to the bruise, leaves the foot miserably weak for weeks or perhaps months. What would be thought of a surgeon, who, because his patient had a discolored nail, the result of a bruise, proposed to remove the stained horn and lay bare the sensitive tissues? No medical man would do such a thing, and no patient would permit it. Yet veterinary surgeons and farriers follow this practice on the horse's foot, and horse owners assent to it. The result is, that corns assume a fictitious importance, and the heel, robbed of its horn, is liable to fresh injury for a long time.

We may be told that the horn is removed so as to release any matter formed as the result of inflammation. It is certainly a plausible excuse, but not a true one. A professional man should be able to diagnose the presence of matter without injurious explorations, and matter is never present unless a horse is worked for two or three days after the appearance. In about 80 per cent of the cases in which a farrier professes to have let out matter, he has simply let out a straw-colored effusion which would have been naturally reabsorbed in a day or two after the cause of injury—the shoe—had been removed. The remaining percentage of corn cases show matter because from negligence or ignorance the shoe has been allowed to remain on the foot, continuing the injury, and thus set up active inflammation.

The rational treatment of corn is to remove the shoe, and foment the foot with warm water—in other words, to remove the cause of injury, and help nature to reabsorb any effusion. If matter forms, it must be thrown off. Nature does this through an opening at the top of the wall, between hair and hoof; man endeavors to do it by an opening through the sole. Now, we believe in nature's plan, and experience show us that it is the best, if not the quickest, course for the horse's foot. Warm fomentations facilitate this course, and therefore the treatment we have suggested is applicable to all stages. This treatment does not injure the hoof, and a cessation of pain, and consequent lameness, can be followed by the immediate application of a properly fitted shoe. On the other hand, when the bars are destroyed and the sole cut away, the wall is left without any support. It is too weak to properly sustain weight; if it rests upon the shoe it is pressed either inwards or outwards, and the recently injured parts are again hurt. Thus, and thus only, it is that the existence of corns can be said to predispose a horse to their recurrence. A corn is only a temporary accident, like a bruised finger; the one is just as likely to recur as the other. If a horse remains lame over a fortnight, there is something more than a corn—either a badly fitted shoe, or the injury inflicted by the farrier's knife—to account for it. Verily, the ordinary cure for corns is worse than the disease. Horses are, we know, frequently lame or tender for months after having had a corn. Let such animals be properly shod, no cutting out of the heel allowed, and we guarantee a speedy cure. Remember that a corn is only a bruise of a horn-covered part. Treat it as you would your own finger under similar circumstances, and very little trouble will be entailed.—*Land and Water.*

PATENT OFFICE DECISIONS.

THE DISINTEGRATING FLOUR MILL PATENT.—CARR *vs.* DAVIDS.

[Appeal from the Board of Examiners-in-Chief in the matter of the interference between the application of Thomas Carr, of Bristol, Eng., and the patent of G. B. Davids, of Baltimore, Md., granted December 14, 1869, for a disintegrating mill.]

LEGGETT, *Commissioner:*

It is proved and admitted on the part of Carr that Davids made his invention in September, 1868. Carr obtained a patent for his invention in England, which was enrolled April 6, 1869. He introduces testimony to show that he made the invention in England long before that date, which testimony has been ruled out by the Examiner of Interferences and the Board, in conformity with the established practice of the courts and the Office. (See Howe *vs.* Morton, 1 Fish., 595; Brooks *vs.* Norcross, 2 Fish., 661; Bain *vs.* Morse, 1 B. app., p. 222; *ex parte* Jno. Cochrane, Com'rs D. 1869, p. 60; Tucker *vs.* Davis, O. G., vol. 2, p. 221.)

I do not find sufficient ground in the argument presented in behalf of Carr for a departure from this practice. The statute is explicit in declaring that any inventor may obtain a patent for his invention, provided it has not been patented or described in a printed publication in a foreign country before the date of his invention. Davids made the invention before it was so patented or described, and his right to a patent is clear.

No evidence of the date of an invention in a foreign country, other than that of a patent or a description in a printed publication, ever has been or can be received under the law. Inventions abroad are ignored by the statute until made to appear through one or the other of the channels named. Therefore Carr did not make the invention in contemplation of law till he patented it, April 6, 1869, and Davids preceded him. Without the light of controlling precedents, I should be unable to place any other interpretation upon the statute than that which constitutes the established practice of the Office in like cases.

The decision of the Board is affirmed.

DECISIONS OF THE COURTS.

United States Circuit Court.—District of California, Ninth Judicial Circuit.

IMPORTANT DECISION CONCERNING THE RIGHTS OF ASSIGNEES OF PATENTS.—PATENT EGG CASE.—DAVID MCKAY *vs.* JOHN B. WOOSTER *et al.*

[In Equity.—Before Sawyer, Judge.—Decided April 7, 1873.]

SAWYER, *Judge:*

On February 28, 1867, a patent was duly issued to J. L. and G. W. Stevens, of San Francisco, for an "improvement in cases for transporting eggs."

In August, 1872, said patentees, by deed, granted and assigned to H. F. Billings, of Chicago, in the State of Illinois, "for, to, and in all the States and Territories of the United States east of the Rocky Mountains, all the right, title, and interest which they, the said John L. and George W. Stevens, had in and to the said letters patent, and the invention as secured to them by said letters patent, and all their rights, liberties, privileges, and franchises which they had or might acquire by or under the said letters patent," which said deed was duly recorded. Since said assignment, said Billings has erected a manufactory for said patent cases for the transportation of eggs at Chicago, in the State of Illinois, and has manufactured, in accordance with the specifications of said patent, and he still continues to manufacture said cases; and he has sold and continues to sell the same "to the public, or to whomsoever desires or desired to purchase them, without any restriction or reservation whatsoever."

