

MISCELLANEOUS INVENTIONS.

An improved process of securing moulded glass stones to metallic frames has been patented by Mr. Johann Fischer, of Tannwald, Bohemia, Austria. The invention consists in attaching a thin metal plate to the under side of the moulded glass stone when the same is in a soft state, and then soldering this plate on the under side of the stone to the metal frame or plate of ornaments, jewelry, etc.

Mr. Paolo Corvaja, of Palermo, Sicily, Italy, has patented improvements in the method and apparatus for ballasting ships in port. The present mode of outside ballasting consists in hanging logs of wood by chains or ropes from the sides of the vessel as counter-balancing weights, so that when the vessel attempts to keel over from any cause while lying at the wharf or being towed, the weight of the log on the higher side alone prevents her from doing so, for on the lower side the slackening of the chains or ropes lets the log on this side float in the water; hence it is of no use, and the strain of righting the vessel is thrown entirely on one side. This arrangement also fails in its purpose of keeping the vessel steady, as when she rolls the log sinking in the water relieves her of its weight, whereby an unsteady motion is maintained. The object of this invention is to temporarily ballast ships by the weight and buoyancy of the ballasting logs combined.

In an improved stove, invented by Mr. Dabney L. Ervin, of Crawfordsville, Miss., the novel feature consists in arranging the binding rods of the stove in vertical grooves made in the edges of the side and back plates, so that they may be protected from burning; also in a peculiarly constructed soot drawer and scraper combined; and in an ash pan secured in position in a novel manner.

Mr. Henry R. Robbins, of Baltimore, Md., has patented a means for enabling the driver to make change for the passengers or deliver tickets to them without requiring the passengers to pass to the end of the car; and to this end it consists in combining with a street car two or more pneumatic tubes opening through doors at different points in the length of the car, and at the front end opening near the driver, together with suitable carriers for traversing the said tubes with the money or tickets, and an air forcing apparatus and a valve for directing the current through any one of said tubes, whereby the transmission of tickets or change is easily effected as between the driver and passenger.

Mr. Benjamin F. Luce, of Janesville, Minn., has patented an improvement in the class of laterally swinging gates having hinges or hinge attachments consisting of a roller and an inclined plane resting thereon, the two co-operating in such a manner as to render the gates self-closing.

A target and target stand, to be used in archery, lighter and more durable than those now in use, and possessing the advantage over others of stopping the arrows and allowing them to be easily withdrawn and without injury, has been patented by Mr. William A. Tangeman, of Lockland, Ohio.

In the ordinary connection between the governor and its valve the sliding action and free movement of the governor valve necessary to allow it to be sensitively acted upon by the governor permits such a leakage of steam as prevents the positive and reliable effect of the governor. Mr. Cyrus B. Cook, of Cynthiana, Ky., has patented an invention consisting in combining with the ordinary screw steam throttle valve devices whereby the engine is made to act upon its throttle valve to positively open or close the same, according to the requirement of the work.

An improved cut off for steam engines has been patented by Mr. William Redmond, of Greenville, S. C. The inventor makes use of a rocking lever connected with the valves and with the eccentric rod. The connection with the eccentric rod is made by a block that is fitted for movement in the rocking lever to and from the fulcrum thereof, and is positioned by connections from a speed governor, so that as the governor balls rise a quicker movement is given to the valves and the reverse as the balls fall.

RECENT DECISIONS RELATING TO PATENTS.

Circuit Court of the United States.—District of Vermont.—Wheeler, J.

AN INJUNCTION THAT PROHIBITS THE USE OF AN ARTICLE AFTER THE PATENT HAS EXPIRED.

American Diamond Rock Boring Company vs. Charles Sheldon, Charles H. Sheldon, John A. Sheldon, Charles H. Slason. In equity. February term, 1880.

A motion for a rehearing has been filed since the decree for an injunction and an account, in support of which counsel for the defendants have submitted a brief; and a motion to restore the injunction as to machines made during the life of the patent infringing upon it has been heard.

The motion for a rehearing rests entirely upon the ground that the decision made is, as is alleged for many reasons, erroneous, and is supported by the certificate of two counsel.

The English practice of granting a rehearing upon the certificate of two counsel as a matter of course does not prevail in the federal courts of this country. *Brown vs. Aspdon*, 14 How. 25; *U. S. vs. Wright's Admr.*, 1 Black, 489; *Public Schools vs. Walker*, 9 Wall. 603. According to the present practice in this court the granting such motion rests in the sound discretion of the judges who have heard the cause or made the decision. This seems to be the general practice in the circuit courts of the United States. *Daniels vs. Mitchell*, 1 Story, 198; *Jenkins vs. Eldridge*, 3 Story, 299. This is all that is claimed by counsel for the defendants.

