



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

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HAND CORN PLANTERS—George Atkins, of Pittsburgh, Pa.: I claim attaching the plate, E, by a hinge or joint to the lower part of the box, A, the plate, E, having a curved plate, G, attached to its inner side, which plate is provided with a hole, g, and works over the curved portion, a, of the plate, D, which is attached to the lower end of the box, A. The straight portion, b, of the plate, D, being fitted and working between plates, c, c, attached to the plate, E, substantially as shown and described, so that the distributing device may be operated by merely throwing forward the box, A.

MARBLE SAWING MACHINE—Cyrus Avery, of Tunk hannonck, Pa.: I claim the combination of the slide bars, C, link, E, lever, F, with the rack and movable stirrup, H, the whole being constructed, arranged, and operated in the manner and for the purpose set forth and no other-wise.

THRASHING AND WINNOWER GRAIN—Alfred Belchambers, of Ripley, Ohio: I claim the plates or rubbers, U, V, placed in the shoe, I, when the upper plate or rubber, V, is hung upon a shaft, m, as described, so that it may vibrate laterally by the shake motion of the shoe for the purpose specified.

COUNTING COIN—M. F. Bonzano, of New Orleans, La.: I claim the manner of passing the pieces in regular order through a slot by means of a toothed wheel, for the purpose of making them aid as a pinion to revolve a wheel connected by other wheels with a registering index.

BENDING HAY FORKS—Nathan Brand, of Leonardsville, N. Y.: I am aware that numerous machines have been made with a former, and vibrating arms or levers for bending pieces of wire and metal for various purposes, therefore I do not claim such devices when so used. But I claim, in the described machine for bending and giving a proper form to hay forks with two tines and a shank, the combination and arrangement of the following devices, consisting of the stationary jaw, A, provided with a ledge or side projection, a, the disk, B, with a score for the shank of the fork, the hinged wings or side levers, D, operated so as to bend A, the jaw, A, the disk, B, the hinged jaw, C, so arranged as to give the tines the curve required, and press the shank into the score in the die, B, and give it the proper position in relation to the tines, substantially as described.

SAW SET—Lebbeus Brooks, of Great Falls, N. H.: I claim arranging the adjustable angular bed in the jaw lever and with respect to the jaws and sliding gauge applied thereto, substantially as explained.

SAFETY VALVES—Robert Cornelius, of Philadelphia, Pa.: I claim the arrangement of the weight and lever of an ordinary safety valve, so that as soon as the steam reaches its limit of pressure the weight shall so change its position as to open and keep open the aperture of discharge of steam, in the manner and for the purpose substantially as described.

MAKING LEATHER—Chas. F. Crockett, of Newark, N. J.: I claim making sheets of leather of any desired size and thickness of carriers shavings or buffings, by lapping and cementing them together while in a moist state, and then subjecting the mass to pressure, substantially as and for the purpose specified.

DIFFERENTIAL GOVERNOR FOR MARINE AND OTHER ENGINES—Charles N. Clow, of Post Byron, N. Y.: I am aware that governors operated by pumps have been heretofore used, and that a piston moved similarly to piston L, has been attached to the throttle valve of the engine; and therefore I expressly disclaim such a construction. But I claim controlling the throttle valve of the engine by means of pistons, L and D, and valves, E, E, by producing a vacuum on either side of piston, D, alternately, as the motion of the engine may require, the parts of the apparatus being arranged and operating substantially as set forth.

SHIPS CAPTAINS AND WINDLASSES—James Emerson, of Worcester, Mass.: I claim nothing new, irrespective of the arrangement and operation together, substantially as specified, of the parts of the capstan, made to couple and uncouple at pleasure for joint or separate action, as required, nor do I claim the application of a friction strap or belt to a windlass barrel. But I claim the double or divided capstan or windlass, arranged for operation in the manner specified, and consisting of an upper hand operative portion of the body or capstan proper, G, and under loose portion of said body, H, separately controllable by friction strap, J, or gearing at pleasure with the upper operative portion, G, of the body of the capstan, as and for the purposes set forth.

LOCKS—Michael Erb and F. C. Goffin, of Newark, N. J.: We do not claim the sector tumblers with slots cut in them at varying points, for they have been previously used. But we claim placing said tumblers upon the shaft, C, as shown, viz. the end tumblers, D, being attached permanently to the shaft and the tumblers, D, placed loosely upon it, with washers, b, between them, substantially as shown and described, whereby a positive action or movement is given to the tumblers, the use of springs dispensed with, and the lock rendered durable, simple, and economical to manufacture.