On the 17th of October, 1872, said J. L. and George W. Stevens made a similar transfer of all their right, title, and interest in said patent and invention, in and to all the States and Territories lying west of the Rocky Mountains, to the complainant, David McKay, who thereupon entered upon the manufacture of said patent cases at San Francisco, and he has ever since continued to manufacture and sell the same for use in that portion of the United States lying west of the Rocky Mountains.

The defendants are commission merchants doing business at San Francisco, receiving goods consigned by merchants east of the Rocky Mountains and selling the same on commission. M. Evans & Co. are merchants doing business at Ames, in the State of Iowa, and a part of their business is dealing in eggs. Said Evans & Co., between the 17th of October, 1872, and the filing of the bill in this case, purchased in the usual course of business at Chicago, of said Billings, "without any restriction or reservation" on his part, a number of said patent cases manufactured by him as aforesaid, filled them with eggs in the State of Iowa for the purpose of transportation, and shipped them so filled with eggs to defendants at San Francisco, who received them and sold the eggs on commission in the regular course of their business as commission merchants.

The use of the aforesaid cases in the transportation of eggs from the Rocky Mountains to San Francisco is the infringement complained of; and the threatened continuance of the practice, and further use and sale of the cases so received, the injuries sought to be restrained. Numerous other parties are engaged in similar transactions.

Under the view I take, the only question necessary to determine seems to be precisely the same decided by Shepley, Circuit Judge, in Adams *vs.* Burke, 4 Fisher's Patent Cases, 393, namely: "Does the purchase of a patented article, *lawfully* manufactured, and *sold without restriction or condition*, within his territory by the territorial assignee of a patent right, convey to the purchaser the right to use or sell the article in another territory for which another person has taken an assignment of the same patent?"

The learned judge answers the question in the affirmative. This is the only case I have found in which the precise question has ever been considered. One would suppose that a question of so much importance, and so likely to arise, would long since have been presented to the Supreme Court and authoritatively determined, but it does not appear to have been done. It is insisted that the case cited is not correctly decided, and argued with a great deal of force, that since Lockhart and Seeley, in that case, and Billings in this, only purchased the right of the patentees in a limited territory, they did not themselves have the right to supply, either directly or indirectly, other territory than that purchased; that their right only extended to making, using, and vending *to be used* in the specific territory purchased; that, as they had themselves no right to use in other territory, their vendees could acquire no greater right than they themselves owned; that their purchase of the right to a specific territory necessarily limited their power to sell the machine to be used in that territory alone; that this limitation and restriction is necessarily implied in the sale, even without any express stipulation to that effect; that the patent under the fifth section of the act of Congress of 1836 in terms gives the patentee "the full exclusive right and liberty of making, using, and *vending to others to be used*" the said invention throughout the jurisdiction of the United States; that the eleventh section authorizes him to assign the whole or part of his interest for "any specific part or portion of the United States;" that when he assigns his entire interest for a specified part, he assigns the right acquired under the fifth section of "making, using, and vending to others *to be used*" in that specific part, and "to be used as well as to make and use in that part *alone*;" that, therefore, when an assignee of a specific territory sells a machine in that territory, the machine so sold is taken out of the monopoly as to that territory only, there being no power in the vendor to withdraw it from the monopoly as to other territory in which he has no monopoly or control, and that he can only dispose of his own share of the monopoly, or liberate therefrom to the extent of his own interest therein. This it is argued, is the reasonable construction of the law, and the contract of assignment of the right of the patentee to a specific part of the territory authorized by the act. The consequences of a different view are also urged in support of the position taken, some of which, it is said, find a striking illustration in this case. Thus, it is argued that, labor and materials being cheaper, and the other facilities for cheap manufacture being greater at Chicago than at San Francisco, the patent cases for transporting eggs can be made at a cost so much lower at Chicago than at San Francisco, that the purchaser of the Chicago manufacture could undersell the complainant in his own territory. Eggs also being so much cheaper east than west of the Rocky Mountains, large quantities are there purchased and sent to these western markets. The transportation of the patent cases costs nothing, because it is necessary in shipping to use boxes or cases of some kind, and these require no more room than others.

The freight is paid on the eggs as merchandise, and the greater security against breakage and the improved condition of the eggs brought in these cases more than compensate for their cost at Chicago. Those dealing in eggs, therefore, can purchase these patent cases at Chicago, ship them with eggs from any part of the United States east to parts westward of the Rocky Mountains, and after disposing of their contents sell them at half cost, or even give them away, and still make a remunerative profit on their transactions. There is no use for the cases for return freight. Thus the entire market west of the Rocky Mountains, including nearly one third of the territory of the United States, can be wholly supplied, indirectly, through middlemen, at prices less than it is possible to make the article for here, by parties who have only purchased the territory east, to the utter loss or ruin of those who have purchased and paid for the territory west of the Rocky Mountains. So, again, it is said it may well be in the case of many inventions that some particular locality affords such facilities for cheap manufacture that the whole United States may be supplied from that point at prices that would defy competition in any other locality, so that it would only be necessary to purchase the right for the territory on which the factory is located in order, through middlemen, to practically enjoy a monopoly of the whole country.

It is easy to see that the result of supplying the whole country indirectly through the merchant, who is usually the seller to the consumer, is precisely the same as though the maker himself directly sells to the consumer.

It must be confessed that these arguments are entitled to grave consideration. Enough has been said in this, and in the case cited, to render it manifest that great practical inconvenience may result from either view.

