

### GARVIN PERFECTS A CYANIDE PLANT

New Principle in Electrolytic Precipitation Tested With Marked Success.

### AGITATION OVERCOMES THE SLIMES PROBLEM

Local Inventor Gives His New Machine a Trial With Sixty-Mesh Pulp.

A Portland man has completed a novel leaching plant for the extraction of precious metals from ores. It is known as the Garvin cyanide extraction mill and is the invention of Edward J. Garvin, who has organized the Garvin Cyanide Extraction company to manufacture it. Mr. Garvin has been working on the principle for many months, and recently erected a machine of working size, which he is operating at the laboratory of the Montana Metallurgical Works, 208 Stark street.

There is nothing new in the crushing principle, Mr. Garvin seeking only to attain higher efficiency in agitation of the pulp in solution, more ready extraction and electric precipitation of values from the solution in a practical way. In attaining this he pumps solution and pulp from a discharge point at the bottom of the leaching vat to the top again, which keeps the entire product thoroughly mixed. To avoid the difficulty of slimes or fines coating his cathodes in precipitation, the clearest part of the solution is constantly decanted from the top of the vat and run through the precipitating box, this process continuing while extraction is in progress. When the pulp is first delivered to the vat it runs over a shaking amalgam plate to take up the coarser gold which resists cyanide longer.

Ed C. Morse, metallurgist, tested the pulp and solution in the recent test completed, with results that are highly satisfactory. In the first work grinding was to 60-mesh. The sample taken of this ore before admitting the solution gave \$18.25 gold and \$1.94 silver. After three hours agitation a sample of the pulp showed it to carry only \$12.4. A sample taken in six hours showed the pulp to carry \$10.00, indicating nearly a complete extraction.

Tests of the solution showed that the extraction was more rapid than precipitation. The first solution analyses, made three hours after agitation commenced, showed 1.26 ton, in six hours it carried \$2.65 a ton, in eight hours \$1.24 and in 10 hours 20 cents.

To get a large anode surface in the precipitating chamber a series in sheet form is set in close proximity to the cathode. The cathode has been given cylindrical form and is made to revolve slowly, the lower quarter of the periphery passing through amalgam. This has the effect of depositing the metal particles in the amalgam as quickly as they are formed on the cathode, and thus the surface of the latter for more ready reception of new precipitates.

### READY TO REOPEN THE VESUVIUS' NEW MILL

(Special Dispatch to The Journal.)  
Cottage Grove, Or., June 2.—Manager F. J. Hard of three Bohemia companies arrived here yesterday and has departed for the Vesuvius mine. Mr. Hard spent a brief period with his family in Portland after his return from the east. He expects to start the Vesuvius mill soon.

Thomas Crow of Idaho Springs, Colorado, has just arrived here and accompanied Mr. Hard to the property. Mr. Crow is an engineer and will be in the employ of Mr. Hard during the summer. Mr. Crow will put the 10-stamp mill in order immediately, open the saw-mill and make other arrangements for the season's work.

### NEW SUPERINTENDENT AT OREGON SECURITIES

(Special Dispatch to The Journal.)  
Cottage Grove, Or., June 2.—All the machinery is in place for the mill at the Crystal mine and a mason is engaged to brick up the boiler and foundation.

T. C. Archer of Prescott, Arizona, who is the new superintendent of the Oregon Securities company of Bohemia, has gone to the mine in company with Manager Wood. Mr. Archer is an experienced man and understands especially well. He will have entire charge of the milling and mining forces. Mr. Archer was appointed by the board of directors to fill the place made vacant by the resignation of C. C. Matthews.

### CLIMAX DRIFT IMPROVES.

(Special Dispatch to The Journal.)  
Baker City, Or., June 2.—Developments in the deep drift at the Climax, near Granite, continue of hopeful order. The large vein was crosscut between 800 and 900 feet from the portal, and a drift is being extended on this level. There is said to be 30 inches of good milling ore on one wall, with a larger body of low grade material. The Climax is owned in Spokane, being associated with the interests controlling the Scandia Mining & Tunnel company.

