

AMERICAN ENTERPRISE IN CHINA.

From a recent number of the *Friend of China*, a journal in the English language at Shanghai, just received, we clip the following:—

"We wish now to draw attention to the establishment known as the Kiangaan Machine Shop, Hongqua, to which on several occasions we have made reference. As our local readers know, the site of this establishment was formerly Messrs. T. Hunt & Co.'s, then, as now, under the superintendence of Mr. Thomas A. Falls, an American engineer of some eminence in his profession. Since the establishment has changed proprietors, although only monthly tenants, the Chinese, on Mr. Falls' suggestions, have made several valuable additions and improvements on the property; one of them being a furnace of greater capacity for castings than any east of the cape, we are told. But it is to the work done on the premises to which we would draw attention. We see there, in profusion, howitzers in iron and brass, light and heavy, of exquisite finish; shell of all sizes; the place around being resonant with the roar of a steam polisher of balls as they emerge from the foundry; fuses completed, from the sheet of brown paper and paste, up; muskets in all stages of manufacture, from the small screws which secure the springs of the percussion locks, to the barrels rolled and welded as they come from the furnace; boring machines and lathes of every size, for the mortar or the pistol; immense drops for punching, cupolas for melting the crude ore, ovens for baking, draughtsmen, molders, blacksmiths, boiler makers, copper smiths; in a word, a native arsenal as ponderous and compact as the best of those we see at home.

"Assuring to peace lovers, indeed, is an inspection of this splendid foundation. Would that this peace-securing missionary institution, as we term it, had for its supporters men of better deservings; would that all this peace securing was in aid of a Government bent on enlightening, not on enthraling its subjects, both mind and body!

"The number of artisans employed by Mr. Falls, on an expenditure for salaries of some \$5,000 a month, is over three hundred, fifteen of whom are Americans or Europeans; Mr. Stevenson has charge of the draughting department, Mr. McIlwrath the heavier engineering. Among some pieces prepared for shipment by the *Confucius* for transport last week to Nanking, and thence for the various war fields over the country, were some beautiful three-pounder howitzers, weighing, mounted on iron carriages, the insignificant total of five hundred pounds; twelve-pounder howitzers, similarly mounted, five hundred and twenty pounds; while there were heavy howitzers for ship board, or shore use, of over nine hundred pounds weight; one sixty-eight-pounder howitzer, of cast iron, being just ready for placing in the lathe. The wheels of the carriages seem to be particularly well made, dished as only adepts in that branch of mechanics know how to speach their stocks for whole tires on breech felloes, and it but wants Collinge's patent axletrees to make them equal to the exposition of a Long Acre coach factory.

"A week or so ago there was a trial of some of the guns at Woosung, all proving in a most satisfactory manner. A Parrott gun, in particular, was highly delighted in by the Mandarins inspecting by order of the Taoutai. The distances being calculated for 500 and for 700 yards, the fuses for those distances burnt with excellent precision; the bullets, with which the shells were filled spreading on over distances as far again. Among the three hundred artisans are men from various provinces, the best, however, being Cantonese. As many as thirty are educated youth from Peking. Though now begrimed with the soot of the forge, or the dust of the laboratory, they are 'swells at home.' Two of them, under Mr. Stevenson's tuition, promise well as draughtsmen; and if the Manchous could only secure themselves from the intrigue of native haters, their tenure of the Chinese throne, relying on such establishments as now described, might be considered safe for another century. Time will show, however, whether these arsenals under foreign management are not the weapons to effect the usurpers' expulsion."

Thomas A. Falls, mentioned in the above article,

was formerly connected with the Novelty Works, and Thomas F. Stevenson was formerly of the Neptune Works, of this city.

The Industrial Application of Oxygen.

When illuminating gas was first introduced, it was compressed in strong vessels, just as soda water is at the present day, and delivered to customers in their dwellings. Very few persons had the temerity to suppose that it would ever be conducted through the city in large mains, and be passed into every house through connecting pipes.

