

Recent Mining Excitements.

The present year seems to be unusually prolific of mining excitements in the Far West. During the past month two new ones have blazed forth, the scene of one being the Pine Nut district in Nevada, and that of the other, La Plata in Utah. Concerning the former there is considerable mystery, as the tunnel in which the original (and so far, apparently, the only important) discovery was made is barricaded, and none but those interested are allowed to examine the breast. The stories of the wealth exposed there are, however, comparable only to the tale of Aladdin's cave. As was to be expected, there has been a rush from other mining camps of Nevada to the new district. Claims have been located in all directions, and with customary promptness several companies with large capital stocks have been organized in San Francisco to exploit property in the new field. Pine Nut is located in Douglass County, and is but a short distance from Austin.

La Plata camp, in Bear Gulch, Cache County, Utah, about 25 miles northeast of Ogden, has been heralded as a new Leadville. Ore was discovered at this place about one month ago by a sheep herder, whose sheep wore a path denuding the outcrop of a vein of rich lead ore. From the La Plata claim, located on this vein, the town which has since been established takes its name. This discovery being near Ogden and Salt Lake City, a stampede to the locality immediately followed the first news. It is estimated that within a week there were 500 men in Bear Gulch, where a town site had been laid out, saloons and gambling houses had been put in full blast, and, according to press reports, the place had taken on the look of a typical Western mining camp of five-and-twenty years ago.

The original discovery at La Plata has been followed by several others, and the district is said to be a promising one. As yet little is known concerning the nature of the veins which have been exposed. The formation is reported to be lime and porphyry, and the ore to bear lead and copper, carrying silver. No more definite information has yet been received.

Of the other new mining districts of 1891, Oro Grande, in Southern California, is still the scene of considerable activity; and there seems to be fair probability that some of the prospects there may be developed into mines. The discoveries at Oro Grande have attracted much attention to the mineral resources of Southern California; and there is more exploration work doing among the silver veins of San Bernardino County this year than for a long time past. The region is of considerable promise, and we may look for a gradually increasing product of silver in California as its resources are developed.

The excitement over the Deep Creek region of Utah and Nevada, which was the theme of interest three months ago, has almost entirely faded away. One mine there, the Buckhorn, is, we believe, making regular ore shipments, and others are sending occasional small lots to market; but the discoveries have not been of such a nature and extent as to warrant the immediate construction of a railway into the region; and its inaccessibility, lack of water, and other natural obstacles to profitable mining appear to have discouraged the influx of additional prospectors, or investments of capital in large developments, when there was no longer immediate prospect of a railway.—*Eng. and Min. Jour.*

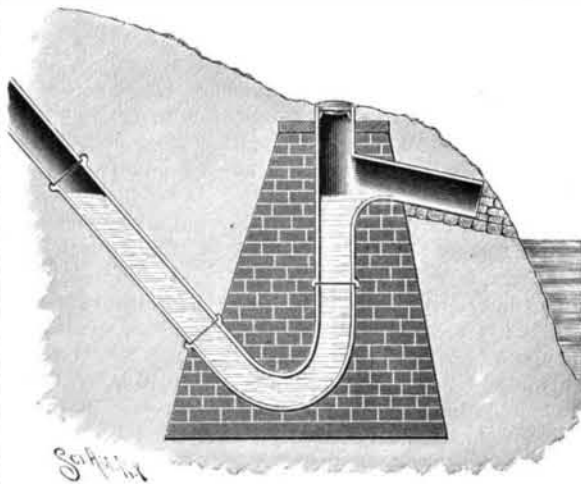
Irrigation by Steam Pump.

Where years ago it might not have been, it is now possible to irrigate many fair and productive acres by pumping, and thereby be independent of all the present systems of water courses and charges. A gentleman who has a Byron Jackson centrifugal pump upon his place, says the *Bakersfield Californian*, has made a careful observation as to cost and capacity of this kind of work. The plant will cost as follows: Engine, \$900; pump, \$200; freight, \$200; average well, say \$200; or \$1,500 for plant. With thirty feet lift, the pump has a capacity of one cubic foot per second, and with ten or twelve feet lift, two cubic feet per second. The water should be used direct from the pump, as, if a storage reservoir is used, there is additional expense, and loss of water from seepage and evaporation. With small ditches and attention, one cubic inch of water per second is ample for 160 acres in vines and trees, and while using the pump it will keep two men busy handling the water, for, properly applied, from seven to eight acres can be irrigated each day. If alfalfa is laid out in narrow checks, so that the water can gently run over it, three acres a day can be irrigated in this manner. Of course, if flooding be practiced, each acre will require the old amount of one and one-fourth cubic feet per second for twenty-four hours.

