Reciprocity in Trade Marks between Great Britain and the United States.

President Hayes has issued a proclamation, under date of July 30, 1878, to the effect that the Government of the United States of America and the Government of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, with a view to the reciprocal protection of the marks of manufacture and trade in the two countries, have agreed as follows:

"The subjects or citizens of each of the contracting parties shall have, in the dominions and possessions of the other, the same rights as belong to native subjects or citizens, or as are now granted, or may hereafter be granted, to the subjects and citizens of the most favored nation, in everything relating to property in trade marks and trade labels.

"It is understood that any person who desires to obtain the aforesaid protection must fulfill the formalities required by the laws of the respective countries."

Citizens of the United States who desire to obtain registration for their trade marks either in this country or in Great Britain may have the business speedily transacted through the Scientific American office on very moderate terms.

American Institute Exhibition.

It will not be the fault of this paper if the coming exhibition of this Institute should prove to be a chaotic mass of half arranged merchandise on the opening day (September 11), for we have so often given notice of the fact that an exhibition is to be held, and have as repeatedly given notice of the time; nor will it be the fault of the officers of the Institute, for the building is always ready in time; but will, we presume, be the fault of the exhibitor, who, as a general rule, procrastinates, and is often many days behind. We should think that an exhibitor would desire that his exhibit should be arranged upon the opening day, and not a week or ten days later. For information address General Superintendent, room 22, Cooper Union Building, New York.

OLIVER'S SCREW-HEADED KEY.

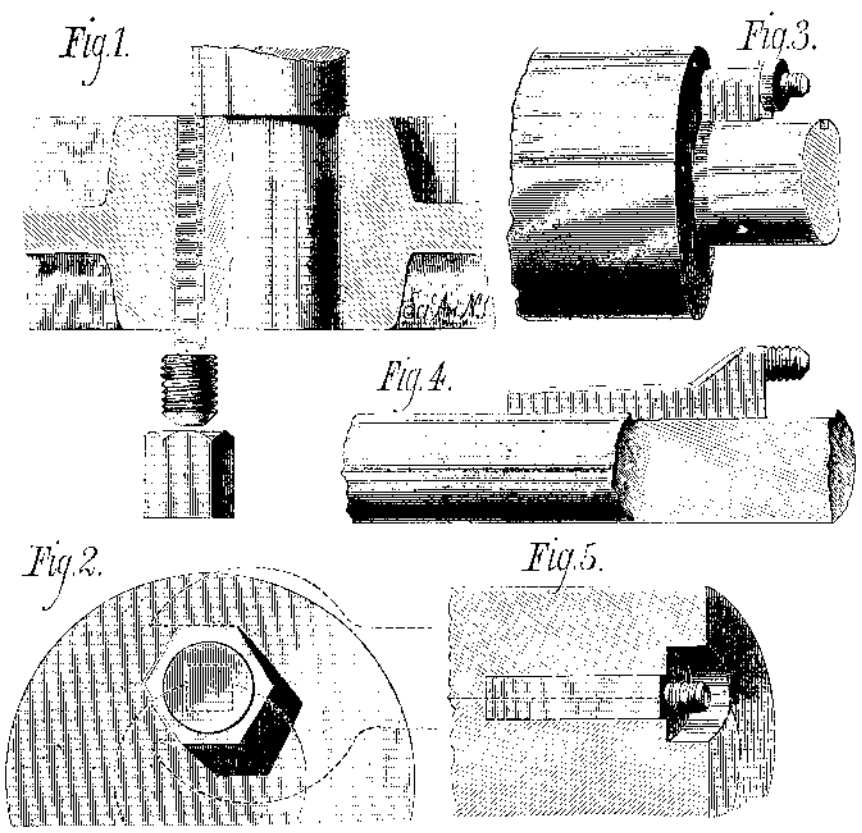
In the several figures in the engraving are represented different forms of a novel key for fastening the bosses of wheels, levers, couplings, etc., to their shafts. The novel feature of the key is its head, which is made cylindrical, and is threaded to receive the nut by which it is drawn from its seat. Where the key has its seat in the end of a shaft, as in Fig. 1, it is made straight, and the threaded portion is larger in diameter than the body of the key, to allow the nut to pass over it as the key is drawn out. In cases where a projecting head would be objectionable, the boss and shaft may be counterbored, as in Fig. 5, so that the end of the key will be even with the end of the shaft. When a key of this sort is to be removed, a short thimble will be placed over the head of the key before applying the nut, and the nut will have sufficient thickness to extend beyond the boss and shaft to receive the strong wrench employed in turning it.

