Machinery and Appliances.

IMPROVEMENT IN THE PNEUMATIC TUBES OF "EXHAUST" COTTON OPENERS:

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The "Exhaust" cotton opener is a machine that seems to be steadily growing in favour in the estimation of the cotton trade. In it, as is generally known, the feeding table is placed at a distance from the opener proper, and the cotton is drawn by pneumatic force through a tube and so delivered to the opener. The air in the tube is exhausted by means of the fans in the opener, and to increase the power an auxiliary fan is in most cases also employed. Two advantages have been mainly sought to be gained by this method of feeding the opener, the first being that the cotton could be readily fed into the trunk in the mixing-room and carried a very considerable distance with the greatest ease and least cost, thus enabling the mixing and store room to be quite separate from the room containing the openers.

This arrangement the risk of heavy damages in the event of fires breaking out has been greatly diminished. The second advantage was that the trunk was utilised for taking out the heavier impurities, such as small stones, grit, particles of heavy vegetable matter, etc. These were trapped in cavities constructed for the purpose at the bottom of several sections of the trunk. This was an admirable arrangement, and since its introduction much less has been heard of fires in blowing-rooms originating in the beaters of the machines striking hard substances that have passed undetected into them. Nearly all our leading cotton machinists have adopted and supply the pneumatic feed to their openers.

The beneficial results attending the introduction of this system, especially in the removal of heavy foreign substances from the cotton, recently gave the query as to whether it could not also be utilised in extracting a considerably greater portion of the lighter impurities, such as sand, dust, motes, and short fibre, that are always present. This question occurred to the managing staff of Messrs. Paul Catterall, Son, and Co., Newhall-lane Mill, Preston. They accordingly began a series of experiments having this end in view, the outcome of which we have pleasure in bringing before the notice of the trade.

The invention consists of a very simple arrangement, which is illustrated herewith. As will be seen, it consists of a small segmental vent their being trapped in the bottom, as has hitherto been the case to such a considerable extent. This is abundantly evident when the sections of the tube are cleaned out. It is then seen that the character of the waste extracted is modified to a very important extent, to the advantage of the proprietor.

The inventors have had the new arrangement applied for some months, and have tested it with the most satisfactory results. In an early test with the form it has been decided to adopt, and with a full charge of cotton, the result was 2 lb. 1 oz., which is a remarkable instance in connection with this competition is the fact that scarcely any technical specialists have taken part in it, it being impossible to say whether they took part in it. Did they question the good faith of those who offered the prize, or did they consider the problem insoluble? The latter view is probably the most correct. It seems quite possible that some satisfactory method may be invented of protecting workers against danger, but there are some difficulties in the way of the general adoption of any such process. We have been unable to verify whether any person who can make any profit out of it is the person who has made it, whereas the manufacturer who makes it has to incur expense in keeping it in order.

NEW MILL.—A cotton spinning mill for 25,000 spindles on the ground-floor is being erected at Euxholes, in the Low Countries. The undertaking has been entrusted to M. M. F. and E. Sees, of Lille, who will execute the contract in five months. It will have a triple expansion engine.
When the water boils in the apparatus, and the temperature of the steam is maintained in the drying-chamber, the flame—or in the case of heating by steam the valve—is so adjusted that some, but only a little, steam constantly escapes from the outer chimney. In proportion as the material in the basket dries, and therefore diminishes in weight, the weight originally fixed at 10 must recede in order to maintain equilibrium. If the former stands at nine the number of small weights may be reduced; for in exact determination there are two small weights, the one weighing 10 times the other 100 times the largest.

The apparatus is made in three different sizes (a) for single determinations; (b) for three at once; (c) for six at once.

As 300 grammes of material of average texture usually need about four hours, so in 12 hours a 3 apparatus can make 18 determinations. The b and c apparatuses are intended for steam only; the a apparatus is arranged also for gas or petroleum—(Text-End).

One of the most energetic of French Protectionists, M. Pouyer-Queytret, died a few days ago at Rouen, in his seventy-sixth year. In the time of the Empire he was one of the violent opponents of the Free-Trade policy of the Imperial Government; and for eighteen years he gave voice to the protest of the manufacturers against the effects of the Treaty of Commerce with England. Since then he has repeatedly made great exertions in the cause of Protection, as, for instance, in 1870, and in 1884 and 1885, when he conducted a Protectionist campaign, which is still remembered. He was not only a political economist, but also a manufacturer, having founded at Rouen the famous spinning factory called La Fontaine, which he possessed, and other establishments of the same kind in the valley of the Seine. A model basket of the most approved quality was noted as the best service to offer to those who worked in the SE fabric, and executed in his capacity as minister under M. Thiers in the negotiations for peace between France and Germany in 1871.

The actual drying of the warps is done over the ‘tins,’ as they are called; these are large round vessels about 4 feet in diameter and about— for warp drying—five feet long; usually they are arranged vertically in two tiers, which are then covered with a cover or a large hood, about five cylinders, not arranged directly one above another, but in a zig-zag manner, the centres of the first, third, and fifth cylinders being on a line, and the centres of the others in another line. The cylinders are made to revolve by suitable driving mechanism, and into them steam at about 5 to 10 lb. pressure, which heats up the cylinders, whereby the warp passing over them is dried. This drying may be partial or complete, being regulated by the speed at which the warps pass over the cylinders, and by the quantity of steam passed into the same; the quicker the speed, and the smaller the amount of steam, the less the warps are dried; while on the other hand the slower the speed, and the larger the amount and greater the pressure of the steam, the quicker and more thoroughly are the warps dried.

In the great deal of water passing through the cylinders by the condensation of the steam, means are always provided for carrying off this water, and its retention in the drying-plant leads to serious results and damage to the machine.

Hand Bleaching—So far as the chemical part of hand bleaching is concerned it does not differ from that of warp bleaching; the same operations and proportions of chemicals can be used, and in the same order, but there is some difference in the machinery which is used. The hand bleaching may be either in separate banks, which is the method mostly in vogue in modern bleach-houses; or they may be linked together in the form of a chain. In the latter case the operations and machinery may be the same as used in the madder bleacher, with a few important minor differences. In the modern bleach-houses the chain form is gradually giving place to the method of bleaching separate banks, partly because so many improvements have been made in the modern machinery of late years, which enables bleachers to handle the yarn in the form of separate banks better than they could do formerly; and as bleaching in separate banks means that the cotton is kept in a more open form, and is in motion, it is more susceptible of being bleached by various liquids which are used, the result was that the bleach will be better and more thorough, which is always the case when the bleach is done in the same time weaker liquors—or, what is the same thing, less material—can be used, which means a saving in the cost of the process. For bleaching yarn in the hand-bleachers, the same quantities of the various bleaching-liquors may be followed with good results—1st. 1 lb. soda, using 1,000 lb. yarn, 40 lb. caustic soda of 70%, and 50 lb. of soda ash of 50% to 45 hours boil at a low pressure. 2nd. 1 lb. soda ash using 50 lb. 3rd. 1 lb. soda ash using 50 lb. to 45 hours boil at a low pressure.