

SCIENTIFIC AMERICAN

[Entered at the Post Office of New York, N. Y., as Second Class Matter.]

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY AND MANUFACTURES.

Vol. XLVIII.—No. 12.
[NEW SERIES.]

NEW YORK, MARCH 24, 1883.

[\$3.20 per Annum.
[POSTAGE PREPAID.]]

AMERICAN INDUSTRIES—No. 87.

THE MANUFACTURE OF PORTABLE FORGES AND BLOWERS.

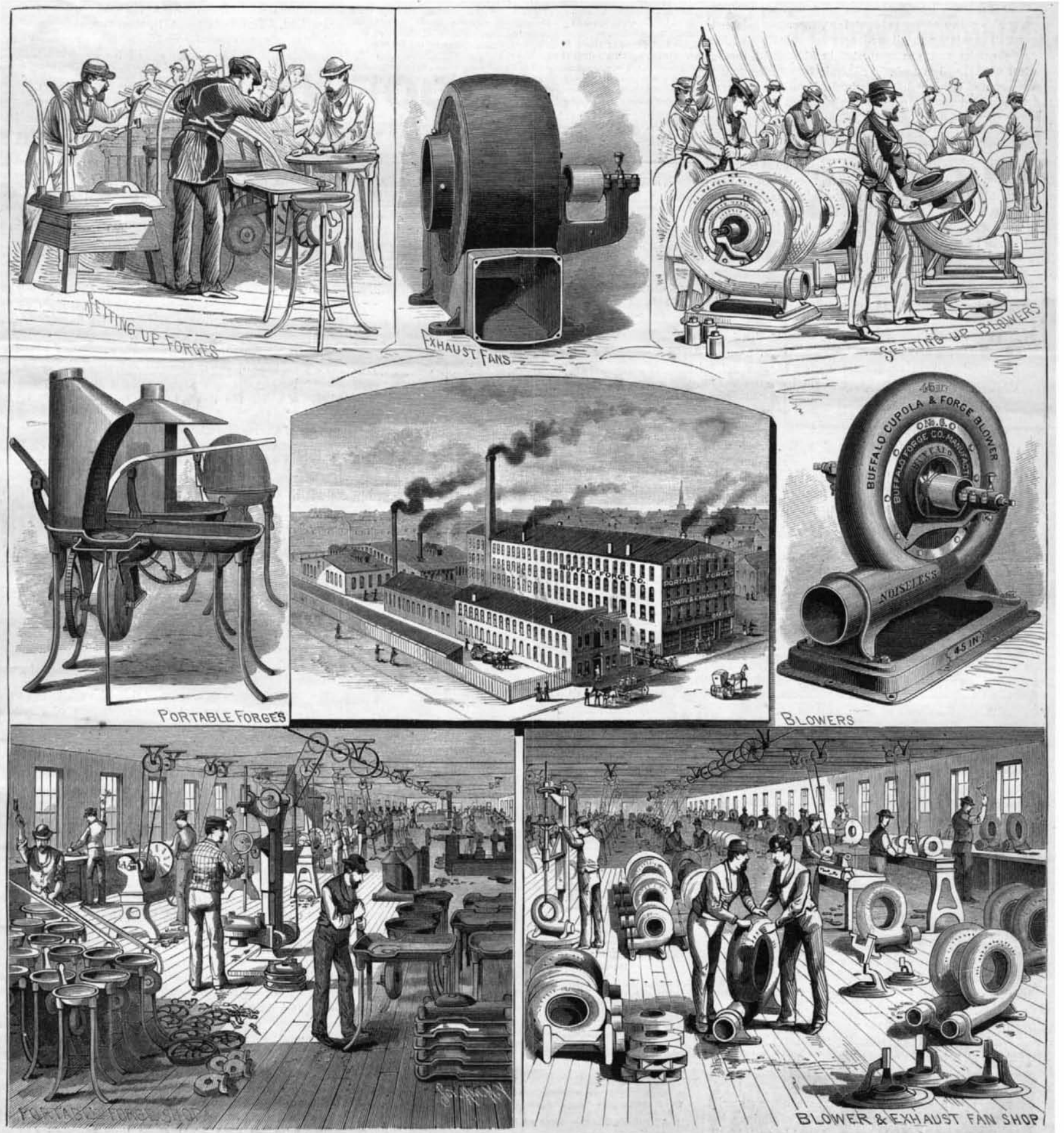
About five years ago, in January, 1878, the industry illustrated herewith had its foundation in a small shop occupying but a single room and employing only two men, making one style of portable forge and nothing more. The fact that the Buffalo Forge Company, from this small beginning, and in so short a space of time, has acquired extensive buildings and now employs a force of 120 men is ample evidence of the enterprise of the company and of the merit of its manufactures. As shown in the engraving, the works comprise a machine shop, foundry, warehouse, and outlying sheds. Even with these commodious buildings