### INDIANA PROMISES WELL.

(Special Dispatch to The Journal.)  
Baker City, Or., June 2.—The Indiana mine, 23 miles east of Baker City, is to have machinery for extensive development work this summer. The mine

Is there anything better than trade between friends?  
Schilling's Best makes friends and trade.  
Your grocer's; moneyback.

### INDIAN RELICS OF VALUE IN OREGON

Prehistoric Remains Arouse the Curiosity of Eastern Experts in This Field.

### TRACES OF STONE AGE ARE OFTEN DISCOVERED

Historical Museum Contains Many Specimens of Which Casts Have Been Made.

Oregon has been discovered as a new field for archaeological research by eastern scientists, and many of them, especially those connected with the American Museum of Natural History of New York, are deeply interested in the Indians who once inhabited this state. The study of the aboriginal inhabitants of the Willamette valley has been started and may yield many interesting results.

Recently George H. Himes, curator of the Oregon Historical society, sent a collection of nearly 100 Indian relics to the American Museum of Natural History from which casts were made. Among the collection were several rare relics known to have been in use several hundred years ago.

In the summer of 1903 Professor Harlan I. Smith, a representative of the American museum, came to Portland, visited the local museum and became deeply interested in many of the Indian relics which had been gathered in a desultory way without any thought of their scientific value. Professor Smith saw at once that many of the curios were rare and asked permission to make sketches and photographs of the most interesting ones, which was granted.

**Casts Made of Relics.**  
The management of the museum became interested through the sketches of Professor Smith and asked Mr. Himes to ship a number of the relics that plaster casts might be made from them. Mr. Himes sent the curios and last week they were returned together with a complete set of casts which may be used in exchange for relics held by outside societies.

"When I sent the collection to New York," said Mr. Himes, "I gave a description of each relic and what I knew of it from my own personal observation without reference to its scientific classification."

**Some of the Valuable Curios.**  
Among the relics sent to New York was a large statue with a hump back and a mortar on top, which was found imbedded in six feet of earth on the banks of the Columbia river, 20 miles below this city, in 1874. Another was a stone image discovered on Sauvie's island on the Columbia river in 1875.

In the collection are the following:  
Type totem on which are sculptured figures, found on Sauvie's island in 1890; sinker of lava, both sides sculptured, found on Yamhill river in 1803; bear's head with nostrils and protruding tongue, carved stone resembling a seal's head and carved stone resembling a fish, all found near The Dalles, small red lava paint cup, found near Oregon City in 1887; small lava mortar on which were curious carvings, and stone figure resembling a puppy, found in a deep pot hole under the falls at Oregon City, income-bowl, found by John La Chapelle in the Willamette river at the foot of Morrison street, Portland; stone warclub 13 inches long, peculiar shape, plowed up by H. C. Lambersson near Scappoose in 1878; bone warclub 21 inches long with peculiar carvings, and in which was a hole for a thong; stone warclub 21 inches long, plowed up by Lindley Meeker near Ridgefield, Washington, ceremonial stone, found six feet below the surface in the roots of a giant fir tree on the Grand Ronde Indian reservation in 1892 (this implement must have been buried at least 300 years, judging from the growth of the tree); amulet of lava on which were delicate carvings; a pestle found 27 feet beneath the surface in Wasco county, Oregon; and another pestle found six feet below the surface at Buena Vista, Oregon. Near each of these pestles were discovered immense mortars.

Besides the above-mentioned articles were numerous mortars, pestles, totems, sinkers, ceremonial stones and various implements.

is regarded as one of the best copper propositions in eastern Oregon. J. W. Messner, being manager. Mr. Messner is authority for a statement that it is the intention of the company to develop the mine thoroughly and put it in good shape before beginning mill operations. Ore is being blocked out, and possibly this year the company will build a reduction plant to handle the product.

### SUPPLIES FOR CORNUCOPIA.

(Special Dispatch to The Journal.)  
Baker City, Or., June 2.—Six wagon-loads of tools and all sorts of supplies have been ordered for the Cornucopia mines by Pierre Humbert, the engineer of the French syndicate which is running work on the property. The Cornucopia camp is enjoying a mild boom and considerable work is in progress on the various mines in this district.