In the absence of an authoritative adjudication, I should hesitate long before venturing to dissent from a well considered decision of so learned, experienced, and eminent a jurist as Judge Shepley. But in this instance I can perceive no good ground for doubting the soundness of the proposition laid down in the guarded form in which it is stated in the case cited.

An important question not discussed by the learned judge may, however, arise as to when, or under what state of facts, a patented machine may be regarded as "*lawfully * * * sold without restriction or condition within his territory, by the territorial assignee of a patent right.*"

In the case now under consideration it will be seen by reference to the stipulated facts that the assignment to Billings was made in August, 1872, while that to complainant was not made till October following. If there is any conflict, therefore, in the rights claimed by the parties, the complainant's assignment, so far as the conflict is concerned, being subsequent in time, was taken in subordination to the prior grant to Billings—that is to say, he could only take by his assignment what was left after Billings' interest had been carved out. At the date of the assignment to Billings the patentees were still the holders of the entire interest under the patent. Had they at that time, at Chicago, sold one of the patented articles in question without restriction or condition, that undoubtedly would have been a lawful sale without restriction or condition, and the article so sold would have been taken out of the monopoly, and the purchaser, or any one deriving title through him, would have been entitled to use it till worn out in any part of the United States. The patentee himself could not by a subsequent assignment of his patent have limited the right of the purchaser already vested. The vendor being at that time entitled to the whole monopoly for the entire jurisdiction of the United States, it was competent for him to wholly emancipate the article sold by taking the entire royalty for the use in any part of the territory. And a sale without restriction or limitation would work such emancipation. In such case any party subsequently purchasing the right to any specific portion of territory would take that right subject to the use of the machine so sold at any point within the territory purchased. What the patentees could do with respect to one machine, they could do as to any number of machines in existence or to be brought into existence. What they could do themselves they could by contract authorize or convey the right to any other party to do. As the patentees themselves could *lawfully sell* these patented articles at Chicago *without restriction or condition*, so as to authorize the purchasers, or those claiming under them, to use the machines anywhere in the United States, they could convey the right to Billings to lawfully do the same. This authority to emancipate from the monopoly by an unrestricted sale was a part of their "right, title, and interest in the invention secured by the patent," that could be exercised and enjoyed at Chicago or other places east of the Rocky Mountains as well as elsewhere. The assignment to Billings is in the broadest terms. It is of "all the right, title, and interest which the said John L. and George W. Stevens had in and to the said letters patent, and all their rights, liberties, privileges, and franchises which they had or might acquire by or under said letters patent," "for, to, and in all the States and Territories of the United States east of the Rocky Mountains." There is no limitation of the power to vend within the territory. The patentees could lawfully make without restriction or condition, could use without restriction or condition, or could *vend without restriction or condition* anywhere within the specified territory, and all their rights they conveyed to Billings without *restriction or condition*, who thereupon stepped into the shoes of the patentees as to the territory sold. Had they intended to limit the right of vending "to vending to be used" by the purchasers within the territory sold only, they should at least have so specified the intention, and by some apt words restricted the right of use in the deed of assignment. This unrestricted assignment of the right to vend put it in the power of Billings to *lawfully* vend the patented article within his territory without restriction or condition, and thereby wholly emancipate from the monopoly the articles so sold. The complainant subsequently purchased his territory, and, whatever the terms of his grant, he could of course only obtain what was left of the franchise or monopoly. As the patentees, after their sale to Billings, could not object to sales by him without restrictions or conditions, their subsequent assignee cannot object. The latter's right is subject to the right of Billings and those who have lawfully purchased without restriction or condition from him. This is as far as it is necessary to go in this case. It is unnecessary now to consider the effect of an express limitation in the deed of assignment of the right to vend for the purpose of use only within the purchased territory, or how far the complainant, being a subsequent purchaser of territory, can lawfully vend without restriction or condition, so as to wholly emancipate the article sold from the monopoly, and enable the purchaser of the patented article of his manufacture to use it in the territory of Billings.

If there is any practical hardship in the construction adopted of the law and contract under it, and it should turn out to be the correct construction, then the patentee, when he desires to assign, must consider whether he can afford to do so without restriction, and the subsequent purchaser, when he wishes to buy, must determine whether he can afford to do so with the burden entailed upon his territory by a prior grant unlimited in the particulars indicated. There must be a decree for defendants. Let the bill be dismissed with costs.

Holland & Spencer, for complainants.
Churchill & Haight, for defendants.

NEW BOOKS AND PUBLICATIONS.

TEXT BOOK IN INTELLECTUAL PHILOSOPHY FOR SCHOOLS AND COLLEGES, containing an Outline of the Science and an Abstract of its History. By J. T. Champlin, D. D., President of Colby University. Price $1.50. Also, by the same author: CHAPTERS ON INTELLECTUAL PHILOSOPHY, designed to accompany the above. New York and Chicago: Woolworth, Ainsworth, & Co.

These two treatises are lucid and well written exponents of a branch of study which deserves more attention than it usually receives. The object for which they are written is carefully kept in view by the author, who has, throughout, abstained from wandering into the higher metaphysics. To the "Text Book" is added an appendix, containing questions on each section of the work, which will be valuable both to teachers and pupils.

PHILOSOPHY OF RHETORIC. By John Bascom, Professor of Rhetoric in Williams College: Author of "Aesthetics, or the Science of Beauty." Price $1.50. New York and Chicago: Woolworth, Ainsworth, & Co.

This is a valuable essay, written in an agreeable style which makes it acceptable to the general reader as well as to the student. There is much thought in small space in Professor Bascom's writings; and the work now before us is written in a very terse and expressive manner.

Recent American and Foreign Patents.

