

What the Well Dressed Women Says About Armor Plate Hosiery

We made it a point to talk with a number of women about *Armor Plate Hosiery* and they all tell us the same story—

"We wear *Armor Plate Hosiery* because we have found it the one absolutely dependable stocking. We get better service—more satisfaction and yet have to pay no higher price."

Pretty much the same story everywhere. And remember, *Armor Plate* is also made for the youngster who is rough on stockings—and for the girls and men, too.

It's all a dyeing secret—and *Armor Plate* wearers get the benefit of our experience. It's really worth your while to know the secret of *Armor Plate*. Won't you ask us?

The
LADIES TOGGERY
MARY BARTELLS, Prop. COTTAGE GROVE

THE ELECTRICAL METHOD

FULLY EXPLAINED BY ONE WHO HAS SEEN IT.

George Holmes Cushing Writes Interesting Article on Process in Technical World.

The following article on separating metals by Col. Brownlee's metallurgical process is part of an article written by George Holmes Cushing and appearing in the January number of *Technical World* magazine. As this process has been spoken of as a possibility in the Bohemia district, it will prove of interest to Sentinel readers.

To lay the foundation for his claim, Col. Brownlee summarizes the origin of the cyanide treatment of gold ores, which process has quadrupled the production of that metal. He then proceeds to prove that the Malm process is only a development from the cyanide process. In brief his summary is: In 1704, a color manufacturer of Berlin while experimenting on chemicals, happened upon the first "cyanogen compound" which he called "Prussian blue." One hundred and two years later another chemist found that by using a certain form of this acid gold

could be dissolved. In 1887 two English scientists—MacArthur and Forrest of Glasgow—proved that, with a weak solution of cyanide, gold could be selected from the base metals of the ore. That is the present basis of ore treatment for gold recovery in this country.

John L. Malm said that if such a stubborn metal as gold could be thrown into solution and extracted from its surroundings by the means of chemicals, it would be easily possible to throw all the metals in a complex ore into solution and to extract them one at a time. That was the basic principle of which Col. Brownlee spoke. Having adopted that theory, he erected a plant of the crudest possible type and experimented therein from 1903 to 1907. This was located at Corbin, Montana, and the apparatus used mostly either earthenware or porcelain—the equivalent of flower pots and stew pans. He is now building, at Georgetown, Colorado, a splendid plant for the Western Metals company and parts of it have been in operation for some time.

His search for a chemical which would throw all metals into solution, led him to select chlorine gas. The next problem was to get out the metals—to send into the solution of metals a potent messenger to cut out first the gold, then the silver, then the copper,

then the lead and later the zinc and the others. It was in the mechanical manipulation rather than the fundamental principle that the trouble arose.

One of the first steps taken is to remove the iron as a factor—the smelters, if you recall, not only retain it but must have it in their process—and this is done by submitting from forty to seventy per cent of the ore to the action of chlorine gas and putting it in a furnace where the desired result is obtained by burning the sulphur. The chemical reaction here is akin to Sir Henry Bessemer's way of getting rid of the carbon in steel.

With the iron in an inert state and the manganese removed, the solution is passed to an "agitator" where further chemical reactions are permitted to take place under the influence of additional chlorine gas—the rushing together of elements which have an irresistible affinity for one another produces intense heat—and this process serves to throw all of the metals in the ore into solution.

At the next stage, the solution is agitated over metallic copper plates which, acting as powerful messengers, reach into the solution and drag out the gold and the silver. This permits the other metals, still in solution to pass on to the next stage, while the extracted gold and silver are separated by a well-known method into bars.

Next, the solution is agitated in the presence of metallic iron which, having an affinity for copper, draws it out of the mixture.

After that, the hot solution passes to the next stage where it is agitated in the presence of metallic zinc to take out the lead. If necessary, the residual solution is again agitated in the presence of zinc oxide, chlorine gas and sulphur dioxide to remove iron, manganese or lime.

These various processes have removed every particle of precious or semi-precious metal in a complex ore with the exception of zinc. Heretofore, that has been considered such an inconsequential matter, in such ores, it customarily is burned off in the smelter. The Malm process takes the residual solution and places it in a vacuum evaporator where all traces of moisture are removed. Here it is fused and run into cells where an electric current was applied and the zinc, in metallic form, is precipitated.

