

A WATCH FACTORY IN ILLINOIS.

The demand for American watches is so great that a new factory is about to be started out West to compete with others.

The Waltham Watch Company has earned a high reputation for American watches, and the new concern proposes to employ a number of persons from that celebrated workshop.

It is said, by the *Chicago Republican*, the success of the Waltham Company is shown in the fact that the majority of watches now carried in the pockets of the American people are from this factory. Watches, costly and cheap, large and tiny, jeweled and enameled, are scattered over the country, all bearing the Waltham stamp.

From a recent article, in the same journal, we quote as follows:—

"The National Watch Company, of Chicago, was instituted two years ago, and after perfecting the organization, the Company immediately set about the erection of a factory. The capital stock is \$200,000, three-fourths of which is owned by gentlemen resident in Chicago. A special charter was procured, which would enable the directors, at such time as they might choose, to increase the stock to \$500,000. The organization is officered as follows:—President, B. W. Raymond, Chicago; Vice-President, Philo Carpenter, Chicago; Treasurer, Thomas S. Dickerson, Chicago; Secretary, G. M. Wheeler, Chicago, Directors; H. C. Culver and Joseph T. Ryerson, Chicago; B. F. Lawrence, Elgin.

"The office of the company is located in the Marine Bank building, on the northeast corner of Lake and La Salle streets, in this city.

"The city of Elgin, Illinois, generously gave to the company 27 acres of ground in the midst of a beautiful park, situated on the east bank of the Fox river, on condition that the factory should be located there. The site is one of the finest which could have been secured. It is just inside the city limits, and is capable of being laid out to great advantage. This work is going forward simultaneously with the erection of the buildings for the manufactory. These are extensive, and so constructed that the greatest possible amount of light may be obtained, the bench of every operative being placed in front of a window, and, indeed, the entire sides of the building present a most complete frontage of glass. The buildings are of cream-colored brick, faced with stone.

"The buildings thus far completed will be capable of turning out 50 watches per day, and will employ 250 operatives. The structures are models of architectural beauty, and would be an ornament to any city upon the continent. No wonder the citizens of Elgin are so proud of their possession.

In addition to the 27 acres donated by the city of Elgin to the National Watch Company, there have been purchased a number of acres of land immediately adjoining, upon which it is the intention of the Company to erect cottages for the occupancy of their employees. Six of these have already been constructed, and are neat, comfortable houses, wearing an air of comfort already inviting.

The grounds around the factory will be graded and laid out in pleasant drives and walks, making the place not only one of industry, but a park which will be a pleasant place of resort. In the work of beautifying the place, several thousand dollars will be expended. The cost of the buildings thus far has been over \$40,000, and upon the machinery now in operation in the west wing \$60,000 have been expended.

On the first of April the manufacture of watches will commence. All the component parts of a watch, from the delicate hair spring up, with the exception of the cases, will be made here, and put up in tin cases and sold by the dozen to the trade. The beautiful enameled dials will be prepared in the building designed for that purpose, the neat hands will be adjusted, but the outer covering, the cases, will be fitted elsewhere. This is the course pursued in nearly all manufacturing establishments of this kind, and all or nearly all of the watches imported from Europe are case in this country. It will be more than a year before the company is prepared to manufacture the cases or to supply more than the complete movement.

It is not surprising that the hands of women have

been found better adapted to the delicate manipulation necessary in the manufacture of watches than the rough, uncouth hands of men. The majority of operatives in the establishment will be ladies, each having their separate department, and each being paid by the piece for their work.

THE RUSSIAN TELEGRAPH.

Charles S. Bulkley, Esq., the Engineer in Chief of the overland telegraph to Russia by the way of Behring's Straits, returned to San Francisco in December from an exploration of the route, and immediately transmitted to this city a report which is just published.

Several parties are at work. Some making surveys, and others constructing the line; soundings have been taken across Behring's Straits, and across some bays which are to be crossed by submarine lines; and the enterprise is being pushed forward in spite of formidable obstacles with vigorous energy. The following extracts from the report will give a good idea of the present state of this great work.

