

To C. A. Cary:

To 10 days' service as Deputy State Veterinary Surgeon, at \$5.00 per day	50.00
To personal expense	39.81

To M. E. Johnson:

To 20 days' service as Deputy State Veterinary Surgeon, at \$5.00 per day	100.00
To personal expense	64.46

To C. H. Flynn:

To 10 days' service as Deputy State Veterinary Surgeon, at \$5.00 per day	50.00
To personal expense	41.46

To T. S. Butler:

To 10½ days' service as Deputy State Veterinary Surgeon, at \$5.00 per day	52.50
To personal expense	59.64

To S. Stewart:

To 23 days' service as Deputy State Veterinary Surgeon, at \$5.00 per day	115.00
To personal expense	57.35

Total.....\$ 2,890.73

THIRD BIENNIAL REPORT

OF THE

STATE INSPECTOR OF OILS

TO THE

GOVERNOR OF IOWA.

 JUNE 30, 1889.

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

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1889.

REPORT OF THE STATE INSPECTOR OF OILS.

To HON. WM. LARRABEE, *Governor of Iowa*:

SIR—I have the honor to make the following report of the work of the State Inspector of Oils and his deputies, for the biennial period closing June 30, 1889. For the first nine months of this time the office was in charge of my predecessor.

During the last year, the demands of the work have rendered expedient the creation of several new districts and the appointment of a number of additional deputies. These are in the northern part of the State, and include Sioux City, Fort Dodge and Eagle Grove, Mason City, and Cedar Falls. The establishment of new stations by tank line companies make new centers for the oil trade, and render resident deputies necessary. This is likely to continue in the future; and while it considerably increases the expense of inspection, it results in very little enlargement of the aggregate business. The distribution made hitherto from larger depositories is, and will be still further in the future, divided among an increasing number of smaller ones.

At the time of writing this report, deputy inspectors are located as follows:

J. K. Mason, Keokuk.
John Behrens, Davenport.
F. O. Udall, Dubuque.
Geo. L. Stearns, Cedar Rapids (P. O., Marion).
M. Stone, Des Moines.
F. R. Laird, Des Moines.
W. H. Lynchard, Council Bluffs.
E. P. Heizer, Sioux City.
J. B. Swinburne, Eagle Grove and Fort Dodge (P. O., Humboldt).
M. Keerl, Mason City.
F. N. Chase, Cedar Falls.

The following States, and others, perhaps, have laws similar to that of Iowa to provide for the inspection and to regulate the sale of petroleum and its products, to-wit: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Georgia, Texas, Kentucky, Tennessee, Arkansas, Missouri, Nebraska, Ohio, Indiana, Illinois, Michigan, Wisconsin and Minnesota.

Prior to the enactment of these laws, the annual loss of life and property, caused by the explosion of coal-oil and fluid lamps, was very great. Upon this subject, the following paragraph, taken from a volume of the United States Census for 1880, entitled a "Report on the Production, Technology and Uses of Petroleum and its Products," page 220, is of much interest:

"In 1873, a committee of the Franklin Institute, of Philadelphia, reported 'On the causes of conflagrations and the methods of their prevention.' This committee reported that in 1872, the number of fires occurring in Philadelphia were 41½ per cent greater than in any previous year. Of these fires, 59 (the largest number originating from any one source) were caused by the explosions of coal-oil and fluid lamps. The report further states: 'The number of deaths in the United States from the explosions of coal-oil and fluid lamps in 1871 was, by the account kept by an insurance paper (the *Chronicle*), 3,500. If the death-rate for 1872 kept pace with the increase of conflagrations, which was about 50 per cent, it would give for the past year (1872) 5,250 deaths and the maiming of probably 20,000 persons within the jurisdiction of the United States.' Statistics of this character could be extended indefinitely."

These and other investigations resulted in the passage of the laws already referred to, and their effects have been very remarkable in diminishing the number of accidents, and in saving property from destruction. Of this, our own State is a good example. During the five years the inspection law has been in force, there has scarcely been a single serious fire resulting from the use of petroleum or its products, and it is believed there has been no well-established case of the loss of life by the explosion of a coal-oil lamp. There has been a limited number of fatal accidents in connection with the use of coal-oil and gasoline, but in nearly every instance, if not in every one, the accident has been the result of carelessness, and would not have happened had proper care been exercised. It has been the custom of the State Inspector to cause a careful investigation to be made of accidents of this kind coming to his notice, whether by direct report or through the press. Three deaths only of this kind have been heard of by me during the last fifteen

months; one of them caused by the bursting of a lamp in the hands of a child, and the other two by the careless handling of gasoline.

Deputy W. H. Lynchard reports as follows regarding the accidents at Boone:

In compliance with your instructions, I have made a thorough investigation into two cases of alleged lamp explosions at Boone. I have ascertained that the State Board of Health has previously made an inquiry into the same cases, and, without any knowledge of the results arrived at, I report herewith the facts as I found them:

The first accident occurred at the residence of Mr. E. E. Ward on the evening of February 14, 1889. There was nobody present when the accident occurred, and all that can be learned concerning its cause, etc., was obtained from Mr. Ward and members of his family. The lamp was glass, of medium size, with a common sun-hinge burner. It had been cleaned and filled before lighting, and half an hour after lighting had been taken up stairs by a young lady. The lady was dressing, and had set the lamp on a yarn mat, resting on a marble-top dresser, attached to which was a large mirror. She states that when she completed her toilet she turned the lamp down a trifle, and went down to the family sitting-room below. A moment after closing the sitting-room door a noise was heard like something falling in the room above, and upon going into the hallway the burning oil was discovered. When the flames were smothered the lamp was found to have been completely destroyed, with the exception of the metal stand, which was found lying on the floor at the foot of the dressing-case. The facts, as thus presented, give strong reasons for believing this was a genuine lamp explosion; but yet I am not satisfied it was. The mirror was not injured, and there was no oil on the top of the dresser—two things incompatible with the theory of an explosion. The accident can be explained by assuming that some portions of the young lady's dress, the beads or buttons of the sleeve, caught in the woolen mat, and that when she turned to leave she unconsciously pulled the lamp and mat over the marble surface, and left it so near the edge that the concussion of the closing door down stairs jarred it off. The oil was what is commercially known as "water white," and stood a flash test of 107—two degrees above the safety standard fixed by law.

