

# CLIFTON CLARION.

WEDNESDAY, MAY 29, 1889

And we further find that the said board have been guilty of gross abuse of the discretionary power lodged in them, in relation to the awarding of contracts, and we, the grand jury accuse E. A. Cutter, J. E. Bailey and F. Dysart, the duly qualified and acting members of the Board of Supervisors of Graham county, Territory of Arizona, of willful and corrupt misconduct in office in this: That whereas, commencing the 16th day of January, 1888, said board published in accordance with law a notice inviting proposals for doing the county printing and authorizing a separate proposal for publishing the proceedings of the board and advertising, said board well knowing the same, and each and every one of them wilfully and corruptly rejected said bid or proposal of said W. W. Jones without cause, and awarded the same to I. E. Solomon at a much higher price, well knowing the same; and we direct that the district attorney make immediate action to enforce said board from carrying out said contract so awarded as aforesaid, and take such other action in the premises as is required by law.

The Wilcox Stockman, a paper well entitled to support from the stockmen of the southwest, has completed its fifth volume.

HARRY R. JEFFORDS has been appointed United States District Attorney for this Territory. This selection is a good one.

The defaulting ex-Mayor of Phenix, A. Leonard Meyer, surrendered himself to the police at Washington Territory and will be brought back.

EARL DENRAVEN'S new yacht, with which he proposes to wrest the America cup from our shores, has been winning races from the crack English boats. She is said to show great speed.

WILFRED WEBB of Pima, we are informed, has been appointed by Superintendent Strauss a member of the county board of school examiners, vice Mr. Solomon's clerk Dysart, removed.

A PARACHUTE performer named St. Clair lost his life at Houston, Texas, last week. When about 250 feet from the ground he lost his hold and struck the ground with a force sufficient to break every bone in his body.

THE acts, resolutions and memorials of the Fifteenth Legislative Assembly of the Territory of Arizona have been issued in pamphlet form from the office of the Prescott Courier. THE CLARION acknowledges receipt of a copy.

It is reported to us that Dividend Cutter of Thomas claims to have a muzzle that will stop THE CLARION. No you haven't, Mr. Cutter; but THE CLARION has a muzzle that will stop you, as you will find out one of these days.

CAPTAIN JACK and eight other Apache Indians have been released from the penitentiary at Columbus, Ohio, and are now at San Carlos. These devils were turned loose on a decision of the Supreme Court on appeal, and are entitled to a new trial.

THE body of Dr. Cronin, whose mysterious disappearance caused such a sensation, was recently found in a sewer in Chicago. The corpse was in a perfectly nude state and bore evidences that the doctor had been foully murdered. The police believe that they have a clue to the perpetrators of the crime.

A PARIS dispatch of the 23d inst says that the American copper mine delegates, with the exception of the representatives of the Tamarack mine, have ratified the provisional arrangements concluded with the liquidator of Compton d'Escompte. Tempe says an agreement with British companies is very probable.

A WRITER in a Denver exchange makes the following sensible comments on smelters and concentrators: "The craze for the erection of smelting works which affected mining investors a few years ago has well nigh died out, but bids fair to be succeeded by a craze for concentrating works. The idle smelting establishments give proof that they were not needed when erected. A competent metallurgist, possessing business judgment enough to weigh properly the conditions affecting costs, supplies and markets, could have foretold the failure of almost all of them. It will be fortunate if similar results do not follow the erection of concentrating works. It is not every ore that can be concentrated at a profit, nor is it an easy matter to determine the method best adapted to the concentration of that which may be fit for treatment.

## CONCENTRATION OF ORES

A Series of Descriptive Articles Showing the Various Methods Employed.

BY ANDREW WALLACE.

Not only is it requisite that the supply of water should be uniform, but it must also be adequate to the needs of the jig; and, as the jig plunger in its upward stroke necessarily creates considerable vacuum below it, the water supply must be placed at sufficient height to enable it to flow rapidly into the jig. If the supply of water is not placed, at least, ten feet above the jig overflow, the effect on the jig will be that some of the lighter and worthless rock will be sucked down to and through the screen, thus causing the lower discharges to be dirty, and probably require them to be redressed.