SAN FRANCISCO, Dec. 18, 1865.

Since my last report, dated at Victoria, our ships have been engaged in transporting material, supplies and parties for exploration of the country through which our lines will pass on both continents, examining harbors and coast lines, locating cable crossings, and, so far as possible, determining the route of these lines. Mr. Conway, in charge of the Fraser's river division, has been delayed in building, owing to the late arrival of materials, but has finished for hundred and fifty miles of line.

The fine bay of Port Clarence has a good entrance, with ten fathoms of water and mud bottom; opening into its eastern side is Grantley harbor, smaller in extent and completely land locked, proving a good landing for our cable, and the only practicable and safe one on the American side of Behring's Straits. The country is of the same general character as that bounding Norton Sound on the east, without timber and covered with a heavy growth of moss, thrown up by the frost in large bunchy masses; below this the earth is thawed about ten inches and beneath frozen solid. Small stunted bushes, bearing berries like wild currants and whortleberries, are the only approaches to trees in this region.

St Lawrence and Mechigme Bays, on the Asiatic coast, proved unsafe for our purpose; shoal water and exposure to south-east gales, driving ice packs in deep masses on the shores, would destroy any cable; both bays were full of old ice, which extended in broken lines 10 miles at sea, through which we worked our way with considerable difficulty. Seniavin Straits offers all the protection necessary, with good bottom, deep water and safe landing in Penkega Gulf or Ablesher Bay, and from this strait to Grantley harbor the bottom of Behring's Straits is mud, sand, and gravel, averaging about thirty fathoms in depth, and distance between proposed landings one hundred and seventy-eight miles. The Siberian side is more mountainous, without timber and but little moss, except in the valleys. The great masses of sientle that rise in sharp, rough outline at their summits are torn and pushed up by the congealing water in every crevice, until the avalanche of rock comes thundering down to the valley, and lies a gentle slope against the mountain side, and in this way these mountains are sinking to hills, and the masses crumbling to atoms in the intense cold. Valleys wind between them, sometimes partially filled with this debris, but through which we find passage for our land line. The ground is thawed to an average depth of three feet, probably owing to the absence of the thick moss covering of the American side.

The most northern regions through which our lines will pass present no serious obstacles, neither in the construction nor successful operation of telegraphs. The submarine crossings will have the advantage of even and soft bottom, with safe landings, and cables not so long as to make their performance doubtful. The land lines, firmly planted in the frozen earth, will stand as if mortised in rock; no timber to fall across nor sleets to weight the wires, they will stretch over the frozen desolation unharmed and unmolested; besides, with reindeer and dogs, the winter watching will be comparatively easy.

The Behring Straits crossing is one hundred and seventy-eight and Anadyr Bay two hundred and nine nautical miles between landings, with water of such depths that icebergs alone could injure the cable; these are unknown in Behring Straits or south of it; the northward currents preventing any drift of deep masses south. Even when the surface current is changed by strong north winds, the lower water still moves northward.

It has been argued by some that the terrific gales of high latitude opposed insuperable difficulty in keeping up lines; they are not fabulous yet, no more violent than the gales of your temperate zone. The Esquimaux builds his insecure skin tent on the most exposed place, so that the snow may blow away from it, and there it stands, his shelter and home through all the blasts of the long winter. I have seen no Esquimaux on the Asiatic side inhabiting underground winter houses as of old; the excavations and ruins remain, but the people are gone long since, and the present races occupy the ground with their deer-skin habitations.

The Indians of the sea coast are misrepresented; we found them friendly, honest and exceedingly hospitable, never manifesting on any occasion, nor about any of our vessels, the least disposition to steal; but they beg, probably thinking that the white man who has so much can freely give. These people can be made useful with proper management; more so in the future than in the beginning of our work.

Game is abundant during the summer, especially

water fowl, and the Indians catch considerable quantities of salmon. Reindeer, rabbits, grouse and foxes (the three last white) seemed plentiful, also seal and walrus.

