

SUGGESTIONS ON TIMBERING

The first indication of weakness in mine timbers is to be found, as a rule, at the joints of the different members of the set. In the case of a stull, by "brooming" of the ends, or, in the case of irregular distribution of the compressive forces, a shearing or splitting. Of course, if the stull acts mainly as a support for material from above, then bending would be the first sign of weakness. This latter, however, is not the proper function of the stull; in such cases a set should be used, if it is possible. Of course, these slugs are only to be witnessed in good timber.

Most of our readers who have had experience in timbering, will recall the fact that many timbers may break without previous warning. Some pines are notorious for being brittle. Such timbers will snap without the least warning. The general principles of timbering are few and simple, although subject to almost infinite modification.

The rules adopted by an experienced timber man of our acquaintance are: (1) Give the maximum strength to the expensive part of the timber units; thus, have the sets stronger than the lagging. Should excessive strain develop the lagging will show the effect first. The main sets can then be reinforced, either by doubling up or by reducing the distance between sets, before any serious damage can result. (2) In placing timbers, secure at the corners; do not wedge in the center of caps, posts or shaft sets. (3) In going through bad ground, cut winzes or drifts egg-shape. Timber with the ordinary sets, securing at the corners. This will give the ground room to swell. The theory is that swelling is due mainly to oxidation in the country. The ground will frequently only swell when exposed to the air. If the ground is given a chance to expand, the oxidized crust will protect the rock behind from oxidation, and thus swelling will be arrested, or partially so, in the interior of the rock mass.

Of course, where swelling is due to pressure developed by removing large ore bodies, the only way to take up the ground is to use heavier and more timbers. If possible, work out such ground rapidly, and abandon the drifts as soon as possible. We know of drifts that have to be re-timbered every two or three months. The expense, of course, is very great in such cases, and the policy should be to abandon these workings as soon as the ground is worked out.—Mining Reporter.

Secret of Hardening Copper.

The old, old story about the secret of hardening copper has recently been revived from two widely different localities. Under recent date, United States Consul General W. R. Holloway, Halifax, Nova Scotia, reports: "It is stated that Mr. Church and Charles Cleveland, of Chester, Nova Scotia, have discovered the long lost and much sought for process of hardening copper. A sample of their hardened copper has been received here which seems to be as hard as steel, a penknife failing to make any impression on it." Mr. A. F. Baudelier, of the American

Museum of Natural History, has brought the subject before an anxious public in an article in Harper's Monthly relating to recent discoveries in Peruvian archaeology. He says: "The intentional tempering of bronze, mentioned as a 'lost art,' is a fable. . . . The Incas knew how to wash gold, to fuse it in small quantities and to hammer it into very thin sheets, easily folded and bent in any desired shape. They melted the less refractory silver and copper ores, but cast objects are much more rare than hammered ones. Their bronze is an accidental alloy and it has not been discovered where the tin was obtained." The report of the consul-general should be classed with the "important if true items," while the dictum to the archaeologist must be given considerable weight, for Mr. Baudelier has spent his life time in the study of the social and industrial conditions of the pre-Columbian inhabitants of Mexico and South America and his researches have been made on the ground and not in the Spanish or other archives.—Mining World.

STEADILY PLUGGING ALONG AT RED BOY

Notwithstanding the fact that General Manager John Thomsen, of the reorganized Red Boy Mines company, who recently recovered from a serious illness at his old home in Fremont, Neb., is still in the east, the gentleman who was instrumental in revamping the old mine, work is being steadily prosecuted at the property under the superintendency of W. H. ("Billy") Reynolds. The Blacksmith level is being extended further in to the mountain to an intersection with the veins of the Concord group, with which the Red Boy was consolidated a few years ago. Ore is not expected to be entered for some time yet, as the progress is necessarily slow, on account of the employment of hand steel in a tremendously hard formation.

Manager Thomsen is said to be meeting with success in the east, where he is working on the proposition of installing a water power and electrical transmission plant at Olive Lake. Work on this plant is expected to be ordered within sixty days and rushed to completion before the summer ends.

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WORK LOW GRADE ORE

Albert Geiser, lessee of the Bonanza mine, came up from Baker City this morning. He says that resumption of operations at the Bonanza will begin just as soon as 6,000 pounds of supplies and new equipment, ordered Monday by Mr. Geiser from an eastern machinery house, is delivered on the ground, which he expects to be about April 20.

It is learned from an official source that Mr. Geiser's plan of operation will be to reopen a big body of low grade ore, abandoned by the old Thatcher management last year, and run the 40 stamp mill to its utmost capacity. This ore body is said to grade from \$5 to \$8 per ton, and with economical operation, the opinion prevails that Mr. Geiser can make a good profit.