The costs of running this pump are one cord of four-foot wood, \$2.50 (or three loads of sage brush at about the same cost); labor running engine, \$1.65; incidentals, 35 cents; a total of \$4.50 for, say, seven and one-half acres, or 60 cents per acre. The engine of fifteen horse power is ample for a pump of double the capacity given above, and the said pump only costs \$100 more originally.

IMPROVED SEWER AND DRAIN PIPE OUTLET.

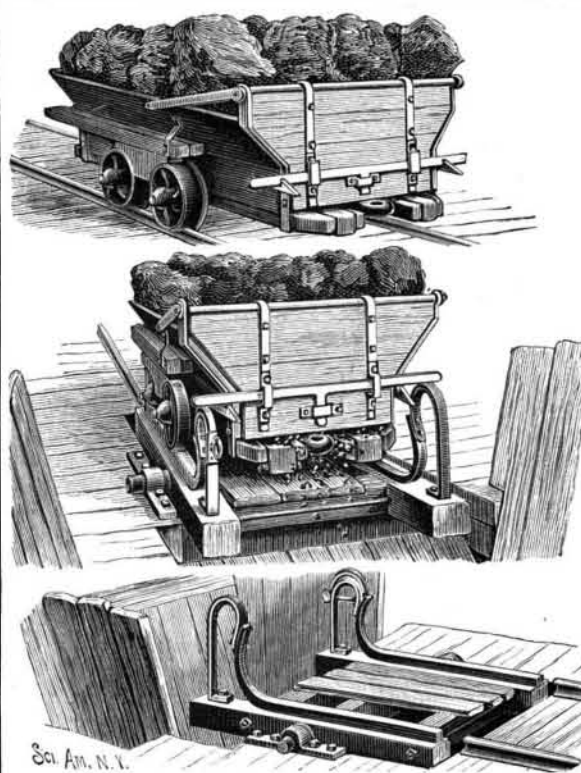
Sewers and other drain pipes, emptying into rivers and streams whose banks are unstable, frequently cause the washing away of the bank to an extent to injure the pipes or obstruct the outlet. To obviate this difficulty the improvement shown by the accompanying illustration has been invented and patented by Mr. James H. Elliott, of the city engineer's office, Memphis, Tenn. A suitable abutment is constructed near the outlet, and the main drain pipe enters this abutment at an incline, then

**ELLIOTT'S OUTLET FOR DRAIN PIPES.**

bends upward to a point near the top of the masonry, when it again bends outward, to discharge the flow into a paved gutter above low water mark. The vertical portion of the pipe is also continued upward to the surface, where it has a removable cover or grating to facilitate inspection and cleaning. The water always remaining in the lower bend of the pipe is designed to break the force of a rushing torrent, and prevent violent outflow, the masonry or concrete wall holding the pipe permanently in place.

AN IMPROVED MINING CAR AND TIPPLE.

The illustration represents a car and tippie, with automatically opening and closing latch, which has been successfully employed in practical work for some time past in Clearfield and Indiana counties, Pa., and is highly spoken of by miners in the soft and hard coal regions. It has been patented by Mr. Cornelius Burns, of Burnside, Pa. The first figure represents a loaded car with its gate at the rear held closed by the latch, the second view showing the latch as raised before dumping, and the third view showing the tippie. The gate is pivotally held on a transverse rod, and on its outer face are keepers in which a latch-bar is loosely held, its outer ends being engaged by latches extending rearward from each side of the car. The tippie, or

**BURNS' MINING CAR AND TIPPLE.**

tilting platform, has rails in line with those of the mine system, and the rails are curved upward at their outer ends, on which are bolted curved extensions or goosenecks, the outer portions of which are carried down vertically and bolted to the platform beams. A removable cap is held on one or both of these curved extensions by a rod with a projecting eye, by which the cap may be tightened or loosened or entirely removed. As a loaded car is run on the tippie, and its rear wheels come against the curved rails, the latch-bar strikes the curved extensions, and is thereby disengaged, the door swinging open as the car tips downward on the tippie, to discharge its contents into the

chute. After the car is unloaded it comes back to a horizontal position by its own weight, the door closing and latching itself as the car returns to a level. Many advantages are claimed for this improvement over the old style of car and tippie. The latch is not liable to open in the mines, it does not require to be lifted by an operator in discharging the load, and the cost to remodel old cars and tipples to conform to this style need be but slight.