When the key is used on a line shaft its head is offset, as shown in Figs. 3 and 4, to admit of receiving the nut. When the key is to be removed a U shaped piece is slipped over its outer end to form an abutment for the nut to work against. A key having a head of the ordinary form is liable to break under severe stress, and thereby involve considerable labor in drilling it out And when a key is removed by means of a drift applied to its thinner end, the successive blows are apt to upset it and increase the difficulty of removing it.

In a manufactory filled with operatives it often occurs that the whole establishment must be idle for days on account of the difficulty attending the removal of a few keys. The improvement illustrated obviates these difficulties, and affords a quick and certain method of removing keys without injuring them, or the machinery of which they form a part.

In factories where explosive material is used or manufactured, as for example in powder mills, it is of especial advantage, as there can be no danger of explosion, as no blows or friction are required to remove the key, consequently no spark can be produced.

This invention was recently patented by Mr. Paul A. Oliver, of Wilkesbarre, Pa., from whom further information may be obtained.



OLIVER'S SCREW-HEADED KEY.

Export Grain Trade of the Mississippi.

Previous to 1870 it was believed that grain could not be shipped to Europe by way of New Orleans, owing to the warmth and humidity of the atmosphere of the Gulf Stream. To disprove that hypothesis the Grain Association in that year sent experimentally 66,000 bushels of wheat to Europe by way of the mouth of the Mississippi. The next year 3,000 bushels of oats and 309,000 bushels of wheat were exported that way. The next three years the exports averaged about 1,500,000 bushels. In 1875 the shipments fell off to 308,000 bushels. In 1866 the jetty improvements led to the exportation, via New Orleans, of about 1,750,000 bushels, chiefly corn. In 1877 the shipments exceeded four million bushels, comprising 351,453 bushels of wheat, 3,578,057 bushels of corn, and 171,843 bushels of rye.

Japanese Houses and Earthquakes.

From the pamphlet of Messrs. Perry and Ayrton, Professors in the Imperial College of Engineering, Tokio, Japan, we learn that the houses in Japan are without the foundations we are accustomed to use; the vertical posts rest on detached stones, and there are no diagonal braces.

Thus the building can be displaced from its position of equilibrium by an earthquake shock without fracture occurring; the so-called "viscous resistance" to the motion, caused by the various joints, diminishing the motion and adding to the safety of the building, while the absence of diagonal pieces tends to lessen the strains.

NEW TIN ROVING CAN.

Probably there is nothing that causes more waste in the carding room than roving cans with imperfect bottoms. In the accompanying engravings a roving can is shown which is calculated to withstand the abuse to which such articles are usually subjected.

Fig. 1.

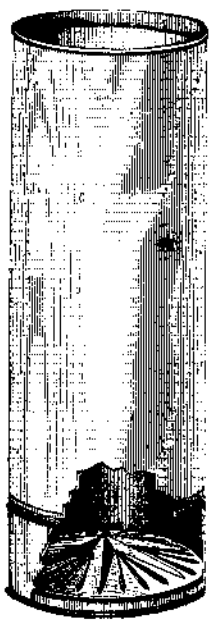


Fig. 2.