"We now hear," says the *Evening Post*, "of the organization of companies in France for supplying oxygen gas in portable receivers, the gas to be used for purposes of light and heat. We may some day have oxygen pipes carried along by the side of the illuminating gas ready for the various applications to which it is adapted.

"The only obstacle hitherto has been the expense. There are many substances which yield oxygen in abundance, but they are all too dear. M. Archereau has proposed the reaction of silica upon the sulphate of lime as a source of oxygen. When these substances are heated to a proper temperature, silicate of lime and two gases—sulphurous acid and oxygen—result. The former is used for the manufacture of sulphuric acid, and the latter it is proposed to compress into cylinders and sell by the cubic foot. The materials here used are very cheap, and the heat required to fuse them will be obtained from a mixture of common gas and oxygen. The silicate of lime could be used in the manufacture of glass.

"The company which has been organized in Paris to make a trial of this process, asserts that it can furnish oxygen at the rate of two cents per cubic foot; whereas, by the old methods, where the gas has been employed in the Drummond light, the oxygen has cost nearly a dollar per foot. By directing a jet of oxygen through an ordinary gas burner, the illuminating power of the gas is greatly increased, and a saving of from forty to fifty per cent effected. The introduction of the oxygen into the flame has also important consequences to health. It will destroy all the noxious gases which have escaped the purifiers, and only water and carbonic acid will result from the combustion. The amount of these latter will be less than usual, for the reason that greater illuminating effect is produced by the employment of a smaller quantity of gas.

"By the combustion of illuminating gas and oxygen nearly the same heat is obtained as in the oxygen-hydrogen blow-pipe. All metals can be fused by this means if placed in suitable crucibles; and the cost of large furnaces and expensive fuel will be saved in numerous industries."

Effect of a Strike.

We cut the following from the *New York World*:—

"Strikes sometimes have a solution not looked for by either the employer or the employee. We have a recent example. The masons and plasterers have recently struck for higher wages and shorter hours, demanding, at the same time, some regulations respecting the manner of conducting the trade. The builders were obliged to yield, but limited their new contracts as much as possible. The result is a great decline in the price of building materials. Brick is three dollars per thousand lower. Lath has declined from six dollars to four dollars per thousand, and lime has declined from two dollars to a dollar and twenty-five cents per barrel.

"Thus, instead of exacting anything from those for whom building is done, or diminishing the profits of the builder (who has probably got an advance on his contract by pleading the strike), the party injured is the poorly-paid class, who go into the woods and get out lumber, who make brick, or who burn lime. The practical result of the strike of the masons has been as if they and the carpenters were each receiving three dollars per day, the masons, by demanding and receiving four dollars per day. We have another illustration. The molders about Troy have been standing out on a strike recently, during which pig iron declined seven dollars per ton, and coal two dollars per ton, the result of which will be, that the miners will ultimately be compelled to accept lower wages. Beyond a certain cost, the building of houses and the construction of machinery is checked; when the utmost cost is reached, the strike of one

class of operatives works injury only to another class."

A Sulphur Well.

We have mentioned several times, says the *Terre Haute Express*, the progress of boring an oil well at Lodi, on the Wabash, some forty miles north of this city. A few days since the auger broke through the roof of a cavity. The auger was taken out, when the gas began to come up in considerable quantities, pushing the salt water before it, causing it to flow over the conductor. After the salt water was driven out, sulphur water continued to flow in a small stream. The well was sunk four feet deeper, which opened new cavities, and the water increased to ten gallons a minute, and it is now flowing five hundred barrels a day of white sulphur! The water as it flows from the conductor is white; after standing awhile, it deposits a white sediment and becomes clear. On being agitated it boils and emits gas. In mineral ingredients, disagreeable smell, and specific gravity, it is said to exceed the Lafayette Artesian—especially the sulphurous odor—and it is claimed it will rank with the most famous medical waters of the world.