STRAPPING TACKLE BLOCKS—J. B. Fayette and D. Wheeler, of Oswego, N. Y.: We claim for tackle blocks a strap made in two parts, each part having a hook at one end to hook into the eye of the block hook, and a hole near the other end for the bolt that fastens them together, substantially as shown and described.

CARRIAGE SPRINGS—John U. Fiester, of Winchester, Ohio: I claim forming elastic twisted springs with elliptical curves for the purpose of giving to the same greater strength and elasticity, and also a lateral and vertical motion, as set forth.

SILVER PLATE, CAKE, AND FRUIT BASKETS—R. Gleason, Jr., of Dorchester, Mass.: I claim attaching the two lids or covers, E, E, to the box, A, of the basket by the swivel joint hinges, F, F, constructed as shown; the lids or covers corresponding in form to that of the body, A, whereby the lids or covers may be placed over the body, A, or turned downward and secured by the catches, G, G, underneath the body, substantially as described.

ADJUSTING CIRCULAR SAWS—George Hutton, of New York City: I claim the combination of the two spherical faced and peculiarly perforated movable collars, C and D, with the concave fixed collar, E, and the concave washer, F, substantially as described and for the purposes set forth. I also claim the employment of the adjusting screws, J and K, in combination with the described collars, C and D, the concave fixed collar, E, and the concave washer, F, as set forth.

REFRIGERATORS—Samuel Hiccock, of Buffalo, N. Y.: I do not claim an inner and outer box, case, or frame, nor the combination of these; neither do I claim filling the space between the inside frame and the outside box or case with any fibrous or pulverized bad conductor of heat. Neither do I claim making the inside frame convex or concave. But I claim covering the inside box case or metallic frame with woolen, flannel, or other cloth, in such a manner that the water as it drips from the melting ice, will drip on to and saturate the cloth, and from the cloth will be conducted out of the case, thereby producing a strata of cold water, held in the cloth, over the entire surface of the inner metallic frame, and surrounding the articles to be kept cool, substantially as set forth.

MOLASSES PITCHERS—Henry W. Goodrich, of Boston, Mass.: I do not claim applying to the outside of a pitcher or vessel a cup or reservoir to catch the drippings from its nose or spout. But I claim arranging the drip receiver, the pipe thereof, and the discharging end of the pipe with respect to the nose and neck of a pitcher, substantially as specified, in order that when the pitcher is being tipped for the purpose of pouring from its nose, none of its liquid contents may pass into the mouth of the discharge pipe, the drip receiver and its pipe, substantially serving to catch the drippings from the nose and convey the same back into the pitcher, as explained.

DEVICES IN PLANING MACHINES—Valentine Houck, of Buffalo, N. Y.: I ask a patent for the improvements described, so that I may either construct a machine combining them, or send the improvements to others to be used upon machines already constructed.

CLEANING RING TRAVELERS IN SPINNING—Henry S. Houghton, of Blackstone, Mass.: I do not claim the use of a brush to clean a throstle, whether automatically operated or otherwise, when the line or dead spindle alone are used. But I claim the application of a brush, when constructed and operated substantially as described, to the delicate movement of the ring traveler, so as to rapidly clean the same without breaking down the thread.

PARING APPLES—Horatio Keyes, of Leominster, Mass.: I do not claim the machine described for operating the cutter, for that has been previously used. But I claim attaching the cutter head, D, to the bar, M, by a pivot, d, and having a lip or bearing piece, e, on the cutter head, for the purpose specified.

VALVE FOR DOUBLE ACTING PUMPS—John C. King, of Belvidere, N. J.: I claim a single acting pump valve with two chambered faces standing at angle to each other and operated by the pressure of the water from the pump cylinder to answer as suction and delivery valve to a double acting pump, substantially as set forth.

BRICK PRESS—Lewis Kirk, of Reading, Pa.: I claim the oscillating mold chamber, in combination with the clay guard, concentric with its trunnions, and the piston, P, actuated by the oscillation of the mold chambers when constructed, arranged, and operated in the manner and for the purpose set forth.