GREENHORN MOUNTAIN DISTRICT LOOKS GOOD

F. A. E. Starr, the mining man, returned yesterday from a trip into the Greenhorn mountains. He accompanied F. O. Bucknum to the Marshall group of mines, near Tipton, owned jointly by Mr. Bucknum and M. F. Muzzy. Later he visited most of the big properties in the Greenhorns, including the Snow Creek, I. X. L., Psyche, Diadem, Listen Lake, etc.

"The whole Greenhorn camp looks good," said Mr. Starr this morning to a Miner reporter. "The Psyche has recently opened up a magnificent body of shipping ore and the Diadem is making a great showing. The Snow Creek mill is working double shift on ore from the Psyche and Diadem, at the same time treating some ore from its own ground. The Lucy is looking good and I understand that work on the Listen Lake, of which Mayor W. H. Gleason, of Sumpter, is president, will start work on May 1. A crosscut to the main ore body will be driven from the 100-foot level of the shaft.

"The snow on the Greenhorns is rapidly disappearing. Already most of the south slopes are bare. Roads are pretty bad, but a continuance of the present good weather will remedy that evil.

"Judging from the tone of my correspondence with eastern investors and prospective investors, we are going to do a big mining business in this camp this year—a legitimate mining business, too."

EMINENT EXPERT AT THE MOUNTAIN VIEW

Dr. Maxim Schumann, a mining engineer and expert of international renown, is at the Mountain View mine, making an examination of that property. Dr. Schumann is said to represent a French syndicate. He has been in every mining camp of any importance in the world, from Siberia to Kalgoorlie, from Klondike to the Rand. The Mountain View is owned by Portland people, and only recently entered the producing list, under the able superintendency of Dr. Techow.

WATERS AND JOHNS LOST

Johns and Waters the Sumpter rock-drillers, who contested at the free-for-all-drilling contest at Grants Pass last Friday, came out second best. Lockridge and Savage, of Galice, were the winners. Other contestants were Seligo and Barrington, of Granite Hill; Sandry brothers, of Gold Hill, and G. Brinkerhoffer, of Galice. The Galice team in 15 minutes of double-handed drilling time, made a 36-inch hole; the Sumpterites' score, 35½ inches. The Granite Hill team was compelled to stop on account of a smashed hand. They drilled a 25½ inch hole in 9 minutes and 40 seconds. The Gold Hill team was last, with 33 inches. The winning Galice boys captured a \$225 purse, the Sumpter team being consoled with a gift of the entrance fees. The Grant's Pass Mining Journal is authority for the statement that \$3500 changed hands on the result of the match. Johns and Waters were heavily backed.

In the single-handed contest, Joe Johns, of Sumpter, was defeated by Brinkerhoffer, of Galice, the holes measuring 18 fifteen-sixteenths inches for the Sumpter man and 20¾ inches for the winning Galice entry. A purse of \$75 went to Brinkerhoffer and the entrance fees to Johns.

In view of the fact that Lockridge and Savage won the double-handed free-for-all drilling match at Grant's Pass last Christmas, they set up a claim to the state championship.

Major Norton Back in Sumpter.

Major F. E. Norton, president of the board of directors of the Citizen's Consolidated Gold Mining company, operating the Gold Coin mines in the Cracker Creek district, arrived from his home in Wheeling, W. V., this morning, accompanied by Robert B. Stanton, a mining engineer of New York, who will examine and report on the Gold Coin in the interest of eastern investors. Mr. Stanton represents the United Mining and Development company of North America, with headquarters in New York. Messrs. Norton and Stanton drove out to the Gold Coin this morning, expecting to remain at the property until the middle of next week. Mr. Stanton intends to make an exhaustive examination, not only of the Gold Coin, but of the string of big mother lode producers in the Cracker Creek district.

The Sumpter-Bourne railway proposition remains in statu quo. The committee appointed at a meeting of local citizens has succeeded in securing subscriptions to \$19,200 worth of the required \$20,000 worth of bonds, but the subscriptions rests upon certain proviso relating to switches and spurs to Cracker Creek mines. These matters were not provided for in the Killen, Warner, Stewart proposition, and the committee has mailed to Mr. Killen the formal demands of the bond subscribers. Mr. Killen is in Colorado. An answer is expected within a few days. Chairman Cato J. Johns, of the committee, announces that if the demands are allowed by Mr. Killen, he can raise the required \$20,000 in two days.