Improved Extensible Ladder.

John C. Hearne and Duston Adams, Pleasant Hill, Mo.—This invention consists of two "lazy tongs" contrivances connected together at the middle joints of the bars by cross bars long enough for the ordinary purposes of the cross bars of a common ladder, the cross bars being connected, near each end, by cords, which limit the extension of the lazy tongs frame, and support the weight of the climber. The top cross bar is provided with hooks or other devices for suspending the ladder, and a rope is attached to and passed from the lower cross bar up over the top one, or through an eye suspended from it, so that the ladder can be folded up out of the way by pulling the cord down; the ladder can be quickly let down when required for use by releasing the rope. The whole constitutes a convenient and efficient ladder for scuttles and the like, not frequently wanted for use, and where it will be out of the way when so folded up.

Improved Turbine Water Wheel.

John C. Green, Flanders, N. J.—This invention is an improvement in turbine water wheels, in which the objectionable feature—the termination of the wheel case at the bottom flange, which renders it difficult to make the joint tight within the outer edge to prevent water leaking through the flange at the holes for the bearings—is done away with, and the case is extended below the bottom flange, and a special flange is provided to rest on the floor, support the wheel, and make a joint around the discharge hole; and this flange also serves to support the wheel so high as to prevent heavy bodies from being carried into the wheel. By this arrangement, it is claimed, the water leaking through the flange at the holes for the journals will remain in the flume.

Improved Addressing Machine.

Francis A. Darling, Fayetteville, N. Y.—This invention relates to an improved addressing machine, intended particularly for use of newspaper publishers and such other persons whose business requires them to send at frequent intervals documents or mail matter to the same subscribers or persons, whose interest it is, therefore, to retain the address of such persons in position for use in printing. The invention consists in the employment of an endless chain passing around a prismatic presser block, and having the address or printing plates removably secured to it by springing their ends into slots formed in the links of the same. The invention also consists in hanging the chain around a drum or wheel that is supported by a sliding frame, and in forming a toothed segment engaging with opposite ratchet wheels on the arbor of the lower chain holder or presser, for the purpose of turning the same one quarter revolution at each downward motion of the frame, and for retaining the same in position immovably during the upward motion of the same.

Improved Door Bolt.

Adolph Hofstatter, New York city.—This invention has for its object to furnish an improved attachment for bolts, by the use of which it will be impossible for the bolt to be worked back and the door unfastened from the outside of said door. By suitable construction, when the bolt is pushed outward so as to bring its knob into the space between the forward end of an open central keeper and the rear end of a forward keeper, and a semi-cylindrical plate has been moved laterally upon the bolt so as to cover the opening or slot in the central keeper, it will be impossible for the bolt to be drawn back without first moving the plate to one side to uncover the said slot and allow the knob to pass through it. Upon the rear end of the plate is formed a small projection, which, when the said plate is adjusted to cover the opening in the keeper, may be slipped into a notch in the forward end of the rear keeper, and which, when the said plate is moved to uncover the said opening, may be slipped into a notch in the rear end of the open keeper, to prevent the said plate from getting out of place accidentally when in either position.

Improvement in Recovering Tin from Waste Scrap.

Henry Panton, New York city.—The inventor proposes to utilize the tin on scrap tinned plate cuttings, etc., by recovering it by mercury amalgamation. For this purpose he cuts the chips into small pieces and places them in a revolving cylinder, into which a shower of mercury is constantly falling. Besides the method of recovering the tin, the patent covers a process of converting the remainder scrap iron into steel, as well as the cylindrical apparatus already described.

Improved Folding Chair.

Asahel C. Boyd, Worcester, Mass.—The invention consists in forming each front leg and superposed arm in a single side piece that is reversely curved at its opposite ends. It also consists in providing the side pieces with a round that serves the double purpose of a connecting pivot for the links and a rest for the upper ends of the legs.

Improved Car Dumper.

Owen M. Avery, Pensacola, Fla.—The invention consists in dumping a car on the side by means of rocking beams pivoted to the middle of a beveled bolster. It also consists in a peculiarly constructed and operated shifter, by which the rock beam is made to perform its intended function. It also consists in a locking device applied at each end of the shifter. It also consists in a double notched lock bar applied to the middle of the shifter. It also consists of means for throwing the line of gravity from the median line of the truck and to that side of the car on which the load is to be dumped. It also consists in a peculiarly simple and convenient mode of coupling car dumpers together.

Improved Fertilizing Material.

James Whitehill, Frederick, Md.—The invention consists in grinding or reducing limestone to a granular state so that it will pass the drill evenly and may be applied in small quantities with as great effect as in large quantities. Thus it is sold in packages, air tight or approximately so.

Improved Vacuum Pan.

Dr. Aurelius P. Brown, Upperville, Va.—The invention consists in a method of producing and maintaining a vacuum in the condensing coil of a vaporizing apparatus whereby the continued action of an air pump (although one may be used to start it, if desired) is rendered entirely unnecessary, and a great saving is thereby produced in the ordinary process of distillation.

Improved Horse Collar.

William Guilfoyle, New York city.—The object of this invention is to construct a horse collar which not only is stronger, cheaper, and more durable than those at present in use, but protects, also, the neck of the horse against scalds and bruises caused by the undue pressure of the collar. This invention is intended to obviate these defects by strengthening the leather part with a metallic shoulder piece having a projecting rim, by which the usual hames are dispensed with and the strain on the collar distributed over the whole surface, protecting not only the neck of the horse, but also furnishing a stronger and more durable collar. Suitable trace hooks are applied to the metallic covering and connected by a strong wire piece, with rings attached to hold the harness together.

Improved Convertible Freight Car.