### ERECTED MODEL SMELTER.

Charles Van Amberg, master mechanic for the Sumpter smelter, decorated last evening, after erecting the model of the plant that is to be displayed at the Mining building during the fair. The model will illustrate the workings of the furnace, without the sampling mill, and is one of the most attractive features in the long list of exhibits.

### INCORPORATED TO MINE.

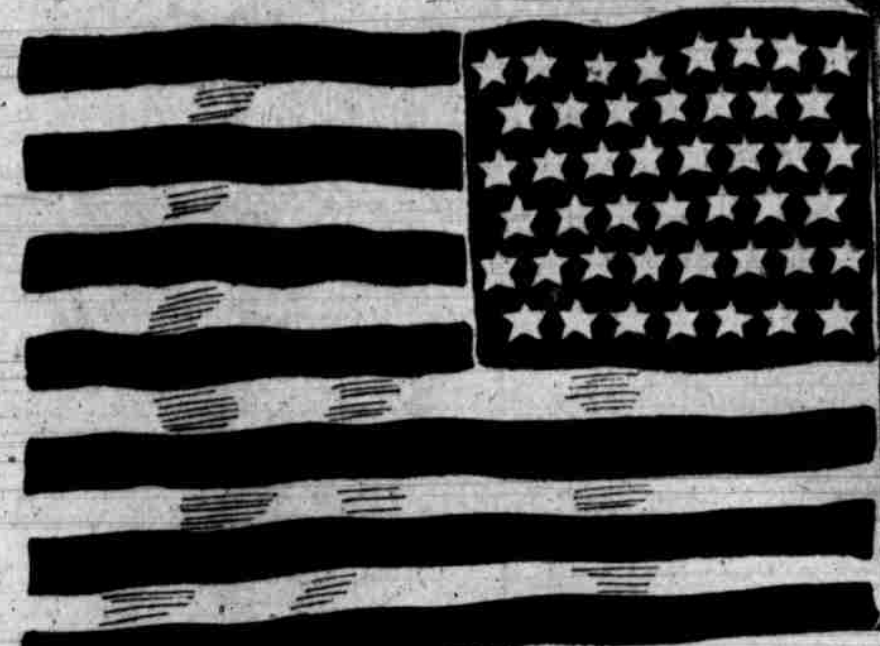
(Special Dispatch to The Journal.)  
Baker City, Or., June 2.—T. H. White, T. W. Ayers and H. J. Stillman of Pendleton have incorporated the Gold Coin Mining company to operate in Baker county, with a capital stock of \$10,000. Their property consists of three claims and is located near Durkee.

### GRADUATION EXERCISES AT VALE PUBLIC SCHOOL

(Special Dispatch to The Journal.)  
Vale, Or., June 2.—The public school of Vale closed a remarkably successful term last evening. An elaborate program was rendered in the courthouse, where even standing room was at a premium. County certificates were conferred by the county superintendent of schools upon four pupils. Four others were promoted to the tenth and two to the eleventh grade.

A pleasant feature of the occasion was the reunion of graduates.

# OLD GLORY!



EMBLEM  
OF  
LIBERTY

## The CHICAGO

The Big Store in the  
Middle of the Block

69-71-73 Third St., between Oak and Pine

The name and address of the Greatest Men's and Boys' Complete Top-to-Toe Outfitters on the Pacific Coast. A store where true merit is the foundation of phenomenal success; an establishment that is true to the people's interest. A store where a dollar buys the biggest dollar's worth within two thousand miles of Portland—north, east, west or south. There is a sale now in progress that for meritorious bargain-giving in high-class Suits you could not mate were you to travel to the Mississippi river. Tomorrow you'll see the great sale in the pinnacle of all its glory, and phenomenal money-saving advantages await your coming.

### The Greatest Suit Sales Ever Made by This Big Store

**\$11** Will buy a better Suit than has ever been offered in this city. Blue serges, black clay worsteds, blue and black unfinished worsteds, double and single breasted styles; pure all-wool, hand-tailored, also imported tweeds, chevots, double-twisted homespun, cassimeres and pure all-wool and mercerized wire-twist fancy worsteds—a parade of styles 100 strong—made by Brandagee, Kincaid & Wood, and The Acorn. Not a suit in the entire lot but is a good \$15 to \$18 value; but The Chicago is a store of live, up-to-date principles, and just before the world's fair we will demonstrate to the public that we have no equal in the Pacific northwest as givers of big values. We want the trade of the appreciative public, and will get it by giving the best clothes for the money to be had anywhere. We fit all sizes and shapes—men to 52-inch bust measure.

