

A P P E N D I X .

THE GAS CONTROVERSY.

EXAMINATION OF VICTOR ZEIS, ESQ., DEPUTY STATE INSPECTOR
OF GAS IN OHIO, BEFORE THE COMMON COUNCIL, MONDAY
EVENING, APRIL 13, 1868. *

By Mr JAMESON :

Question 1. Suppose the Gas Works properly constructed (this city being level), what pressure on the city lamps would give the best illumination for the least expense ; or, in other words, what would be the proper pressure ?

Answer. A city so level as is the City of Indianapolis should have its supply of gas at a pressure not exceeding 15-10ths, provided the mains in the streets are of sufficient size to permit a natural flow of the quantity of gas necessary to supply the consumers.

Q. 2. If the gas is forced through the mains under a pressure of more than 15-10ths, would not consumers be compelled to pay for an undue amount of gas in proportion to the light received ?

A. They certainly would.

Q. 3. If a burner to be used upon a street lamp, tested to burn four cubic feet of gas per hour, should have six cubic feet per hour forced through it, by undue pressure in the mains, would not the bill of the private consumer be fifty per cent. too high ? And would not all consumers be wronged fifty per cent. in their gas bills ?

A. Probably not fifty per cent., but, at any rate, the bills of the private consumer would be increased about one third, or thirty-three per cent.

Q. 4. Does the so-called "Gas Regulator" increase or diminish the pressure on any gas burned in connection therewith ?

A... It diminishes it.

Q. 5. Would such an apparatus ("Gas Regulator") be necessary if the pressure was not too great ? And could it be used to increase the pressure ?

* See Proceedings, page —

A. No; the idea of the inventor of this "Regulator" was simply to counteract the effects of undue pressure upon the mains, and it is so constructed that an increase of pressure, over that in the street mains, is impossible. The only means for a gas consumer to secure a greater pressure upon his burners would be to have a gas holder upon his premises, which, filled in the day time, would give a supply of gas during the evening, in addition to the amount received through the mains.

Q. 6. Other things being equal, is the pressure likely to be heavier or lighter in buildings where there is a large number of burners, as the Union Depot, Theatre, hotels, &c.?

A. Lighter.

Q. 7. If large buildings be in need of "Gas Regulators," other things being equal, are not also small consumers more in need of such apparatus?

A. Yes, much more.

Q. 8. Small consumers are, then, the worst sufferers?

A. Certainly.

By Mr. KAPPES:

Q. 9. Is it possible to meddle with the meters on the public lamps, so as to make them indicate more than is really consumed?

A. It is. If the meter lamps are not carefully guarded, or protected, and the keys to the boxes in which the meters are placed are not delivered to and kept by a sworn officer of the city, it would be easy to detach the meters, and force two or three hundred feet of atmospheric air through them by means of an air pump.

Q. 10. Is there a probability that such a fraud could be committed without disconnecting the meter?

A. Yes, sir; if the means of connecting the air pump with the supply pipe of the lamp are provided for.

Q. 11. Who has the advantage in meter measurement, as applied to public lamps, the City or the Gas Company?

A. Most certainly the Gas Company. The best plan in lighting a city is to have burners provided that burn a certain number of feet per hour under a given pressure, and to have the city control the same through a proper officer, and by means of a Pressure Register and Pressure Gauges. The Pressure Register is an apparatus somewhat similar to a small gas-holder in its workings; it rises when the pressure increases, and falls as the pressure diminishes. A clock and rotating cylinder also form a portion of the Register. In the clock are certain special wheels which cause the cylinder to make one complete rotation in twenty-four hours; upon the cylinder is placed a sheet of paper, technically called a "card," which is divided, perpendicularly into twenty-four columns, corresponding with the hours of a day, and horizontally by lines representing the pressure of the gas "tenths of an inch," and ranging from one-tenth to forty-tenths. On this card the variation in "pressure" is noted by a lead pencil.

with movements depending upon the rising or falling of the small gas-holder already spoken of. The cost of a Pressure Register is from \$160 upwards.

Q. 12. Would you recommend the use of more than one Pressure Register?

A. I think that a Pressure Register should be located in the City Gas Inspector's office; and, besides, there ought to be several Pressure Guages, set at various points of the City, such as in fire engine houses or police station houses, where some person could note the pressure indicated by them at any time. Those Pressure Guages would cost from \$15 to \$16 each.

Q. 13. What is your judgment as to the utility and importance of such a city officer as a Gas Inspector, and would his services, if well and honestly discharged, be of equal importance to the City and to the citizen?