As a matter of fact, the jig plunger does not displace at each stroke as many cubic inches of water as would be represented by its area multiplied by the length of its stroke, and it is not necessary to provide water enough for this. In reality, there is more or less air always mixed with the water directly under the plunger, and when it is remembered that air is very elastic, and capable of being compressed, it will readily be seen that only part of the space vacated by the plunger need be filled with water, the rest of the space being compensated for by the expansion of that air which was compressed on the down stroke; in practice this will be apparent to any thinking person, but it is more noticeable in those machines which are treating the coarser sizes. For instance, take that jig which is working on 1-2 inch ore; in that jig, the stroke of the plunger would be about 11-2 inches, and about 100 strokes per minute, the plunger working under these conditions would displace nearly 300 gallons of water every minute; whilst the size of pipe, with ten feet head, needed to supply the jig, would not require to be more than two inches. As there must be one hundred full strokes per minute, it can readily be seen that were the full supply necessary it would require to be furnished in 30 seconds, because the other half minute is taken care of by the down stroke when water is being forced out. The presence of air in the water serves as a cushion or spring to the plunger and prevents too sudden changes in the flow of the stream through the screen, and it also deadens the shock which at each stroke is given to the machinery. Were there no elastic medium in the water or between it and the plunger, either the plunger working close in its seat would draw the water back through the sieve, and with it some worthless sand; or, the plunger working loose in its seat, allows the water to escape too readily, and as it is manifestly impossible to pass water having a ten foot head through a two inch pipe at the rate of ten gallons per second, the effect would be that the plunger would leave the water at every stroke, and on its return would strike the water with such force that the machinery would soon be wrecked. Reasoning in this way, it is evident that the plunger ought to be made as tight as possible, consistent with the least amount of friction.

In regard to the stroke of the plunger, and the manner in which it should be applied, the theory is shortly explained in this way; the stroke should approximate as nearly as possible to that obtained in hand work, that is, the plunger should make the upward stroke slowly and the downward stroke quick. Various mechanical devices have been planned to achieve a perfect motion, notably that of Mr. John Colloom; the writer also has at divers times designed and built jigs having the quick and slow motion to the plunger. Experience, however, teaches that all those devices are very expensive to maintain; they require expensive labor to operate them; and, excepting in the coarsest sizes where the stroke is greatest, the accruing benefit is not appreciable.

The simplest and most practical mechanical movement, and that which is almost exclusively used at this time, is the eccentric; but, in speaking of the eccentric, I do not wish it to be understood that I claim for it less friction than for the other devices named. The fact is, the eccentric wears faster and requires more power, but it has advantages which appeal to the pockets of all mill men; it costs less to replace, it requires little attention beyond that bestowed with an oil can; and, thanks to the elastic properties of the air under the plunger, it does the work required.

I have already mentioned the opening which is in the hopper shaped bottom beneath each screen. This opening is fitted with a valve to prevent the escape of water from the body

of the jig, and is intended to discharge all ore or sand which comes through the screens. It might be supposed that, with a perfect series of revolving screens, there would be nothing received on the coarse jigs which would go through their screens, but it is next to the impossible to prevent some of the finer sands from clinging to and joining with the larger rocks, and these fine particles have to be provided for another source from which the fine particles come, is to be found in the abrasion of the coarse rock in its passage to the jig, and in the action it is subjected to when it gets there. As the rock is continuously fed to the jig, and it has been shown that only a very small percentage goes through the screen, it is plain that the greatest amount must remain lodged on the screen. A jig, to be kept in perfect working condition, besides having a steady supply of water and ore, and having its moving parts in good order, must also be provided with means whereby the ore as it accumulates on the screen can be automatically removed. The reason why it is necessary to the good work of a jig to be able to automatically discharge the ore which lodges on the screen, is this: having found by experiment just what water, stroke, and speed is required to make a good concentrate, the next thing to be done is to maintain the working of the jig in precisely the same condition it was found best. It is an easy matter to keep the stroke, speed, and supply of water at a regular gait, but the ore is a variable quantity and must be closely watched.

