

**Empty Empires.**

*Chambers' Journal* has taken to discussing the question of who owns the North Pole. Its ownership, we think, if it be found at all, will probably be acquired by either the United States or England, and either the stars and stripes or St. George's cross will wave over the possible patch of earth, according as some Yankee explorer or Captain Nares first plants his foot on it. As to either banner staying there, that is another matter. We fear the indigenous inhabitants, — walruses, polar bears, and chance Esquimaux — will laugh the eagle and the lion to scorn, and no tidings of either monitors or Woolwich cannon will induce them to allow either starry flag or meteor banner to remain, after it is left to their tender mercies.

There is an old tradition in the United States navy of a dispute between representatives of the two nations over a bit of ground just about as useless as the north pole would be. Two men of war, respectively English and American, met many years ago among the South Sea Islands. Volcanic eruptions in that locality were rife, and the navigators of vessels hardly dared close their eyes at night for fear of new reefs and shoals appearing, regarding which the charts were literally "at sea." The American ship had been in the neighborhood longer than the English one, and therefore her skipper knew something of the marvelous tricks which the land occasionally played. Hence he was not at all surprised to discover one day looming up before him an island, where, according to all accounts, there should be open sea. The Englishman sighted the land at the same time, and in a few minutes a well-manned cutter shoved off from his gangway and pulled for the shore. The American captain likewise sent a boat, and a lively race ensued to see which should first reach the land. As the English boat got into shallow water, her officer jumped overboard, and was followed by some of his crew, who splashed up to the beach. By the time the American boat had landed, the English flag was floating from a boat-hook stuck up for a staff, and a red-coated sentry was calmly walking to and fro beside it. The English captain then sent word over to the American vessel that he had taken possession of that island in the name of the King of Great Britain. The American captain, however, claimed first discovery, and sent back a counter message that that island belonged to the people of the United States. Before morning a storm arose, and both ships worked hard to keep off the lee shore, but when the day broke, there was no lee shore to avoid. The island had gone, and with it flag and sentry. A convulsion similar to that which raised it above the sea had caused it to sink again; and two astonished captains might have been seen navigating their vessels over its former site, vainly searching for the beautiful island which each intended to present to his grateful country, and thus secure to himself imperishable renown.

**NEW BOOKS AND PUBLICATIONS.**

**CONTRIBUTIONS TO THE NATURAL HISTORY OF KERGUELEN ISLAND,** made in connection with the United States Transit of Venus Expedition, 1875-76. By J. H. Kidder, M. D., U. S. N. Part II. Washington, D. C.: Government Printing Office.

This pamphlet contains some interesting information, especially as to the fauna of the remarkable island which forms its subject.

**THE AMERICAN NEWSPAPER DIRECTORY,** containing Accurate Lists of all the Newspapers and Periodicals Published in the United States, Territories, the Dominion of Canada, and Newfoundland. New York city: George P. Rowell & Co., 41 Park Row.

A new edition of Messrs. Rowell & Co.'s handsome volume is now before us; and the steady increase in its number of pages shows us that the newspaper industry is not suffering from contraction. The advertising world is well acquainted with the usefulness of this manual; and it maintains its reputation for accuracy, except in one very glaring instance. It understates the circulation of the *SCIENTIFIC AMERICAN* about 15,000 copies; and it does not mention the *SCIENTIFIC AMERICAN SUPPLEMENT* at all.

**THE COAL TRADE, a Compendium of Useful Information.** By Frederick E. Seward, Editor of the "Coal Trade Journal." New York city: F. E. Seward, 111 Broadway.

An excellent handbook of the whole subject of coal, describing all the mining regions, the various qualities of the mineral, the working of collieries here and abroad, the rates of freight, and all other particulars. It is illustrated with maps.

**THE FANCIER'S JOURNAL.**—All young people and many old ones take an interest in poultry, pigeons, rabbits, birds, and other pets of various kinds. The above-named weekly publication is a journal in which all such persons are interested, as it treats these subjects in a clear and practical manner, with a thorough knowledge of breeding, rearing, feeding, etc. Each number contains information of great value to poultry raisers, dealers, and fanciers. It is published weekly at Hartford, Conn., and is furnished to subscribers for \$2.50 a year.