Reindeer are used for beasts of burden on the coast and in the interior of Northeastern Siberia; in Russian America, dogs alone. With these animals some of our short inland transportation must be accomplished during the winter, especially that over the thick moss covered region. We intend to use every available means of water transportation, and locate our lines so far as possible to favor the plan.

In natural history the collections have exceeded the expectations of the most sanguine, and do honor to the liberality which has permitted this work. No other duty has been neglected for this object, however, but when recreation was necessary or convenient this has proved a pleasing and instructive source.

Our soundings were made with a new instrument, which brings up a sufficient quantity of any other bottom than rock for satisfactory test, and which, during the progress of our work, has added many interesting specimens from the ocean beds to our collections.

The general health of all connected with the expedition has been good. No serious sickness has been reported, no death has occurred, nor any serious casualty befallen any person.

The expedition was delayed so late that I was obliged to abandon my plan of exploring the lower Kwichpak and its mouth, and the through boat exploration of the Anadyr river, but the winter parties now in the field will accomplish the purpose.

All the vessels have rendered most efficient service and are well adapted to the work. There have been but few listless moments or idle hands since our prows were turned fairly north, and, with scarcely an exception, all connected with the enterprise have engaged with interest in the service, and zealously endeavored each to emulate the other in the discharge of their duties. The services of Captain Scammon have been of the greatest importance, not only as a thorough seaman, but particularly as an officer of the Government of the United States, carrying our national flag.

The Russians, sensible of the importance of the enterprise, have neglected no opportunity to express the most kindly feeling and liveliest interest in our success, receiving us with unbounded hospitality. The officials have generously assisted us.

In regard to the British Columbia division, I will report immediately after Mr. Conway arrives.

I am, respectfully yours obediently,

CHAS. S. BULKLEY, Engineer-in-Chief.

Alloys of Manganese.

The preparation of alloys of manganese with iron or copper has been carried on in Germany on a commercial scale by M. E. Prieger. These alloys possess valuable properties, and their applications are constantly improving in number and utility. The *Deutsche Industrie Zeitung* states that to prepare the alloys of iron and manganese (ferro manganese), M. Prieger made a mixture of pulverized oxide of manganese, charcoal dust (corresponding in quantity to the oxygen of the oxide), and of metallic iron sufficiently broken up, such as minute grains of cast-iron filings or steel, etc.; the mixture was put into a graphite crucible, which would hold from 15 to 25 kilogr., and covered with a coating of charcoal dust, sea salt, etc., and heated for a few hours at a white heat. After cooling there was at the bottom of the crucible a metallic homogeneous mass, containing but very insignificant quantities of foreign bodies. Of these alloys the most important are those containing two equivalents of manganese to one of iron, and four equivalents of magnesia to one of iron, and corresponding to 66.3 per cent, and 79.7 per cent of manganese. Both are harder than tempered steel; they are capable of receiving a very high polish, they melt at red heat, and can be easily poured; they do not oxidize in the air, and even in water only superficially; their white color is of a shade between steel and silver. Alloys of copper and manganese are much harder and more durable. Alloys of tin are very fusible, durable, and easy to work; in color and brilliancy they may be compared to silver. The iron and manganese alloy furnishes a very simple means of adding to iron or steel a given amount of manganese, by the addition of from 1.10 to 5 per cent; very satisfactory results are obtained.

Composition of Lucifer Matches.

Phosphorus, 4 parts; niter, 10; fine glue, 6; red ochre, or red lead, 5; smalt, 2; convert the glue with a little water by a gentle heat into a smooth jelly, put it into a slightly warm porcelain mortar to liquefy; rub the phosphorus down through this gelatin at a temperature of about 140° or 150° Fah.; add the niter, then the red lead, and lastly the smalt, till the whole forms a uniform paste.

MR. HARTNUP, the astronomer to the Liverpool Corporation, reports that during the recent storm, and taking the twenty-four hours ending nine P. M. 2d of January, the extreme pressure of the wind was 10 lb. on the square foot.