

THE GRAND SCENERY OF OREGON.

(Continued from first page.)

dered this district very rich in vegetation. The valleys of the many streams and rivers which abound in this section are most of them very fertile. The Rogue River, which has cut its way to the coast through a deep canon, is very beautiful and is very heavily timbered. A number of placer mines have been established along its shores, and much gold has been taken from the sand and gravels of its bed.

Our illustration gives a general view of Portland, which is the principal city of Oregon. It is located on the Willamette about 12 miles above its junction with the Columbia River. Its population in 1880 was 17,577, but it has grown rapidly under the impulse given it by the Northern Pacific Railroad. From its streets may be seen the beautiful cone-shaped glitter of Mt. Hood, which is the wonder and admiration of all travelers, and which rises from the vast plain to a height of 11,225 feet, solitary in its grandeur and standing like a sentinel watching over the destinies of the city. Its summit extends into the region of perpetual snow, and some idea of its beauty may be had from the photographs which we here reproduce.

Oklahoma the New Eden.

That innate and inbred desire of the members of the human family to get something for nothing—or next to nothing—must account for the mad race for quarter sections of land in Oklahoma, of which so much has been printed lately in our daily newspapers.

All the neighboring States of the Southwest, bordering on the newly opened territory, share in the excitement, and even the older States, like conservative Tennessee, are sending their contingents. Yes! Even the lake regions of the North are sending settlers. Among the excited throng are farmers, lumbermen, miners, mechanics, printers, store keepers, gamblers, saloon keepers, whisky men, and adventurers of every sort.

Already cities have actually been plotted on paper, and for one of them a bank has been organized which began business at noon on the now celebrated 22d day of April, 1889. The *Southern Lumberman* thinks that for some time to come it is altogether probable that *faro* banks in fair Oklahoma will considerably outnumber the legitimate financial institutions.

At the present time only one railroad runs through the new country, but several others go very near its boundaries, and these convenient thoroughfares are all putting on extra rolling stock on account of the unprecedented demand for transportation.

The General Land Office has established two offices—the one at Kingfisher Station and the other at Guthrie; while the Post Office department is straining every nerve in maintaining an effective postal service. There are said to be no fewer than seventy thousand applicants for the eleven thousand quarter sections of land that are available for settlement, so it is very evident that many pilgrims will be disappointed. There is no evidence to hand that Oklahoma lands are one whit better or richer in any respect than those in the Indian Territory, Kansas, Missouri, Illinois, or Tennessee, and yet hundreds of farmers are leaving comfortable homesteads in old settled communities and are gladly taking all the chances of pioneer life. Were there any indications of auriferous deposits of rich silver ore; of lead mines; of inexhaustible coal measures; of vast forests of hard woods; or in fact of any evidence of mineral or vegetable wealth out of the ordinary run, one could understand this mad rush; such not being the case, all our readers can do is to patiently await developments and then judge of the real value of Oklahoma and its lands. Land agents and law firms are circulating maps of the new Eden, and on paper it certainly looks to be a beautiful country; and *The Lumberman* thinks if the garden of Eden had been as well shown up by land lawyers and agents of old, the descendants of Adam would have mobbed that lonely angel with a flaming sword who guarded its gate and kept them out. Oklahoma is evidently a more desirable country, as it has required several hundred of Uncle Sam's blue coated angels, armed with repeating rifles, to keep the people out of it. Still, we are not going there—this year the editor adds—and we are not advising any of our friends to go to stay. It may prove a good field for the tourist who represents a good lumber firm, a burial case factory, or a tombstone quarry.

Rock Cuttings in the Proposed Nicaragua Canal.