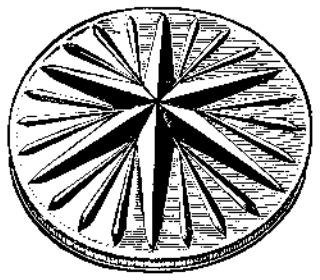
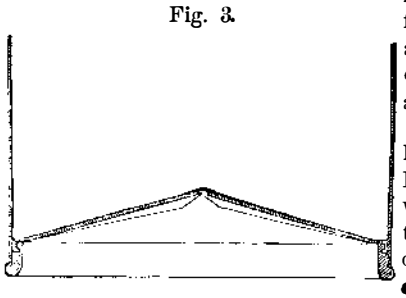


Fig. 3.



The completed can with a portion of its side broken away is shown in Fig. 1. Fig. 2 is a perspective view of the indented bottom, and Fig. 3 is a vertical section showing the manner of putting the parts together.

The bottom is pressed up with a star-shaped indentation in the middle to strengthen and stiffen it. This construction gives the bottom a desirable form and permits of the use of light metal, and at the same time gives it rigidity.

The bottom is attached to a strong tinned iron hoop, and the hoop and bottom together are inserted into the lower end of the can, and a strengthening band is put around the can a short distance, say 5 inches, above the bottom, and attached by beading on to the body. When all of the parts are put together in the manner described, the bottom of the can is placed in a vessel containing melted solder and allowed to remain until the solder enters every seam and attaches the bottom securely to the body of the can, when the can is removed and allowed to cool.

We are informed that there are a great number of these cans now in use, giving great satisfaction.

Patented May 28th and June 18th, 1878, by James Hill, 261 and 263 Dyer street, Providence, R. I. For further particulars address the inventor as above.

New Inventions.

Messrs. Henry J. Hellert, Franck M. Müller, and Charles A. Meyer, of Vincennes, Ind., have patented Improvements in Bowling Alleys, by which the pins may be set up and the balls returned quickly by the players themselves, without requiring any person to attend to the pins and balls.

Messrs. Thomas Massey and William H. Rawe, of Pawtucket, R. I., have patented an improved Stopper for Bottles designed to contain beer or other effervescing drinks or liquids; and it consists in a bottle nozzle having curved slots in opposite sides, and in a yoke adapted to the slots in the bottle nozzle, and to a stopper of novel construction.

Mr. Vanderlyn H. Felt, of Kendall, N. Y., has patented an improved Lifting Jack, for raising the axles of wagons to allow them to be oiled, for raising tracks of railroads to ballast and level them, for raising fences to place blocks beneath them, and for other similar uses.

An improvement in Dyeing Apparatus has been patented by Mr. Alphenas V. Hysore, of Wilmington, Del. This improvement relates to apparatus for manipulating stock in a dye house, and for transferring it from one dye vat to another. It consists in an arrangement of hoisting mechanism and a track and a car of peculiar construction, to facilitate the transfer of stock from one vat to another.

Mr. Marcus H. Rogers, of Great Barrington, Mass., has patented an improved Newspaper Folding Machine. This invention relates to the class of machines that are employed in folding newspapers for mailing. The advantages claimed for this machine are that it may be placed under the fly of an ordinary power printing press, and it may be used in conjunction with the press, folding the papers as fast as they are printed.

Messrs. Charles E. Hart and Toby Johnson, of Lake Lillian, Minn., have patented a Combined Burglar Alarm and Indicator, which is operated whenever a cord, connected with the doors and windows of a dwelling, is subjected to tension by the act of opening a door or window. The place or apartment where the burglar is seeking an entrance is indicated upon a register, by means of numbers, one number indicating one place or apartment, and another another.

An improved Bottle Stopper has been patented by Mr. Alexandre Esprit Napoléon Agnel, of Paris, France. This is an improvement in the class of adjustable screw caps or stoppers for bottles used for perfumery, tooth washes, toilet waters, medicines, etc., from which it is desirable to discharge the liquid in drops or fine jets.

