

construct a stove with two grates—the one immediately above the other. First, make a glowing fire in the upper grate, and then start a fire in the lower grate. Now, theoretically, all the smoke arising from the lower grate will have to pass through the upper fire, and, in so passing, will be consumed. Live coals, when necessary, from time to time, may be taken from the lower to the upper grate. Fresh fuel should always be put upon the lower grate. Thus, I should think, a continual fire might be kept up, and nearly all the smoke consumed.

W. H. B.

Baltimore, Nov. 1, 1865.

[We should suppose that this plan might consume the smoke of the lower fire, but would increase that of the upper fire. Still, this could be ascertained only by trial.—Eds.]

PATENT-LAW TRIALS.

Infringement of a Design Patent.

U. S. CIRCUIT COURT.—Before Judge Benedict.

Emma C. Wooster vs. Jason Crane, et al.—This is a bill in equity filed to recover damages for an alleged infringement of a patent issued Oct. 20, 1863, for a design for a reel.

The article in question is a reel for containing ruffles, ladies' dress trimmings, and other goods; and consists of two parallel disks of pasteboard connected by four bits of wood, on which the ruffle is wound between two pasteboard sides. The pasteboard is cut in the form of a rhombus, with the angles rounded, and what the patentee claims is "the design and configuration of the reel."

The statute relied on as giving to the complainant the right sought to be enforced is the act of March 2, 1861. The eleventh section of this act is as follows:—

"SEC. 11. And be it further enacted that any citizen or citizens, alien or aliens, having resided one year in the United States and taken the oath of his or her intention to become a citizen or citizens, who by his, her or their own industry, genius, efforts and expense, may have invented or produced any new and original design for a manufacture, whether of metal or other material; * * * or any new and useful pattern or print or picture, to be either worked into or worked on, or printed, or painted, or cast, or otherwise fixed on any article of manufacture; or any new and original shape or configuration of any article of manufacture not known or used by others before his, her, or their invention or production thereof, and prior to the time of his, her or their application for a patent therefor; and who shall desire to obtain an exclusive property or right therein, to make, use, and sell and vend the same, or copies of the same, to others, by them to be made, used, and sold, may make application in writing to the Commissioner of Patents, expressing such desire, and the Commissioner, on due proceedings had, may grant a patent therefor, as in the case now of an application for a patent."

I am not aware that any judicial construction has been given to the portion of this act considered applicable to this case. No authorities were cited on either side showing any adjudication upon the question involved. There seems to me, however, little doubt as to what should be the construction to be put upon it, when sought to be applied to a case like the present.

In this case the reel itself is an article of manufacture, is conceded to be old, and not the subject of a patent. The shape applied to it by the complainant is also an old, well-known mathematical figure. Now, although it does not appear that any person ever before applied this particular shape to this particular article, I cannot think that the act quoted above was intended to secure to the complainant an exclusive right to use this well-known figure in the manufacture of reels. The act, although it does not require utility in order to secure the benefit of its provisions, does require that the shape produced shall be the result of industry, effort, genius, expense, and must, also, I think, be held to require that the shape or configuration sought to be secured shall at least be new and original, as applied to articles of manufacture. But here the shape is a common one in many articles of manufacture, and its application to a reel cannot fairly be said to be the result of industry, genius, efforts, and expense. No advantage whatever is pretended to be derived from the adoption of the form selected by the complainant, except the incidental one of using it as a trade-mark. Its selection can hardly be said to be the result of effort even. It was simply an arbitrary, chance selection of one of many well-known shapes, all equally well adapted to the purpose. To hold that such an application of a common form can be secured by Letters Patent, would be giving the act of 1861 a construction broader than I am willing to give it.

The decree must, therefore, be for the defendant.

Validity of a Reissued Patent.

U. S. CIRCUIT COURT.—Before Judge Nelson.

Samuel H. Doughty vs. James J. West et al.—This was a motion for a preliminary injunction in a suit brought to prevent an alleged infringement of a patent belonging to the plaintiff.

