

OLD CHINESE WROUGHT-IRON BREECH-LOADING CANNON.

At the establishment of Messrs. McKee & Judson, iron dealers, 457 and 459 Water street, in this city, there is a large quantity of old iron which came from China as ballast in the clipper ship *Flying Scud*, and among it are a large number of old Chinese wrought-iron cannon, several of which are breech-loading. The *Flying Scud* was employed by the British government as a transport during the Chinese war, and was furnished with this quantity of old iron as ballast, and when she came home an arrangement was made for it to remain in her hold, hence its appearance in our port.

All of these wrought-iron cannon are curiosities, but the greatest interest attaches to those which load at the breech. In the first place, they are of great age. Experienced persons on seeing them pronounce them without hesitation one hundred years old, judging from the rust upon their surfaces. Distrusting the accuracy of this criterion, it is still impossible to look at them without being convinced that many years



have passed since they were forged. They are of very peculiar fashion, and we give an illustration of one of them from an accurate drawing made for the purpose by our artist.

They are all of nearly the same size, and the dimensions of the one represented are as follows:—Length, 5 feet; diameter at breech, 7 inches; diameter at muzzle, 5 inches; diameter of bore, 2 1/4 inches.

The bore at the breech is widened by successive cylindrical enlargements, as represented in the dotted lines, and in the rear of this the external shell of the cannon is continued for a length of fourteen inches in the form of a hollow trough open on the upper side. Through each of the sides of this trough is a slot, doubtless intended for a key to hold the breech piece in place. The breech pieces are missing, and whether they were chambered in front to receive the charge, or whether the latter was placed in the bore of the gun, it is impossible to determine.

It is well known that breech-loading cannon were tried in Europe soon after the introduction of the use of gunpowder. Still, this proof of their having been employed by the Chinese so long ago will attract attention at this time.

The muzzle-loading wrought-iron cannon that came out in the *Flying Scud* are considerably larger than those which load at the breech, and the ability of the Chinese to forge these large masses with their little hammers has excited considerable surprise among our mechanics.

It is said to be a universal rule, that in the infancy of the arts great skill is displayed in the use of poor tools, and that as civilization advances better tools are devised, requiring shorter training in those who employ them.

The New Gun-Boat Contracts.

The *Commercial Bulletin* (Boston) directs the attention of the public to efforts that have been made for influencing government to modify the original gun-boat contracts, in order that some of those to whom they have been awarded may fleece the government. It says:—"We suggest that on no consideration should the original contract be modified without stating in writing the amount for each change. If the Navy Department or its agents once encroach upon the contract, and then leave the rest open, every gun-boat built by a speculator will cost probably three times the amount of the original sum specified in the bid. It is a well-known fact that every vessel built for the government in New England navy yards, has cost fifty per cent less than those which have been built in Virginia."

THERE appears to be a perfect stagnation in scientific discovery; learned bodies are exclusively occupied in the discussion of trite subjects, among which spontaneous generation, coloring matters from coal tar, the composition of steel, and the composition of comets, attract the most attention.

Poisonous Cosmetics.

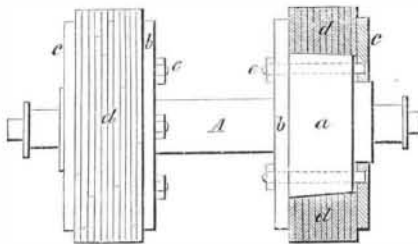
At a recent sitting of the Paris Academy of Medicine, Dr. Réveil read a paper on the necessity of preventing perfumers from selling poisonous or dangerous articles which should be exclusively left to the responsibility of regular chemists, and not sold without a physician's prescription. "To show the danger there is in allowing the unchecked sale of certain compounds," he said: "I need but state that arsenic, the acid nitrate of mercury, tartar emetic, cantharides, colchicum, and potassa caustica form part of their ingredients. The kind of soap called lettuce soap, which is sold with the announcement that it has been acknowledged by the Academy, does not contain the slightest trace of lettuce. This and other soaps are all colored green by the sesqui-oxid of chromium, or of a rose color by the bisulphuret of mercury known as vermilion. Some which are cheaper contain 30 per cent of insoluble matter, such as lime or plaster, while others contain animal nitrogenous matter, which having escaped the process of saponification, emits a bad smell when its solution is left exposed to the air. The

various toilet vinegars are so far noxious that, being applied to the skin still impregnated with soap and water, they give rise to a decomposition, in consequence of which the fatty acids of soaps, being insoluble in water, are not removed by washing, become rancid and cause a chronic inflammation of the skin. The preparations employed for hair dye under the pompous names of 'African Water,' 'Florida Water,' &c., all contain nitrate of silver, sulphur, oxyd and acetate of lead, sulphate of copper, and other noxious substances. All cosmetics for removing hairs or freckles are dangerous; the *lait antéphélique*, for instance, contains corrosive sublimate and oxyd of lead. Were a chemist in France to deliver such a remedy to a customer without a regular prescription, he would be liable to a fine of 6,000 francs."

FAIRBAIRN'S IMPROVEMENT IN ROLLERS: FOR PREPARING FLAX.

We find the following description of this invention in *Newton's London Journal of Arts and Sciences*:

This invention relates to a novel mode of covering with the leather drawing and pressing rollers of machinery for preparing hemp and flax; the object being to render such



rollers better able than heretofore to withstand the cutting action of the fibers. The covered rollers of preparing machines have hitherto been generally made by stretching leather around the periphery of iron or wooden rollers, so that the face of the covering leather was presented to the hemp or flax fibers. Instead of thus disposing the leather, it is now proposed to apply the leather to the rollers so that the acting surface will present the cross-grain of the leather to the staple under operation. This arrangement will also permit of considerable wear taking place in the covering leather before the roller will be required to be recovered. The leather used for covering the rollers is stamped out with a suitable cutting tool from stout hides, in the form of rings or segments of circles, according to the diameter of the roller to be covered, and these rings or segments are strung on or placed around the periphery of the flanged roller in a sufficient number of layers to produce, by their combination, a breadth of covering equal to the length of the roller required to be made.

The figure represents a pair of the improved drawing rollers mounted on a spindle, A, one of the rollers being shown partly in section, the better to explain its construction. The roller consists of a metal core, a, made slightly conical, and formed with a flange, b, at its base. Projecting from the core is a boss to receive an annular plate, c, which, when applied, forms the second flange of the roller. The leather rings are cut to fit the core, a, and they are slipped on as shown at d, so as to cover the whole surface of the core. The annular plate, c, is then applied, and, by means of clamping screws, e e, which are passed through the plate, c, and core and flange, a b, the plate, c, is caused to bind the layers of leather firmly together, the same being thus gripped securely between the flanges of the roller.

The roller, thus constructed, is finished by turning down

the leather covering in a lathe, to produce a smooth surface. By this means, it will be readily understood that any desired thickness of leather covering can be obtained, and that great facility is afforded for applying the leather to the rollers.

The patentee claims "constructing covered rollers in the manner and for the purpose above described."

PRODUCTIVENESS OF FOWLS.—Experiments to ascertain the comparative productiveness of the different breeds of poultry, have been made this spring in the Zoological Gardens of the Bois de Boulogne. The number of eggs laid by the fowls in that establishment has been immense. It appears that the Asiatic breeds of Nankin and Brahmapootra are the best layers; the French *Crèveceurs* come next; the Houdans third; the La Fleche fourth; and after them the Dorkings and a Dutch breed. The Nankins and Brahmapootras are also remarkably precocious; and, according to some breeders, they begin laying in February, and keep on almost to the end of the year.



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