An improved Bobbin has been patented by Mr. John S. Crowley, of Manchester, England. The object of this invention is to protect wooden bobbins used in the manufacture of textile fabrics. It consists in a notched ring that is attached to the lower end of the bobbin, for receiving the lugs of the bobbin wheel.

Mr. Amandus Henning, of New York City, has patented an improved Stereotype Block. When the stereotype plates are secured to their blocks by the common method, and it is desired to adjust one of them in a form, it is necessary to unlock the entire form, thereby endangering the arrangement of the other blocks in the form, so that it frequently becomes necessary to readjust the form. Another difficulty common to the ordinary method of holding stereotype plates is that the face of the plate, near its edges, is often injured by the tools employed in fastening the blocks and locking the form. By this improvement these difficulties are obviated.

An improved Water Reservoir and Stove Pipe Shelf has been patented by Mr. John W. Barton, of Emporia, Kan. The object of this invention is to provide a cheap and convenient water reservoir, to be attached to the stove pipe, and to furnish a shelf for holding articles over the stove to keep them warm. The water in the reservoir is warmed without expenditure of extra fuel, and the space occupied by the reservoir is not available for other uses.

Mr. James Dawson, of Brooklyn, N. Y., is the inventor of an improved Attachment for the Hose of Fire Engines, the use of which will enable liquid chemicals to be introduced into the stream of water passing through the hose, so as to be thrown upon the fire with said water, and thus avoid the necessity of having a separate engine for throwing chemicals.

An improved Lamp Bracket has been patented by Mr. Bruno A. Neisser, of Battle Creek, Mich. The object of this invention is to provide a cheap and simple device, attachable to a sewing machine table, for supporting and adjusting the position of a lamp to light the operative at work without preventing the free passing on table of the garment operated upon.

Messrs. George L. Neville and Leroy C. Godwin, of Portsmouth, Va., have invented an improved Device for Canceling Stamps, which consists in a cap having thin sharp edges and two points, which are inserted in the stamp from the back and bent down over its face, to hold the edges of the cap against the back of the stamp.

An improved Invalid Chair has been patented by Mr. Cevedra B. Sheldon, of New York city. This invention relates to improvements on an invalid chair for which letters patent No. 173,071 were granted to him February 1, 1876, and it consists in a novel arrangement of the movable seat, back and foot rest, which permits of the ease adjustment of the chair or the quick conversion of it into a reclining chair or lounge.

Mr. Moritz Jonas, of New York City, has patented an improved Cigar Package, composed of a series of bundles prismatic in cross section, and placed together so as to dovetail into each other.

An improvement in the manufacture of Hydraulic Cement has been patented by Mr. John Dimelow, of Austin, Texas. The object of this invention is to furnish a superior article of hydraulic cement from refuse material which is now regarded as worthless, so that any city can supply itself with all the cement it requires for building and other purposes at a comparatively small cost. It consists in a hydraulic cement formed of rotten, decomposed, or refuse limestone or marble and the deposit of rivers, in about equal proportions.

Mr. John H. Tays, of New Braunfels, Texas, has patented an improved Draw Gauge for cutting leather straps of any desired width. It may be adjusted to any required width without being liable to slip, as in the common draw gauges.

Mr. John M. Pfaudler, of Rochester, N. Y., has patented an Apparatus for Regulating the Pressure in a Series of Fermenting Vessels. The invention has for its object to provide an effective apparatus for equalizing the pressure in a series of hogsheads or other vessels containing beer, wines, or other liquids in a state of fermentation, and for regulating the pressure of the gas caused by such fermentation, so that it shall not exceed a certain number of pounds to the square inch previously determined and gauged in the said apparatus.

Mr. Wm. Manley, of Rochester, N.Y., has patented an improved Machine for Rubbing the Seams of Boots and Shoes, which holds the uppers of boots and shoes firmly and smoothly while the seams are being opened and rubbed down. It enables the work to be done quicker and better than when done in the usual way.