At this point was found one of the most peculiar and intensely interesting things in the entire process. The chlorine gas, which started in with the first cylinder and followed the metal through to the last cell, is liberated, having lost less than two per cent of its volume, and is sent back to the first stage where it begins to work on another batch of metal.

In doing all this, these metallurgical chemists have done no more than any school boy can do with a match, a newspaper, a stick of kindling and a few lumps of coal. Both use simple things to start chemical reactions; after that the pent up elements of nature, in a dash for freedom, do the rest. It is not a mysterious process; it is merely following a rule of nature.

And what does all this mean? It requires from three to four kinds of ore "to make a flux." Under the old method, no one producer can recover his own metals. The new process means that every individual producer may, if he chooses, smelt and refine his own ores at the mine mouth. This discovery is really a contribution to science. It goes on the solid theory that all things in nature came from gases through fluids to solids; to recover the valuable metals it is only necessary to reverse the process and start back towards gases through the fluids, stopping there to take out the things of present value. Since it conforms to an established principle of chemistry and since a similar process is used elsewhere a million times each day, there is no reason why it should not prove successful in metallurgy. In that respect, the business world appreciates the statement of Col. Brownlee when he says that he has merely found a correct basic principle. He has.

Your eastern friends would like to know something about the country you are living in. Send them a copy of the Sentinel. Extra copies, 5c.

Notice of Publication.

Department of the Interior, U. S. Land Office at Roseburg, Oregon, January 16, 1912.

Notice is hereby given that Joseph B. Gregg, of Cottage Grove, Ore., who, on November 14, 1906, made Homestead entry Serial, No. 04084, for Lot (11), Section 4, Township 22 S., Range 2 west Willamette Meridian, has filed notice of intention to make Final five year proof, to establish claim to the land above described, before Register and Receiver of the United States Land Office, at Roseburg, Oregon, on the 23rd day of February 1912.

Claimant names as witnesses: John D. Palmer, of Cottage Grove, Oregon; Joel D. Palmer, of Cottage Grove, Oregon; Samuel K. Lewis, of Corvallis, Oregon; John Gray, of Cottage Grove.

BENJAMIN F. JONES,
j25-115. Register.

Have you got something kicking around in your way that you want to get rid of? A reader in the Sentinel may sell it for you.

Notice of Final Settlement.

Notice is hereby given that the undersigned, the administrator of the estate of James Henry Harms, deceased, has filed with the county court of Lane County Oregon, his final account as such administrator of said estate and that Friday, the 9th day of February, 1912, at the hour of one o'clock p. m. of said day, has been fixed by said court as the time for hearing any objections to said report and the settlement thereof.

JOHN W. HARMS,
j11-18. Administrator.

Notice of Forfeiture.

To Frank Haley, or his legal heirs: You are hereby notified that we, the undersigned, have expended one hundred dollars in labor and improvements on the "Bear" Lode Mining Claim, situated in the Bohemia Mining District, Lane County, Oregon, notice of location of which said mining claim is recorded at page 579, in book 6, of the mining records in and for said County and State, reference to which said notice and record is hereby made for more particular and definite description of said mining claim, as will appear by affidavit in the office of the County Clerk of said County, in order to hold said premises under the provisions of Section 2324, Revised Statutes of the United States, being the amount required to hold the said mining claim for the year ending December 31st, 1911. And if within ninety days after the first publication of this notice you fail or refuse to contribute your proportion of such expenditure as co-owner, your interest in said mining claim will become the property of the subscribers under said Section 2324. This notice is published for the first time in the Cottage Grove Sentinel, of Cottage Grove, Oregon, on the 25th day of January, 1912.

HARRY H. PARKER,
j25-April. THOS. R. PARKER.

Notice of Forfeiture.