The brief has been carefully examined and it presents scarcely anything not before presented by counsel and fully considered. The validity of the reissued patent was established by Judge Shipman upon substantially the same record in the Southern District of New York. *Am. Dia. Rock Boring Co. vs. Sullivan Machine Co.*, 14 Blatchf., 119.

That decision was followed and concurred in in this case, and the decision in that respect could not be changed in this case without overruling that as well as the one in this case. The only other questions are those relating to infringement and to the effect of the New Hampshire decree. The question of infringement by the means held to be an infringement in this case was not determined by Judge Shipman in either case before him. It was merely postponed to final hearing; so that question was fully open. It was very carefully considered, and nothing new is presented in regard to it.

It seemed to be understood or assumed that the patent has been held to cover a conical boring head; but that is not correct. It has been merely held that filling into the center to make a conical head to bore by the same means as the annular head infringes the patent for the annular head, although it may be and probably is an improvement upon the annular head. And likewise in regard to filling out the stock even with the laterally projecting diamonds.

And there is nothing new about the New Hampshire decree. The fact remains that the causes of action there were different from those here, so they had not passed under judgment. And the issue here is not shown to have been actually decided by the court there relating to the merits of either case.

It is urged that the plaintiff does not proceed to an accounting under the decree so that the defendants can appeal. This motion, however, was filed before there was any time for such accounting, and its pendency may have thus far prevented. Whether it has or not, that is no ground for a rehearing, although it might become a ground for dismissing the bill for want of prosecution.

On the whole it is quite apparent that a rehearing under the rules would not, with any reasonable degree of probability, change the result, but would only delay this and other causes, and add to the expense of the parties.

The patent was granted under the acts of Congress of 1836 and 1861, and carried the full and exclusive right and liberty of making, using, and vending to others to be used, the patented invention during the term of the patent. Act of 1836, section 5. The defendants have machines made during the term of the patent, and which were infringements when made. If they could be made then and used now in defiance of the owner of the patent the exclusive right granted would not be fully enjoyed. The grant of the exclusive right is substantially the same in this country as it is in England. The question raised here arose there in *Crossley vs. Derby Gaslight Co.*, Webst. Pat. Cas., 119. The case is more fully reported in 4 Law Jour. N. S. Chan., 25. There the patent would expire on the 9th December, 1829, and on the 28th November, before a bill was filed praying for an injunction against using infringing machines and for an account, the Vice Chancellor granted the injunction and directed the account, and the defendants appealed. After argument, the Lord Chancellor Lyndhurst, said: "This is an appeal from his Honor the Vice Chancellor, and is a case for an injunction against the invasion of a patent right, by preventing the use of certain gas meters. This case is very peculiar, and is distinguishable from all other cases in the books. It appears that the plaintiff obtained his patent on the 9th of December, 1815, and that on the 28th of November, 1829, only a few days before the patent expired, he filed a bill. It was objected that the court would not interfere just on the eve of the expiration of the patent and grant an injunction which would only last a week. The point has never yet been decided; but I am of opinion that the court would interfere after a patent has expired to restrain the sale of articles manufactured previous to its expiration in infringement of a patent right; and that a party would not be allowed to prepare for the expiration of a patent by illegally manufacturing articles and immediately after its expiration to deluge its markets with the products of his piracy, and thus reaping the reward of his improbus labor in making it. The court would, I say, in such case restrain him from selling them even after the expiration of the patent." This doctrine does not appear to have been denied or questioned afterward, and was frequently carried out in effect by decreeing the destruction of infringing machines. *Betts vs. De Vitre*, 34 Law Jour. Chan., 289; *Needham vs. Oxley*, 11 Weekly Rep., 852.

In *Curtis on Pat.*, Sec. 436, it is laid down as clear law that "if the patent has expired, the account and the injunction will extend to all the articles piratically made during the existence of the patent, though some of them may remain unsold." The illegality attaches to the things themselves. The person making them has no right to make them, no right to them when made; he can impart none, and none can accrue by their passing into time when they might be made. The ordinary injunction in such cases in effect restrains all infringement of the patent, and is in form perpetual. It would doubtless cover an illegal sale or use after the expiration of the patent. In this case the ordinary injunction has been suspended in the course of the proceedings to limit the term of the patent, and there is, therefore, no injunction now in force.

The injunction is restored as to machines made in infringement of the patent.

THE VOLATILE OIL OF MUSTARD.

BY WM. L. DUDLEY, PROFESSOR OF ANALYTICAL CHEMISTRY AND TOXICOLOGY, MIAMI MEDICAL COLLEGE OF CINCINNATI, O.

When the flour of black mustard, after having been freed from the fixed oil by pressure, is macerated for several hours with water and then distilled it yields 0.5 to 0.7 per cent of a very pungent volatile oil. This compound has the properties and composition of the sulphocyanate of allyl, $C_4H_5NS = \left\{ \begin{matrix} (CS) \\ (C_2H_5) \end{matrix} \right\} N$. Its most characteristic reaction is its combination with ammonia, with which it unites immediately, forming crystalline thiosinamine or sulphocyanate of allyl-ammonium, $H_3(C_2H_5)N.CNS$.

