

## Sewing Machine Suit in Great Britain.

The case of *Thomas vs. Reynolds*, recently tried by the Court of Queen's Bench, London, before Lord Campbell and a special jury, is of more than ordinary interest on several accounts, one of which is the attempt to break the Howe patent on the ground of want of novelty. Until the introduction of Mr. Howe's invention, no practically useful sewing machine had been used in England. The plaintiff, a stay manufacturer at Birmingham, invited the inventor to England, and engaged him to adapt his invention to the sewing of stays, which, at that time, were covered with ornamental stitching. This he effected by the use of a traversing frame which held the work distended, and passed it under the action of the sewing instruments. It appeared that machines, possessing some of the essential features of Thomas's machine, had been extensively manufactured in the United States, and imported into Great Britain by Messrs. Grover & Baker, of New York, who were licensees under Howe's American patent; and that, seeing others, the defendant had purchased such machines and employed them in his business.

For the defence, it was not attempted to deny the infringement, but the validity of the patent was questioned, on the ground of want of novelty, from the publication of material parts of the plaintiff's invention in the specifications of some eight patents of prior date to the plaintiff's. Of these, the defendant relied mainly on a patent granted to John Duncan, in the year 1804, for a new mode of tambouring or raising flowers, figures, or other ornamental devices upon muslins, &c.; and on another patent granted to Messrs. Fisher and Gibbons, in the year 1844, for improvements in the manufacture of figured or ornamented lace, or net, or other fabrics. In Duncan's specification a traversing frame was shown, for holding the cloth at tension, and presenting it to the action of a series of needles and hooks, which were thus enabled to form isolated patterns all over the fabric. This was proved by plaintiff's witnesses to be distinct from his frame, inasmuch as the traverse of Duncan's frame was necessarily limited, to suit the special work required; whereas the plaintiff's would traverse the fabric so as to form a row of stitches from selvage to selvage. And further, Duncan's frame required to be moved by hand after each stitch, while plaintiff's was self-acting, and dependent on the movement of the needle and shuttle, which formed the second claim under the plaintiff's patent. It was, however, shown by the plaintiff's witnesses, that there was a material difference between the two arrangements. The form of the stitch was the same in both arrangements, but the mode of producing it was very different. The evidence for the defence went to prove the similarity of Duncan's and the plaintiff's frame for holding and traversing the work; and the anticipation by Fisher and Gibbons of the plaintiff's claim for the needle and shuttle; their specification having contemplated, in express terms, the sewing of two fabrics together.

Lord Campbell, in summing up, said that notice had been served upon Mr. Baker that he would be sued, but he left the country; and then the plaintiff reluctantly, but necessarily, brings an action against this stay-maker at Birmingham, who was using the machine. Duncan's machine could not properly be called a sewing machine; but that is a matter of fact for your consideration. The witnesses for the plaintiff have stated that it is essentially different from what is stated in plaintiff's claim, No. 3. The defendant's witnesses you have heard, and I must own I was a little surprised to hear that they considered that Duncan's was a sewing machine; but if it be a sewing machine, it is very wonderful that from the year 1804 to the year of grace, 1846, there was no practically useful sewing machine, either in England or America. But one of the witnesses said, that a workman reading Duncan's specification would at once find that it was a sewing machine. It is to be regretted that the world for forty years lost the advantage of such a happy invention. But, gentlemen, if you think it [claim No. 3 for the stretching frame] is substantially the same, although Mr. Howe