This motion is founded upon a reissued patent to the plaintiff for a new and useful improvement on skeleton skirts, on the 1st of August, 1865, as assignee of James Draper, the inventor and original patentee; and also, upon affidavits in support of the alleged infringement of said patent by the defendants. The original patent was issued October 4, 1859, and surrendered and reissued on the 27th of December of the same year, and again surrendered when the present patent was issued in 1865.

The claim of the present patent is "for a new manufacture of skeleton skirts, substantially, as described,

consisting of a series of tapes woven in the direction of their length in alternate sections, as single and double tapes, with hoops inserted in the loops formed by weaving the tapes, as double tapes, and there secured to prevent the tapes from sliding latterly on the hoops."

None of the previous issues of October and December, 1859, contained this claim. And it is now, for the first time, put forth as the original invention of the patentee prior to the date of the first patent. This the plaintiff must sustain in order to uphold the present patent.

It appears from the affidavits, on the part of the defendants, that a patent had been issued for this same improvement as early as Jan. 6, 1863, or rather for this improvement with the addition of metallic fastenings; and that the defendants are manufacturing their skeleton skirts under this patent; and which will make it necessary for the plaintiff to overcome the inference against him, *prima facie*, that his subsequent reissue, in August, 1865, was suggested by this patent; for, it seems clear, as stated in the affidavit, that this patent of 1863, embraces the whole of the improvement of this last reissue of plaintiff.

Nearly six years have elapsed since the original patent was issued to Draper, and before he has described and claimed his real invention, according to the theory of this suit. Of course, this delay has had the effect, doubtless, to lead persons engaged in this business to conduct it as if no such claim belonged to him, and may, if his patent is now sustained, work hardship and loss. We agree, however, if he can clearly show that he was the inventor of the skirt previous to the date of the first patent, and was the first and original inventor, his patent must be upheld. We say clearly, because the lapse of time cast suspicion upon the case, and courts and juries will require the fullest and most explicit proof of the fact. Of course the case is not one for a preliminary injunction, and the plaintiff must go to his proofs.

Motion for preliminary injunction denied.

Extraordinary Endurance of a Steel Ship.

The London papers publish the following extract from the log of the *Clytemnestra*, a clipper ship of 1,250 tons register, built of three-quarter inch steel plates:—

"The morning of October 5, 1864, commenced with strong winds and thick, drizzling rain. 8 A. M., had gale and tremendous squalls, with thick, constant rain. From 8 A. M. until noon gale rapidly increasing, and barometer falling fast, with very threatening appearance. 2 A. M., tremendous gale and most terrific squalls, with thick rain and dismal appearance. The ships attached to the same moorings below us began to break adrift, with sails blown from the yards and topgallant masts gone. 3:30 P. M., hurricane at its height, blowing so terrifically hard that it was impossible to stand on deck without holding on. At this time our inshore bower chain parted, our sails were all blown from the yards, and the topgallant mast went with the foretopmast. When the bower chain parted we swung out stern on to the gale, and held on for a few minutes, when in a tremendous burst of wind our stern chain parted, and away we drove across the river, before wind and tide, at a frightful rate, smashing into several ships on our way. Finally, we were brought to a standstill on the opposite side of the river, and became a target for one half of the ships in Calcutta. One wooden ship driving up struck upon our starboard quarter, walking right through the upper part of our stern, and raising the poop deck. Three or four ships were constantly pitching into our main rigging, being all fast together, and smashing and tearing away at everything thenceforward. At 4:30 P. M., two iron ships and one wooden one drove right into us abaft the fore-rigging, carrying away chain plates and rails. One of their bowsprits struck the foremast, and, with a fearful crash, the foremast fell over the port side, almost burying a small vessel that was fast to us. The rigging of the foremast was totally gone. Some time before the mast went it broke 'tween decks, tearing up the main deck, and breaking two beams. 5:30 P. M., wind abating very fast, and barometer rising, with fine weather. Ship laying almost a helpless wreck."