Mr. John R. Spearman, of Silver Street, S. C., has patented a simple and effective Device for Protecting Bees from the destructive moths which enter the hives, and, depositing their eggs at the bottom of the hive or stand, gradually work upward under cover of their own webs until they reach the honeycomb and cause the bees to abandon the hive.

An improved Stop Motion for Drawing Frames has been patented by Mr. Walter S. Kelley, of North Weare, N. H. This invention consists in an improved mode of connecting together the catch lever and the trumpet guide used on a drawing frame in cotton mills to stop it when the end or sliver breaks or contains fine places, the object being to allow of throwing back the trumpet in a convenient position for inserting the end or sliver, and to allow of adjusting the altitude of the free end of the catch lever to accommodate inequalities in the drawing frame.

Mr. Osmond M. Johnston, of Brownsville, Pa., has patented a Burial Casket, formed of potter's clay, and having transverse and longitudinal ribs formed on the inner surface of the top, sides, and bottom.

Mr. Charles Waller, Jr., of Baraboo, Wis., is the inventor of an improved Gate and Door Latch, by which a door may be fastened and yet opened under different degrees of force, depending on the adjustment of the latch, thus enabling a person to open and shut the door by merely pulling the door on one side or by pushing it on the other. It is also designed to answer the purpose of a lock.

Messrs. Harman Brocious, Hiram E. Bensinger, and Samuel Wragg, of Raven Run, Pa., have patented an improved Lubricator, which consists in a novel arrangement of an oil cup or lubricant holder, and a novel construction and arrangement of devices employed in connection therewith, whereby the lubricant is automatically supplied at regular intervals and in uniform quantities.

Mr. Samuel Keim, of Altoona, Pa., has patented an improvement in Millstone Dresses, the object of which is to cause the grain to be thrown away from the eye of the stone and carried to the flouring surfaces before it is ground fine, and thereby reduce the quantity of middlings by entirely freeing and pulverizing the flour.

Mr. Robert Kirkpatrick, of Richmond (Debec P. O.), New Brunswick, Canada, is the inventor of a simple and convenient Device for Ascertaining the Weight of Articles too heavy for being placed on the scale by the hands alone, and so constructed that such articles may be elevated from the ground and weighed by the same device.

Mr. Julius Brunner, of Morrisania, N. Y., has patented an improved Toy Pistol, which consists in a stock containing a spring hammer and a star wheel, arranged in the stock so as to trip the spring hammer and explode the percussion paper carried by the wheel.

The Durability of Railroad Ties.

According to *Le Fer*, at a meeting of directors of the German railroads held at Constance, the following information was furnished in regard to the relative value of the different methods of injecting ties:

First.—Railroad from Hanover and Cologne to Minden.

Pine ties injected with chloride of zinc; after 21 years the proportion of ties renewed was 21 per cent.

Beech ties injected with creosote; after 22 years, 46 per cent.

Oak ties injected with chloride of zinc; after 17 years, 20·7 per cent.

Oak ties not injected; after 17 years, 49 per cent.

The conditions were very favorable for experiment; the road bed was good, and permitted of easy desiccation.

The unrenewed ties showed, on cutting, that they were in a condition of perfect health.

Second.—Railroad "Kaiser-Ferdinands-Nord."

Oak ties not injected; after 12 years the proportion renewed was 74·48 per cent

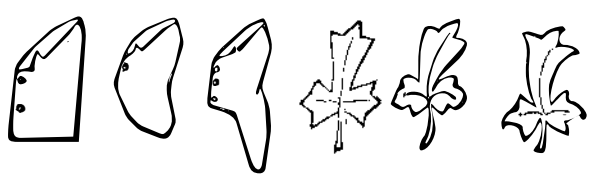
Oak ties injected with chloride of zinc; after 7 years, 3·29 per cent.