William Worsley, Little Falls, N. J.—The invention consists in V shaped detachable sections applied to the floor of a grain car, to give the necessary pitch to the bottom, and a nozzle combined with a swiveled elbow spout, so that the grain may be discharged on either side of the car from the same nozzle.

Improved Hose and Pipe Coupling.

Theodore E. Button, Waterford, N. Y., assignor to himself and L. Button, of same place.—The invention consists in the improvement of pipe or hose couplings. The joint where the two pipes are connected may be either ground or packed. A nut, made in two parts, has each part hinged to a swivel working on one pipe. The other pipe screws into this sectional nut, which draws the pipes together. The two parts of the nut are held together by a ring which is made to fit the conical surface of the outside of the nut. The taper of this surface must be sufficient to allow the ring to be easily pulled off. The ring is provided with lugs to which are attached chains which are made fast to some fixture. Now, by a slight movement of either the coupling or the fixture, the ring is pulled off and the coupling disconnected. Each pipe is provided with a pressure valve. When the pipes are connected these valves are open; but when the pipes are separated, they close automatically or by the pressure.

Improved Railroad Rail Joint.

Thomas V. Allis, New York city.—This invention consists in making, in a rail or other joint in which the rails or bars are subject to expansion and contraction, the holes for the joint bolts of the same size in the crosswise direction of the rails or bars as the threaded portion of the bolts; and said bolts are made as much smaller in the parts which are in said holes as the depth of the grooves of the thread, or thereabout.

Improved Nut.

William VanAnden, Poughkeepsie, N. Y.—Nuts for screw bolts that are made by punching or cutting them from bars of rolled metal have the fiber or grain of the iron disposed diametrically to them in some parts, so that a splitting or bursting strain on the nut acts on the metal in the direction of the least adhesion—that is, transversely to the grain—so that they split open easily. In this invention, before cutting up the rods into the short pieces required for the nuts, they are twisted to cause the grain of the metal to extend in its lengthwise direction from a half to two thirds of a coil around the nut, so as to cross the lines of the bursting strains, or the directions in which these strains act, and thus oppose them in the direction in which the adhesion of the metal is most powerful.

Improved Hydraulic Cane Crusher.

Charles H. Dickinson, Rosedale, La.—The invention consists in the improvement of cane crushers. The cane being dumped from the cart into crushing cylinders, pistons are forced down upon it by hydraulic presses with great force, crushing the cane far more effectually than it can be by the common roller presses, and expelling the juice into the pan below. The pistons are then partially withdrawn; the bagasse is saturated with steam introduced through a pipe for the purpose of dissolving the crystallized particles so that they can be expelled; then the pistons are brought down to act a second time upon the bagasse and expel the remaining portion of the juice or the greater part of it. Water may be used with good results instead of the steam for saturating the partially crushed bagasse, but steam is much more effective.

Improved Window Mirror.

Alfred Olander, Glen Gardner, N. J., and Albert Olander, New York city.—It is quite common in cities to place mirrors outside the windows, so adjusted as to enable persons within to see pedestrians on the side walk reflected in the mirror. The above inventors propose an arrangement of a double mirror mounted on vertical pivots at the center, to turn about a quarter of a revolution, so that either side can be used by changing it slightly. For changing it a pull piece is carried inside of the room, connected to the mirror by a bell crank and rods for turning it in one direction, and a spring in the space between the two mirrors acts on one or both of the pivots for turning it in the other direction; and for holding it against the action of the springs, the pull piece has ratchet notches and engages with a catch.

Improved Lady's Work Box.

Wm. Brace, Washingtonville, O.—The invention relates to ladies' work-boxes, in which are kept their spools of different numbers of thread or silks, needles and other matters. It consists in making them portable and easy to be handled, by the construction and arrangement of their parts.

Improved Butcher's Implement.

John Baggs, Easton, Md.—This invention has for its object to furnish an implement, adapted especially for butchers' use, which embodies a knife, saw, and spring balance, so that meat can be sawn, cut and weighed, at one and the same operation, without removing the hand from the handle.

Improved Dovetailing Machine.

Thomas Cullen, Blackstone, Mass.—The invention consists in the improvement of dovetailing machines. The saws are triangular in cross section, with teeth formed on each side, and on the corners. They are fitted in holes through studs, and fastened by binding screws to turn on their longitudinal axes, to adjust them to the work properly. The crank shaft, by which the saws are worked, is arranged at the center, around which the saw gate oscillates in adjusting the saws for working obliquely, and provided with a driving pulley behind the face plate. A scale is arranged on part of the face plate, and an index finger is arranged on the saw gate to sweep it and indicate the degree of the inclination of the saws. Adjustable stops arrest the saw gate at the right points in shifting it forward and back in sawing tenons, the said stops being set by the scale and index at the top, so that the changes, which in this kind of work are of necessity frequent, can be made without reference to the scale. The adjusting screw holds the gate in position after it is adjusted. The studs by which the saws are held are swiveled, to allow them to turn as is necessary for the shifting of the saw gate, and shifted more or less distant from each other according to the distances the notches are to be apart, which vary considerably in the different kinds of work. The saws are only used in the vertical position, and the board is fed to and from the saws obliquely, to form the side, but for cutting the bottom sides it is fed at right angles by the screw. For the direct feed for cutting the bevel edges of the tenons, and the cross or transverse feed for cutting the bottom of the notches, merely two ordinary sets of ways, at right angles to each other, with corresponding feed screws and carriages, are needed; but for the oblique feed for the sides of dovetail notches, the ways can be shifted around obliquely to the plane gang of saws. Mechanism is provided to prevent the table from turning with the carriage and to cause it to keep the work square to the saws. The shifting of the carriage for the bevel sides of the notches is effected by a shaft, turned by hand to screw the feed table forward until it is arrested by a stop coming against a lug; then the feed screw will be turned to slide the work to the left by the carriage to cut the bottoms of the notches, and during this time the shaft will be thrown around to the right to shift the ways around to correspond with the sides of said notches, ready to feed the work back from the saws and from said sides as soon as the limit of the transverse movement for cutting the bottom is reached, and the movement stopped by one of the stop middle pins and a stop; then the board is taken out and the other end presented to the saws, and the work continued by feeding it up.

