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IMPROVED UPRIGHT DRYING MACHINE.

Opinions among finishers are divided as to the advisability of having the cylinders for drying the bleached or dyed and starched goods in two heights, disposed in a horizontal machine, or in several heights in a vertical machine. The former arrangement has, says the *Textile Manufacturer*, the advantage that every part of the machine and the cloth during its progress is visible and accessible, but this construction is very inconvenient where the machine assumes large dimensions, because then it requires a very large space; besides, the removal of the steam over such a large distance is more difficult. For this reason many finishers have lately given the vertical type the preference, for, in general, there is plenty of space in height in the drying room, and only the floor space is limited. In order to show those of our readers who take an interest in these machines a good type of such a vertical machine, we here reproduce an illustration of one made by French makers (MM. Pierron and Dehaitre, of Paris), a good model, which, however, on the whole, does not differ much from that of the best English machines. On reference to our illustration it will be found the machine shown contains sixteen cylinders, which, in their interior, contain the buckets now adopted by good makers for carrying off the condensed water. All pipes are placed on the gearing side. The machine is driven by a friction plate, which is in connection with a treadle in front of the machine, so that the attendant can stop the machine instantly as soon as he sees anything wrong. The machine contains, on the whole, as we said before, no new features, and is only a good example of its kind, but as the details are well brought out in our wood cut, our readers will be able to examine them easily.

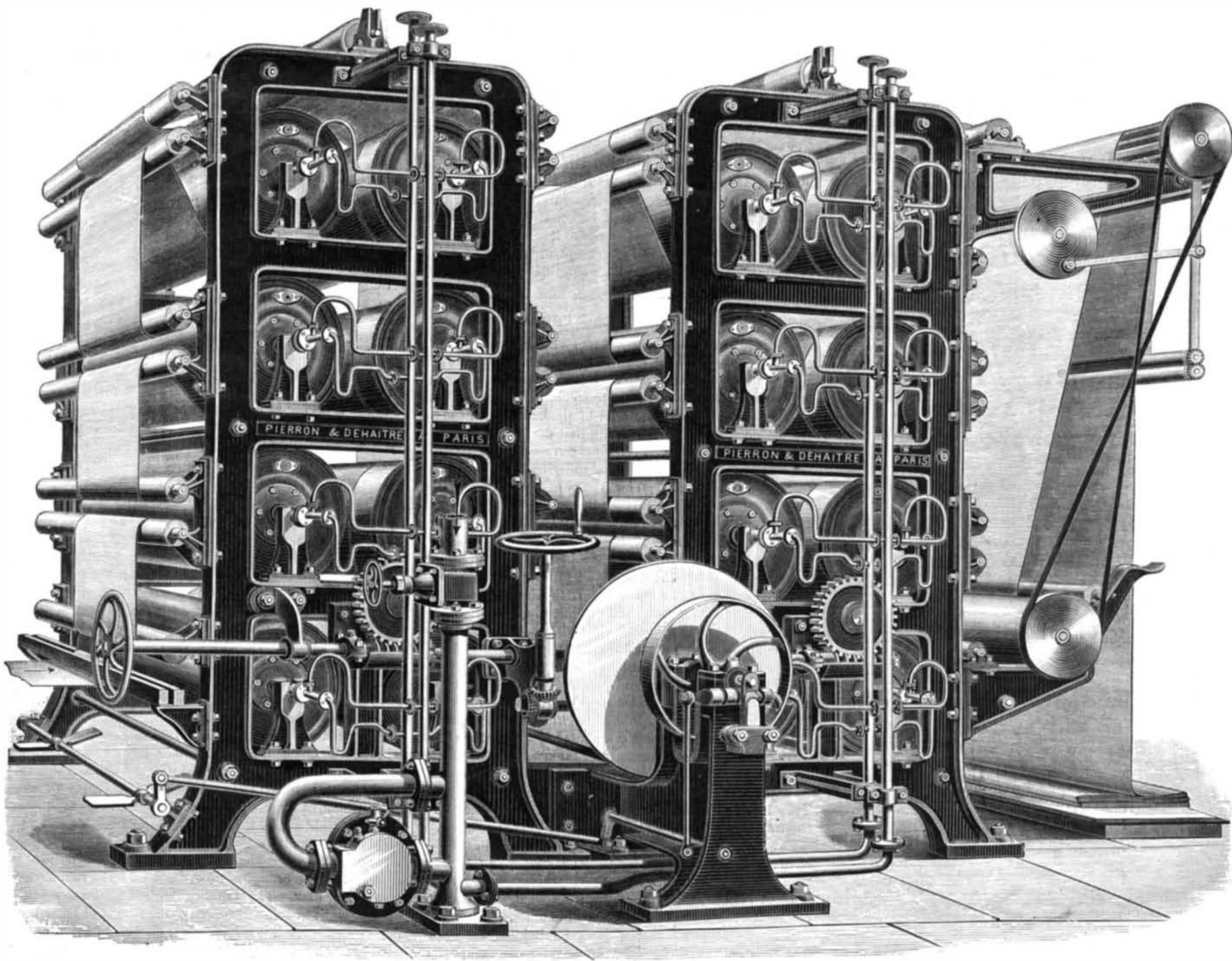
Pneumatic and Chemical Extinguishers.