Oak ties injected with creosote; after 6 years, 0·09 per cent.

Pine ties injected with chloride of zinc; after 17 years, 4 46 per cent.

National Characteristics.

The national character of a people is expressed in its dress and its ornaments in the same manner that handwriting carries with it the character of the writer. For example, says Mr. John Moser in the *American Architect*, take the English, the French, and the German. In England the leaders of fashion, etc., are from twenty to thirty years old; in France, old and young alike interest themselves; in Germany, the old professor gives the tone in art matters. Now take a coat of each and note the characteristics of the people



in the cut of it: the English, square and angular; the French, graceful and soft in its lines; and the German has some of the former, and adds some scholasticism inclining to the pedantic. Take, again, the treatment of a simple trefoil by the different peoples; and we find the first is all vigor, nearly everything in straight lines; the second is all grace and elegance; the last, with some vigor (sharp corners), and some grace in the motion, has the scholasticism in the central divisions, which must all have the convex and concave sweep. Now it seems to me a big sunflower hewn out with a broad-ax does not express the national character of this great people; and yet there is so much of this crudeness in the ornamentation of our day, that I cannot think of anything else that would fill the bill; and I feel that our leading men should be able to give us something original, appropriate for our time (we are no longer in the dark ages), that would be characteristic of us, and that would not disgrace us when the future antiquarian shall find the sites where we dwelt and worked.

How Salmon are Canned.

A special correspondent of the *World*, writing from New Westminster, British Columbia, under date of July 10, reports a good deal of activity along the Frazer river, the salmon having begun to run.

There are at present eight canneries on the Frazer, each employing from 250 to 300 men. Both American and English firms have capital invested in the enterprise. The river at this time presents a very busy appearance. The fishing boats have their nets spread day and night, and some very good hauls have already been made. The fish taken so far are very small, the average weight when trimmed being only five pounds. People in the East and in England probably have very indistinct ideas of the manner in which the canned salmon that appears on their tables is prepared. The mode is as follows: A company comes here, and having selected a site on the banks of the Frazer, proceeds to erect a cannery. This consists generally of several low, long wooden buildings, comprising a boat house to contain the fishing boats, of which each cannery has some thirty or forty, an engine room, a boiling room containing vats in which the fish are boiled, a tin room where the cans are made, packing rooms, and a large room in which the fish undergoes the various processes previous to shipment to market. Some of the canneries find it advantageous to let out their work to Chinese firms, who undertake to supply all the labor necessary to dress the fish after it is caught and prepare it for canning. But the majority of firms take charge of the whole of their business. At stated times after the nets are laid across the river the boats return to the cannery and land their catch. This is immediately seized by the Chinese workmen, for by far the greater part of the indoor work is done by Mongolians, and washed. The fish are then slit up and cleaned and the head removed. Then they are passed on to the next block, which consists of a machine with a number of sharp blades joined to a shaft which is turned by a handle. The blades are just so far apart that the salmon when cut will be the correct length to fill an ordinary one pound can. The next stage consists in filling the cans. The fish is rammed and jammed and squeezed into the tins, and it is this part of the proceedings that would make one who had seen the process unwilling to eat the salmon when it is ready for sale. Next the covers are placed on and soldered. They are then perfectly air tight and are forwarded to the boilers. These consist of vats some five feet in height and about four feet in length and breadth Into these, which contain boiling water, the cans are plunged and allowed to remain two hours or so. At the end of that time they are taken out and allowed to cool. A hole in the center of the cover that had been soldered up at first is now opened by placing a hot iron over the solder. The melted metal drops into the can, and this accounts for the several shotlike bodies found in each tin. This vent being opened, all the gases generated in the boiling are allowed to escape. Afterward the cans are passed on to the next department, when they are rendered air tight once more, and further on to workmen who dip them in a varnishlike composition. Later they come to the labeling department, after which they are ready to be packed in four dozen cases and shipped. This is the whole process of canning. Thus a salmon enjoying life and liberty and in the full pursuit of happiness at 9 o'clock may find himself snugly packed away in a can at 12 and ready for the American market, labeled as the finest Frazer river salmon. In less than fifteen days after the same fish may be sold in New York, and a few days later in London, not, however, until the Frazer river label has been torn off and an English one substituted, when the new importation then appears under the name of fine Scotch salmon.