**Recent American and Foreign Patents.****NEW MECHANICAL AND ENGINEERING INVENTIONS.****IMPROVED RAILROAD SIGNAL.**

Ira Robbins, Hughsville, Pa.—This invention consists in erecting along the foot of a mountain or hill (where there is danger of a land slide) a series of posts between which suitable panels are bottom-hinged so as to connect with signals near a railroad track. Unless a slide takes place, the panels remain in position and the signals are not displayed; but should one occur, any approaching train is notified in time to slow up and avoid danger.

**IMPROVED ROTARY ENGINE.**

Thomas C. Orr, Enfield, Ill.—The pistons are pressed back in the hub by the abutment for passing it, and are pressed out against the case after passing it by steam which passes from the steamway into the hub behind the pistons. The latter are a little larger at that end to insure sufficient pressure to overcome the pressure on the outer end. A spring is used with each piston to keep it out when steam is not acting on it.

**IMPROVED MACHINE FOR PUNCHING METAL LATHS.**

Le Roy Carpenter, Victor Kauffman, and Eason White, Beardstown, Ill.—Two metal rolls have punches for making slits for the plaster; also punches for making the nail holes by which to fasten the sheets on the studs, and a cutter for trimming the sheets. Said rolls are geared together and provided with a hand crank for turning them.

**IMPROVED MILLSTONE.**

John W. Truax, Essex Junction, Vt.—This invention improves the construction of millstones, to enable them to be more readily adjusted and balanced, and to make them more effective in operation. An illustrated description will be found on page 198, current volume.

**MACHINE FOR FORMING SOCKETS ON HAMMERS, ETC.**

Charles A. Williams and Joshua F. Williams, Skowhegan, Me.—This is an improved method of punching and forming the handle sockets on hammers, adzes, hatchets, and other tools with one heating. The invention consists in a machine to which is exposed the hammer or other blank after heating, first to the action of a spreading or enlarging die and punch, and then to the action of the perforating and socket-shaping die and punch.

**IMPROVED WATER WHEEL.**

John Shortridge, Frank W. Shortridge, and Ernest W. Shortridge, Rockingham, N. C.—This invention consists in providing a water wheel with tapering bottom parts below the bottom edge of the buckets, to rest on a turning point, and form an escape box below the wheel.

**IMPROVED LOCOMOTIVE FEED WATER HEATER.**

Horatio N. Waters, West Meriden, Conn., Milton W. Hazelton, Chicago, Ill., and James K. Taylor, Boston, Mass.—A corrugated tube, through which the feed water passes from the pump into the boiler, is surrounded by a steam jacket, into which the exhaust steam is forced by the back pressure of the nozzle, by means of pipes connecting it with the exhaust pipes. A spoon-shaped projection is provided to catch a portion of the steam and direct it into the jacket. The invention also consists of the method of constructing the corrugated tube for the water, and of a spiral deflecting core in the axis of the corrugated tube to divert the water into the interior portions of the corrugations to facilitate the heating.

**IMPROVED RAILROAD TIE.**

George D. Blaisdell, Cambridge, Vt.—This tie consists of a cast iron bar, with a box in each end for holding the rail chairs, and a rod extending from end to end of the tie, and securing the chairs in place by clamping plates.

**IMPROVED MACHINE FOR MAKING NUTS.**

Carl G. Gustafsson, Jönköping, Sweden.—This is an improved machine for making screw nuts of hexagonal and other shapes in rapid and effective manner. It consists of an intermittently revolving disk with dies, into which the nut blanks, cut by shears from the bar, are fed and brought by consecutive punches into the required shape.

**IMPROVED WINDMILL.**

Jason C. Sparks, Tipton, Iowa.—The wheel with fixed vanes is used, and wheel supports are jointed to the turntable, carrying the tail vane, so that the wheel swings around edgewise to the wind to adjust it to the varying power of the wind and to stop it.

**NEW CHEMICAL AND MISCELLANEOUS INVENTIONS.****IMPROVED LAMP COLLAR.**

Theodore L. Owen, Geneva, N. Y.—This is a mode of constructing a lamp collar in two parts, to one of which the burner is attached, while the other is secured to the flange of the lamp. The object of the device is to allow of the replenishment of the lamp with oil without necessitating the unscrewing of the burner.

**IMPROVED INVALID BEDSTEAD.**

Andrew McArthur, South Chenango, Pa.—This consists of a platform, pivoted longitudinally and transversely in a frame, so that the patient can be tilted upright or sidewise, as may be required for comfort. On the lower part are independent jointed supports for each leg, with bandage appliances, and a windlass and straps for extending the leg in case of fracture or dislocation. The upper part is provided with a bed with edges suitably formed to be strapped around the body of the patient, and in the middle portion are arm rests, contrived for adjusting to different positions for the comfort of the patient when elevated by tilting on the transverse axis.