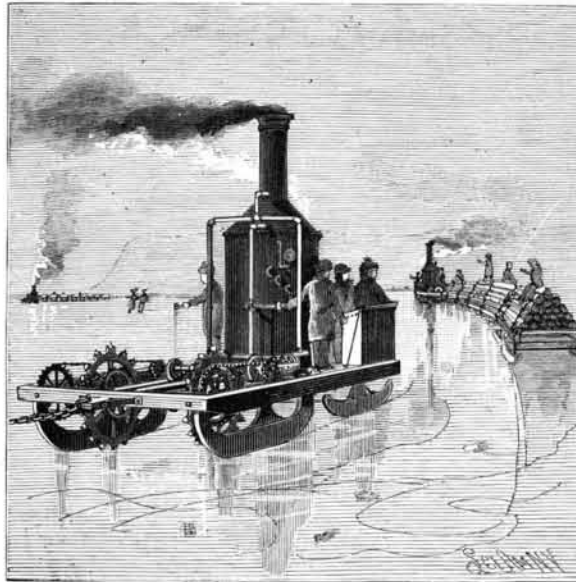
The most serious feature of the Nicaragua canal project, in a contracting and financial sense, is the great rock cut at the eastern divide, 3 miles long and averaging 120 ft. deep by 80 ft. wide on the bottom, containing in all some 7,000,000 cubic yd. of material, or say 440 cubic yd. per lineal foot. There is no precedent, says *Engineering News*, for such an enormous cut, and it has been assumed that four years, at least, would be necessary to complete it, while many question the possibility of doing it in that time. The great rock cut at the Tilly Foster mine, Brewster's Station,

N. Y., if it may be relied on as a precedent, would go far to relieve these doubts. From that cut 215,000 cubic yd. have been removed in 20 months within a lineal distance of 450 ft., or nearly 500 cubic yd. per lineal foot, and this by day work only, with a force of 150 men, or one man per yard of center line, by four cable hoisting plants only, or say one per 100 ft., and practically at the rate of about 4,000 cubic yd. per month per cable when working full time and with full force. Equal efficiency cannot be expected in tropical Nicaragua and temperate New York; but neglecting for the moment this very serious difference, a work conducted with equal efficiency, and with a cable hoisting plant for every 100 ft. of center line, would at the rate of 4,000 cubic yd. per month extract the necessary cube of 44,000 cubic yd. in just 11 months of solid work, and this without night work; while the force to accomplish this end, if the New York example were admissible as a precedent, would be about 5,300 men with 160 cable hoisting plants, or about 33 men per plant and per 100 ft.

This is not so large a number as to seem difficult of attainment, or to cause the men to be in each others' way, even if increased by a considerable percentage to allow for tropical inefficiency; and we fully believe that there are men in this country who can and will undertake to parallel this record if afforded the opportunity, and if the contracting wheat be winnowed from the chaff by some other and safer method than "lowest bid" and "influence," so that those men who really understand from experience how to handle such work may have a fair chance.

A STEAM-PROPELLED SLED.

An invention by means of which a sled is designed to be propelled by steam power, and adapted to pull a



CONNIFF'S STEAM SLED.

train of sleds, has been patented by Mr. James F. Conniff, of Oconto, Wis., and is illustrated herewith. The main frame of the power sled is mounted on sets of runners, of which the rear set is pivotally connected to the under side of the frame. On the frame is a boiler supplying steam to an engine connected with driving shafts on either side, each of the shafts carrying a sprocket wheel communicating motion by a sprocket chain to a shaft mounted transversely at the rear end of the main frame.

From this shaft power is communicated to two propeller wheels, mounted in bearings in a frame that is free to swing up and down, whereby the wheels will be always in contact with the ice or snow. The periphery of each propeller wheel has projections with sharp cutting edges, to enable the wheel to take a firm hold on the ice or snow, whereby the power sled will be capable of drawing a train of sleds connected therewith.

A Recent Cat-astrophe.

An interesting exhibition of trained cats has been conducted for some time past by Leoni Clark, known on the variety stage as the "cat king." His troop of thirty cats has been a great attraction. Philadelphia has, of late, been the scene of many performances, and on the 24th ult. Mr. Clark thought that his troop of cats needed some medicine, and he went to a neighboring drug store and had a prescription, which was tried with good results many times, put up. He then assembled his troop of educated cats in a row and began to administer the medicine. After he had gone down the line giving dose after dose as far as the thirteenth cat, cat number one, with an unearthly shriek, leaped into the air and fell dead.