the quarters are found too small, and large additions are contemplated.

Starting with the intention of making nothing but the first quality of work, the business of the company has naturally and steadily grown, and now seventeen different styles of portable forges and hand blowers are made, which are suitable for all purposes, from the most delicate uses of jewelers and dentists to the heaviest kinds of smith's work. A complete line of power blowers and exhaust fans for every possible duty is made by this company. In addition to the various kinds of blowers, these works turn out the Buffalo cabinetmaker's clamp, the Buffalo wagon jack, and a complete line of pulleys and hangers.

The Buffalo forge has outstripped its predecessors, and may now be found as a staple article of stock in every large hardware and iron house in the country. The steamers leaving New York carry export orders of these articles to South America, the West Indies, England, Australia, the Netherlands, and in fact to every principal distributing point in the world.

We are told of a tourist lately returned from a tour in the Eastern hemisphere, who says that in all his wanderings the Buffalo forge could be seen, and it served as a continual reminder of home. In the great West, where new railroads are constantly being built, the surveyor with his theodolite is followed by the navy with his Buffalo forge, and in all the



WORKS OF THE BUFFALO FORGE COMPANY, BUFFALO, N. Y.

shops, great and small, in the mills and factories, the forge is an essential element.

The portable forges made by this company are so well known everywhere that it seems almost superfluous to enter into any detailed description of them.

The original and novel power blower made by this company for cupolas, forge fires, etc., is deserving of special notice.

The shavings exhaust fan for planing mills, furniture and piano factories, and all uses requiring a partial vacuum has a peculiar mouthpiece, by means of which the material to be conveyed may be carried to the right or left, or in both directions if desired, by simply loosening four bolts.

They also manufacture all the accessories, such as counter-shafts and pulleys, blast gates, etc.; in fact, everything pertaining to this line of business, from the miniature forge for miners, jewelers, dentists, locksmiths, farmers, and tinsmiths to the mammoth blowers and exhaust fans for the largest uses.

The works in which all this variety of manufacture is carried on occupy Nos. 480 to 490 Broadway, and 166 to 182 Mortimer Street, Buffalo, N. Y.

The buildings are shown in the central view of our engraving, and interior views and representations of some of the products are shown in the marginal views.

The first floor of machine shop is 50 x 135 feet, fitted up with special tools for the speedy and economical execution of the work. Prominent among these are a large, special pulley lathe and special pulley borer, built by Niles Tool Works, of Hamilton, O., and kept running to their full capacity.

The second floor is used for fitting and setting up power blowers and exhausters, and on the third floor are found the wood workers, tinsmiths, and painters; on the fourth floor, pattern making department, and experimenting rooms.

The building adjoining is used on the ground floor for blacksmith shop and tumbling rooms, and on upper floor as warehouse and shipping department.

The foundry, situated back of the machine shop and warehouse, is a commodious structure 60 x 100 feet, with two wings, each 30 x 40 feet. It has every facility for first class work, and is fitted up with a view to the comfort of employees.

We are informed that the company has now in hands of the printer a new and complete forty-page catalogue of specialties, making a hand book indispensable to every mechanic and farmer who wishes to keep up with the times, and which they will mail on application to any address.

The Corrosion of Iron and Steel.

M. Gruner recently communicated to the Academie des Sciences some observations on the relative perishability, under certain circumstances, of cast iron, steel, and soft malleable iron. Plates of different composition were immersed during equal periods in water acidulated with 0.5 per cent of sulphuric acid, and also in sea water, and exposed in moist air.

Scientific American.

ESTABLISHED 1845.

MUNN & CO., Editors and Proprietors.