It has already been shown that the tendency of a mixed body of ore and rock particles of the same size, when exposed to the action of an upward intermittent stream of water, was to arrange itself in layers according to gravity; the ore to be saved by concentration is almost invariably the heaviest, and consequently becomes that layer which is nearest to the screen. Water, stroke, speed, and layer of ore, being once established as being all right, it can be shown that the depth of this layer of ore must be kept always the same for that particular ore.

Should it happen that the ore layer becomes too shallow, the water will have too much action on the light and small particles, and they will pass to the screen and through it, making a dirty product below; on the other hand, should the layer of ore become too deep, the action of the water on the ore particles will be retarded and much good ore will pass up and over the overflow to the next screen, or else will be lost in the tailings.

[To be continued]

THE Gallup News-Register says that Colfax county seems to be enjoying a veritable boom induced by the liberal policy the Maxwell grant company are pursuing in the way of costly irrigation works and a liberal policy toward settlers. This boom will not be confined to Colfax county, but will extend all over New Mexico if grant owners will only learn their lesson from the Maxwell grant managers.

THE news is sent to the Tucson Citizen that on Wednesday last a silver nugget was taken out of the Silver King mine weighing 850 pounds, and worth \$11 per pound.

McAULIFFE, San Francisco's pet bruiser, knocked out Tom Lees, the Australian pug, in eight rounds last week.

### Cancer

Is a form of blood poisoning which is not understood by the medical profession as to its real nature and character, but it is evidently hereditary in its nature. It may accidentally develop itself without any predisposition or evidence of such existing poison. The knife or caustic Salves have heretofore been the so-called remedies for it, but all honest practitioners will tell you that this treatment fails to cure, and only hastens fatal results. Thousands of cases of epithelioma (skin cancers), and a great many cases of scirrhus cancers, have been entirely cured by the use of Swift's Specific. It forces the poison out of the cancer itself, and the pores of the skin.

My father had cancer; my husband also had cancer, in fact died with it. In 1875 a lump came on my nose, which steadily increased in size, and alarmed me. I used various remedies—salves and other applications, and finally tried to burn it out, but the sore returned worse than ever, growing larger and more angry, until I determined to try Swift's Specific. I took the medicine and it soon made a complete cure. I know that S.S.S. cured me, because I discarded all other remedies. This was several years ago.

and I have had no sign of a return of the cancer. MRS. M. T. MAREN. April 5, 1889. Woodbury, Texas. Treatise on cancer mailed free. THE SWIFT SPECIFIC CO., Drawer 3, Atlanta, Georgia.

### Another Complaint.

EDITOR CLARION: I like the bold stand you and your correspondents are taking for the people; but you do not suggest any remedy. I have observed that changes only come after the people have loudly demanded them. The last grand jury told the taxpayers that they were being robbed, but no particular heed will be given to their words until the people generally have swelled the chorus of complaints until it actually forces a hearing. Will not some one give us more facts about that printing? Is that man in San Jose right about it? Cannot THE CLARION get hold of that bill of Solomon's and publish the items. All this distrust is wrecking the county, and will cause it to drift like an overloaded and water-logged ship hopeless in the financial sea. We cannot stand any increased ratio of taxation. The farmers have been assessed to even a cord of wood lying in the door yard. Let us see that others are assessed in proportion. Grain will be very low, and the government freighting contract at the figures taken will not afford a living. If the teamsters would band together it would learn somebody a lesson. You may think this strong talk, but you will find that it will have to come to that at last.

The Bulletin is fixing for some political move. It squarely declares that everything in this bankrupt county is lovely, and that the goose hangs exceedingly high, and all that is needed is to let present conditions severely alone, or make them a little more so, if possible. "Might is right" in this county in practice, if not in theory. I hope to hear other expressions of opinion, so we may have a little more light on the matter; for if our prosperity, happiness and larger opportunity is to be filched away, through a tax on the produce of toil that is not founded on justice, though it may have the warrant of partial and iniquitous law, it is time the farmers of this Valley rise as one man and right this wrong.

A VICTIM.

PIMA, May 25, 1889.

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