A correspondent asks us to tell him the difference between a pneumatic extinguisher and a chemical extinguisher, the former not having yet been introduced in his locality. The chemical extinguisher is a metal tank in which there is a solution of soda. A quantity of acid is held in some convenient receptacle, generally a glass bottle inside the tank, which, being turned into the solution of soda, generates carbonic acid gas by the mingling of the chemicals. A pressure is thus created which serves to project the liquid and the gas to a considerable distance. Carbonic acid gas is a sure extinguisher of fire when applied in even moderate quantities. The pneumatic extinguisher consists of a similar tank, inside of which is a small air-chamber; into this inner chamber air is forced by a pump until it is compressed several atmospheres. The space surrounding the air-chamber is then filled with a chemical compound which, on being brought in contact with heat, evolves carbonic acid gas. The pneumatic has an indicator that shows how much pressure there is in the air-chamber; when the machine is needed for service the air is permitted to escape from its confinement, and, being exceedingly elastic, exerts a pressure upon the compound sufficient to force it from the tank about the same distance a chemical can throw—thirty or forty feet. When these machines were first invented great difficulty was found in holding the air in the air-chamber, but this has been overcome; the gauge at all times indicates the amount of pressure, and so long as there is any it will, of course, project the stream. Water may be used instead of the compound if desired, but this is claimed to be far ahead of water for putting out fires. To state it briefly, the chemical extinguisher is dependent upon a gas generated within it for

the pressure required to project a stream composed of fire-extinguishing chemicals; the pneumatic extinguisher depends upon compressed air, confined in an interior air-chamber, for a pressure with which to project either a chemical compound or plain water. Both kinds accomplish their purpose, which is to supply a small stream instantly for the extinguishment of incipient fires, and they have proved to be valuable auxiliaries to the other apparatus of fire departments. The same principle is applied to large machines, and nearly all the prominent fire departments have chemical engines, which render excellent and important service. The pneumatic principle as applied to extinguishers is comparatively new, it being but five or six years since the first of them were introduced.—*The Fireman's Journal*.

The Perfect Screw.

Professor W. A. Rogers produces a perfect screw by the following process: An ordinary well constructed lathe is used; and cuts of various depths are taken on a preliminary screw, for the purpose of tabulating the errors of the leading screw of the lathe as compared with a standard measuring bar. This being done, a micrometer screw is used to vary the relation between the leading screw and the cutting tool. This screw is kept moving automatically, or by hand, so as to always correspond with the tabulated values, which results in producing a screw nearly free from the errors of the leading screw. This screw is then ground with a nut cut in the same way; and, if not sufficiently perfect, it is then put in the place of the leading screw, and another screw cut from it by the same method, whereby any remaining errors are eliminated.



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