

SCIENCE

NEW YORK, JANUARY 29, 1892.

THE AMERICAN ASSOCIATION OF INVENTORS AND MANUFACTURERS.

FEW occurrences of public interest have recently taken place which have been of greater moment to the people and to the nation as a whole, and few have attracted less public attention than that which was held in Washington in answer to the call of Mr. Watkins, on the 19th of January,—the meeting of the American Association of Inventors and Manufacturers. Organized a year ago, nearly, and composed of inventors like Dr. Gatling, Mr. Charles F. Brush, E. E. Sickles; business men like Mr. Gardiner G. Hubbard and Oberlin Smith; public men like General Butterworth and O. T. Mason; and scientific men like Professors Anthony and Thurston, and backed by the Commissioner of Patents, this association should have some interest for the people at large and for the journalists who represent the people. Its first meeting was opened by the president and attended by the whole bench of the Supreme Court, and its addresses during its several days' sessions were given by the most distinguished men of science and greatest inventors of the country.

The purposes of this organization are declared to be: To promote the progress of science and useful arts (Constitution U. S., i., 8). The diffusion of practical, scientific, and legal information respecting inventions. The encouragement of favorable and the discouragement of unfavorable laws respecting property in patents. To secure the co-operation of foreign inventors for reciprocal regulations under patent systems. The proper, just, and adequate protection of the rights of American inventors authorized by the Constitution of the United States. Any person in sympathy with the objects of the association is eligible to membership under conditions stated in the constitution upon the payment of a membership fee of five dollars for the first year. No initiation fee is charged. To the executive council, composed of the seven officers and the nine directors of the association, has been assigned the duty of completing the organization, begun with so much earnestness at Washington.

Its first meeting was held on the centennial of the signing by George Washington of the first patent law of the United States, the beginning of national industrial prosperity. As is well said in the call lately issued for the second meeting:—

"The celebration of the beginning of the second century of our American patent system was the outgrowth of a spontaneous desire to recognize publicly the benefits which that system has conferred upon our nation and upon the world.

"Eminent inventors, statesmen, and scholars from all parts of the Union met together to express their appreciation of the merits of that system, which has lightened the toil of the farmer, shortened the working hours of the mechanic, added to the safety of the miner, and lifted the burden from the household drudge.

"The monument then erected on the boundary line between two centuries, embellished by the best thoughts of

such gifted minds, will endure so long as the libraries of the world shall preserve the record of their tribute to American genius.

"While existing laws have encouraged and do now stimulate the creation of intellectual property and do throw safeguards around its ownership, yet the fact remains that neither the real inventor nor the author has been adequately protected in his rights.

"This state of affairs has resulted from the fact that the inventors of the country have never thoroughly organized themselves for mutual protection nor brought concerted effort to bear upon their representatives in Congress, to the end that proper laws should be enacted, nor have they heartily supported the officials of the Government in their attempts to secure adequate facilities for carrying out present regulations. Hence the system, even as it exists, has been preserved with great effort, and even now is handicapped by some conditions that are not encouraging.

"It may be true that the patent system, in a few instances, has had an unfavorable effect upon certain sections of the country and upon some occupations, and that some owners of useful patents have demanded greater profit for their inventions than was consistent with the public good. But such evils, if they exist, can best be remedied by intelligent discussion among those who have a vital interest in the things themselves.

"The people at large and their representatives need to be impressed with the fact that it is to the epoch-making inventions of the century that our country owes its high position among the civilized nations of the world."

The patent system so auspiciously inaugurated by the greatest and first of our presidents has been intermittently promoted and sometimes obstructed in its operation by that alternation in power of friends and enemies—or lukewarm friends—which so generally characterizes the action of a popular government, and that of the United States no less than those of minor countries. In its best estate, however, it has never done the best that it might for either the inventor or the nation. During the last few years, its operation has been shamefully embarrassed and the interests of the country have been greatly injured, while those of the inventor and his rightful claims upon the country have been no less seriously affected, in consequence of the utter neglect of this great department by Congress, and the refusal of the national legislature to provide it with respectable quarters and sufficient working force.

In many cases, applications of immense importance to the industrial interests of the nation have been kept in the office for many months, through the utter inability of the working force to keep itself up with the business of the office.

The annual report of the Commissioner of Patents to Congress dated Jan. 1, 1891, calls attention to the lack of sufficient examining force and to the need of more office room. The commissioner remarks that "the pace kept up in the patent office now, as in all recent years, is inconsistent with that high degree of care which the patent system calls for," and that "a patent should evidence such painstaking examination that upon its face it should warrant a preliminary

injunction, and there can be little doubt that the continuance of the 'American' examination system depends upon so conducting examinations into the novelty of alleged inventions as to make the seal of the patent office a powerful, if not conclusive, presumption that the patent is valid."

The commissioner further reports that "during the past year the patent office has earned a surplus, over every expense, of \$241,074.92, and the total balance to the credit of the patent fund now in the treasury of the United States is \$3,872,745.24, and that the inventors of the country cannot understand why the government takes their money and then fails to provide necessary facilities."