The other case was more clearly not an explosion, but was far more lamentable in its effects. It occurred at the residence of Mr. Jesse Hull, at 4 o'clock on the afternoon of February 19, 1889, and resulted in the terrible death of Mr. Hull's lovely little girl, aged three and one half years. In company with a neighbor's little girl, of the same age, the child had gone up stairs to the children's bedroom to play. In the room was a small glass hand-lamp that had been used as a night-lamp, and had but a small quantity of oil in it. The child had lighted this lamp, and had evidently started to go to

an adjoining room. The house was new, and the door, being freshly varnished, stuck a little at the bottom. The baby had evidently exerted all her strength to pull it open, and when it opened it came back with force enough to break the frail lamp by striking it with the metallic knob. There were no other persons in the house but the children and Mrs. Hull, who was down stairs in a remote room. She has the misfortune of being hard of hearing, and could not hear the screams of the children, and her first knowledge of the accident was given her when she saw her darling running through the kitchen with her clothing enveloped in flame. The child was fatally burned, and died the next morning. The lamp was found to be broken only in two pieces, and the fracture could be traced to the point where it had evidently received a blow from the door-knob. The little one had apparently held to the broken lamp until the oil had saturated her clothing and was ignited from the burning wick. This oil was the same as that mentioned above.

GASOLINE ACCIDENTS.

Mrs. H. G. Reed, of Iowa Falls, one day in the month of June, 1888, undertook to fill the tank of a gasoline stove while the fire was burning—something that should never be done. The fluid ran over, took fire, flashed up in her face, and caught her clothing. She was so seriously burned that death ensued in a few days. There was no explosion. It was a clear case of want of care in handling a highly inflammable fluid.

There was a singular accident at Reinbeck, Grundy county, in the month of May, 1889, which resulted in the death of Mr. Thos. D. Robinson, mayor of the town. Deputy Geo. L. Stearns investigated the case, and reported as follows:

As you directed, I went to Reinbeck on the 24th of May and made inquiries in reference to a reported explosion of gasoline. The facts are these: Mr. Robinson, the mayor of the city, called on the firm of Colburn & Watson to borrow their brush and pail containing the blacking which they use in their hardware and stove store, which is a kind they have for their own use in blacking their own stoves. They do not sell it at all; it comes already mixed for use, and sometimes to soften the same they add gasoline. Mr. Robinson was a great friend of Mr. Colburn, a member of the firm, and he told Mr. R. that he could use water as well as gasoline, but Mr. R. thought gasoline would make the best polish. He commenced blacking a stove in which there was fire. The gasoline in the blacking caught, and pail and brush were soon in flames. He did not have presence of mind enough to drop them, but ran out and around the house, holding the burning pail and brush in his hands in front of his person, and inhaled the flame, which, with the shock to his nervous system, as his physician explained to me,

caused his death. Had he thrown the stuff from him as soon as it caught fire he probably would not have been injured. Mr. Robinson told the doctor that he did not blame any one, as the accident occurred through his own carelessness.

Deputy Lynchard reports a case in his own household which strongly illustrates the necessity for great care in handling gasoline. He says:

On Monday morning my wife was nearly burned to death by the explosion of some gasoline. The man who delivered a ten-gallon can of it in the morning spilt a quantity of it, that ran down between the can and the wooden casing. There must have been a quart of it, and it slowly evaporated, filling a small shed kitchen with the vapor. I was at Carroll, and my wife was unable to lift the can and carry it out. When she lighted the gasoline stove at noon a terrific explosion followed. She was blown into an adjoining room, and severely burned about the head and arms.

COAL-OIL AND ITS INSPECTION.

The Iowa State Board of Health, in a circular recently issued, has given some valuable information as to the composition of coal-oil, the necessity for its careful inspection, and the requirements of the law in relation thereto. The suggestions made by the Board in reference to the different qualities of oil, trade-marks, etc., are worthy of the close attention of the public and of those who include this article as a part of their stock in trade. The following extracts are made from the above mentioned circular:

Kerosene may be said to be the middle product of petroleum, the upper being several volatile hydro-carbons, known under the general term of naphtha, a highly inflammable substance; and the lower, of paraffine, heavier and less combustible than kerosene. Naphtha is a very dangerous explosive. An excess of naphtha in kerosene renders the kerosene dangerous. An excess of paraffine makes the kerosene heavy and less combustible.

As naphtha and paraffine have less commercial value than kerosene, the inducements of refiners is to retain so much of them in the kerosene as possible.

The statutes of Iowa demand that so much of the naphtha shall be removed that oil when heated to a temperature of 105 degrees Fahrenheit, will not throw off a vapor which will ignite when in contact with a flame or lighted match. That is what is termed the flashing point. Extensive observation and experiment have demonstrated that this standard will give satisfactory results for illuminating purposes, and be safe for use in ordinary lamps. It would not, however, be safe for kindling fires in the kitchen stove. No oil having a flashing point below 105 degrees can be lawfully sold nor used for illuminating purposes in this State.

The flashing point should not be confounded with the burning point, or fire test, which signifies that degree of temperature or heat at which oil placed in an open vessel will ignite and burn without a wick. The fire-test is not recognized by the Iowa statute, and has little or no value as determining the actual quality of the oil. Retail dealers should especially bear this in mind. Refiners and tank line companies frequently brand oil "150 degrees fire test," "head light 175 degrees," or trade marks which have no relation whatever, under the law, to the actual quality of the oil. The brand of an Iowa inspector, indicating the flashing point, is to be deemed the actual quality and standard of the oil. The average difference between the flashing and burning point of kerosene is twenty to twenty-seven degrees, so that oil branded 150 degrees fire test should have a flashing point of 123 degrees. Hence, no person should be misled or deceived by the dealer who says an oil is 150 or 175 degrees fire test. The law interposes no inhibition against trade-marks. The refiner or dealer may give his oil any name or grade he pleases.

The tendency of retail dealers is to purchase oil having a high flashing point, presumably on the theory that if oil having a flashing point of 105 degrees is safe, that of 126 degrees is so much safer. Theoretically that is true, but the higher the flashing point the denser and heavier the oil. Heavy oil congeals more or less in cold weather, will not rise freely, hence there is imperfect combustion. There is a limit to capillary attraction. Heavy oil is also more liable to clog the wick tube. Oil having a flashing point of 105 to 110 degrees will give better illumination, burn freer, and with greater satisfaction in ordinary lamps, than an oil with a flashing point of 120 or 125 degrees.