DOOR LOCK—Christian Knauer, of Birmingham, Pa., assignor to Warwick, Atterbury & Co., of Pittsburgh, Pa.: I claim actuating the bolt of a right and left hand lock by means of a tumbler which has a vertical motion, for the purpose of freeing and securing the bolt, and also a vibrating motion for throwing in or out, the tumbler being arranged in relation to the key in such a manner that the bolt will be thrown out the same distance in which the key may be inserted, substantially as set forth.

PLOWS—N. S. Lockwood and J. D. Winn, of Dayton, Ohio: We claim welding the post, A, or breast, A', to the mold board, B, and attaching the share, C, and land side, C', to the mold board and post or breast by means of the flanch, A', at the lower end of the post or breast, and the plate, C', of the share and land side, through which flanch and plates, screws, W, pass, substantially as shown for the purpose specified.

COTTON GIN FEEDERS—L. J. Mallard and Wm. S. Baker, of Riceboro, Ga.: We claim the combination of the screen, g, with the revolving toothed cylinder, c, constructed in the manner described, and when so placed in relation to the ginning rollers, G, that any excessive accumulation of cotton between them shall be removed or prevented, and the excess be retained between the cylinder and screen, until its quantity shall be equalized and relieved by the gin.

ARTIFICIAL TEETH—Saml. Mallett and A. B. Smith, of New Haven, Conn.: We claim the combination of two punches, one immovable, the other movable in the slot, c, with a spring, d and the two cavities, one, e, in the plug, or immovable punch, and the other, e', movable with the movable punch, the latter to be set by the insertion of the teeth into said cavity, in order to make the distance between the holes in the plate correspond with the distance of the pins in the tooth, as described.

ODOMETERS AND COUNTING MACHINES—Jos. L. Martin, of Baltimore, Md.: I claim, the following parts, combinations, and applications: first, the attachment of a friction clutch to the ratchet lever, operating against the bar of the connecting rod for producing the requisite motion in the first wheel, so arranged that any excess of motion in the bar, will not produce excess of motion in the wheel, and I claim this, whether in combination with the ordinary train of wheel work, with single or double ratchet pawl, or in combination with the arrangement of wheel work described.

Second, though I do not claim operating the count wheel by a cam or eccentric placed at its center, where this is actuated by means independent of the axle of the carriage, and disconnected therefrom, as by the weight and clutch of the ratchet, patented Oct. 31, 1855. I do not claim the combination of the cam (whose axis is attached directly to the carriage axle,) with the connecting rod and frictional clutch upon the ratchet lever made substantially as described.

CARTRIDGES—Edward Maynard, of Washington, D. C. I am aware that cartridge cases of a tapering shape, have been made of sheet copper, or other hard metal combined with soft metal rings, as described and represented in a patent granted to A. E. Burnside, March 25, 1855. And I am also aware that the said cartridge can only be used in a movable breech piece, and that it does not possess, in other particulars, the peculiar advantages which distinguish my improved cartridge for breech-loading fire arms.

I claim my improved cartridge for breech-loading fire arms, composed of a hard metal cylindrical case charged with powder, and combined with a projectile of such shape, that whether the case receive a large or a small charge of powder, the said projectile is self retained in contact with the powder, in such a position that its point should be coincident with the axis of said case, and a perfectly tight joint formed between said projectile and case, by filling the grooves in the former, with greasy matter, substantially as set forth.

ELASTIC BANDS—David McComb, of Memphis, Tenn.: I claim the combination of the link or slide with the hooked ends of hoops, for the purpose of securing them from opening, with the expansive force of the bale. I also claim the peculiar formation of the link, as exhibited, which forms a secure means of keeping the hooked ends of the hoop together, and has a guard which keeps it to its place, is easy of application in putting on, and may be removed at pleasure without mutilation.

SMOOTHING IRONS—O. F. Morrill, of Boston, Mass.: I claim attaching to the iron a vessel or receptacle for containing alcohol or other spirit, constructed with a spout or chamber, into which the spirit is conducted by a wick and heated by a flame properly applied thereto, the said spout or chamber having attached to it and communicating with it, a small tube through an orifice of which the gas or vapor thus generated is forced in a jet and ignited by coming in contact with the flame employed for generating the gas, by which arrangement a jet of flame is made to impinge upon the hollow chamber of the iron, as set forth.

I also claim constructing the iron with a partition, r, r, at the rear portion of the iron, for the purpose described.