Such a state of affairs is simply a disgrace to the country and to the committees of Congress entrusted with the care of this great instrument of national advancement. The work of the association should be forwarded by every citizen and promoted by every journal in the land. The indifference of the members of the committees of Congress having charge of the business interests of the country can only be accounted for by the fact that the people, and especially the business men of the country, who should continually consult with and direct these committees, pay no attention to this branch of legislative work. Were these committees carefully made up of men well-posted in the work entrusted to them, and were they kept up to their duty by the pressure of public opinion, the prosperity of the nation would be vastly better assured than now.

SOME RECENT MINERAL DISCOVERIES IN THE STATE OF WASHINGTON.

WHEN I visited Washington Territory in the autumn of 1887, I found great activity among the prospectors in the mountainous region lying near the Canada line, and between the Cascade Range and the Bitter Root division of the Rocky Mountains; also in the Cœur d'Alene region. Many fissure veins carrying gold, silver, lead, zinc, copper, etc., had been discovered, and tested sufficiently to prove their richness. In some cases the precious metals were associated with iron carbonates, but more commonly with iron sulphides, galena, and lead carbonates. Chlorine, antimony, and zinc were also found in combination. Copper was found both native and combined. The gangue was usually quartz, with which is often associated what is called "porphyry." The country rocks are granite, quartzite, argillite, and limestone.

On my return to the country in 1891 (now the State of Washington) I found that there had been no loss of reputation in respect to any of the mining localities; but that in all except the Cœur d'Alene and Colville regions the development of ores had been retarded by the lack of transportation.

In 1887, the Cascade Range proper, though rich in the purest magnetite along its crest, and in the Cretaceous lignites along its flanks, was not regarded as a promising field for the discovery of the precious and base metals. A few small veins of low grade silver, gold, and copper ore had been found among the iron bearing rocks about the head springs of the Snoqualmie River, but nothing to compare with the developments on the waters of the Methow, Okinagan, Kootenai, Cœur d'Alene and upper Columbia, on the east of the Cascade Range. But during my visit to the State last autumn I found an army of prospectors and miners at work on a group of veins running along the western flank of the Cascade Range. This group or belt so far as discovered is about fifty miles long and fifteen miles wide (perhaps

twenty miles wide), and occupies the eastern edge of Snohomish and Skagit Counties. The region is drained by the upper waters of the Skagit, Stillaguamish, and Skykomish Rivers. The veins are well defined fissures carrying gold, silver, lead, copper, and sulphur with iron, antimony and arsenic in quartz and porphyry; in other words, the same sort of veins as those found in eastern Washington. Usually they follow the course of the country rocks, but with the usual branching and flexing.

The country rocks, which consist also of granite, quartzite, and slate (I saw no limestone) usually stand nearly vertical, though in some places inclining eastward with a dip as low as thirty degrees. The general trend of both country rocks and ore veins is a little more to the north-east than that of the irregular crest-line of the main mountain. Hence they all cross the mountain at a sharp angle immediately north of the Cascade Pass, the name given to the notch at the head of the Cascade River, which is one of the chief affluents of the Skagit River. This locality has within two years become famous as the "Cascade Mining District." Here have been opened numerous veins of auriferous pyrites and argentiferous galena. The veins are broken across by a deep gorge, whose steep sides are striped by the disclosed vertical edges of the veins. Of course, in many places the outcrops are concealed by soil and vegetation, but the mountains rise three to four thousand feet above the gorge (six to seven thousand feet above Puget Sound), and the upper third is bare rock, and numerous denuded spaces extend much lower. The physical conditions are favorable for prospecting, mining, concentrating, and moving. The mountain on the north side holds near its summit two small glaciers: the lower one I named the Silver Queen, the upper one the Sky-light. Snow slides and running gravel are uncomfortably common on these heights. But safe camping ground can always be found in the evergreen forests on the mountain sides. So much for the north end of this mineral belt.

The other leading mining district is at the south end of the belt, and is known as the Silver Creek District on one side of a dividing ridge, and the Monte Cristo District on the other side. Silver Creek is a tributary of the Skykomish River, and has its head in Silver Lake, a beautiful little sheet of water nestling among the evergreens in a groove of one of the lofty outliers of the main range. The creek, after running in its elevated trough for two or three miles suddenly begins to pitch down a steep escarpment, and falls a vertical distance of two thousand feet in three miles of surface measurement, and falls fifteen hundred feet more in the next five miles, at the end of which it joins the north branch of the Skykomish River. Its course is southerly.

The Monte Cristo District is made by a continuation eastward of the veins of the upper half of the Silver Creek District, which pass through the water-shed into the valley of the Sauk River, a tributary of the Skagit. Taking this part of the mineral belt across its widest part it measures at least twelve miles, probably more. The ores do not differ materially from those of the Cascade River country, and the veins stand on each side of the gulches, offering every facility to the miner. Not less than thirty distinct veins (or ledges) have been uncovered, and many tunnels of several hundred feet in length have been driven horizontally. The best "rich streaks" are of argentiferous galena, which in a few cases are as much as four feet wide (generally much less), and carry from thirty to three hundred ounces of silver to the ton.

This new mineral region is as yet but very partially ex-