Where the oil is sold or kept for sale, without inspection, the penalty provided by law is so heavy that cases arising under that section have to be dealt with by indictment. In some instances the punishment is difficult to inflict, because it seems, and it is in fact, unnecessarily severe. It would be an improvement if the law in this respect were so amended that the first offense could be prosecuted before a justice of the peace, and the heavier penalties reserved for those who offend a second or third time. On the whole, the law is well obeyed and is no doubt serving a useful purpose.

I add hereto a statement showing the aggregate of inspections, by districts, for each month of the biennial period. Also a copy of the rules established by the State Board of Health, in accordance with law, for the government of inspectors, and the amended act of the General Assembly.

Respectfully,

CHAS. BEARDSLEY,

Inspector.

REPORTS OF INSPECTORS.

Report of inspection for the month of July, 1887.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
John Behrens .....	.....	576	27	\$ 58.95
J. K. Mason .....	.....	630	552	90.60
S. S. Harris .....	.....	636	440	87.60
F. B. Laird .....	.....	91	800	49.10
John Blanchard .....	.....	763	365	94.55
M. Stone .....	.....	632	840	105.20
C. J. Blanchard	10	1,126	856	156.40
Total	10	4,474	3,880	\$ 642.40

Report of inspection for the month of August, 1887.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
John Behrens	1,125	474	\$ 136.20
J. K. Mason	1,381	549	165.55
S. S. Harris	1,391	775	177.85
F. B. Laird	594	655	92.15
John Blanchard	2,330	423	244.15
M. Stone	996	58	102.50
C. J. Blanchard	1,658	1,063	215.45
Total	9,355	3,067	\$ 1,133.85

Report of inspection for the month of September, 1887.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
John Behrens.....		2,453	214	\$ 256.00
J. K. Mason		3,216	231	333.15
S. S. Harris		2,107	328	227.10
F. R. Laird.....		2,004	616	240.50
John Blanchard.....		3,702	549	397.65
M. Stone.....		901	100	104.10
C. J. Blanchard		2,231	1,199	283.05
Total		16,794	3,137	\$ 1,841.25

Report of inspection for the month of October, 1887.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
John Behrens.....		1,955	269	\$ 208.95
S. S. Harris		3,844	665	417.85
J. K. Mason	19	2,948	272	310.30
F. R. Laird		2,611	752	298.70
John Blanchard.....		3,155	88	317.40
M. Stone.....		1,383	257	151.15
C. J. Blanchard.....		3,250	588	354.40
Total.....	19	19,146	2,841	\$ 2,058.55

Report of inspection for the month of November, 1887.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
John Behrens.....		4,283	98	\$ 433.20
S. S. Harris	4	3,927	916	403.90
J. K. Mason		3,029	117	398.75
F. R. Laird		3,142	320	325.50
John Blanchard.....		3,329	104	338.10
M. Stone.....		1,210	136	127.80
C. J. Blanchard.....		4,112	350	428.70
M. A. Raney		477	69	51.15
Total	4	24,409	1,310	\$ 2,506.80

Report of inspection for the month of December, 1887.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
John Behrens.....		2,963	472	\$ 312.90
S. S. Harris		3,139	82	318.00
J. K. Mason		2,933	76	297.10
F. R. Laird		4,534	182	462.50
John Blanchard.....		4,769	101	471.40
M. Stone.....		2,084	129	214.85
C. J. Blanchard.....		3,017	513	337.50
M. A. Raney		590	74	62.70
Total		20,968	1,537	\$ 2,173.95

Report of inspection for the month of January, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
John Behrens.....	..	2,689	297	999.55
S. S. Harris.....	..	4,394	426	450.70
J. K. Mason.....	..	3,563	212	367.10
F. R. Laird.....	..	3,156	342	332.70
John Blanchard.....	..	1,904	335	208.15
M. Stone.....	..	1,909	231	202.45
C. J. Blanchard.....	60	3,066	253	325.35
Total.....	62	20,874	2,046	\$ 2,195.90

Report of inspection for the month of February, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
John Behrens.....	..	2,856	102	\$ 290.70
S. S. Harris.....	..	4,939	414	514.60
J. K. Mason.....	..	3,976	130	394.10
F. R. Laird.....	..	3,333	537	332.05
John Blanchard.....	12	3,333	539	350.95
M. Stone.....	..	1,315	65	124.75
C. J. Blanchard.....	..	3,089	500	293.90
Total.....	13	20,160	2,277	\$ 2,131.05

Report of inspection for the month of March, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
John Behrens.....	..	1,215	470	\$ 145.00
S. S. Harris.....	..	1,129	1,343	180.05
J. K. Mason.....	..	3,004	672	243.00
F. R. Laird.....	..	675	1,022	118.60
John Blanchard.....	17	2,153	1,209	277.45
M. Stone.....	..	740	834	90.30
C. J. Blanchard.....	15	3,331	786	363.90
Total.....	32	10,237	5,826	\$ 1,518.30

Report of inspection for the month of April, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
J. K. Mason.....	..	603	78	\$ 64.10
John Behrens.....	..	459	165	57.15
B. E. Agard.....	..	502	..	50.20
S. S. Harris.....	..	645	5	64.75
F. R. Laird.....	..	35	..	2.50
M. Stone.....	..	856	471	109.15
C. J. Blanchard.....	..	581	428	79.50
Total.....	..	3,700	1,107	\$ 425.35

Report of inspection for the month of May, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley.....		486	110	\$ 54.10
J. K. Mason.....		716	252	84.50
John Behrens.....		609	365	79.50
B. E. Agard.....		1,519	110	157.40
Geo. L. Stearns.....	4	1,407	200	151.10
F. R. Laird.....		587	149	66.15
M. Stone.....		288	220	39.50
W. H. Lynchard.....		379	40	29.90
M. A. Raney.....		163	137	23.15
J. B. Swinburne.....	28	71	151	16.45
Total.....	82	6,125	1,715	\$ 701.45

