece of crystallized sheet zinc under or behind a piece of stained or painted glass, whereby the glass will not only be considerably strengthened, but whereby those portions of the glass which are left transparent will look as if they were inlaid with pearl.

BOOT-JACK.—A. P. Seymour, Jr., Hecla Works, N. Y.—This invention consists in a novel construction of a boot-jack, whereby the implement, when not desired for use, may be folded or closed up so as to occupy but a very small space, and when required for use be capable of being readily extended or unfolded.

SLED BRAKE.—Samuel K. Sutton, Paterson, N. J.—This invention relates to a new and improved brake for sleds, and it consists in operating a dog by means of a toggle, connected to a shaft provided with a spring and a lever, all so arranged that, by manipulating the lever, the dog will be forced down into the ground and the motion of the sled checked or entirely stopped, as desired.

MACHINE FOR CUTTING PAPER, PASTEBOARD, OR OTHER SIMILAR MATERIAL.—Stephen D. Tucker, New York City.—This invention relates to a new and improved machine for cutting paper, pasteboard, or other similar material. The invention, however, is more especially designed for cutting paper for printers' and bookbinders' use, and consists in a novel construction and arrangement of parts, whereby the paper or other material may be cut very expeditiously, and the working parts of the machine placed under the complete control of the operator.

WATER WHEEL.—George W. Herring, Bangor, Me.—This invention relates to a new and improved center bent water wheel, and it consists in a peculiar construction and arrangement of the same, whereby the usual platform for the wheel to run upon is avoided, and the wheel rendered capable of running in either direction, right or left, at the option of the millwright.

MACHINE FOR STRIPPING WILLOW.—James Swan, Paterson, N. J.—This invention relates to a new and improved machine for stripping willow of its bark, preparatory to the manufacture of the same into baskets. The invention consists of a rotary stripping device provided with blades or strippers arranged in connection with a spring or springs in such a manner that the strippers will be made to bear or press upon the willow by centrifugal force generated by the rotation of the hollow mandrel to which the stripping device is attached. The invention also consists in a means for cleaning the stripping device, or preventing the same from clogging, and the invention finally consists in a clamp of peculiar construction for grasping the willow, and drawing it through the stripping device.

ANTI-KICKING ATTACHMENT FOR HORSES.—O. H. P. Fancher, New York City.—This invention relates to a new and improved anti-kicking attachment, to be applied to horses in harness, the object of the invention being to obtain a device for the purpose specified, which will be self-operating, and require no special care or attention on the part of the driver to apply it, or cause it to act.

PORTABLE FENCE.—G. W. Campbell, Pendleton, Ind.—This invention relates to a new and improved fence of that class which are designed to be readily put up and taken down, and it consists in a novel manner of constructing the fence, whereby a very strong, durable, and economical fence of the kind specified is obtained.

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."

All reference to back numbers should be by volume and page.

J. B. H., of Pa., inquires in regard to the process of polishing horn, and specimens of quartz. The two inquiries are very diverse. In regard to the first we have no information to offer, except that it is similar to that of polishing wood, and as to the latter, the same means employed in finishing the harder qualities of stone will succeed with quartz. This is shown in any work on the business of the lapidary or the treatment of gems.

C. C. M., of Tenn., asks what is the "facial angle" as understood by phrenologists. We advise him to address Fowler & Wells, Phrenologists, New York City. They know more about such matters than we ever hope to imagine.

H. C. B., of N. Y., says: "It is well known that an object capable of casting a shadow gives a converging one if it intercepts the rays of a luminary larger than itself, and a diverging one if the conditions are contrary. If this is true why do clouds appear to give a diverging shadow during a smoky day?" Our correspondent does not consider that the diverging shadow includes the penumbra.

E. T. M., of Ill., seems to object to the scent of petroleum. He asks how to alter the smell or partially change it to something else. We can only counsel him to use a stronger and pleasanter odor.