To Frank Haley, or His Legal Heirs: You are hereby notified that I, the undersigned, have expended one hundred dollars in labor and improvements on the "Loma" Lode Mining Claim, situated in the Bohemia Mining District, Lane County, Oregon, notice of location of which said mining claim is recorded at Page 508, in Book 6 (by Martin Shea), of the Mining Records in and for said County and State, reference to which said notice and record is hereby made for more particular and definite description of said mining claim, as will appear by affidavit in the office of the County Clerk of said County, in order to hold said premises under the provisions of Section 2324, Revised Statutes of the United States, being the amount required to hold the said Mining Claim for the year ending December 31, 1911. And, if within ninety (90) days after the first publication of this notice you fail or refuse to contribute your proportion of such expenditure as co-owner, your interest in said Mining Claim will become the property of the subscriber under said section 2324. This notice is published for the first time in the Cottage Grove Sentinel, of Cottage Grove, Oregon, on the 25th day of January, 1912.

HARLEY H. PETRIE. j25-A11.

Registration of Land Title.

In the Circuit Court of the State of Oregon, for the County of Lane.

In the matter of the application of Mae W. Thompson to register the title to lot No. one of block No. one and also beginning at the southeast corner of lot No. 2, block No. 1, run thence west 20 feet, thence north 114 feet, thence east 20 feet and thence south 114 feet to the place of beginning; all being in James Henry McFarland's first addition to Cottage Grove, Lane County, Oregon, as the same is platted and recorded, against the Bank of Cottage Grove and all whom it may concern, Defendants:

TO ALL WHOM IT MAY CONCERN: Take notice, that on the 25th day of January, A. D. 1912, an application was filed by said Mae W. Thompson in the Circuit Court of Lane County for initial registration of the title to the land above described. Now, unless you appear on or before the 29th day of February, A. D. 1912, and show cause why such application shall not be granted, the same will be taken as confessed and a decree will be entered according to the prayer of the application and you will be forever barred from disputing the same.

STACEY M. RUSSELL, Clerk.
J. E. YOUNG, Applicant's Attorney.
(Seal of Circuit Court.) j25-f22.

Notice of Final Settlement.

In the Matter of the Estate of J. B. Lurch, Deceased.

Notice is hereby given, that the undersigned, executor of the estate of J. B. Lurch, deceased, with the will annexed, has filed his final account, as such executor, in the County Court of Lane County, State of Oregon, and that March 4, 1912, at the hour of 1:30 o'clock p. m. of said day has been fixed by the Judge of said Court as the time for hearing objections to said report and the settlement thereof.

Dated this the 29th day of January, 1912. BENJAMIN LURCH,
Executor, with the will annexed, of the fl-29. Estate of J. B. Lurch, deceased.

Just Three Words

Pride of Oregon

The Kind of Flour mother used to use when she made that Famous Bread



Brings Prompt Aid in Case of Fire

The farm buildings are often at the mercy of flames.

A minute's time gained at the outbreak of a fire, means saving the property.

A call on the Bell Telephone saves the precious minutes.

The far-sighted farmer appreciates its protection as well as its economic value.

The best time to join the army of progressive farmers is now.

Consult our local manager.



The Pacific Telephone and Telegraph Company

Every Bell Telephone is the Center of the System

Have You Made Your Resolutions Yet?

If not, make one right now to hereafter buy your Dry Goods and Groceries of us. If you have already made such a resolution, be sure and keep it. Our prices are as low as consistent with quality given.

JOHNSON & CO.

SHOES!

We have just received, in addition to our large stock, about 1500 pairs of shoes.

You Need Not Wait for a Sale to Buy These Shoes at Right Prices

Our Shoe business for 1911 shows a gratifying increase over any other year. If you want snappy styles and satisfactory wear from the Shoes you buy, we feel sure we can please you.

OUR SHOES ARE BETTER
Burkholder-Woods Co.

Old Shoes & Hats Bought

at Rees-Wallace Co.'s
Friday and Saturday, Feb. 2, 3

We will pay 50c a pair for Men's and Women's Shoes and 25c a pair for Children's Shoes, when new ones are purchased. Also 50c each for Men's Hats. The only provision is that the Shoes and Hats must be worn to the store.

Rees-Wallace Co.

"WHERE YOU DO BETTER"