Report of inspection for the month of June, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley.....		337	111	\$ 41.35
J. K. Mason.....		710	379	89.95
John Behrens.....		731	387	91.45
B. E. Agard.....		1,069	330	123.40
Geo. L. Stearns.....		826	830	124.10
F. R. Laird.....		870	1,393	151.65
M. Stone.....		415	332	60.60
W. H. Lynchard.....		886	1,007	138.95
M. A. Raney.....		268	347	44.15
J. B. Swinburne.....		435	221	54.55
Total.....		6,557	5,287	\$ 920.05

Report of inspection for the month of July, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley.....		394	662	\$ 72.50
J. K. Mason.....		454	330	61.90
John Behrens.....		1,129	882	157.00
B. E. Agard.....		1,808	550	208.30
Geo. L. Stearns.....		855	1,201	145.35
F. R. Laird.....		578	674	91.50
M. Stone.....		441	1,290	108.60
W. H. Lynchard.....	19	940	1,384	165.10
J. B. Swinburne.....		220	207	32.35
Total.....	19	6,817	7,180	\$ 1,042.60

Report of inspection for the month of August, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley.....		735	607	\$ 103.85
J. K. Mason.....	1	1,796	575	202.45
John Behrens.....		3,240	751	363.05
B. E. Agard.....		2,262	968	274.60
Geo. L. Stearns.....		3,608	1,039	312.75
F. R. Laird.....	55	2,359	1,389	310.85
M. Stone.....		946	100	99.60
W. H. Lynchard.....	27	1,465	1,553	226.85
J. B. Swinburne.....	10	282	317	45.05
Total.....	93	15,633	7,329	\$ 1,939.05

Report of inspection for the month of September, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley .....	..	1,204	975	169.15
J. K. Mason .....	..	1,011	135	107.35
John Behrens .....	..	1,419	477	165.75
B. E. Agard .....	..	5,563	880	600.30
F. R. Laird .....	..	1,148	470	138.80
M. Stone .....	..	613	465	84.55
W. H. Lynchard	50	1,908	1,238	257.70
J. B. Swinburne	15	626	278	78.00
Geo. L. Stearns .....	..	1,934	737	230.25
Total	65	15,426	5,645	\$ 1,831.35

Report of inspection for the month of October, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley .....	..	3,029	..	202.90
J. K. Mason .....	..	2,715	154	250.70
John Behrens .....	..	3,846	530	410.60
B. E. Agard .....	..	4,620	370	486.50
F. R. Laird .....	..	1,513	820	192.30
M. Stone .....	..	1,984	415	219.15
W. H. Lynchard	62	3,138	1,035	371.75
J. B. Swinburne	1	1,467	219	157.75
Geo. L. Stearns .....	..	3,225	732	358.60
Total	63	24,537	4,285	\$ 2,674.35

Report of inspection for the month of November, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley	1,815	444	\$ 203.70
J. K. Mason	1	1,656	425	186.95
John Behrens	2,321	322	243.20
B. E. Agard	2,948	370	313.30
F. R. Laird	1,133	111	118.85
M. Stone	484	100	53.40
W. H. Lynchard	2,738	526	300.10
J. B. Swinburne	1,186	1	118.65
Geo. L. Stearns	2,994	335	316.15
Total	1	17,275	2,534	\$ 1,854.30

Report of inspection for the month of December, 1888.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley .....	..	1,278	191	\$ 137.55
John Behrens .....	..	3,019	304	312.10
F. O. Udall .....	..	6,642	110	669.70
J. K. Mason .....	..	2,197	5	221.05
F. R. Laird	11	333	306	48.60
M. Stone .....	..	1,634	190	168.40
W. H. Lynchard .....	..	3,012	337	321.65
J. B. Swinburne	5	634	222	75.05
Geo. L. Stearns	92	2,862	335	306.15
Total	113	21,552	1,871	\$ 2,260.05

Report of inspection for the month of January, 1889.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley		3,803	303	\$ 295.45
J. K. Mason	2	3,096	121	315.85
John Behrens		5,114	111	516.95
F. O. Udall		5,732	399	593.15
F. R. Laird		1,915	406	211.80
M. Stone		1,259	265	139.15
W. H. Lynchard	4	2,304	521	256.85
Geo. L. Stearns		4,087	461	431.75
J. B. Swinburne		649		64.90
Total	6	26,959	2,587	\$ 2,825.55

Report of inspection for the month of February, 1889.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley		793	385	\$ 98.55
J. K. Mason		784	70	81.90
John Behrens		1,840	276	198.40
F. O. Udall		2,658	924	310.00
M. Stone		594	216	70.20
F. R. Laird		705	111	76.05
W. H. Lynchard		1,377	119	143.65
Geo. L. Stearns		1,381	286	152.40
J. B. Swinburne		713	223	82.40
E. P. Helzer		680	170	76.50
Total		11,511	2,779	\$ 1,290.65

Report of inspection for the month of March, 1889.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley		409	367	\$ 68.25
J. K. Mason	9	1,083	310	124.70
F. O. Udall		2,491	964	317.30
John Behrens		1,433	335	159.95
F. R. Laird		1,075	804	147.70
M. Stone		879	973	146.65
Geo. L. Stearns	101	1,433	514	168.00
E. P. Helzer		582	340	70.20
W. H. Lynchard		1,257	501	150.75
J. B. Swinburne		333		33.30
Total	110	11,255	5,006	\$ 1,386.80

Report of inspection for the month of April, 1889.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley		651	416	\$ 85.90
F. O. Udall	110	1,039	953	102.55
John Behrens		1,217	1,035	174.45
F. R. Laird		625	389	81.95
M. Stone	35	771	603	110.75
J. K. Mason	30	579	111	65.75
E. P. Helzer		656	343	82.70
W. H. Lynchard		613	289	74.70
Geo. L. Stearns		1,433	216	154.10
J. B. Swinburne		150	110	18.50
Total	175	7,707	4,463	\$ 1,011.55

Report of inspection for the month of May, 1889.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley		507	368	\$ 69.10
J. K. Mason		566	433	78.20
F. O. Udall		1,027	832	204.30
John Behrens		1,005	625	131.75
F. R. Laird		762	815	116.95
M. Stone	110	469	599	87.85
E. P. Heizer		526	483	76.75
W. H. Lynchard		880	802	128.10
Geo. L. Stearns		620	819	102.95
J. B. Swinburne		108	325	37.05
Total	110	7,070	6,100	\$ 1,023.00

Report of inspection for the month of June, 1889.