Cat number two followed suit. Cat number three did the same, and so it went on until thirteen cats that had taken the medicine lay dead before him. Mr. Clark is in a terrible state of mind over his loss, and will sue the druggist, who he claims put up the wrong prescription. The druggist declares that he put up exactly what Mr. Clark's prescription called for.

Correspondence.

A Suggestion for Introducing Wires in Electric Subways.

To the Editor of the Scientific American:

In the recent article on "The Electric Subways of New York City," I was struck with the extremely slow method of introducing the small line into the duct, preparatory to drawing the cable. It occurs to me the first line might be run through much quicker by air than with the jointed rod.

I should think a specially made large sized hand bellows would be sufficient to drive through a pasteboard cone with a light line attached. The line should be taken from a light, free-running reel.

Thimbles of different sizes could be made for the different sized ducts, so the nozzle of the bellows would fit any of them. One side of the thimble may be crimped sufficient to allow the line to enter the duct.

M. A. CURRIER.

Omaha, Neb.

Semi-solid Lubricants.

To the Editor of the Scientific American:

I note in your issue of April 27 that the well known mechanical engineer Joshua Rose speaks, in his Paris letter, of the use of a semi-solid lubricant on grinders forced by screw pressure upon the journals, and in speaking of it as a new idea "of much interest" he add: "I was informed that it was proposed to try a similar device upon the axle boxes of a locomotive. I should think it likely that such an axle box would, however, require a more continuous supply of lubricant than this would give." Concerning this it might be of interest to note that the idea is not new in this country, as at least over a year ago the Chicago and Northwestern Railway were using a solid lubricant, coming in the form of candles, upon their engines.

Just how successful it was I am unable to say. It was a white substance of about the size and hardness of an ordinary candle and some three or four inches in length, used in much the same manner described in his letter.

J. M. FARNSWORTH.

Vinton, Iowa, April 29, 1889.

Natural Gas in Kentucky and Indiana.

State Geologist Gorby, of Indiana, in relation to the natural gas development in Harrison County, Ind., and Meade County, Ky., says:

So far as it has been tested, the field stretches along the Ohio River about thirty miles, beginning at a point about twenty miles below Louisville and extending below Brandenburg. It has a width of seven or eight miles in each State, and contains about fifty wells, ten or fifteen of them on the Indiana side and the remainder of them in Kentucky. It is from the Kentucky wells that it is proposed to supply the city of Louisville. It will require a pipe line about thirty miles in length, and when I was there last, work upon it was being pushed vigorously. There were originally three companies that started out to supply the city, but they are merged into one organization now.

The Harrison County wells are shallower than those in Hamilton and Howard Counties, the gas being reached at a depth of 358' in the river bottom. The bluffs along the river are about 200' high, and the wells back from the stream require more boring, so that those sunk in different parts of the field range from 358' to 550' in depth. The Hamilton and Howard County wells, as I have observed them, run from 800' to 1,000'. In some of those in Harrison County the supply is as abundant as in the average producing wells of Hamilton and Howard. Some of them are producing 4,000,000' daily, and the output throughout the field is estimated at 50,000,000' every twenty-four hours. The gas comes through a black shale, and is of about the same quality as that produced in other Indiana fields. There is more annoyance from salt water than there is in the Noblesville and Kokomo section, but this is obviated by the use of separators, which have been improved upon until some of them now work very satisfactorily.

I think there is a plentiful supply for Louisville, however, from the Kentucky portion of the field. It is astonishing what one moderately productive well will do when the gas is properly handled. In the State of Indiana the town of Portland, which has 2,000 inhabitants and several manufactories, is supplied by one well, with a capacity of 875,000' daily, and one mill there with an engine of 20,000' each day. Of course, where it is burned as an ornament or for advertisement in large flambeaus on the streets and in public places it is different. I am only speaking of cases where the gas is not wasted.

Preservation of Milk by Freezing.

It is said fresh milk may be preserved indefinitely by freezing it and maintaining it in the frozen state until wanted for use. Many of the steamers now sailing on distant voyages are provided with steam refrigerators, in which milk and other foods may readily be preserved for any length of time.