REFLECTING QUADRANTS—Thos. Hedgecock, of Surrey Co., Eng. Patented in England March 31st, 1856. I claim the detector glass, G, applied and operating, as described, in combination with the index glass, A, and horizon glass, B, for the purpose of facilitating observations, in the manner set forth.

CLUTCH FOR FLOUR PACKERS—J. T. Noye, of Buffalo, N. Y.: I claim the clutch formed by the hollow shaft, W, with slots, s, and chamber, K, in connection with the round shaft, T, with driving pins, f, and balance or slide guards, o, to drive the pins up into the chamber in the manner and for the purpose of packing flour in barrels.

APPLE PARSER—J. D. Seagrave, of Worcester, Mass.: I do not claim allowing the knife holder to turn either way. I claim the attaching the spring, s, to the rod, P, so as to hold or return the knife to nearly right angles to the line of motion of P, to or from the center of M, as described.

PORTFOLIO—James Shaw, of Providence, R. I.: I do not claim, separately or in itself considered, the roller, B. But I claim the roller, B, attached to the covers, C, C, provided with the grooves, b, c, and rings, d, which are fitted in the grooves, c, substantially as described for the purpose set forth.

HARVESTERS—J. C. & L. C. Pluche, of Cape Vincent, N. Y.: I claim the frame, C, when arranged in respect to the driving shaft, D, and having the bar, E, attached to its lower end, and the strips, f, attached to the bar, E, the upper ends of the strips, f, having a roller, g, attached to them, which roller is fitted and works in a guide, F, the finger bar, G, being connected to a shaft, k, fitted within the bar, E, where the whole is constructed and arranged substantially as shown for the purpose specified.

AUGER HANDLES—N. C. Sanford of Meriden, Conn.: I claim in augers having an eye for the passage and retention of the handle, fastening the stick or handle in the eye of the auger shank by means of the screw, C, passing through the eye, B, handle, E, and into a recess, in the shank, in combination with the clamp or screw plate, D, on the under side of the stick within the eye, and operated by the screw, as specified.

CORN HARVESTERS—W. S. Tilton, of Boston, Mass.: I claim the rotating cutters, G, G, and stationary knife, J, placed within an adjustable frame, E, arranged as specified.

OPERATING CUTTERS—John Tear, of Chicago, Ill.: I am aware that a divided or sectional cylinder has been used, and that these sections have been operated by cams to give them lateral and vertical motion. These I do not claim. I claim, in turning or cutting irregular forms, the use of a cutter head, in which the knives or cutters are caused to traverse during the rotation of the cylinder for the purpose of adapting themselves to the shape of the thing to be cut by them.

SHIRING HAT BODIES—Jos. Thomas, of Brooklyn, N. Y. First, I claim combining with the wheel, D, the wheels, E and U, or their mechanical equivalents, for giving the main wheel a vibrating motion, when set with a stationary plate or bed, in order to run the goods back and forth, and also in combination therewith, the mechanism for giving the main wheel the constantly advancing motion when arranged and operating in a manner substantially the same with that described.

Second, I claim combining and arranging the circular plate or bed, B, I, and table, C, I, in such manner that by the levers, A', or their equivalents, and cords, b, b, the same mechanism may adjust the plate, B, I, to the wheel, D, and also the table, C, I, to the ratchet rollers, and thus give any pressure desired to the goods, substantially as specified and for the purposes set forth.

COAL HEATING BAKERS—J. D. Wheelock, of Maysville, Wis.: I claim the use of the descending flue or tube, E, in two parts, the one sliding into the other, so that the same can be lengthened or shortened at pleasure for the purpose of passing off the fumes and smoke of the coal burned in the chamber, F, in combination with the said chamber, F, and the perforated bottom, H, and top, D, for baking purposes, substantially as set forth.

WATER HEATERS—Edward Whiteley, of Boston, Mass. I claim the diagonal partition, o, between the pipes, K and L, operating in the manner and for the purpose specified. Second, I claim the inclined roof of the heater for the purpose of expelling the air therefrom, in the manner specified and as described.

REVOLVING HARROWS—G. J. Olendorf, of Middlefield, N. Y.: I do not claim to be the inventor of inverted gear, ratchets, wheels, ratchets, or a cylinder constructed with a series of spikes on its surface, for I am aware that these have long been in common use. But I claim the construction and combination of the several parts of my revolving harrow, the whole being arranged and described as set forth.