NAME OF INSPECTOR.	No. barrels of oil rejected.	No. barrels of oil approved.	No. barrels of gas-oil rejected for illuminating purposes.	Amount of fees.
Chas. Beardsley		563	321	\$ 67.35
J. K. Mason		873	509	112.75
F. O. Udall		1,713	961	212.35
John Behrens		1,853	305	200.35
M. Stone		842	546	111.15
F. R. Laird		887	389	108.15
W. H. Lynchard		923	921	128.35
E. P. Heizer		446	482	68.70
Geo. L. Stearns		564	970	104.30
J. B. Swinburne		516	296	66.40
H. Keerl		110	83	15.15
Total		9,290	5,683	\$ 1,213.15

OIL INSPECTORS' RULES AND REGULATIONS.

THE INSTRUMENTS.

RULE 1. The instrument to be used in testing oil under the provisions of Chapter 185, Acts of the Twentieth General Assembly, as amended by Chapter 140, Laws of the Twenty-first General Assembly, shall be that made by EIMER & AMEND, New York, and shall have inscribed thereon the words: "Oil Tester, Iowa State Board of Health," and shall be constructed as shown in the following diagram:

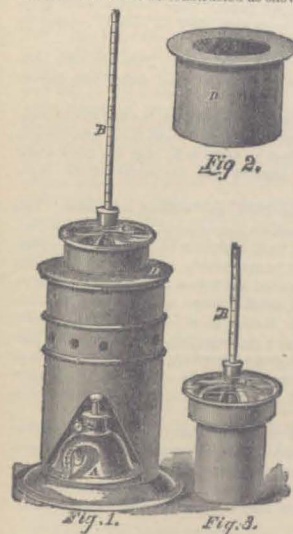


Fig. 1 represents the instrument entire. It consists of a sheet copper stand $8\frac{1}{2}$ inches high, exclusive of the base, and $4\frac{1}{2}$ inches in diameter. On one side is an aperture $8\frac{1}{2}$ inches high, for introducing a small spirit lamp, **A**, or better, a small gas-burner, instead of a lamp, when gas is available.

The water-bath, **Fig. 2**, is also of copper, $4\frac{1}{2}$ inches in height, and four inches in diameter inside, provided with a flanged cover. The opening in the cover $2\frac{1}{2}$ inches in diameter. The flange, which supports the bath in the cylindrical stand, is one fourth inch projection. The capacity of the bath is about 20 fluid ounces, which is indicated by a mark on the inside.

Fig. 3 represents the oil cup, which is also of copper. The section below the flange is $3\frac{1}{2}$ inches high and $2\frac{1}{2}$ inches in diameter. The section below the flange is one inch high and $3\frac{1}{2}$ inches in diameter, and serves as the vapor chamber. A small flange at the upper rim serves to hold the cover, which is of glass, in place.

To prevent reflection from the otherwise bright surface of the metal, the inside is blackened by forming a sulphide of ammonia. The capacity of the oil cup is about

ten fluid ounces, when filled to within one eighth of an inch of the flange, which joins the oil cup and the vapor chamber.

The cover of the oil cup, **C**, is of glass, $3\frac{1}{2}$ inches in diameter; is perforated on one side with a circular opening, which is filled with a cork, through which passes the thermometer, **B**. On the rim is another oval opening three fourths of an inch deep, and the same in width, through which is to be passed the flashing jet in testing. The glass cover is used instead of metal, that the operator may more readily note the exact point at which the flash occurs. A small gas jet, one fourth of an inch in length, is the best for igniting the vapor. Where gas cannot be had, a small waxed linen twine is the best, which can be easily prepared by dipping the twine in melted beeswax.

THE FLASH TEST.

RULE 2. The test shall be made as follows:

Remove the oil cup, and fill the water bath **D** with cold water to the mark on the inside. Place the oil cup in the water bath, and fill it with oil to within one eighth of an inch of the flange. Care must be taken that oil does not flow over the flange. Remove all air bubbles with a piece of dry, soft paper. Place the glass cover **C** on the oil cup and adjust the thermometer so that its bulb shall be entirely covered by the oil.

Fill the lamp with alcohol only, for heating the water bath. Trim the wick carefully, and so adjust the flame that the degree of heating will not exceed two degrees per minute.

When the temperature of the oil has reached 90° Fahrenheit, the test should commence by inserting the torch, which should have a very small flame, into the oval opening in the glass cover, passing it in at such an angle as to have the flame about half between the oil and the cover, and reaching near the center of the vapor chamber.

The motion should be steady and uniform; rapid, and without any pause. This should be repeated at every two degrees rise of the thermometer until 100° is reached, when the lamp must be removed, and the torch applied at each degree of temperature, until 105° is reached. Great care must be exercised to secure accuracy at this point, and to this end the torch should be applied just before the temperature reaches the 105° point. If no flash is shown at this point, replace the lamp and continue the test at each two degrees rise, until the flashing point is reached, which is indicated by the appearance of a slight bluish flame on the surface of the oil. *The lowest point at which the vapor-flame appears*, and a perceptible flash is produced, is to be designated as the flashing point. The temperature of the oil must be noted before the torch is applied. The flame of the torch must not touch the oil. Oil that flashes at 105° , or below that, must be rejected.

As cold oil will expand by heating, care must be taken that it does not rise so as to flow over or on the flange or shoulder of the oil cup. That part of the oil cup comprising the vapor chamber must be dry and entirely free from oil above the flange.

The water bath must be filled with cold water, for each separate test, and the oil cup carefully and thoroughly wiped dry of oil from the previous test.

FOR TESTING THREE HUNDRED DEGREES.

RULE 3. The instrument to be used for testing oils which come under the provisions of section ten of the law, shall consist of the cylinder, shown in **Fig. 1** of the diagram, the copper oil cup, shown in **Fig. 3**, the copper collar **D**, for suspending the oil cup in the cylinder, and an adjustable wire support for suspending the thermometer in the oil.