PATENT OFFICE.

PATENTS GRANTED FOR SEVENTEEN YEARS.

MUNN & COMPANY.

In connection with the publication of the *SCIENTIFIC AMERICAN* have acted as Solicitors and Attorneys for procuring "Letters Patent" for new inventions in the United States and in all foreign countries during the past twenty years. Statistics show that nearly ONE-HALF of all the applications made for patents in the United States are solicited through this office; while nearly THREE-FOURTHS of all the patents taken in foreign countries are procured through the same source. It is almost needless to add that, after so many years' experience in preparing specifications and drawings for the United States Patent Office, the proprietors of the *SCIENTIFIC AMERICAN* are perfectly conversant with the preparation of applications in the best manner, and the transaction of all business before the Patent Office.

Judge Mason, formerly Commissioner of Patents, says, in a letter addressed to us:—"In all your intercourse with the office, I always observed a marked degree of promptness, skill, and fidelity to the interests of your clients."

Ex-Commissioner Holt says:—"Your business was very large, and you sustained and justly deserved the reputation of marked ability and uncompromising fidelity to the interests of your clients."

Ex-Commissioner Bishop says:—"I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys."

EXAMINATIONS.—If an inventor wishes our opinion in regard to its probable novelty of his invention, he has only to send us a pencil or pen-and-ink sketch of it, together with a description of its operation. For an opinion, without examination at the Patent Office, we make no charge, but if a

PRELIMINARY EXAMINATION AT THE PATENT OFFICE is desired, we charge the small fee of \$5. This examination involves a personal search at the Patent Office of all models belonging to the class, and will generally determine the question of novelty in advance of an application for a patent. Up to this time we have conducted over ELEVEN THOUSAND Preliminary Examinations, thus showing a more intimate knowledge of inventions at the Patent Office than can be possessed by any other person or firm.

If an inventor decides to apply for a patent, he should proceed at once to send us by express, charges prepaid, a model not over one foot in size, and substantially made. He should also attach his name and residence to the model.

PATENTS ARE GRANTED FOR SEVENTEEN YEARS, the following being a schedule of fees:—

On filing each Caveat.....	\$10
On filing each application for a Patent, except for a design.....	\$15
On issuing each original Patent.....	\$20
On appeal to Commissioner of Patents.....	\$20
On application for Reissue.....	\$30
On application for Extension of Patent.....	\$50
On granting the Extension.....	\$50
On filing a Disclaimer.....	\$10
On filing application for Design (three and a half years).....	\$10
On filing application for Design (seven years).....	\$15
On filing application for Design (fourteen years).....	\$30

In addition to which there are some small revenue-stamp taxes. Canadians have to pay \$500.

FOREIGN PATENTS.—Messrs. MUNN & CO. have had more experience than any other solicitors in this country in procuring foreign patents, and have old established agents in London, Paris, Brussels, Berlin, Vienna, and other large cities. Foreign business should never be entrusted to other than experienced agents.

Messrs. MUNN & CO. give special attention to the preparation Caveats, and to the prosecution of the EXTENSION OF PATENTS, REISSUE OF DEFECTIVE PATENTS, REJECTED CLAIMS, INTERFERENCES, and DISCLAIMERS. They also prepare ASSIGNMENTS, LICENSES, AGREEMENTS, and CONTRACTS, in reference to Patents, and will advise patentees when their rights are infringed in reference to bringing suits against INFRINGERS. In connection with Patent Lawyer of eminent ability, they prepare and conduct cases in the United States Courts. Indeed, there is no branch of Patent business which MUNN & CO. are not prepared to undertake.

If an inventor wishes to apply for a patent, all he has to do is to write to us freely for advice and instruction, and he will receive prompt attention. If his invention contains any patentable features, he can depend upon getting his Letters Patent. All communications considered confidential. Send models and fees addressed to

MUNN & CO.,

No. 37 Park Row,