**IMPROVED COFFIN ATTACHMENT.**

Samuel A. Hughes, Parker's Landing, Pa.—This consists of a hook attachment to coffins, for lowering them by the ropes or straps, instead of having the ropes or straps pass under the coffins. It is fastened to the handle plates.

**IMPROVED PIANO LOCK.**

Amos S. Blake, Waterbury, Conn.—This invention consists in the lock case, formed of two plates, by bending up the side and end edges, and bending over the end edges of the one plate and slipping the other plate into the seat thus formed.

**IMPROVED MAT.**

Arthur Thompson, Warner, N. H.—This is a mat of excelsior, mounted on and attached to a backing of paper, cardboard, cloth, or sacking, the object being to provide a cheap mat for omnibuses, street cars, and the like.

**IMPROVED MEANS OF ATTACHING MAST HOOPS AND SAILS.**

Edgar B. Beach, West Meriden, Conn., assignor to himself and H. B. Beach, of same place.—The usual mode of attaching the back of fore and aft sails to the mast hoops is by a seizing between an eyelet in the sail and around the hoops. The above inventor suggests an excellent substitute for this mode of fastening, which consists in two semicircular sleeves of metal, attached to the hoop, and which receive the leech rope in their semicircular portion. A clamping screw passing through both pieces, and the eyelet in the sail fastens all together.

**IMPROVED BARBED FENCE WIRE.**

Richard Emerson, Sycamore, Ill., assignor to himself and Chauncey Ellwood, of same place.—The invention consists in a fence barb formed of a piece of wire bent into the form of a figure 8, with both end parts upon the same side of the middle part, and with its ends projecting in opposite directions. When the barbs have been adjusted in place upon the fence wire, the eyes are straightened out, forming a bend in the said fence wire, into which the end parts of the barb are pressed, so that the barbs can neither turn nor slide.

**NEW HOUSEHOLD ARTICLES.****IMPROVED WASHING MACHINE.**

Squire Turner, Sr., Columbia, Mo.—A lower tub is made ring-shaped, and to its inner sides are attached the standards that support the upper tub. A vertical shaft passes down through the centers of the tubs. The bottom of the lower tub is made flat, and in it are placed four rollers, placed at right angles with each other, and each made in sections, which revolve upon a rod, the ends of which are attached to brackets, secured to cross bars. The bars and rollers are connected so that all the rollers and their bars may move together. The bottom of the upper tub is inclined, and in it are placed four conical rollers. Every other one of the rollers has cavities formed in it which carry down air and discharge it among the fibers of the clothes, to be pressed out, together with the water, by the following smooth rollers, removing the dirt and washing the clothes clean.

**IMPROVED DISH-WASHING MACHINE.**

Edward P. Hudson, New York city.—The dishes are submitted to the action of sponge rollers, and pass to an endless belt, thence to a second set of rollers. They then go to another part of the receptacle, where the water acts like a cushion and conveys them smoothly to the bottom of a strong basket, in which they settle without chipping, breaking, or being otherwise injured.

**IMPROVED GRATE.**

Francis Z. Hickox, Utica, N. Y., assignor to one third his right to Michael Smith and one third to John Mills of same place.—This is a shaker or stirrer, consisting of a frame fixed to slide forward and backward on vertically inclined ways under the grate, and having teeth projecting up into the fire between the bars, so as to have a forward and backward and up and down raking action.

**IMPROVED CHILDREN'S COMMODO.**

Allen B. Crowell, West Dennis, Mass.—This combines the advantages of a chair, walking stool, and commode. The chair is arranged within a case, with front and rear doors, closed by a cover that is used as a tray when attached to the front part of the commode. Closets at the sides serve for storing the playthings, while a cross bar at the rear, with extension guards of the side walls, allow the use of the commode as a walking stool.

**NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.****IMPROVED MACHINE FOR EDGING LUMBER.**

Andrew E. Hoffman, Fort Wayne, Ind.—In using this machine, the lumber is laid upon a table, and is pushed back into the proper position, as indicated by the guide wire. The carriage is then thrown into gear with the proper shaft, and the saw traverses the lumber from end to end. As the saw leaves the lumber, the lumber is turned over and adjusted into proper position to be operated upon by the return saw. As the carriage reaches the end of the frame, the other saw is raised, and the Sawyer causes the carriage to move in the opposite direction by throwing it into gear with the other shaft.