**\$15** Gives you choice of a world of high class creations in double and single breasted Suits, worth \$20.

**\$8.00**  
BUYS A GOOD ALL-WOOL,  
HAND-TAILORED \$10 OR  
\$12 SUIT.



### Great Half Price Sale Outing Suits

We will inaugurate the Summer Outing Suit Season with a sale that will move you to action at once. Commencing tomorrow we put on half price sale 300 All-Wool Outing Suits in men's and young men's styles, sizes 33 to 40, in small lots carried over and all sample suits sent to us to select by this season.

**\$5.00** Will take choice of all-wool, tailor-made, plain and fancy light and dark colors, worth \$10.

**\$7.50** For choice of all fine \$12, \$15 and some even better suits in this lot. Hand-tailored, splendid styles, homespun, chevots, tweeds, wool crash.

### Concise Dressers

We show the newest Quaker Gray Gunmetal and the craze of the hour—Broken Steel Tip Grays. A most exhaustless variety of Brandagee, Kincaid & Wood's very latest tailor productions, at

**\$20, \$25 and \$30**  
Or less than two thirds merchant tailor prices.

### Your Footwear

Bought at this store insures comfort, style, service and low prices. Blucher, bals, and Oxfords, in-tan, chocolate, black and patent leathers, also vici, colt, calf, etc.

**\$3.50, \$3.00, \$2.65**  
**\$2.35, \$1.85, \$1.65**



### Boys' and Children's

In Blucher and bals, tan or black. Special values.  
**\$1.35, \$1.50, \$1.65, \$1.85, \$2.00,**  
**\$2.25 and \$2.50.**

Every pair of Men's or Boys' Shoes bought at this store is guaranteed. If a pair goes wrong a new pair free.

### Furnishings

Portland's Largest All New Stock.

**50¢** Neglige, Golf and Working Shirts, the most extensive variety and best values in the city.

**75¢** Golf and Neglige, a most handsome assortment of the good and nice kinds.

**\$1.00** Extra values in silk bosom, brilliantine, silica, penang and madras.

**\$1.50** Cluett's most select styles, golf and negligee.

**\$2.00** Mohair, pongee, French flannels, etc.

**\$2.50** Pure pongee and cream brilliants, etc.

Underwear, Neckwear, White or Fancy Wash Vests, etc.

### Mothers

Tomorrow you can pick up some exceptional good things in Knee Pants Suits and save money.

**\$1.65** Will take choice of small lots of Buster Browns, Norfolk or Double Breasted Suits, that sell regularly up to \$3.

**\$2.65** Will contain several lines of broken lots of elegant all-Wool Materials that are worth at least \$4.

Several new arrivals in extra quality hand-tailored Knee Pants Suits at **\$3.85, \$4.85,** and **\$7.50.**

### Young Men's Suits

Tomorrow will offer some exceptional fine opportunities.

**\$7.85** Will take choice of several full lines of single and double breasted \$10 Suits, and lots of two, three and four of a kind that were broken during the Easter rush, worth up to \$12.

**\$9.85** Will be a power. Some of the very handsomest \$12 single and double breasted-styles and all small or broken-lots, worth up to \$15. Serges, unfinished worsteds and fancy mixtures.



### The Fullworth

A Hat to Fit Your Face—30 Styles, 30 Shades and Colors  
America's Greatest

**\$2.50**  
HAT



### Panama Hats

Killmartin & Co.'s Real Fijijapi Water-woven Hand-shaped Panamas

**\$3.85**

For choice of six shapes of 15 Panama Hats, unbleached. We display the Panama Hat, best stock in all grades up to, each.....\$25

### STRAW HATS

Sennits, Milan, Manila and Porto Rican Straw, all styles, 50¢, 75¢, \$1 and up to \$5.