RULE 4. To ascertain the igniting and burning point, under section ten of the law, the test should be made as follows:

Fill the cup with oil to be tested to within three eighths of an inch of the flange joining the cup and the vapor chamber above. Care must be taken that oil does not flow over the flange, by expansion from heating. Place the cup in the cylinder, covered with the collar, **D**. Adjust the wire support so that the thermometer bulb, when supported thereon, will be just covered by the oil, the bulb also being near the center of the cup. Place the lamp or gas jet under the cup. Adjust the flame so that the degree of heating will not exceed ten degrees each minute until 250 degrees Fahrenheit is reached, when the rate must not exceed five degrees a minute above that point. The torch to be used must be the same as described in Rule 1, for obtaining the flash point. Apply the torch lightly over and above the surface of the oil at each five-degree rise in the temperature, until the oil ignites and burns. The lowest point at which the oil will ignite and burn is to be taken as the burning point, and no oil which burns at a temperature of 300 degrees Fahrenheit must be approved for the purposes set forth in section ten of the law. When approved, the package, cask, barrel or vessel containing the oil from which the oil tested was taken, must be branded, "Approved, above 300 degrees Fire Test," as provided in section one of the law. The actual point at which the oil burns must be branded on the barrel. If it burns at 300 degrees or below that, it must be rejected. In this test the water bath cup and the glass cover are not used, the flame of the lamp being applied direct to the bottom of the oil cup.

GENERAL RULES.

RULE 5. All instruments, testers and thermometers must be submitted to the office of the State Board of Health, to be there approved by the Secretary of the Board.

RULE 6. Inspectors must remove all previous brands of test, such as "150 Fire Test," etc., before affixing his brand on any cask, barrel or package.

RULE 7. The brand to be used by inspectors must not be less than seven inches, outside measurement, with adjustable dates, and for the "Approved" brand, circular in form, with ample margin to protect the barrel or vessel from the stencil brush, and must contain the word "Iowa," in addition to date and signature.

RULE 8. The brand for rejected oil must be square in form, bearing the name of the inspector, without date, and not less than seven inches, outside measurement; and also contain the word "Iowa."

RULE 13. Where oil of different grades, or standards, is placed in receiving or storage tanks, an inspection must be made, and the actual standard obtained of oil from such tanks, after it is put into barrels for sale and use. There must be no average test, by taking an average of the different qualities or standards of oil before it is placed in such tanks. Where a number of barrels are filled consecutively from a tank, an inspection of one barrel would suffice for that particular lot of barrels, *provided*, no oil has been added to the tank during the process of filling the barrels. The barreling, testing and branding must constitute one transaction. There must be no lapse of time therein.

RULE 14. Oil received from jobbers is frequently of various standards, and the actual standard cannot be ascertained except by a separate test of each barrel. The statute plainly requires all oil to be inspected when in barrels, and that each barrel, cask, tank or vessel shall be inspected. There must be no average or cumulative tests. For instance: a sample of oil taken from five barrels of 102 degree oil and five barrels of 105 degree oil, would give a mixture that would, when tested, cause the whole ten barrels to be rejected, whereas five barrels, separately tested, would have to be approved.

RULE 15. The practice of jobbers in delivering oil to retail dealers without inspection is a direct violation of law. The delivery constitutes *prima facie* evidence of sale. A retail dealer receiving a lot of uninspected oil cannot justify himself for selling such oil on the ground that the jobber is responsible to the State for the violation of law. He should immediately notify the Inspector that the oil is in his possession. Inspectors must exercise diligence to arraign offenders and stop the practice. They must, with strict impartiality, insist upon obedience to law in their respective districts.

RULE 16. Oil in transit must not be inspected outside of the district to which it is sent.

RULE 17. No deputy shall inspect oil that has been inspected by another deputy, unless so directed by the State Inspector.

RULE 18. In case of dispute between an inspector and a dealer as to a test of oil, the question, together with a sample of the oil in dispute, must be sent to the office of the State Board of Health for adjudication.

RULE 19. Inspectors must regard their duties as inspectors paramount to all other duties, and upon notification, must perform them without delay.

RULE 20. If accidents occur from the use of illuminating oil, the inspector of the district wherein they occur, should ascertain all the facts and circumstances, and report them to the State Inspector, or to the State Board of Health, and if possible, procure and send by express to the State Board of Health, a sample of the oil causing the accident.

STATE OF IOWA.

CHAPTER 185—ACTS OF TWENTIETH GENERAL ASSEMBLY.*

AN ACT to provide for the inspection and to regulate the sale of petroleum and its products, and to repeal Chapter 173 of the Acts of the Seventeenth General Assembly, and Section 3991 of the Code, as amended by Chapter 149, Laws of the Twenty-first General Assembly.

Be it enacted by the General Assembly of the State of Iowa:

SECTION 1. That the Governor, by and with the advice and consent of the Senate, shall appoint a suitable person, resident of the State, who is not interested in manufacturing, dealing in, or vending any illuminating oils manufactured from petroleum, as State Inspector of Oils, whose term of office shall commence on the first day of April of each even numbered-year, and continue for the term of two years and until his successor is appointed and qualified. It shall be the duty of such State Inspector, by himself or his deputies, hereinafter provided for, to examine and test the quality of all such oils offered for sale by any manufacturer, vendor, or dealer; and if upon such testing or examination the oils shall meet the requirements hereafter specified, he shall fix his brand or device "*Approved, flash test—degrees*" (inserting the number of degrees), with the date over his official signature, upon the package, barrel or cask containing the same. And it shall be lawful for the State Inspector, or his deputies, to enter into or upon the premises of any manufacturer, vendor or dealer of said oils, and if they shall find or discover any kerosene oil, or any other product of petroleum kept for illuminating purposes, that has not been inspected and branded according to the provisions of this act, they shall proceed to inspect and brand the same. It shall be lawful for any manufacturer, vendor or dealer to sell the oil so tested and approved as an illuminator: but if the oil or other product of petroleum so tested shall not meet said requirements, he shall mark, in plain letters on said package, barrel or cask, over his official signature, the words: "*Rejected for illuminating purposes, flash test—degrees*" (inserting the number of degrees). And it shall be unlawful for the owner thereof to sell such oil or other product of petroleum for illuminating purposes. And if any person shall sell or offer for sale any of such rejected oil or other product of petroleum for such purpose, he shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be subject to a penalty not exceeding three hundred dollars.