American and Canadian Railroads.

I do not believe that the extreme measure of requiring a license of the Canadian railroads to do business as part of lines connecting points in this country, and authorizing the abrogation of such license if they shall be held to have violated the Interstate Commerce law, is either wise or necessary. The power should never be granted to any one man or any body of men to put a stop to the business of a great railroad. In such case it is not the railroad or its stockholders that would be the chief sufferer, but the men who have made their business arrangements dependent upon the service which the railroad is to render them. I do not believe that the great cities or the great manufacturing districts of New England, that Buffalo, Toledo, Rochester, St. Paul, Minneapolis, the great cities of the Northern Pacific, or even Chicago or New York, would long submit to such an arrangement.

It is said also that by helping build up the railroad system of Canada, we create what would be a great military danger to us in case of war with Great Britain. On the contrary, it seems to me that we are getting a hostage which will forever bind Canada and Great Britain, so far as she cares for Canada, to good behavior toward us. All the property of the Canadian railroads, or which Canadian or British capital have invested in connecting lines in the United States, at once becomes worthless to them and a means of attack to us if war breaks out. The five million people of Canada are stretched out along the boundary line of nearly four thousand miles, if you follow its curves. I suppose nine-tenths of them dwell within an average of less than fifty miles from the American border. Their lines of railroad could be taken possession of by a military force in many places, if we find it necessary to do it. Canada is a chain easily severed in a hundred places. When she is broken at one point, she is broken at all. Our population is to hers as at least thirteen to one. Our wealth, our military resources, our power of producing military equipments and supplies, exceed hers in a vastly larger proportion. On the other hand, our transcontinental communications can be maintained in spite of anything that Canada or England could bring against them. It is said that special action may be taken by the British or Canadian government to enable their roads to underbid ours. If that happens, we shall know how to take care of ourselves, and the more interest they have in the American connection, the more they get into our power. No such action yet appears, or seems likely.

American railroads are as much entitled to protection against foreign hostility or unfair competition as any other form of capital or of labor. The railroads of the United States employ at least 850,000 persons, who in their turn have dependent upon their labor at least 5,000,000 persons, a thirteenth part of the population of the United States. The operating expenses of the railroads of this country were \$352,000,000 in 1890. The figures for 1890 are not yet accessible, but there must have been an increase in this respect of from thirty to fifty per cent in the past ten years. Of this vast sum more than one-half is paid directly for labor, without reckoning the cost of labor which enters into the price of equipment, supplies and materials used during the year.—*Senator Geo. F. Hoar, in The Independent.*

Iron Paper.

It will not, perhaps, be remembered, says the *Paper Maker* (London), that in the great exhibition of 1851 a specimen of iron paper was exhibited. Immediately a lively competition ensued among ironmasters as to the thinness to which cold iron could be rolled. One ironmaker rolled sheets the average thickness of which was the $\frac{1}{1600}$ part of an inch. In other words, 1,800 sheets of this iron, piled one upon the other, would only measure one inch in thickness. The wonderful fineness of this work may be more readily understood when it is remembered that 1,200 sheets of thinnest tissue paper measures a fraction over an inch. These wonderful iron sheets were perfectly smooth and easy to write upon, notwithstanding the fact that they were porous when held up in a strong light.

It is claimed the steamer *Majestic* is the most economical coal burner of any of the Atlantic "high fliers." She burns 220 tons of coal a day, shows 19,500 horse power, and makes an average of over 20 knots, or 23 miles, per hour throughout the Atlantic passage. There are only two other ships that have reached this speed, namely, the duplicate ship the *Teutonic* and the *City of Paris*. But there are a few other vessels that come near this speed.