S. F. B., of Conn., asks how to make an amalgam for the old style electrical machine. The recipe is: mercury, 4; zinc, 8; tin, 2. Melt the zinc first, add the tin and pour into a box containing the mercury. Mix by shaking while hot.

J. H. S., of Pa.—"Which would you advise for economy and service in an iron mill, a vertical engine of 12 inches cylinder and 13 inches stroke, 100 strokes per minute, attached directly to the shaft; or a horizontal engine with a cylinder of 14 by 36 at 40 strokes per minute?" We should prefer the 12 by 13 inches, direct acting engine if obliged to choose; but to do its full work 200 strokes per minute would be better than 100. We cannot, however, give a conclusive answer without working drawings of the two engines.

H. F., of Mo., asks how to temper mill picks. We think the question has been answered through our columns. Perhaps some practical man can afford the information.

J. H., of Ind., asks if felt covering is injurious to a boiler. We never knew of injury to a boiler from this source. He sends us also a statement, clipped from a local paper, to the effect that an engineer in trying his gages discovered a British flame issuing from the cocks! We have little regard for such "cock and bull" stories.

S. M. S., of Pa., asks how to melt and cast such metals as brass, copper, and nickel to the best advantage. We presume nothing more is required than good plumbago crucibles, a clear anthracite fire, and good molding sand.

C. W. C. & Co., of Montana, state that they are cracker bakers, and the only lumber obtainable of which to construct their boxes is a pine that possesses a strong odor which is imparted to the crackers. Seasoning the lumber and lining the boxes with paper is insufficient. We think it doubtful if the wood can be deodorized without considerable cost. Lining the boxes with tin foil would be cheaper and probably effectual.

S. M. P., of R. I.—You can whiten or restore ivory which has turned yellow by boiling it in lime water and polishing it with whiting and chamois leather. In many cases where, as in piano keys, the ivory cannot be removed, the polishing process will be found partially successful.

Business and Personal.

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

INVENTORS and MANUFACTURERS may have their articles illustrated and described, free of charge, in the English Catalogue of Chas. Pomeroy Burton, (American Merchant, and Dealer in American Machinery, Nos 142 and 143 Cheapside, London, England,) by sending cuts immediately to F. L. Button, "Waverly House," 697 Broadway, New York City. N. B.—30,000 copies of the January edition will be circulated.

A metal-working shop, with two patents, for sale or exchange for Real Estate in city or country. Townsend & Sears, 218 Fulton st., room 7.

All who consult their own or their friends' interest, will send their address, at once, on stamped envelope, to Dana Bickford, 52 Broomfield st., Boston, Mass.

A Lamb, 12-gage, Family Knitting Machine, used only a week, for sale. Will send, C. O. D., by Express. Price \$50; cost \$65; in perfect order. Address W. W. Thompson, Adams, Lee county, Georgia.

Smokers—See advertisement of the cigar perforator. Every smoker should have one. Oliver Guinan, Vicksburg, Miss.

Where is cotton silk thread manufactured? what firm manufactures Pettunett woolenwares, shawls, etc.? and where can machines for making cotton lace corsets be had? Address E. Förster, Condorsport, Potter county, Pa.

Can coiled steel wire be silver-washed, tin-washed, or colored any color that will remain permanent? E. F. Mallory, Springfield, Pa.

To Sleigh Manufacturers—For Snow and Ice.—Bourne's Propellers for children's sleighs. State Rights for sale. Address F. Philip Bourne, New Dorp, Staten Island.

Parties manufacturing very fine perforated iron screen, or parties having machinery to manufacture it, will address F. R. Wilson, Philadelphia, Pa.

Wanted—A split-stay dresser. Send descriptive circular and prices to S. W. Little, Evansville, Ind.

Manufacturers of Power Spice Mills please address Box 1000, Baltimore, Md.

I want a shaping machine, new or second-hand. Parties having the same address particulars to Wm. Holmes, Gallon, Ohio.

A. W. Griffith, of Jefferson City, Mo., wishes to know where he can obtain a machine to cut and bale rye straw.