The Artificial Alizarine Patent.—An Important Decision by the Supreme Court of the United States.

Justice Blatchford recently delivered the opinion of the court in the appeal case resulting from the suit of the Badische Company *vs.* Cochrane *et al.* This was a suit in equity brought in the Circuit Court of the United States for the Southern District of New York by Badische Anilin und Soda Fabrik, a corporation organized under the laws of the Grand Duchy of Baden, in the Empire of Germany, against the appellants, for the infringement of reissue letters patent No. 4,321, granted to Charles Graebe, of Frankfort-on-the-Main, and Charles Liebermann, of Berlin, Prussia, April 4, 1871, for an improvement in dyes or coloring matter from anthracine. The original patent (No. 95,465) was granted to the same persons October 5, 1869, for an improved process of preparing alizarine. It was reissued on two separate amended specifications, Division A and Division B. No. 4,321 is Division B.

The Judge says:

"Inasmuch as the defendant's article is produced from anthracine, or its derivatives, by some method, and is a dyestuff called 'artificial alizarine,' it is contended that the sale of it infringes No. 4,321. The articles in market, called 'artificial alizarine' at the present day, are substances all of which are made from anthracine; but they vary all the way from nearly pure alizarine made by the monosulpho acid process through the products of the bisulpho acid process, which contain combinations of alizarine and anthrapurpurine, up to an article of pure purpurine, free from alizarine. All of these are used as dyestuffs, according to the shade of color and other qualities desired. The specific article put in evidence in this case as an infringement contains about sixty per cent of anthrapurpurine. It is claimed by the plaintiff to be the artificial alizarine described in No. 4,321, and to be physically, chemically, and in coloring properties similar to that. But what that is is not defined in No. 4 321, except that it is the product of the process described in No. 4,321. Therefore, unless it is shown that the process of No. 4,321 was followed to produce the defendant's article, or unless it is shown that that article could not be produced by any other process, the defendant's article cannot be identified as the product of the process of No. 4,321. Nothing of the kind is shown. On the other hand, the defendant's article is made abroad and by a process different from that of No. 4,321. It therefore cannot be the product of that process. If the words of the claim, 'by any other method which will produce a like result,' mean any other method which will produce the only product mentioned in the description, namely, alizarine, as then understood, having the formula $C_{14}H_8O_4$, the defendant's article is not that product, for it contains other dyeing ingredients which the alizarine of the patent does not contain. If the words of the claim are to be construed to cover all artificial alizarine, whatever its ingredients, produced from anthracine or its derivatives by methods invented since Graebe and Liebermann invented the bromine process, we then have a patent for a product or composition of matter which gives no information as to how it is to be identified. Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process."

In brief, the Supreme Court holds as follows:

The claim in reissue letters patent No. 4,321, granted to Charles Graebe and Charles Liebermann, April 4, 1871, is: "Artificial alizarine produced from anthracine or its derivatives by either of the methods herein described, or by any other method which will produce a like result." Unless it is shown that the method described in this patent was followed to produce the defendant's article, or unless it is shown that that article could not be produced by any other process, the defendant's article does not infringe the patent.

While a new process for producing the old article (alizarine) was patentable, the product itself could not be patented, even though it was a product made artificially for the first time, in contradistinction to being eliminated from the madder root. Calling it "artificial alizarine" did not make it a new composition of matter, and patentable as such by reason of its having been prepared artificially for the first time from anthracine, if it was set forth as alizarine, a well known substance.

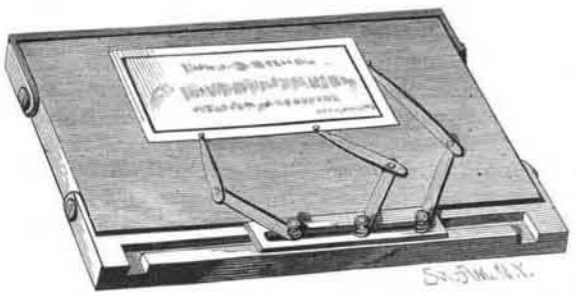
The reissue patent certainly is for a different invention from that described in the original patent, unless the product claimed in the reissue is precisely that product, and no other, which the process described in the original patent produces.

A Magnificent Palace Car.