Improved Plow.

Stephen L. Stockstill, Medway, O., and Henry D. Kutz, Harrisburg, Pa.—This invention is an improvement in the class of plows provided with one wheel, or connected to and supporting one end of an axle having a wheel on the other end; and the improvement consists in the adjustable connection between the axle and plow beam for the purpose of allowing vertical adjustment of the axle.

Improved Cotton Stalk Knocker.

Marvell M. Carruth, Helena, Ark.—This invention is an improvement upon the machine for which letters patent were granted to George Gorman, September 20, 1853; the objects aimed at being to isolate the gearing from danger of contact with the cotton stalks, to secure free space for the operation of the revolving knocker, and also to secure rapid rotation of the latter from a slow forward movement of the machine over the surface of the ground. By suitable construction, as the machine is drawn slowly forward, a shaft is revolved rapidly, and its bars strike, knock down, and break into small pieces the cotton stalks, enabling the plowman to readily cover them with his plow, so that they will fertilize the soil.

Improved Coffee Roaster.

James Hart, Kekoskee, Wis.—The object of this invention is to furnish a simple utensil, by the use of which coffee beans may be quickly roasted, preserving all the fragrant volatile oils, and producing thereby a more aromatic coffee. The invention consists of a lens-shaped metallic vessel provided with a handle and adjustable slide covering the aperture for the admission of the beans, which is slowly turned over the fire till the beans are properly roasted.

Improved Machine for Cutting and Perforating Cigars.

Jacques Levy, Theodore Levy and Armand Levy, New York city.—The object of this invention is to furnish to cigar manufacturers a machine which, by mechanical means, pierces the heads of form cigars, and cuts at the same time the tucks of the same, improving thereby the smoking quality of the cigars and economizing the time consumed in piercing by hand. It consists, mainly, of a working table, to which upright guide bolts or standards are applied, which carry the needle bar, held by strong springs and acting by a treadle connection. The cigar bunches are placed under the needle bar in the form blocks, adjusted thereon, and pierced by the descending needles. A sharp blade at the edge of the table serves to cut the tucks of the bunches when passing the form blocks to the needle bar.

Improved Composition Paint Oil.

James McCafferty, New York city.—This invention has for its object to furnish an improved paint oil, simple in composition, causing the paints to flow freely and dry without scaling or cracking, which may take the place of linseed oil for most purposes, and will be much less expensive. The invention consists of the paint oil formed of resin boiled with oxide of manganese. Boiled linseed oil is then poured in, and the mixture is then taken out and poured into a tank containing refined petroleum oil and dissolved india rubber. The mixture is then thoroughly stirred and allowed to stand for twenty-four hours to settle.

Improved Cutter for Tonguing and Grooving Lumber.

Daniel Perrin, McGregor, Iowa.—This invention has for its object to furnish improved cutters, spurs, or trimmers for matching tongued and grooved lumber, which will enable more and better work to be done with less expense and less wear and strain upon the machine than when the ordinary cutters are used. The invention consists in the cutters for trimming off the sides of the groove and tongue, made of equal breadth with and of half the thickness of the other cutters to adapt them to be used in pairs.

Improved Oil Cloth Printing Machine.

Charles Rommel, Elizabeth, N. J., assignor to himself and Wisner H. Townsend, New York city.—This invention relates to machines which permit the successive printing of oil cloth or other fabrics in different colors, and has for its object the substitution of the hand coloring of the printing blocks, and the adjustment of the fabrics by such means that the whole apparatus may be driven by steam power, and the manufacture of oil cloth and other fabrics be accelerated. The invention consists in the arrangement of suitable coloring rollers with boxes on a spider frame in such a manner that the requisite number of printing blocks are successively colored and the cloth carried forward as soon as the printing of the blocks is completed. The shaft of the printing roller is connected by pawl and ratchet arrangements with the printing bed and movable frame, which regulate the forward motion of the cloth and the return of the supporting frame at the time required.

Improved Animal Cage Trap.

Sylvester W. Rice, Roseburg, Oregon.—This invention relates to a new self-setting animal trap; and has for its object to effect the continuous operation of the trap, and to cause each animal, as it is entrapped, to reset the trap for its successor. The invention consists in providing the trap with a treadle having perforated end plates or gates, which, according to the manner in which the treadle is inclined, close or open the trap at the ends.

Improved Wagon Brake.

William B. Stanley, Groveton, N. H.—The invention consists in the improvement of wagon brakes. By means of short chains, a brake beam is connected with two levers which are pivoted to the reach behind the beam. The connection of the beam with the levers is made with the short ends of the latter; their long ends or arms are by rods connected with a lever which is pivoted to the front of the wagon body. When the lever is swung back by the driver of the wagon, the long arms of the levers will be swung forward and their short arms thereby carried back, so that they will draw the beam back in equal degree on each side of the reach, and thereby firmly apply the brake shoes against the wheels. The rods have parts formed of chains, so that the same can be extended or contracted at will, in conformity with the contraction or extension of the wagon reach, if it should be found necessary to vary the length of the same.