**IMPROVED WALL.**

Philo A. Knapp and Ira S. Knapp, Danbury, Conn.—These inventors propose to construct the walls and partitions of buildings, of boxes without top and bottom, filled with loose gravel. The boxes are placed one upon another and tied, keyed, or otherwise fastened together so as to form blocks, in imitation of stone or other building blocks.

**IMPROVED STALL FLOOR.**

Bernhard Schaefer, Chicago, Ill.—This invention consists of a movable floor, laid on the common stable floor, made of longitudinal wedge-shaped or tapering strips, that are connected by transverse bolts and intermediate wedge pieces at the ends. The floor below the flooring is cleaned from time to time by raising the sections and sweeping the dust away.

**IMPROVED SIDE BAR WAGON.**

Alfred W. Doty, Windham, N. Y.—This relates to that class of carriages in which the side bars are made in two parts, and connected to the box at the middle or thereabout. The box is let down between the side bars, instead of being mounted above them, as heretofore, the bars being pivoted to the sides of the box.

**IMPROVED CHECK BRACE FOR VEHICLE SPRING.**

Lewis P. Worrall, Sugartown, Pa.—This is a combination, with a vehicle perch and springs, of brackets having a coupling box at the base, and plates reversely curved at the ends, in order to form a double-acting brace that will allow the springs to come together without striking the perch or body, and without making any rattle.

**NEW AGRICULTURAL INVENTIONS.****IMPROVED SEED PLANTER.**

John H. Martin, Thomas Bunford, and Stephen S. Ege, Glen Rock, Neb.—This device operates the dropping slide of a seed planter by the advance of the machine. It enables the seed to be planted without its being necessary to mark the ground.

**IMPROVED POTATO DIGGER.**

James W. Young, Southfield, Mich.—This machine digs potatoes, separates them from the soil, and deposits them in the middle part of the row, so that they will be out of the way of the wheels in digging the next row. It also keeps its own teeth free from vines and weeds.

**IMPROVED METALLIC SOCKET FOR FENCE POSTS.**

William M. Phelps, Oronoco, Minn., assignor to himself and Daniel McAlpine, same place.—This is a metallic fence post point. Its object is to prevent the post from rotting off, and thus to cause the posts to last very much longer, and to enable any kind of timber to be used for the posts.

**IMPROVED AGRICULTURAL BOILER.**

Henry L. Humphrey, Frederick H. Humphrey, and Ira G. Humphrey, Monroe, Mich.—This is an improved boiler and furnace for cooking food, scalding hogs, boiling sap, boiling cider, making apple sauce, heating curd for cheese, condensing milk, trying lard and tallow, etc. The fire box is provided with a grate, and from the upper part of its rear end a wide and shallow flue extends back so that the products of combustion may be close to and in direct contact with the entire bottom of the box. Two boilers fit into the box and rest upon a steam board. By this construction, the contents of the boilers will be heated by the water placed in the box.

**IMPROVED SEED PLANTER.**

Alvin J. Branham, Houstonia, Mo.—This is an improved device for operating the dropping bar of a seed planter from the wheel. It may be applied to any planter in which the seed is dropped by slides, so as to make them automatic in their operation.

**IMPROVED CHURN.**

Jonas Cook, Mount Pleasant, N. C.—The novelty in this lies in the dasher, which includes spiral cross bars, a spiral disk and a circular disk attached to a vertical rotary shaft. The object is to throw the milk into violent agitation and thus produce the butter more rapidly.

**IMPROVED CHURN.**

Henry B. Ramsey, Rockville, Ind.—This churn is provided with a series of tubes, passing through the churn to a water reservoir at the bottom, to break up the currents of cream, and at the same time to serve as water conveyers.

**IMPROVED BAG FILLER AND MEASURER.**

Joseph J. Scholfield, Salt Lake City, Utah Ter.—This consists of a funnel-topped, sheet metal tube, with open bottom, and having springs upon the outside to hold the bag up around the tube. It is enough smaller than the bag to be put in it freely. Inside the tube is sealed with lines, showing the different measures, so that, by putting the filler in the bag and shoveling in the grain, the quantity can be readily ascertained, and the grain can be quickly discharged by merely pulling the filler out of the bag.