This volatile oil does not pre-exist in the seed of black mustard, but is formed from myronic acid contained therein, under the influence of water and a peculiar ferment called myrosin, which also exists there. Consequently it is not produced unless the mustard flour is allowed to macerate with the water some time before distillation. The myrosin of black mustard being limited in quantity, the best yield of the oil is obtained by mixing the seeds of the white and black mustard. White mustard seeds contain no myronic acid, consequently it is impossible to obtain the volatile oil of mustard from that alone.

The oil is colorless or slightly yellow; its boiling point is $148^\circ C.$, and specific gravity 1.009 to 1.010; it is somewhat soluble in water, but dissolves easily in alcohol and ether. It has a very pungent and acrid odor and taste. It prevents the coagulation of serum albumen as well as alcoholic fermentation.

Oil of mustard is occasionally prepared artificially by distilling sulphate or iodide of allyl with potassium sulphocyanate. The following is an analysis by Dr. E. Mylius of a sample artificially prepared: Allyl sulphocyanide, 92.2 per cent; carbon bisulphide, 0.8 per cent; hydrocyanic acid, 0.2 per cent; polysulphides (chiefly allyl-trisulphide), 4.0 per cent; and non-volatile bodies containing nitrogen and sulphur, 3.0 per cent.

This oil has been used in medicine, chiefly externally, for its powerful rubefacient properties, blistering the skin when applied to it. Schwalbe (Deut. Chem. Ges. Ber. v. 286) says the addition of mustard oil to cow's milk (1 drop to 20 grammes) prevents coagulation. The mixture may be kept in summer for weeks in half filled bottles without coagulating; but after five or seven weeks the casein was found to be converted into albumen, and the liquid was strongly acid. According to Mitscherlich it is the most deadly of all etheral oils, 4 grammes killing a kitten in two hours, 15 grammes in a quarter of an hour. The post-mortem appearances were those of acute gastro-enteritis, and the smell of the oil pervaded the blood, urine and lungs.

The commercial oil is much adulterated with alcohol, carbon bisulphide, petroleum spirit, oil of gilliflowers, and castor oil. Its purity can be tested very easily in the following manner: If several drops are allowed to fall on water they should sink to the bottom on very slight agitation, and should remain perfectly clear. A slight admixture of petroleum spirit causes the drops to remain on the surface. If the oil contains 5 per cent of strong alcohol the drops will become opalescent. Five drops of the pure oil of mustard dissolve in fifty of strong sulphuric acid to a clear deep yellow liquid; if it is adulterated with other vegetable oils they will become charred, and the solution will be dark brown or black; but carbon bisulphide, if present, will separate in minute drops and render the liquid turbid.

The Wheat Crop of the World.

The wheat crop of the whole world for 1879 shows a deficiency of over 375,000,000 bushels, nearly 200,000,000 bushels of the deficiency falling to Europe. The following table, compiled from the *Bulletin des Halles et Marches*, shows the yield for each large wheat raising country compared with the average yield:

	Average yield.	Yield for 1879.
	Bushels.	Bushels.
United States.....	337,500,000	337,500,000
France.....	230,172,000	172,135,000
Russia.....	180,000,000	157,500,000
Germany.....	95,000,000	90,000,000
Spain.....	94,500,000	78,750,000
Italy.....	87,550,000	67,500,000
Austria Hungary.....	76,500,000	63,000,000
Great Britain.....	83,500,000	47,500,000
Turkey.....	34,500,000	29,500,000
Roumania.....	27,000,000	22,500,000
Belgium.....	19,150,000	14,650,000
Portugal.....	6,750,000	5,675,000
Algeria.....	20,500,000	16,875,000
Canada.....	13,500,000	13,500,000
Australia.....	13,500,000	14,650,000
Egypt.....	13,500,000	11,500,000
Netherlands.....	4,615,000	3,375,000
Greece.....	3,500,000	3,375,000
Servia.....	3,375,000	2,812,500
Denmark.....	2,250,000	2,250,000

The Export Trade in Oysters.

The rapid increase in the exportation of oysters to Europe during recent years is shown by the following figures, as given by the Bureau of Statistics:

	Barrels.	Value.
1876.....	42,839	\$214,196
1877.....	52,134	260,620
1878.....	78,612	383,051
1879.....	90,663	453,306
Totals.....	264,238	\$1,321,183

During the winter just past the shipments have been much greater than during the corresponding weeks of 1878-79. The oysters are shipped in barrels on steamers, and generally arrive in good condition. The great bulk of them goes to England. Those sent to the Continent go almost exclusively to Amsterdam.