SEC. 2. The State Inspector provided for in this act is authorized to appoint a suitable number of deputies, which deputies are empowered to perform the duties of inspection, and shall be liable to the same penalties as the State Inspector; *provided*,

that the State Inspector may remove any of said deputies for reasonable cause. It shall be the duty of the Inspector and his deputies to provide themselves at their own expense with the necessary instruments and apparatus for testing the quality of said illuminating oils, and when called upon for that purpose to promptly inspect all oils heretofore mentioned, and to reject for illuminating purposes all oils which will emit a combustible vapor at a temperature of one hundred and five degrees standard Fahrenheit thermometer, closed test, provided the quantity of oil used in the flash test shall not be less than one pint. The oil tester adopted and recommended by the Iowa State Board of Health shall be used by the Inspector and his deputies in all tests made by them. And said board shall prepare rules and regulations as to the manner of inspection, which rules and regulations shall be in effect and binding upon the Inspector and deputies appointed under this act.

SEC. 3. The State Inspector before he enters upon the discharge of the duties of his office shall take the oath or affirmation provided by law, and file the same in the office of the Secretary of State, and execute a bond to the State of Iowa in a penal sum not less than twenty thousand dollars with sureties thereto, to be approved by the Secretary of State, who shall justify as provided by law, and in addition thereto state under oath that they are not interested, directly or indirectly, in manufacturing, dealing in, or vending any illuminating oils manufactured from petroleum; such bond to be conditioned for the faithful performance of the duties imposed upon him by this act, and which shall be for the use of all persons aggrieved by the acts of said Inspector, or his deputies, and the same shall be filed with the Secretary of State. Every deputy Inspector shall take a like oath or affirmation prescribed herein for the State Inspector, and execute to the State a bond in the penal sum of \$5,000 with like conditions and for like purposes, and with sureties thereto who shall justify and have like qualifications as herein provided for the sureties for State Inspector, and such sureties shall be approved by the clerk of the District Court of the county in which such deputy Inspector resides, and said bond and oath shall be filed in the office of such clerk, and such deputy Inspector shall, before entering upon the discharge of his duties, forward said clerk's certificate of such filing to the Secretary of State to be placed on file.

SEC. 4. All inspections herein provided for shall be made within the State of Iowa, and the Inspector and deputy Inspectors shall be entitled to demand and receive from the owner or party calling on him or for whom he shall perform the inspection, the sum of ten cents per barrel, and for the purposes of this act, a barrel shall be deemed fifty-five gallons.

SEC. 5. It shall be the duty of the State Inspector and every deputy Inspector to keep a true and accurate record of all oils so inspected and branded by him, which record shall state the date of inspection, the number of gallons rejected, the number of gallons approved, the number of gallons inspected, the number and kind of barrels, casks or packages, the name of the person for whom inspected, and the amount of money received for such inspection, and such record shall be open to the inspection of all persons interested; and every deputy Inspector shall return a true copy of such record at the beginning of each month to the State Inspector. It shall be the duty of the State Inspector to make and deliver to the State Auditor for the fiscal period ending the 30th day of June, 1885, and every two years thereafter a report of the inspections made by himself and deputies for such period, containing the information and items required in this act to be made of record, and the same shall be laid before the General Assembly.

SEC. 6. If any person, or persons, whether manufacturer, vendee [er] or dealer shall sell or attempt to sell to any person in this State any illuminating oil, the product

of petroleum, whether manufactured in this State or not, which has not been inspected as provided in this act, he shall be deemed guilty of a misdemeanor and subject to penalty in any sum not exceeding three hundred dollars, and if any manufacturer, vender or dealer in either or any of said illuminating oils shall falsely brand the package, cask or barrel containing the same, as provided in this act, or shall refill packages, casks or barrels having the inspector's brand thereon, without erasing such brand, having the oil inspected, and packages, casks or barrels re-branded, he shall be deemed guilty of a misdemeanor, and shall be subject to a penalty not exceeding three hundred dollars, or be imprisoned in the county jail not exceeding six months, or both, in the discretion of the court.

SEC. 7. Any person selling or dealing in illuminating oils produced from petroleum who shall purchase, sell or dispose of any empty kerosene barrel, cask or package, before thoroughly canceling, removing or effacing the inspection brand on the same, shall be guilty of a misdemeanor, and, upon conviction thereof, shall pay a fine of one dollar for each barrel, cask or package thus sold or disposed of; and any person who shall knowingly use any illuminating oil, the product of petroleum, for illuminating purposes, before the same has been approved by the State Inspector of Oils, or his deputy, shall be guilty of a misdemeanor, and, upon conviction thereof, shall pay a fine in any sum not exceeding ten dollars for each offense.

SEC. 8. No person shall adulterate with paraffine or other substance, for the purpose of sale or for use, any coal or kerosene oils, to be used for lights, in such a manner as to render them dangerous to use; nor shall any person knowingly sell or offer for sale, or knowingly use any coal or kerosene oil, or any product of petroleum, for illuminating purposes, which, by reason of being adulterated, or for any other reason will emit a combustible vapor at a temperature less than 105 degrees of standard Fahrenheit's thermometer, tested as provided in this act; provided, that the gas or vapor from said oils may be used for illuminating purposes when the oils from which said gas or vapor is generated are contained in closed reservoirs outside the building illuminated or lighted by said gas. Any person violating the provisions of this section shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be punished by imprisonment in the county jail not more than one year, or by fine not exceeding \$500, or by both such fine and imprisonment, in the discretion of the court; provided, further, that nothing in this act shall be so construed as to prevent the sale for and use in street lamps of lighter products of petroleum, such as gasoline, benzine, benzole, naphtha, or to prevent the use of machines or generators constructed on the principle of the "Davy safety lamp."

SEC. 9. It shall be the duty of the State Inspector, and of any deputy Inspector, who shall know of the violation of any of the provisions of this act, to prosecute before a court of competent jurisdiction any person so offending. And in case the State Inspector, or any deputy Inspector, having knowledge of the violation of the provisions of this act, shall neglect to prosecute as required herein, he shall be deemed guilty of a misdemeanor and punished accordingly, and, upon conviction, shall be removed from office.