PRE-TANNING COMPOSITIONS—J. B. Williams, of Salem, Mass.: I do not claim the employment of either carbonate of soda or niter in the tanning liquor. Nor do I claim the employment of a hydrated solution of nitrate of potash and muriate of ammonia in the treatment of hides, preparatory to their being immersed in the tan vat.

But I claim subjecting the hides, after the liming and drenching of them preparatory to their being immersed in the tanning liquor, to the action of a bath of the carbonate of soda and niter, and one of an acid solution or mixture, as specified, the same being for the purpose as set forth.

SAPONIFYING FATS—G. T. Wilson and Geo. Payne, of Belmont Vauxhall, Eng.: We are aware that oils and fats have been heated with steam, and that it has been used as a carrier in the still, but they have not been treated in accordance with our process, viz. by steam maintained at about 500 to 600 degs. temperature above specified, and so as to produce results attained by it. We therefore lay no claim to the processes mentioned of treating oils or neutral fats by heat and artificial pressure, so as to prevent the formation and use of steam or vapor; nor do we claim the common method of treating them by steam in a super-heated state.

But we claim our improved process of treating them so as to distill over glycerine with fat acid mixed but uncombined, as explained.

WELDING IRON PLATES—Wm. Bertram, of Woolwich, Eng. (assignor to John W. Cochran, of New York City.) Patented in England Dec. 21, 1854. Having described the method of carrying out my invention in the construction of ships, bridges, boilers, and other structures, when numerous sheets, bars, or plates of iron are used. I claim welding the separate faces of such bars or plates together by pressure or concussion, while at the same time they are subjected to opposite blasts of heat, in the manner set forth.

MOWING MACHINES—Cornelius Aultman and Lewis Miller (assignors to Ball, Aultman & Co., of Canton, O.) We do not claim connecting the cutter bar to the machine by a hinge joint; nor do we claim the joint at or near the extremity of the cutter bar. But we claim connecting the cutter bar to the machine by the double rule joint, or the double jointed coupling piece, B, C, in the manner and for the purposes set forth.

WORKING STEEL—Horace Vaughn, of Providence, R. I. I claim the dry chloride of sodium and bi-chromate of potash, with or without the prussiate of potash for hardening and tempering steel, combined, applied, and operating substantially as set forth.

RE-ISSUE

CUTTING THREADS OF WOOD SCREWS—Cullen Whipple, of Providence, R. I. (assignor to New England Screw Co., assignor to Cullen Whipple, aforesaid.) Patented Aug. 8, 1842. Re-issue dated March 6th, 1856. What is claimed, first, in combination with the screw blank or mandrel, which gives the rotary motion to the screw blank, the employment of the rotating wedge-formed cam, or the equivalent thereof, for determining the pitch of the thread, and for permitting the return motion to repeat the operation, substantially as described.

Second, causing the chaser or cutter, at each successive cut, to approach nearer to the eye of the screw or blank by means of a revolving conical cam, which, at each successive operation, acts by a greater radius, substantially as described.

Third, governing the motions of the chaser or cutter, to make the core or body of the screw of a conical or tapered form along the whole or any part of its length, by combining therewith a cam of gradually enlarged diameter, substantially as described, the form of such cam depending on the form intended to be given to the core or body of the screw.

Fourth, combining the cam which determines the form of the core or body of the screw (to make it tapering or conical whole or in part,) with the chaser or cutter by means of a rock shaft and adjusting lever, substantially as described, the cam being in combination with the mandrel, between one of the arms of the rock shaft and the face of the cam, so that by the use of a set screw or otherwise analogous device, the cutter or chaser may be readily set, as described.

Fifth, shifting the cam which determines each successive cut of the chaser or cutter, by combining therewith a ratchet movement, operated by an eccentric or cam, which, at the required periods, liberates or disengages or operates a lever connected with the cam, to shift, substantially as described.

Sixth, disconnecting the shaft or mandrel from the driving power at the end of each complete operation of the machine by combining the clutch or the equivalent thereof, with the ratchet, by means of an index wheel or perforated rim, which, at the required periods, liberates or acts upon the connections of the clutch to disengage it, substantially as described.

Seventh, making the chaser or cutter for chasing or cutting the threads of screws by machinery with a groove of the form of the thread in its cutting face and in the direction of its length, substantially as described, whereby the said chaser can be sharpened simply grinding off at the end, and without changing the form of the groove,

and whereby also the said chaser cuts on both sides of the thread, and finally on the edge thereof, as described. Eighth, the combination of the screw driver for holding and rotating the screw blank, with the tubular rest open at the side, to support the shank of the blank while being threaded, substantially as described. [Twice re-issued.]