Improved Dentist's Flask.

Clemon Bailey, Kinston, N. C., assignor to himself and H. C. Bailey, of same place.—This invention relates to an improved construction of vulcanizing flask, used by dentists for preparing artificial gums, etc., and has for its object to keep the two parts of the flask properly together, and to obviate the necessity of tightening the connection while the flask is in the vulcanizer, and also to improve the shape and style of the flask. The invention consists in an improvement upon devices which are now in use to contract the parts of a dentist's flask when in the vulcanizer. A semi-elliptic spring, placed on top of the flask and connecting its ends with bars that project from the bottom of the flask, the said bars being secured to the flange under the flask, pulls the two parts of the flask firmly together, even if the other fastenings should, by unequal expansion in heat, fail so to hold the parts together.

Improved Musical Instruments.

Justin Whitney and Horace W. Whitney, Boston, Mass.—This invention relates to musical instruments in which hooks are made to vibrate to produce musical tones. Holes of any shape are bored in a bar or frame, into which the shanks of the hooks are inserted. These shanks are flattened horizontally, so that the bearings will be at right angles to the line of vibration, by which the tendency to produce harmonic tones is lessened. The hooks are of wire, which produces a quality of tone more agreeable than other forms of metal. When double hooks are used, a middle leg is soldered to them in the bow, by which to attach them to the bar, and a support is applied to this shank about midway between the bow of the hook and the bar, the said support being placed on the sounding board, to assist in sustaining the hook and to communicate the vibrations to the sounding board. A load of metal or other substance is also fixed to the bow of the double hook, to destroy the harmonic tone; and the base end of the sounding board is given freedom to vibrate.

Improved Wheel for Vehicles.

Orlando D. Spalding, Mankato, Minn.—This invention consists in the mode of forming an anti-friction bearing for axles. A tube passes through the hub and is fast therein, and at each end of the latter is a casing in which the rollers are placed. A cap screws on the end and confines the rollers. The casings are screwed into the tube, such screw portions of the shells being tubes through which the axle passes. This enables the shell to be screwed tight up to the ends of the hub. The rollers are simple solid cylinders of steel, the diameter of which is just sufficient to fill the annular space in the shell around the axle. The entire bearing at each end of the hub is on the two sets of these rollers. The rollers revolve around the axle as the wheel revolves.

Improved Harvester.

Charles H. McCandlish and John C. Naginey, West Rushville, O.—This invention has for its object to furnish an improved device for supporting the tongue of front cut harvesters to relieve the horses' necks from the weight. The invention consists in the particular means by which the wheel is attached to the tongue. To the upper part of a bar are pivoted the upper ends of other bars, which pass down upon the opposite sides of the wheel, and their lower ends are connected by a bolt which passes through the hub of the said wheel, and serves as its journal. To the lower end of the arm first mentioned is pivoted the end of a short bar which has a number of holes formed in it. The latter passes between the bars, where it is adjustably secured in place by a pin or bolt, which passes through a hole in the bars and through one of the holes in the bar, so that by shifting the said pin or bolt from one to the other of the holes the tongue may be adjusted higher or lower, according to the hight of the horses.

Improved Steam Washer.

Charles A. Bradley, Monticello, Fla.—This invention has for its object to improve the construction of steam washers in such a way that the steam and water can only escape through the discharge tube, and cannot escape through the return or ingress openings. The invention consists in the combination of downwardly projecting tubes, made V-shaped in their cross section, with the ingress openings in the plate of a steam washer. The tubes have holes in their lower ends, and extend to the lower edge of a flange so as to be always submerged, and thus prevent the possibility of the steam or water being forced out through said ingress openings, and insuring its passage through the discharge tube.

Improved Grapple.

John Burkhart, Brookville, Ind.—This invention relates to a new instrument for grappling and supporting heavy stones and other bodies during the building of houses, bridges, walls, embankments, or other structures; and consists in the combination, within a suitable clevis, of a pin or bar of adjustable grappling hooks, so arranged that they can be conveniently shortened or elongated to suit the sizes of the bodies to which they are applied.

Improved Sewing Machine.

John O'Neil, New York city, assignor to himself and R. A. Schoneman, of same place.—This invention consists in a simple and efficient arrangement of gear for working the rock shaft which carries the hook and works the feed. The machine is designed more particularly for securing the wire in the brim of a lady's hat frame. The stand is therefore constructed to allow of presenting the hat frame so as to be properly acted upon. The needle arm has an extension placed below the journals and connected at its lower end with the wrist pin of a drive shaft. This extension is also connected by a rod with a bell crank, which is attached to a block having a pin that enters a slot of the arm in a rock shaft which carries the parts for catching the upper thread, and also the feed operating cams, so that the reciprocation of the block turns the arm and shaft.

Obtaining Sulphur and its Compounds from Gas Lime.

Julius Kircher, New York city.—This invention is intended to provide a simple and efficient means of extracting sulphur, sulphuric acid, and sulphurets of sodium and potassium from gas lime. The lime is heated to 300° Fah. in a closed retort, and steam at 600° Fah. passed over it, evolving sulphuretted hydrogen, which passes to a leaden chamber, and is there ignited with atmospheric air to produce sulphurous acid; it is then mixed with nitric acid vapors, when the reaction produces sulphuric acid. The gas lime is mixed with clay, loam, or sand, and subjected to heat, when the silica or alumina unites with the lime and with oxygen, forming silicate of lime, etc., and liberating the sulphur. To produce the sulphuret of sodium or potassium, the gas lime, etc., is mixed with caustic soda or potassa, and allowed to stand until the reaction takes place.

Improved Manufacture of Gas.