In the tin making and other mechanical departments, without which no cannery is complete, every labor saving contrivance possible is used. Two new canneries have been erected this season, and the salmon fishery has thus become one of the principal industries of this section of the colony.

New Mechanical Inventions.

An improvement in Fly Wheels for Sewing Machines has been patented by Mr. Albert Decker, of Kankakee, Ill. This invention relates to improvements in the fly or band wheels of sewing machines. The fly wheel may be allowed to turn loosely on its shaft when winding up the bobbin, so as to prevent the running of the machine, save the wear of the same, and dispense with the necessity of taking the work out of the machine while winding up the bobbin.

Mr. Charles E. Macarthy, of Forsyth, Georgia, is the inventor of an improved Horse Power. The invention is an improvement upon the horse power for which letters patent were granted the same inventor March 26th, 1878, in which an endless rope belt is distended around two pulleys in the same plane, and one side of said belt is wrapped once around a horizontal master wheel at right angles to the said pulleys. The improvement consists in certain details of construction which render the machine more complete and effective.

Mr. Thomas B. Gunning, of New York city, has patented an improved Ejector for Oil Wells, which consists of two pipes, one within the other, so adjustable relatively by a lever, and connected with a nozzle and a valve, at their lower ends, that the air forced down one pipe is turned by the nozzle into and up the other, so that an upward current is produced, which sucks up from the bottom of the well and carries its fluid contents up through the ejection pipe, the bore of which is clear of any obstruction to the rising fluid.

Messrs. James W. Crossley, Augustus A. Hagen, and George Juengst, of New York city, have patented an improved Tobacco Cutting Machine, which is designed for cutting plug tobacco. It consists in a certain construction and combination of parts, which cannot be readily described without an engraving.

Mr. Philip Whightsil, of Pickerington, Ohio, is the inventor of an improved Nipping and Clinching Tool, embracing in one implement both nippers and clinchers, which are pivoted to opposite sides of a common handle.

Mr. Leonard Anderson, of Painesville, Ohio, has patented an improved Machine for Cutting Veneers, either straight or tapered, for pails, buckets, etc., from logs of any size. It will cut the veneers evenly and without breaking or checking them.

Mr. William L. Miller, of Santa Rosa, Cal., has patented an improved Pump Valve, which consists in an elastic hemispherical valve, of rubber or other material, having a metallic valve stem and rigid backing. It has a check strap for limiting the lift of the valve, which is attached to the top of the valve and to the leather packing of the pump.

An improved Pump Handle has been patented by Mr. John Chegwidden, of New York city. This invention relates to pump handles for operating a single pump from different floors of a building; and it consists in the combination of a series of racks and toothed sectors of peculiar construction with a series of handles and a rod which extends from the pump through two or more floors, whereby any handle in a series of handles connected with a single pump rod may be operated without moving the other handles.

An improved Permutation Lock has been patented by Mr. James T. Speer, of Oelwein, Iowa. This invention relates to the class of locks that are applied to money drawers; and it consists in a lock having two notched and perforated permutation wheels or tumblers, and a key of peculiar construction for operating the same.

The Darien Canal Project.

Lieutenant Wyse, of the French navy, in charge of the French expedition for surveying canal routes across the Isthmus of Panama, has decided in favor of the northern route, running from Acanti, southwesterly, to the Island of Alligators, thence down the Tupisa to Darien. This line, he claims, presents fewer engineering difficulties than the southern route, which involves a system of locks and tunneling, besides being nearly twice as long as the line proposed.