

ment clerks came up, and I asked him whether he would advise young men to get places under the government.

He replied that he would not, and said that the short hours and the work seemed to demoralize the employes. Said he:

It seems to me that the hours and the work here are injurious to character. The clerks work from nine until four and there is a tendency for them to become machines. They have not the incentives to good work that you find in other branches of business, and if I had a boy I would not want him in the department. Just in this connection I have a protege in Buffalo, who wrote me the other day wanting a place in the department. He is now a letter carrier in Buffalo, and when I first met him he was blacking my boots in a barber shop. He attracted my attention by his knowledge of geography of the United States. A man who was being shaved asked whether Detroit was the capital of Michigan, when this boy broke in and said: 'No, it is not; it is Lansing.' I then asked him what was the capital of Louisiana. He replied: 'Baton Rouge.' 'And Connecticut?' said I. 'Hartford is the capital now,' was the boy's reply. 'It used to have two capitals, Hartford and New Haven, but they have changed that, and it has now only Hartford.' I then asked the boy where he went to school, and he told me that he was going to night school and learning as best he could. I gave him an order on one of the book stores for what books he wanted, and took an interest in him from that time on. Well, he got a fair education, and one day he surprised me by coming into my office and telling me that he had passed the civil service examination and was working for Uncle Sam. He had received an appointment as letter carrier and he is now making \$1,000 a year. He has been saving his money and investing it, and he is now worth a nice little property. He is a bright young man, and though I did not tell him so, I think he is far better off in Buffalo than in a Washington department.'

MR. BISSELL TALKS OF THE PRESIDENT.

At this point the conversation turned to President Cleveland, and the Postmaster General chatted interestingly of his early association with him. It is now nearly twenty years since the two began their practice in the law at Buffalo, in connection with Mr. Lyman K. Bass, who had been a member of Congress. Mr. Bass left the firm in 1876, and from that time on it went under the name of Cleveland & Bissell. In speaking of it I said: "Suppose Mr. Bissell, you let your mind run back fifteen years to the time when you and the President was practicing law together at Buffalo. Had you any idea at that time that Grover Cleveland might be President of the United States and yourself a cabinet officer?"

"I can easily answer for myself," said the Postmaster General, "and almost as well as to the President. I never had any ambition to engage in politics, and at that time I was devoting myself to the practice of law. During the first years of my legal association with Mr. Cleveland it was my idea that he might go on the bench, and I was at that time anxious to have him accept a place as one of the judges of the superior court and I spoke to him about it, but he did not take to the idea. He has an

eminently judicial mind, and I have always thought he would have made as great a reputation as Chief Justice of Supreme Court of the United States as he has as President. It is the judicial character of his mind that fits him so well for his present position. His head is always clear as to great questions. He makes up his mind after considering all sides of a question, and he is generally correct. His judicial ability was recognized in the courts of Buffalo. It used to be that the judges there in deciding a point of law would ask the opinion of some of the lawyers present upon it before making their judgment, and I have often noted that if Grover Cleveland was in the court room he was man whose advice was sought. This was so when he was quite a young lawyer, and he made himself noted at the bar as a safe and conservative counselor."

HOW GROVER CLEVELAND WORKS.

"Was he much of a student?" I asked. "Yes," replied the Postmaster General. "President Cleveland has always been a hard worker. He likes work better than anything else, and he was as industrious as a lawyer as he is as President of the United States. I first knew him in the law firm of Lanning, Cleveland & Folsom, way back in 1869. I had just graduated from Yale and I acted as one of the six clerks for this firm for a time. They had a big business. They were attorneys for the New York Central and other railroads and their outside practice was large. Cleveland was the hardest worker of the firm. I have never known a man who worked harder to master all the details of his cases. It didn't seem to make much difference whether the amount involved was big or little, and he often put as much time on small cases as he did on large ones. He liked the law and he studied it as a science. He received many large fees, though you could not say that he was what is called a money-making lawyer. He practiced the law because he loved it and he seemed to get his greatest pleasure out of his work."

FRANK G. CARPENTER.

GAS MAKING.

Two new furnaces are being constructed at the gas works in this city, so that there may be no failure of the supply for illumination during the holidays, when the demand on the gas plant is usually as great as it can cope with. The new furnaces are of somewhat different design to those heretofore erected and used, in that the fire and ash box are to be located beneath the floor, and the feeding place will be closer up between the retorts than in the other furnaces.

The output of the gasworks now is about what it was ten years since, the introduction of electric lighting being the cause for a non-extension of the plant and service. The time has been reached, however, when additions must be made, for the requirements for gas for illuminating and heating purposes are steadily increasing, and the plant of the Salt Lake company is now taxed to its utmost capacity. The company had intended to erect a new and larger gas tank this fall, but the pressure of financial matters has caused the work to be deferred till spring.

Although not much is heard of the

gas works except in the way of settling bills for the illuminator, it is quite an important industry in Salt Lake. During the month of October three million feet of gas were consumed in this city, taking about 300 tons of coal for its production, exclusive of the coke necessary for heating it. This month the amount will be largely increased, not less than twelve tons of bituminous coal being "roasted" every twenty-four hours, or 360 tons a month. As winter comes on the amount will go above this, reaching, about the holidays, seventeen to eighteen tons of coal a day.

The gas company now has four furnaces in operation and one undergoing temporary repairs will be started up as soon as ready. In each of these furnaces retorts are arranged in groups or "benches." It is usual in gas works to have them in odd numbers of three to seven placed thus: A A A

In the Salt Lake works, however, three of the furnaces have three retorts in each, while two others have six each, arranged so that the heat from the burning coke reaches all of them.

Each retort holds about 325 pounds of coal, from which the gas is driven off by a heat of more than 2000 deg. Fahrenheit. The solid matter that remains in the retort after the volatile substances go off in the gas is known as gas coke, which is used by the breweries and foundries, and for heaters.

It is not the purpose here to give a detail of the gas forming process, though a brief sketch may not be uninteresting. When the gas which contains the volatile products leaves the retorts it passes up to and along a hydraulic main, in which cooling engines, accompanied by a condensation of vapors and the taking out of the tar particles. From the main it goes into a series of U tubes where it is cooled in the Salt Lake works to 65 degrees F., and is thus largely freed from its impurities. The gas is brought down to the temperature stated in order to produce the quality used here for illuminating and heating. If the standard of temperature was higher there would be more gas, but its quality would not be so rich.

In a separate building from that in which the cooling pipes are placed is an engine which performs the duty of an "exhauster," reducing the pressure on the retorts, drawing the gas through fine sieves and forcing it into condensers. Then the gas is washed by being passed through a scrubber of coke, under a spray of water. It is next passed through purifiers containing slaked lime between strainers, and is there relieved of its sulphuretted hydrogen and other impurities which render its use dangerous to life. From there it is conducted to the meter, which measures quantities up to ten million feet. Then it goes to the gasholder, from which it is distributed through the mains. From the record kept by the meter's figure the company can compute the entire quantity of gas that has been manufactured since the plant was placed in operation. When the new furnaces now being constructed are completed there will be six in operation, with a capacity for using about 24 tons of coal per day in gas production, or about seven and a half million feet of gas per month.