Ventilation.

General Morin lately read a paper before the French Academy of Sciences on the ventilation of public buildings. The fundamental principle of good ventilation, he observed, was this:—To draw off the vitiated air from the stratum nearest the floor—that is, in the immediate vicinity of the persons in the room, and to admit pure air through the ceiling or apertures made in the walls close to it. In winter the air to be introduced, may be previously warmed by an apparatus placed under the roof; but in summer considerable difficulty is encountered in lowering the temperature of the air to be admitted, since the sun having darted its rays upon the roof during the

day, the space under the roof is so hot that, instead of admitting cool air, it penetrates into the building at a much higher temperature than that of the interior. General Morin has tried four different plans for cooling the air. The first consisted in making it pass through a space filled with pulverized water—that is, reduced to a sort of dust, as it were, by making two jets of water strike against each other with great violence. By this method, the temperature is only lowered by two degrees, and moreover it would require a considerable quantity of water and costly machinery to effect it, unless ample water power were at command. The second plan consists in making the air pass along the sides of metallic vessels containing water, which may, if necessary be cooled with ice; but here again there is the difficulty of giving the cooling surfaces a sufficient development—a condition which cannot easily be complied with, and which therefore, in point of fact, renders this method impracticable. The third consists in making openings on that side of the building which is never exposed to the action of the sun, while the vitiated air is drawn off through metallic tubes, the draught of which is increased by the action of the solar rays to which they are exposed. On the side exposed to the sun, the windows should be closed with blinds, or, in case of skylights, the glass panes may be watered outside. The fourth process will be easily applicable as soon as Paris can command abundance of water by the new aqueduct of the Dhuis. It imitates the natural effect of rain, and is very efficacious, since one cubic metre and a third per hour will suffice to water 100 square metres of roofing, which will thus be prevented from being overheated by the sun. Applied from an early hour in the morning, and continued as long as the sun shines on the building, it not only prevents the roof from getting hot, but will reduce the interior temperature of the building very considerably, and cool the air admitted into the garret or space under the roof. As this operation of watering need not be performed for more than 60 days every year, the cost for a large railway station like the Orleans one, for instance, would not exceed 1,000*l.* each season.

Headless Screws for Boots.

We have all heard of pegged boots and sewed boots, but the last novelty is "screwed" boots. It may be asked, where is the superiority of "screwed" soles over nailed? It is here: the thread of the screw holds the sole upon the bottom of the boot or shoe, as long as enough of the metal is left to retain this thread. It will be understood that an iron, copper, or a steel nail, or wooden peg, may drop out, or so far wear off, that the sole will work through these fastenings, and part company from the upper; but not so when the screw takes the place of the nail. As long as the thread of the screw remains—and it will so remain as long as a particle of the screw is left—the leather sole will be held to its place, and wear till it is worn through. We understand that the French army shoe is manufactured in this manner; good stout soles put on with the headless brass screw. This screw is all thread, and by a peculiar kind of a machine is twisted through the outer sole, and into the inner sole, when it is riveted at each end. The metal being brass is not affected by water, and the wear of one of these soles is equal to four of the kind which are sewed or pegged.—*Shoe and Leather Reporter.*

[A screw will not hold unless there is some substance for it to catch in. The wretched leather in boots and shoes now-a-days would seem to be very poor stuff in which to make a thread.—Eds.]

BESSEMER STEEL.—Recently a cubic block of steel, of the enormous weight of 100 tons, was successfully cast at the new works of Messrs. Bessemer and Sons, at East Greenwich. At Bolton, Lancashire, a block of similar steel, weighing 250 tons, was cast by the aid of Messrs Ireland and Sons' patent upper-tweezer cupola furnace.

GEN. BURNSIDE is building a railroad in the oil regions, ten miles and a half long, which is to be completed in ninety days. Seven hundred men are employed in the construction.

It has lately been found that sulphuric acid attacks pure lead more quickly than the same metal in an impure state—a result quite contrary to expectation.