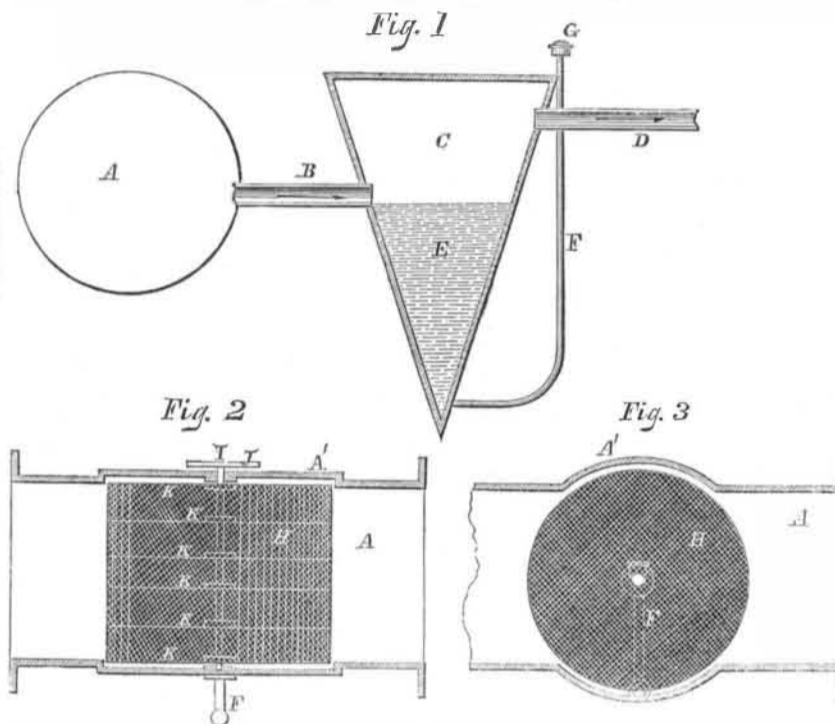
did not copy it, or Mr. Thomas did not copy it, the law is, that being substantially the same, and being so disclosed by the specification of 1804, the patent would be invalid. But I cannot help owning that I was a little surprised to hear that they could be the same, if it was necessary in the one always to stop and re-adjust the machine for any change in the pattern; whereas the other could go on and change the fabric to be sewn exactly according to the will of the workman who was superintending the machine. That would have constituted, as one would think, a material difference between them; but one of the witnesses says that that might be done even in Duncan's; that Duncan's will work vertically, laterally, and horizontally. That is contrary to the evidence given on the part of the plaintiff; but you must form your own

opinion. If you think that this really was substantially the same, though unknown to Howe, and although it slept for nearly half a century, if it be substantially the same as that which is described in the claim No. 3 of Howe's invention or Thomas's patent, then your verdict upon that will be for the defendant: but if you think there is no satisfactory evidence given to you to show that either claim No. 2 or No. 3 had been anticipated—that Fisher and Gibbons's patent and Duncan's are materially different from the description of the claim, either in No. 2 or in No. 3—then your verdict will be for the plaintiff."

The jury deliberated for a few minutes, and found a verdict for the plaintiff, with nominal damages, forty shillings.

This decision establishes the Howe patent in Great Britain.

## CONDENSING LIQUIDS IN GAS PIPES.



Gas, when first distilled from coal, contains several ingredients of an objectionable character, one of which is sulphur. One of the important purifying processes consists in washing with water. But in this process two effects are produced. The water absorbs the impurities from the gas, but the gas also absorbs a quantity of water; in other words, the gas becomes saturated with water; and although this evil, by the processes adopted, is not as great as might be imagined, there is still a sensible quantity of liquid held in suspension in the gas, and when the pipes leading it to the burners are very cold, the liquid condenses and collects in depressions, causing much annoyance, and often serious damage.

The invention illustrated in the accompanying engravings abstracts the water by presenting to it a fluid for which it has great affinity, and extending the surface of contact, and so presenting it to the flow of the gas that every particle of water is absorbed. The fluid used is alcohol, and the method of presenting it consists in compelling the gas to pass through one or more strata of wires wet with the absorbent fluid.

Fig. 1 is a vertical section, Fig. 2 a horizontal section, and Fig. 3 a vertical section, at right angles to that in Fig. 1.

A represents the straight main, A' an enlargement thereof, and B a service pipe, which conveys the gas from the main to the burners. E is a conical reservoir, and D a continuation of the service pipe. E contains a pool of alcohol, and F is a feed pipe through which it is supplied. G is a stopper, by removing which the alcohol mingled with water may be withdrawn at any time, and preserved for re-distillation. H represents a wire gauze cylinder, which is rotated slowly by clock-work, and every portion of its periphery being, at one part of each revolution, below the surface of the alcohol, E, every portion of the cylinder is invariably wet, and ready to absorb the water from the gas passing through its interstices. A portion of the alcohol be-

comes vaporous, or dries up from the cylinder; but this vapor, unlike that of water, produces no material difficulty by subsequent condensation.

I represents the shaft on which the wire gauze wheel, H, is mounted. It fits tightly and easily in the side of the enlarged main or case, so that little or no gas escapes around it. J is a wheel, by which motion is communicated to I from suitable clock-work not represented. K K, etc., represent simply disks within the wheel, H, which increase the wetted surface presented without retarding the gas.

The inventor of this ingenious device is John Walton, of Louisville, Ky. It was secured by Letters Patent on the 30th of June last. Further information may be obtained by addressing him by mail.