The private coach recently built for Mr. E. H. Talbot, of the Chicago *Railway Age*, is one of the most luxurious affairs, says Mr. Pullman, ever put upon a railway track. It runs on twelve wheels, six of which were made in Germany by Krupp. The observation room at the end of the car is finished in oak, with plate glass windows extending to the floor, velvet carpets, and embossed leather furniture, including sofas. The bedroom is finished in maple and amaranth, and opening from it is the parlor, the most elegant apartment of the car. It is finished in solid mahogany, with inlaid panels and carvings of rare and costly woods from all corners of the earth, including the Holy Land. The butler's pantry, kitchen, and the sleeping apartments for the servants are models of elegance and comfort. To duplicate the car would cost $75,000—it was a present to Mr. Talbot.

FEED GUIDE FOR PRINTING PRESSES.

Secured by thumb screws and adapted to be shifted along a slot are three fingers made of thin, flat spring metal. To each finger is attached an extension by a joint connected by a small thumb screw having a pointed end. On the outer end of each extension there is a point; these points are set in the tympan sheet at the edges of the paper as shown in the engraving, and the points at the joints are set wherever they may happen to touch, to stay the end points. From the



SMITH'S FEED GUIDE FOR PRINTING PRESSES.

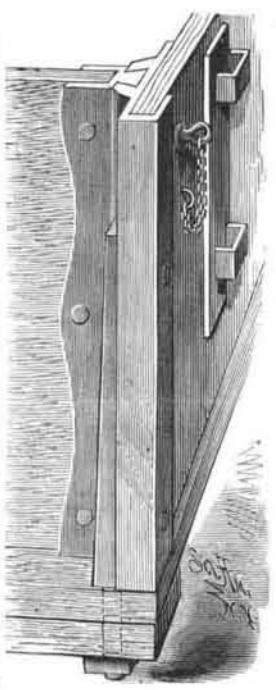
joints the fingers spring downward a little in order to press the end points down.

The attachment needs no screw driver or wrench for adjusting it, as the joints are secured by small thumb screws; the fingers spring sufficiently to allow the points to be raised and carried around, and to keep them pressed down.

This invention has been patented by Mr. W. B. Smith, of Orlando, Florida.

WAGON BODY.

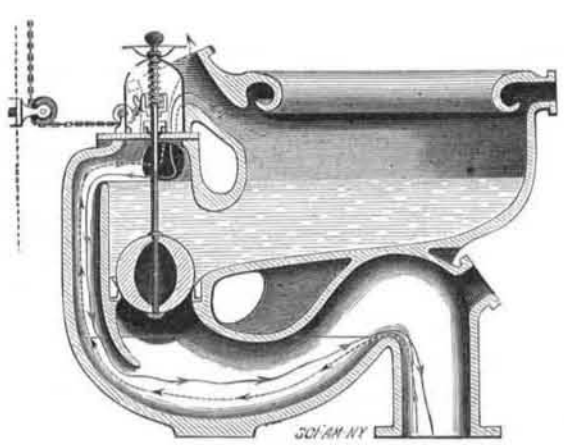
At each corner of the bottom of the wagon box is secured a standard, having a U-shaped cross section, provided with a short and long shank between which pass the ends of the lower side board. Riveted to the outer surface of the long shank is a metal bar which terminates in a screw that passes through the bottom board and a cross bar, and receives a nut. By this means the standard is held in place. On the outer surface of the long shank is formed a dove tailed groove, in which fits a tongue formed on a U-shaped casting held on the end edge of the end board. A locking pin passes through the side board and long shank into the edge of the tongue. The side board is held to the standard by pins. The lower side board is provided with loops for receiving stakes for holding the upper side boards. As the standards hold the end board, no cleats need be nailed to the end of the side boards for holding the end board, neither are cleats on the end board necessary.



This invention has been patented by Mr. C. F. Folsome, and further particulars may be obtained from Messrs. Folsome & Dillon, of Atoka, Indian Territory.

WATER CLOSET.

The accompanying illustration represents one of the latest inventions in water closets, and which is worthy of study, as the inventor claims that it contains all the elements of success needed to make it perfect. It is made of crockery,



WATER CLOSET.

and is simple in operation and compact in form, having no parts where matter can lodge. Raising the pull rod lifts the hollow rubber ball on its lower extremity, and pulls the chain admitting the water, which, as the engraving shows, is not permitted to immediately enter the body of the bowl, but is guided round the crown so that every portion is thoroughly washed. The rod passes through a stuffing box in a brass plate, so that all foul gases are excluded from the room. The rubber ball cushions on a brass thimble cemented to the crockery and finished to a smooth surface with a tool. By means of an encircling spring near its upper extremity, the force required to raise the rod can be adjusted to a nicety, adapting its use to children or adults, as may be necessary.

