

BARBUTT, ABBOTT BROS. & WOODWARD,

LAKE CITY, COLORADO.

Department of Engineering.

JAMES W. ABBOTT, C. E., Yale, 1868; Sheffield Scientific School, 1868-71.

J. J. ABBOTT, JR., C. E., Sheffield Scientific School, 1869-74.

Deputy U. S. Mineral Surveyors and Mining Engineers.

ASSISTANT:

WM. A. PRATT, C. E., Sheffield Scientific School, 1872-76;

Deputy U. S. Mineral Surveyor.

Department of Chemistry, Metallurgy and Assaying.

RICHARD W. WOODWARD, M. E.,

Member of the American Institute of Mining Engineers; Yale, 1867; Sheffield Scientific School, 1868-70; University of Heidelberg, Prof. Bunsen's Laboratory, 1870-71. From 1871-74, connected with the Royal Prussian School of Mines at Berlin, and Royal Prussian Lead, Silver, and Iron Smelting Works in Upper Silesia. From 1874-76, Chemist of the U. S. Government Geological Exploration of the Fortieth Parallel, CLARENCE KING, U. S. Geologist, in charge.

Department of Engineering.

This department of our business was established in June, 1875, when Lake City was but a small hamlet of log cabins. Since then our force has been increased and our facilities greatly augmented. We have the largest and by far the most complete outfit of engineering apparatus in Colorado, while our library of volumes on engineering science has comparatively few equals in the United States. Although prepared by thorough education and varied experience to execute any work in Civil or Mining Engineering which may present itself, we expect to devote our principal attention for the present to the surveying and patenting of mining claims. We hope, by faithful care and the use of suitable instruments to help the miners of this section to avoid in a large degree that confusion and disorder which often happen in the early period of mining camps, when ignorant and incompetent surveyors (so-called) are the only reliance. In the survey of mining claims a solar instrument is indispensable. True bearings can only be determined with certainty in the mountains by the sun. Local attraction renders the needle alone totally unreliable. Any official survey of a mining claim made without the use of the solar instrument is worthless, as a rule. All Deputy United States Mineral Surveyors are expected by the Land Department to use them, and surveys made without are soon detected in the office of the Surveyor General by the errors which inevitably arise. Our solar instruments are models of perfection. They, like all our instruments, have been made expressly for us from our own designs by the most noted manufacturers in the East.

We desire to say a word about location certificates:

It is estimated by the highest authority in Lake City that "not one in twenty of the location certificates filed in this county will stand the test of legal scrutiny."

In Circular No. 4, from the office of the Surveyor General of Colorado, under date of November 5, 1874, is the following instruction: "Description by boundaries and reference to some natural object or permanent monument, are both required in a record, under law and instructions, and neither is alone sufficient."

"This office is under imperative instructions to decline to make a survey unless the claim upon which the order is applied for is based upon a location marked upon the ground by reference to some natural object or permanent monument, and duly recorded and certified in conformity to law and instructions."

We advise that in every case a survey of a claim be made previous to filing the location certificate. The cost is trifling compared with the additional security gained.

We shall make a specialty of obtaining patents to both lode and placer claims. (No other claim can be patented in this section) We shall aim to keep ourselves thoroughly posted on mining law and the decisions of the courts and the Land Office upon mining questions in dispute; and shall always be glad to render any assistance in our power to help a miner maintain his just rights—but shall never knowingly lend ourselves to any scheme of fraud or trickery.

Department of Chemistry, Metallurgy and Assaying.

*This department of our business was established in December, 1875, and was for a time under the charge of F. J. Abbott, Jr., but the pressure of duties in the Engineering Department made it evident that he could not give to the former that conscientious attention which is requisite to sustain the standard that we have established for all professional work. We have accordingly associated with ourselves a scientist who has achieved an enviable reputation in both continents. For a profound and thorough knowledge of Chemistry and Metallurgy he has probably no superior in America. Under his charge it is our intention and expectation to make our laboratory soon recognized as the **METALLURGICAL HEADQUARTERS OF SAN JUAN**. It will have all the facilities and appointments requisite to a complete Chemical and Metallurgical Laboratory in New York or San Francisco. Its library of technical works in English, French and German, and the periodical scientific literature of both continents, will be very exhaustive.*

We shall cordially welcome all miners, at all times, whether they desire any professional service or not. To all having valuable mines which they desire to have represented in our large and varied cabinet, we extend an invitation to bring such specimens as will best accomplish that purpose.

We cordially invite all strangers visiting Lake City to call on us, and promise to give them such information in relation to our mineral resources as may be in our power. They will find our cabinet and laboratory interesting and instructive.

We solicit orders by mail from all parts of Colorado, and will give them prompt attention. Our terms for silver assays will be two dollars each; for gold assays, five dollars each. For all other professional work special prices will be made, according to the circumstances of the case. Specimens of ore sent by mail should be numbered, and the numbers explained in a letter accompanying the specimens.



REFERENCES.

- NOAH PORTER, D. D., LL. D., President of Yale College.
 THEO. D. WOOLSEY, D. D., LL. D., Ex-President of Yale College.
 JAS. D. DANA, Ph. D., LL. D., Author of Dana's Mineralogy.
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