## Air Brake for Cars.

One of the latest English patents connected with railroad operations, involves the conveying of power, by allowing compressed air to travel through a tube to the point where the power is required. It consists in working the brakes of railroad cars by having as prime mover an air pump or pumps fixed to the frame-work of the carriage of the engine, tender, or other carriage, or to more than one carriage. Each air pump or prime mover is to be worked by a crank or eccentric, either direct from the ordinary axle or by a separate axle, with any of the well known appliances for instantaneously throwing the same in and out of gear, or the air pump may be worked by the guard or driver. The other parts consist of a cylinder, piston, and connections, attached direct, or by means of levers, as convenience or circumstances may require, to the brake or brakes in each carriage. The cylinders connected immediately with the brakes may be placed on the side, top, or beneath the seats of the carriages, and the apparatus is applicable to both old and new carriages. The patentee proposes to employ air, say at eighteen pounds to the inch, compressed to about half its bulk. The pipes through which

the compressed air is transmitted from the prime mover to the cylinders connected with the brakes, may be carried either under the bottoms or along the roofs of the carriages. The fixed parts of the pipes may or may not run the length of each carriage, and are to be of metal, or otherwise, with unions at the ends, and self-acting air-tight valves opening inwards. The other parts of the pipes for making the connections are to be flexible, with metal ends forming parts of the unions, or other joints, and are so constructed as to open the valves in the ends of the metal pipes when being screwed up, or otherwise attached. It is a clumsy affair, possessing little novelty.

## Coating Articles of Iron with Metallic Alloys

Among the recent patents secured through the Scientific American Agency, is one granted to Joseph Poleux, for the above purpose. This invention consists in preparing iron to receive the coating, by immersing it in concentrated mineral acids. As soon as the articles to be cleansed are immersed in the acid, one, two, or more small pieces of spelter are dropped among them, or the spelter is passed into the acid with the articles. The acid acts at once and rapidly on the spelter, holds in solution what it dissolves, and precipitates the film of it on the minutest portions of the iron surfaces the instant the acid has cleansed them, and this film protects such portions from any further action of the acid while remaining in it. Without the spelter, undiluted acid could not be used without great waste and injury to small or thin articles placed in it. The articles are next taken out, and without being washed, dried, or undergoing any other treatment whatever, are passed immediately, though slowly, into the bath of melted alloy that forms the coating. Mr. Poleux employs muriatic, nitric, or sulphuric acid, of the ordinary degrees of concentration in commerce, (viz., muriatic, of 18° Beaume; nitric, 38° Beaume; and sulphuric, 66° Beaume, or thereabouts,) without dilution.

## Great Cotton Factories.

The foundation of the largest cotton factory in the world has just been laid in Russia, on the island of Cronholm, in the river Narova, between its two cataracts. It is in the form of a grand square, and will possess 1,672 windows, 20,000 gas burners, and will employ 3,000 hands.—*Exchange*.

[We regret that we cannot learn the dimensions of this mill from the above. The Saltaire Mill, of England, only 500 feet long 50 wide, and five stories high, has been claimed in English journals to be the largest in the world, but it does not equal several in this country. The Pacific Mills, at Lawrence, Mass., will be, when completed, 800 feet long, 75 wide, and practically seven stories high, with print works attached, 1,500 feet long. The Lord Mill, now being erected near Norwich, Conn., is 950 feet long, and 75 feet wide, but we have not learned its height; and there is reputed to be a mill now in operation in Portsmouth, N. H., which is a trifle larger than that. No one should proclaim anything "the largest in the world" without giving data from which others may judge the correctness of the statement.]

## Salt and its Properties.

The August number of *De Bow's Review* contains an able article on the subject of salt, its manufacture, properties, uses and varieties, from the pen of William C. Dennis, of Florida. The principal object proposed by Mr. D. is to show the cause of the failure of the salt frequently used in preserving meats to perform that office, and to point out the method of remedying the evil. No one who has the slightest acquaintance with the immense loss occasioned every year in this country by the spoiling of butter, fish and cured meat, particularly bacon, will be disposed to undervalue any effort to analyze the reason of the fact, and designate the method of prevention. The cause of the evil Mr. Dennis finds in the imperfect crystallization of all salt made by boiling, in which is included the Liverpool salt—the variety most used in this country. The substitution of salt produced by evaporation—a process, the slowness of which insures the perfection of that chemical process whose final result is complete crystallization—is the proposed remedy.