Robert H. Patterson, Hammersmith, England.—This invention relates to the purification of coal gas, used for illumination, by the use of purifying vessels containing alkaline sulphides or sulphur finely divided and mixed with a substance which will permit the gas to pass freely; especially is the presence of this sulphide or sulphurous mixture necessary in the first of the purifiers, called the "decarbonating vessel," the other vessels containing the alkali to be converted into sulphide. The decarbonating vessel is recharged when the mixture therein is saturated with carbonic acid gas, which is indicated by the presence of that gas in the illuminating gas leaving the vessel; and when the gas issuing from the vessels containing the alkali to be sulphuretted shows the presence of sulphuretted hydrogen, the production of the sulphides is complete.

Improved Stop for Water Main Attachments.

William Young, Easton, Pa.—As a cheaper stop for keeping the water back while attaching service pipes to water mains until a connection is made, a pipe connection attached to the main is proposed, consisting of two sections coupled together by a union, with a disk of glass or any substance that will break readily by a crushing force, and packing washers between the two sections, which will stop the water until the connection is made, and then let it flow by screwing up one section against the other, hard enough to break the glass.

Improved Corrugated Metallic Rolling Shutter.

Alexander Clark, London, England.—The object of this invention is to deaden or prevent noise in raising and lowering corrugated metal revolving shutters. The invention consists in applying a soft or pliant material—such as leather, webbing, sheet india rubber, or india rubber tubing—to the shutters and the grooves in which they move. When applied at one or more intermediate points in the width of the shutter, a strip or length of the material is used, fastened at one end to the top and the other end to the bottom of the shutter, and also at any intermediate points, as required, so as to coil up therewith, and form a cushion between the several coils of the metal shutter, and thus prevent the noise produced by the corrugations catching and slipping over one another when the shutter is being coiled or uncoiled. In addition to the said strips the edges of the shutters which move in the grooves are bound with india rubber or leather as well as the grooves themselves. The inventor is a very extensive manufacturer of iron shutters, metallic cornices, etc. The invention just patented is considered a very important improvement.

Improvement in the Manufacture of Acid Phosphates.

Henri Storck and Farnham Maxwell Lyte, Asnières, near Paris, France.—It has hitherto been found difficult to extract, from the phosphoric acid or superphosphate as usually produced, the sulphuric acid employed in the attack. The object of the present improved process is the extraction of this sulphuric acid. The inventors take mineral phosphates, bone earth, or any other form of phosphate of calcium, more or less impure, and treat them with the quantity of sulphuric acid requisite to convert them into phosphoric acid, or a soluble acid phosphate of calcium; the former, remaining in solution, is drawn off. This liquid is now treated with hydrate of barium, carbonate of barium, sulphide of barium, or any convenient compound of barium, by means of which the sulphuric acid may be withdrawn from the solution of phosphoric acid. Another method consists in forming an acid phosphate of barium, lead, or strontium, and adding this, in sufficient quantity, to the crude phosphoric acid or superphosphate. By either of these means the sulphuric acid contained in the crude phosphoric acid is precipitated, and the purified phosphoric acid or superphosphate may be drawn off by decantation or filtration.

Improved Press.

Warren E. Warner, Syracuse, N. Y.—The top of the press is a broad and strong metal cross head cast in one piece, with holes for the rods, lugs, and sockets for the upper ends of the toggle jointed bars, and with the strong projection from the under side downward from the center for guiding a screw and the ratchet nut. The follower starts level in the beginning of the operation, and does not require the powerful guiding follower stem (commonly used in this kind of press) with the double cross head, between which it works to keep it level at starting, as when pressing cider, hay, and the like. The cavities in the nuts for the round heads of the bars are made so that the heads of the two bars will meet at the bottoms of the sockets which run into each other and roll together, so as to transmit the force directly from one bar to the other, and relieve the nuts of the strain, besides changing the friction from sliding to rolling, and thus economize power and wear.

Improved Station Indicator.

James K. Magie, Canton, Ill.—In this invention an endless belt carries the names of the stations, and works over rollers, one of which is turned by a shaft and wheel connected by suitable gearing with a pin wheel, all to operate by a stop piece arranged on the track at the stations, against which one of the pins of the wheel comes, as these contrivances are usually arranged. Mechanism is provided in order to have the pin wheel turn further than it naturally will by the influence of the stop against which it comes, so as to have the next pin in advance high enough to clear the blocks in all contingencies when not set to be acted upon by them, and yet come down to a vertical line to be ready for the next stop.

Improved Clock Escapement.

Charles Fasoldt, Albany, N. Y.—This invention has for its object to so impart the impulse to the pendulum of an astronomical or other clock that the said pendulum will not receive it directly from the escape wheel, but indirectly by a gravity arm or lever whose oscillations are created by the escapement. In this manner a surplus power may be imparted to the clock without increasing the oscillation of the pendulum, and a complete regulation is obtained. The present invention is based upon the United States letters patent which were granted to the same inventor February 1, 1859, and March 7, 1865, more especially upon the latter.

Improved Dried Fruit Loosener.

Cornelius Ragan, Waterloo, Iowa.—This invention has for its object to furnish an improved device for loosening dried apples, dried peaches, and other dried fruit packed in barrels or boxes. The invention consists of a square steel rod, having its lower part flattened, coiled spirally and pointed and provided with a handle.

Improved Fruit Dryer.

John Stevenson, Sparta, Ill.—This invention consists in a fruit dryer having two separate but communicating chambers, which are provided, one with a series of superposed open frame supports for trays, and with steam pipes arranged beneath the open frames, and the other with a steam coil, which serves to heat the air preparatory to its passage to the drying chamber.