PUBLISHED WEEKLY AT

No. 261 BROADWAY, NEW YORK.

O. D. MUNN.

A. E. BEACH.

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NEW YORK, SATURDAY, MARCH 24, 1883.

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(Illustrated articles are marked with an asterisk.)

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No. 377,

For the Week ending March 24, 1883.

Price 10 cents. For sale by all newsdealers.

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SIX HUNDRED AND FIFTY MILES BY TELEPHONE.

In our last issue we gave an account of recent successful experiments in telephoning over the new wire of the Postal Telegraph Company, between this city and Cleveland, Ohio, a distance of six hundred and fifty miles.

We have now to report the results of further experiments over the same line, made by ourselves on the invitation of the officers of the company. On the 13th inst. we visited the Postal Telegraph Company's headquarters in this city—the large and splendid building No. 49 Broadway.

The new wire, as our readers will remember, is composed of steel and copper, its chief peculiarity and merit being its extraordinary conductivity. So great is the facility of the new wire for carrying the electrical current, that sounds and signals may be sent through it for lengths of a hundred miles as easily as through a common wire of ten miles; the new wire thus annihilates space, brings far distant places near together, and realizes the long sought desideratum of easy telegraphic and telephonic communication.

The instrument used by us in this experiment was a Hopkins transmitter, worked by two cells of the Leclanché battery. The principal novelty of this transmitter consists in a carbon electrode that floats on mercury, and the buoyancy of the carbon presses it into contact with the diaphragm of the telephone, without the intervention of spring or weight.

The wire is poled with forty or forty-five poles to the mile, and insulated in the ordinary manner throughout the line, except at the Hudson River, under which it passes in a cable 4,980 feet in length; and by a short cable under the river at Cleveland.

The transmitter was hung upon the wall like the ordinary instruments, and we gave the usual call, "Hullo! Hullo!" to Cleveland. We were instantly answered in clear tones by Mr. C. H. Rudd, the superintendent of the Postal Company in Cleveland. With him we then maintained a telephonic conversation for a considerable time; several other gentlemen in the party did the same, among whom was Mr. G. M. Hopkins, the inventor of the transmitting instrument.

Those of our readers who have had any considerable experience in telephoning, especially in the city of New York, know that this was a satisfactory test of the Cleveland wire. If the reading of random newspaper items can be intelligently done, then anything may be sent. We have only to add that the noise from induction was about the same as on our city lines, and we were able to speak to Cleveland and hear the answers with greater ease and satisfaction than we often experience in trying to talk from our office to points in town that are only two or three miles apart.

For the accomplishment of this remarkable result, the opening of telephonic communication for distances of six hundred and fifty miles, the public is indebted to the enterprise of the stockholders and directors of the Postal Telegraph Co. and the corps of able manufacturers, inventors, and electricians whom the company has been so fortunate as to associate with them.

The construction and success of this wire marks the opening of a new and important era in the march of electrical progress. Its benefits and influence will indeed be far reaching. It opens the prospect of a more extensive, better, and cheaper system of electrical communication than has ever been employed, or hardly dreamed of as possible. One wire will have the business capacity of many common wires; one improved wire will, in fact, enable us to do things that could by no possibility be accomplished by the ordinary wires.

The Postal Telegraph Company's compound wire has a diameter of 3/8 of an inch, consists of a steel wire core, weighing 200 pounds per mile, that will resist a tensile strain of 1,650 pounds, on which copper is deposited to the extent of 500 pounds per mile, with a resistance to the electric current not exceeding 1.7 ohms. The wire has seven times greater conductivity than iron wire of equal size, copper being the best conductor known except silver. It has double the tensile strength of iron wire of equal weight when strung on the lines, will last longer, permits the use of low tension currents and small batteries.

Ninety per cent of the wires now in use are No. 9 iron, with a resistance of 20 ohms per mile, and the very best are No. 6 iron, with a resistance of 10 ohms, while the compound wire to be used by this company has a resistance of only 1.7 ohms. The resistance of No. 9 iron wire on a line from New York to Chicago, 1,000 miles, is over 20,000 ohms, and on a No. 6 iron wire over 10,000 ohms, and on the compound wire less than 1,700 ohms, thus bringing Chicago telegraphically as near to New York as Philadelphia, and San