A. If a proper person is appointed, who would discharge his duties honestly and faithfully, a city of this size might save thousands of dollars per annum; not only the City as a corporation, but especially the private consumers, as such an officer would be able to protect the latter by proper inspection of the meters used. This City should have had such an officer fully ten years ago. In Ohio, a similar office has been created by State law, and persons holding position under it are State officials. By this enactment, no Gas Company in Ohio is now permitted to set or use a meter for the measurement and sale of its gas until the same shall have been proven and badged by the State Inspector, or by his deputy, which latter position I now hold I would advise that your next Legislature be petitioned to enact a general law requiring the appointment of Gas Inspectors at all localities where gas works are now or may hereafter be organized and operated, said law to include among its provisions a minimum standard of quality at which illuminating gas shall be considered merchantable. In Ohio, by the law I have just spoken of, the minimum quality is fixed at twelve candles, and the making of a poorer gas compels a proportionate deduction in the bill of the Company so offending.

Q. 14. Is it possible that common air can be forced into the gas holder and passed off to the consumer as gas?

A. Yes. This can be accomplished by various means. If there is an exhauster used in a gas works, it may happen that, through neglect by the man in charge of the exhauster, a vacuum is created in the retorts, then the machine, acting as force pump, will draw air and force it with the gas into the gas holder. The same may also be done intentionally, if the exhauster is permitted, purposely, to run faster than the quantity of gas generated from the coal in the retorts requires. Where there is no exhauster used, air can be mixed with gas by the means of an air pump; for instance, by forcing air into the purifying boxes or water-pipe connections. The exhauster itself is a machine driven by steam power, and applied to facilitate the passage of gas from the retorts, through the different apparatus, into the

gas holder, and to avoid the loss of the illuminating power of gas by combustion in the retorts.

By Mr. JAMESON:

Q. 15. What is your opinion of the gas in our city; is it mixed with air?

A. As I am but a few hours in your City, I have not had sufficient opportunity for making such observations as would justify me in expressing an opinion on this subject. The presence of air in gas is generally very easily detected by the naked eye, since the flame appears of a bluish cast above the orifice of the burner, and the illuminating power of the gas is considerably impaired.

By Mr. LOOMIS:

Q. 16. You say you are familiar with the manufacture of gas in Europe; what is the population of some of those cities in which you have been engaged?

A. The City of Mayence has about 50,000 inhabitants, not including its military garrison, which, perhaps, numbers about 10,000; Cologne has over 120,000; and the City of Prague, including its suburbs, has about 200,000.

Q. 17. What is your opinion: Is it becoming to a city of the magnitude of Indianapolis to extinguish the public lamps at midnight, thus leaving the people on its streets, after that hour, in darkness? Does it add to its reputation?

A. I should certainly prefer and recommend to have the public lamps burning during all the dark hours of the night; but I should be in favor of entirely abandoning the lighting of the public lamps of a city where it has no proper control as to the gas purported to be consumed, or where meter lamps are used and unjustifiable pressure is resorted to. I should certainly recommend a total discontinuance of public lamps where so doing would be the means of bringing a gas company to terms.

Q. 18. How is it in Cincinnati?

A. The lamps in Cincinnati burn all night without regard to moonlight, and the gas company receives payment at the rate of four cubic feet per hour per lamp.

By MR. KAPPES:

Q. 19. What burner, for general purposes, do you consider the best?

A. The one lately come into use, known as the "Young America." They are manufactured by Gleason, of New York City. It is a brass burner, very economical, fish-tail pattern, and has a check, with the very small holes therein, for the passage of the gas. In the City of Cincinnati this burner is used exclusively upon the public lamps.

By Mr. JAMESON :

Q. 20. What is the size of the burner used in Cincinnati?

A. Four feet per hour, under a pressure of 20-10ths in the mains.

Q. 21. Would the authorities of any city in Europe submit, if an attempt was made to compel them to pay for gas used by their public lamps at the rate of six feet per hour, if there were an agreement that the burners of the lamps should be supplied with four feet per hour by meter measurement? Would they not turn their gas entirely off all night?

A. They certainly would. In addition, I will state that since coming to this country I learned that several years ago the city and a large number of the citizens of New Orleans discontinued to use gas for the purpose of accomplishing a reduction in the price thereof, and were successful. And only a few days ago I read in a German newspaper a report which, from my individual experience as a journalist for some time connected with a paper in Cincinnati, I believe must be true, because it was printed in a newspaper, that the inhabitants of the City of Mannheim, on the Rhine, have resolved not to burn any gas at all unless the gas company will reduce their prices allowed them by that city's authorities, under a long running contract, made about fifteen years ago. I think Mannheim has about 80,000 inhabitants. Such movements have, in general, a very good effect, when gas companies have taken advantage of City Councils not experienced in technical points for making gas contracts.

By Mr. KAPPES :

Q. 22. Is there a reasonable excuse for a gas company refusing to furnish a plat of the lengths and sizes of mains laid in the streets of the city, the number of meters, the approximate number of burners used by private consumers, &c.?

A. There can be no technical reason for not complying with such a request, unless the gas company sees fit to prevent the authorities from becoming aware that the pipes laid are too small in diameter. As to meters, &c., I think this is merely a private business of the gas company.