Particular attention has been paid to ventilation. Emanations from the sewer pass to the lower water line, which bars their further progress. If from any cause this trap should fail to seal, then the gases would take the direction shown by the dotted line, and pass out through the pipe attached to the side of the top of the bowl. In case of siphonage from the exterior, the air would enter the bowl and go through the closet as indicated by the noted line to the sewer. The coupling for uniting the metal pipes to the crockery of the bowl consists of an externally threaded ring, divided into longitudinal sections, which is put round the branch of the bowl. The ring is slightly larger than the collar of the branch, in order that the screw nut which holds the parts together may pass over. The screw nut of the coupling screws on to the split ring, bringing the parts together against a rubber packing.

Communications relating to this patent should be addressed to the Nason Manufacturing Co., 71 Fulton Street, New York.

The Indicator Diagram of a Gas Engine.

At the last meeting of the Physical Society a paper was read by Professor W. E. Ayrton, F.R.S., and Professor J. Perry on the above subject. It was intended to teach practical engineers a method of studying gas engine diagrams. The most recent results obtained by the use of Dowson gas were given by the authors, and it was suggested that before long gas engines will be employed for the propulsion of ships. A large wooden model of an Otto engine enabled the operations going on during a cycle of the engine to be understood by the meeting. Tables were given of the constituents of coal gas and Dowson gas and the air required for combustion, and the heat of combustion and specific heats, to enable the characteristic equation of the fluid used in the gas engine to be determined.

An easy method of obtaining an empirical formula to represent all the diagrams which can be obtained from an engine with different quantities of gas was described, and its results compared with observation. The effects of vibration of the indicator spring in the various parts of the diagram were discussed, as well as those of the explosion. Three practical methods for determining the rate q of gain of heat by the fluid during the forward stroke were given, and a diagram was shown in which this rate could everywhere be compared with the rate of doing work. If W is the indicated work in one cycle, it was shown that 5·64 W is the total energy of combustion of one charge, and this is expended as follows: 1·45 W is the work done in the forward stroke, 2·22 W is given to the cylinder by radiation in the forward stroke, 1·5 W is carried off through the exhaust pipe, 0·47 W is given to the cylinder as heat after the exhaust valve opens. The rate at which the loss 2·22 W by radiation occurs at every point of the forward stroke was shown on a diagram obtained from a knowledge of the temperature at every point in the stroke, and when the ordinates of this diagram were added to the q diagram previously described, a diagram was obtained showing at every point of the stroke the rate at which combustion was going on. This diagram was specially important as showing the effect of dissociation in the gas engine.

Large Grape Vines.

Capt. W. G. Phelps has a grape vine that is now believed *to be the largest in the United States. In 1867 the large* vine that was famous in Southern California was cut down and exhibited at the Centennial Exhibition. It measured 14 inches in diameter. This vine of Captain Phelps' is 25 years old and is 13 inches in diameter. It is of the Mission variety, and it has never received the benefits of irrigation. It stands near the house, south of Stockton about two miles, and it covers about 4,000 square feet of ground. If it had been permitted to run where it wished it would have covered a much larger area, but it was found necessary to cut it back in order to save the roof of the house. The largest crop that grew was two or three years ago, when, after selling a ton and a half by actual weigbt, the remainder was estimated at two tons and a half.—*Pacific Rural Press.*

(In the *Bulletin of the Torrey Botanical Club* for January, 1882, Prof. C. E. Bessey reports finding in Wayne County, Ohio, a colony of grape vines, supposed to be *Vitis labrasca*, L., the trunks of which were, some of them, over a foot in diameter. In a subsequent number of the same journal, Mr. H. W. Ravenel, of Bluffton, S. C., states that in March, 1881, while in Darien, Ga., he rode out to Baisden's Bluff on the coast, some twelve miles northeast of Darien, to see a celebrated grape vine. It was just in leaf, and, from the wood and bark, appeared to be *Vitis æstivalis*. On measuring the trunk at 8 feet from the ground, Mr. Ravenel found that it had a circumference of 44 inches. This rather beats the grape vine of the land of the "big trees." Another large vine, although of smaller dimensions than those noted above, is reported by Mr. N. L. Britton (*l. c.*) as growing near Egbertville, on Staten Island, N. Y. This vine (*Vitis cordifolia*) has a circumference of 25½ inches at a point three feet above its base, "completely covers three cedar trees, each at least 30 feet high, and is a very beautiful plant.")