SEC. 10. No oil, nor fluid, whether composed wholly or in part of petroleum or its products, or of other substance or material, which will ignite and burn at a temperature of 300 degrees of the standard Fahrenheit thermometer, open test, shall be carried as freight, nor shall the same be burned in any lamp, or vessel, or stationary fixture of any kind, in any passenger, baggage, mail or express car on any railroad, nor on any passenger boat moved by steam power, nor in any street railway car, stage coach, omnibus or other public conveyance in which passengers are carried

within this State. Any violation of the provisions of this act shall be deemed a misdemeanor, and the offender shall, on conviction thereof, be fined not less than one hundred dollars, nor more than one thousand dollars, and shall be liable for all damages resulting therefrom.

SEC. 11. If any inspector or deputy shall falsely brand or mark any barrel, cask or package, or be guilty of any fraud, deceit, misconduct or culpable negligence in the discharge of his official duties, or shall deal in, or have any pecuniary interest, directly or indirectly, in any oils or fluids used or sold for illuminating purposes while holding such office, he shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not exceeding one hundred dollars, or imprisoned not exceeding thirty days, and be liable to the party injured for all damages resulting therefrom.

SEC. 12. It shall be the duty of the Governor to remove from office, and to appoint a competent person in the place of, any inspector who is unfaithful in the duty of his office.

SEC. 13. Any person who shall knowingly or negligently sell or cause to be sold any of the oils mentioned in this act for illuminating purposes, except for the purposes herein authorized, which are below the standard and test required in this act, shall be liable to any one purchasing said oil, or to any person injured thereby for all damages resulting from any explosion of said oil.

SEC. 14. Within sixty days after the passage of this act the State Board of Health shall make and provide the necessary rules and regulations for the inspection of illuminating oil, and for the government of the inspector and deputy inspectors provided for in this act, and as contemplated by the provisions of this act, which shall be approved by the Governor of the State, and when so approved shall be furnished by said Board to the inspector and his deputies. When written complaint shall be presented to the governor charging the inspector or any deputy with a failure or refusal to comply with or carry out said rules and regulations, or any provision of this act, he shall investigate such charge, and if well founded and sustained, the person against whom said charges were made shall be removed from office by the Governor without delay. Said rules and regulations may be changed or modified by said Board, subject to approval of the Governor, not oftener than once a year.

SEC. 15. Chapter 173 of the acts of the Seventeenth General Assembly, and section 3901 of the Code, are hereby repealed.

SEVENTH ANNUAL REPORT
OF THE
Board of Dental Examiners
OF THE
STATE OF IOWA,
FOR THE
YEAR ENDING NOVEMBER 15, 1889.

S. A. GARBER, D. D. S., SECRETARY,
TIPTON.

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

DES MOINES:
G. H. RAGSDALE, STATE PRINTER.
1889.

SECRETARY'S REPORT.

IOWA STATE BOARD OF DENTAL EXAMINERS, }
SECRETARY'S OFFICE, }
TIPTON, November 15, 1889. }

To his Excellency, WM. LARRABEE, Governor of Iowa:

SIR—In accordance with the provisions of section 9, chapter 36, laws of the Nineteenth General Assembly, State of Iowa, I have the honor of submitting this, the seventh annual report of the Iowa State Board of Dental Examiners.

Since the annual report for the year 1888 was rendered, the seventh annual meeting of the board was held at Des Moines, Iowa, commencing Tuesday, May 7th, and continued its sessions until Friday, May 11th, the annual meeting of the Iowa State Dental Society being in session at the same time and place.

The members present were Drs. J. Hardman, Muscatine; J. T. Abbott, Manchester; E. E. Hughes, Des Moines; E. D. Brower, Le Mars; S. A. Garber, Tipton. At this meeting six (6) applications for license upon examination were received. All of these obtained the required seventy-five per cent and was duly licensed to practice dentistry in Iowa.

Licenses have been issued since the last report, November 15, 1888, to twenty (20) graduates of reputable dental colleges. During the year six (6) permanent licenses have been granted to non graduates, who passed the required examination before a full board. There are at this time eight (8) temporary licenses in force. These permits expire May 1, 1890.

The total number of registered and licensed dentists as shown by the board register, is five hundred and forty-seven (547), an addition since November 15, 1888, of twenty-six (26), twenty (20) of whom are graduates, who were licensed on proof of their diplomas, and six (6) upon passing the required examination.

It affords us much encouragement to further inform you that this year shows a largely increased number of Iowa students in attendance upon lectures, in the several dental colleges in this country.

At this session there are over one hundred (100) students attending lectures in the dental department of the State University at Iowa City. The number in attendance in this department during the session of 1888-9 was seventy-five (75), thus showing an increased attendance this year of over twenty-five (25) per cent.

We cannot refrain from again calling your Excellency's attention to the fact, of the urgent need of an amendment to our present dental law, whereby the fee for licenses granted on examination, should be increased from two, as now, to not less than five dollars, and a corresponding increase for licenses issued to the holders of valid diplomas. This would be in accordance with the fees, as required in all the newer enactments of other States, and would give the board funds for the prosecution of their work, with much greater efficiency than is now possible, with the limited amount at their command.

Section 9 of the dental law allows members of this board as compensation, the sum of five dollars for each day actually engaged in the duties of their office—and it requires four entire days to perform the work of each annual meeting. Besides this much additional time is devoted by the several members each year, to the examination of applicants for temporary license. Therefore, practically, this board performs its official duties without complaint or compensation.

The following are the receipts and expenditures of the board since the last report, November 15, 1888:

RECEIPTS.

On hand as per Secretary's report, Nov. 15, 1888.....	\$ 26.69
Received for examinations and licenses to date.....	134.00
Total.....	\$ 160.69

EXPENDITURES.

Stationery, printing, prosecutions and incidentals, Secretary's office for the year.....	\$ 149.10
Balance on hand Nov. 15, 1889.....	\$ 11.59

All of which is respectfully submitted,

S. A. GARBER, D. D. S.,
Secretary.

SIXTH BIENNIAL REPORT

OF THE

CENTRAL STATION

OF THE

Iowa Weather Service

GUSTAVUS HINRICHS,

DIRECTOR.

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

DES MOINES:
G. H. RAGSDALE, STATE PRINTER.
1889.