ADDITIONAL IMPROVEMENT.

BREECH LOADING FIRE ARMS—Abner N. Newton, of Richmond, Ind. Patented June 27, 1854: I claim, first a swivel jointed cylindrical breech-pin, D, the rear portion of which is armed with lugs, b, b, and studs, c, d, e, and an inclined plane, f, all operating in the manner and for the purpose specified.

Second, I claim the locking of the cylindrical breech-pin, D, by means of lugs, b, b, on said breech-pin, rotating on slightly inclined planes, said planes formed within the barrel on opposite sides at the rear of the mortise, C, or their equivalents, substantially as set forth.

Third, I claim the peculiar combination and arrangement of the four parts or pieces of an ordinary gun lock, to wit, the hammer, mainspring, tumbler, and feather spring, making one plain simple piece, operating as represented.

Fourth, I claim the slotted thumb lever, E, in combination with the studs, c, d, e, whereby the swiveled breech is caused to rotate from left to right, and from right to left in locking and unlocking said breech, and whereby the breech is also moved back and forth, substantially as described.

DESIGNS.

STOVES—Isaac Diller, of Lancaster, Pa.

COOKING STOVES—Garretson Smith, Henry Brown J. A. Read, of Philadelphia, Pa.

AIR-TIGHT STOVES—Garretson Smith and Henry Brown, of Philadelphia, Pa.

NINE PLATE STOVES—Garretson Smith, Henry Brown and J. A. Read, of Philadelphia, Pa.

STOVES—Garretson Smith, Henry Brown and Jos. A. Read, of Philadelphia, Pa.

STOVES—S. W. Gibbs (assignor to Perry & Norton,) of Albany, N. Y.

COOKING STOVES—J. F. Allan (assignor to Stratton & Massey,) of Philadelphia, Pa.

Wood Bearings to Shafting of Steamers.

The British steamer *Himalaya* having had the old brass bearings removed, substituted lignum vitæ bearings to her screw shafting, which have operated much better. A correspondent of the London *Artizan* thus describes the results of their application:—

"Since the application of this material the vessel has run about 30,000 miles, during which time the engines have made about 8,000,000 revolutions. The total wear down in the stern-post does not exceed 1-8 inch., which is, of course, very trifling for the work done. The screw shaft is lined with brass at the part bearing on the wood, and this bearing is 18 inches diameter X 4 ft. long. The lignum vitæ is inserted into the cast-iron stern pipe in segments, each piece being the whole length of bearing, and about 3 inches wide X 3-4-inch thick, so that the segments combine into the form of the pipe, in a somewhat similar way as the staves of a cask. The abutting edges of these segments are rounded off to form water-ways, and their surfaces are also scored in several places to allow a free circulation of water on every part of them. These segments are prevented from running round with the shaft through its friction by a strip of metal, which is pinned on to the upper side of the stern-pipe, and against the edges of which the lignum vitæ segments abut. They are kept in at the inner end by a shoulder in the stern-pipe, and at the outer end by a ring, which is screwed on to the stern-post.

We are indebted to the courtesy of Mr. Gray, the engineer of the *Himalaya*, for a description of a very ingenious application of lignum vitæ which he has adopted in his collar or thrust bearing. He found this bearing wore considerably, and when in the Mediterranean last year, the brass rings had thus become so reduced that there was a space of about 3-4 of an inch on the slack side of the collars. He determined to try the experiment of interposing lignum vitæ segments between the thrusting collars on the shaft and the brass rings on the bearing, and fitted them in four segments of a circle to each collar, so that they can be slipped in their place without removing the bottom brass. They are prevented from running round with the shaft by a brass plate screwed on to the lower brass, and are so easily removed and re-fitted that two hours only are necessary for applying new segments to the block. A set of lignum vitæ segments, thus applied, will last for from 7,000 to 10,000 miles, and the expense of fresh segments is comparatively trifling."

This steamer, next to the *Persia*, is the largest afloat in active service. It recently made a very rapid passage to Halifax from the Crimea with 2,000 troops.

A new Metallic Alloy.

Equal parts of iron, cobalt, and nickel fused together, make a very hard alloy of dazzling whiteness, resembling silver. It is suitable for making knife blades, fine files, and other such articles.