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July 8. 1853  
Made  
32-1

**BY AUTHORITY.]**  
**AN ORDINANCE FOR THE ORGANIZATION OF A WATER DEPARTMENT OF THE CITY OF BALTIMORE:**

Section 1. *And be it enacted and ordained by the Mayor and City Council of Baltimore,* That the Water Board of the City of Baltimore shall consist of three Commissioners; the first of whom shall be President, and the second First Assistant Commissioner, and the third Second Assistant Commissioner.

Section 2. *And be it enacted and ordained,* That the members of the Baltimore Water Board shall be appointed as other city officers are appointed, without regard to party or personal favor, and on account of their qualification and reputation only.

Section 3. *And be it enacted and ordained,* That in case of the disability of the President of the Board, the First Assistant Commissioner, and in case of his disability, the Second Assistant Commissioner shall exercise the duties of the office of president, during the continuance of such disability.

Section 4. *And be it enacted and ordained,* That the term of office of said Commissioners shall be as follows: The President shall be continued in office from the date of his appointment until the first of March, 1856; the First Assistant Commissioner from the date of his appointment until the first of March, 1857; and the Second Assistant Commissioner from the date of his appointment until the first of March, 1858; and from and after the expiration of the terms of office as above mentioned, the term of office of the several Commissioners hereafter appointed shall be three years from the date of their appointment.

Section 5. *And be it enacted and ordained,* That any vacancy of said offices occurring whilst the City Council is not in session, shall be filled by the Mayor until the meeting of said Council, and the Mayor shall have power, during the recess of the Council, to suspend in good and sufficient cause, any one or more of the Commissioners or officers, and shall report the facts to the first meeting of the Council.

Section 6. *And be it enacted and ordained,* That the salary of the President shall be five hundred dollars per annum; (\$500), that of the Assistant Commissioners, two hundred each (\$200) per annum, payable quarterly.

Section 7. *And be it enacted and ordained,* That the Water Board shall receive, and take charge of all the books, records, original accounts, plats and muniments of the City pertaining to the property purchased from the Baltimore Water Company, and shall be charged with the preservation of said Water Works, with the devising and executing of such measures as may be necessary to preserve the quantity of water and keep it pure; with the management, preservation and repair of the dams, reservoirs, mains, pipe-yard, and property of every description belonging to the Water Works; and shall have charge of the purchase and laying down of such mains and pipes as the City Council may authorize.

Section 8. *And be it enacted and ordained,* That the Water Board shall have power to employ foremen, mechanics, keepers, watchmen, laborers and other persons, whom they may judge to be necessary for the performance of their duties under this ordinance, and shall require bonds and securities in such cases as they may deem necessary.

Section 9. *And be it enacted and ordained,* That a Treasurer, who shall likewise act as Secretary, and whose duty it shall be to receive and be accountable for the income from the Water Rents, and a Book-keeper and two Collectors shall be appointed by the Mayor and City Council. The salary of the Secretary and Treasurer shall be one thousand dollars (\$1,000) of the Book-keeper, eight hundred dollars (\$800) and of the two Collectors, eight hundred dollars (\$800) each. Their terms of office shall be three years after the first appointment, which shall be as follows:—the Secretary and Treasurer's first term shall be until the first day of March, 1854; that of the Book-keeper and Collector for the Western District until the first day of March, 1857; and that of the Collector for the Eastern District until the first day of March, 1858, unless sooner discharged. All of said officers shall be subject to the orders of the President of the Board, and may be suspended by the Mayor for cause, until the decisions of the City Council is obtained.

Section 10. *And be it enacted and ordained,* That the said Commissioners shall each, before entering upon the duties of their several offices, execute a stamped bond, with such securities as the Mayor and President of both Branches of the City Council shall deem sufficient, to the corporation in the penal sum of fifteen thousand dollars (\$15,000) and with the condition that they will faithfully and honestly execute the trusts reposed in them; and said Treasurer shall execute a bond as aforesaid, and with the condition aforesaid, in the penal sum of ten thousand dollars (\$10,000) and said Collectors shall each execute a bond as aforesaid, with the condition aforesaid, in the penal sum of five thousand dollars (\$5,000), subject to the approval of the Mayor and President of both Branches of the City Council, and said bonds shall be deposited with the Register. No security which shall be given by any incumbent of any office in said Water Department shall be deemed cancelled or lost for want of a renewal of a re-appointment.

Section 11. *And be it enacted and ordained,* That the President of the Board shall have the general management of business entrusted to the Department, and shall order and direct the collection of the rents and the business of the office. He shall be more especially responsible for the supply of water, and the good order and safety of all the Works, from the supply dams to the City inclusive; for the exactness and durability of the daily work to be performed at the works; for the supply of material in the pipe yard; to prevent any casualty, and for the fidelity, care and attention of all persons employed by the Department in watching the Works, and in making constructions and repairs.

Section 12. *And be it enacted and ordained,* That the said Collectors shall pay over, daily, all the moneys received by them during the day to the Treasurer, and said Treasurer shall deposit his receipts of money daily with the Register of the City to the credit of the said Water Department. At the same time, the returns of the weekly receipts, made out by the Treasurer and sworn to by him, (or by the first clerk in the absence of the Treasurer from sickness,) shall be deposited with the Mayor, who shall give a receipt on the duplicate return, provided the payment made to the Register.

Section 13. *And be it enacted and ordained,* That all bills shall be examined and passed on by the Water Board, and the Register of the city shall pay the requisitions of the Board, for the salaries of the officers and men of the department, whether appointed by the City Council under this ordinance, or by the Water Board; and for the blank books, paper and contingencies of the office. The requisitions made by the Board for repairs, laying of mains and pipes, and new works, shall be paid by the Register, not exceeding the amount appropriated by the City Council for each respectively.

Section 14. *And be it enacted and ordained,* That the annual report of the Water Department shall be made on or before the first day of February in each year. It shall contain the statistics of the department, its receipts and expenditures of money in detail; the history of leading events and such opinions and recommendations as may be necessary, relating to the conditions and improvements of the works. Quarterly reports shall also be made, containing such information as the Water Board may have in their possession relative to the Water Department. All reports herein before mentioned shall be made to the Mayor and City Council.

Section 15. *And be it enacted and ordained,* That on the first Monday in February, in every year, the Water Board shall report to the Mayor and City Council a working plan for the ensuing year, under the several heads of repairs, purchase and laying of mains and pipes, and new work, with an estimate of the quantity of work under each head of expenditure which it is proposed to undertake, and which can be beneficially accomplished; and a statement of the cost of each, together with the amount of salaries and contingencies to be paid in the office, and exhibiting a total of the expenditures contemplated to be made during the ensuing twelve months, commencing on the first day of January.

Section 16. *And be it enacted and ordained,* That the provisions which the City Council may deem it necessary to make, for the preservation and repair of the work, shall be applied to those objects alone, and those which are made for the extension of mains and pipes, and for any new work, shall not be exceeded by the expenditures for those purposes during the year in which they are voted, unless on some urgent necessity, and by ordinance of the City Council.

Section 17. *And be it enacted and ordained,* That the Water Board shall have power to make all contracts for material and work, which shall be printed or in writing, when the amount is important, or for new work, and verbally when for small or customary repairs.

Section 18. *And be it enacted and ordained,* That public notice shall be given, in two daily papers having the largest circulation, of the time and place at which sealed proposals will be received for entering into contracts.

Section 19. *And be it enacted and ordained,* That the Water Board shall require security for the performance of important contracts, and whenever they deem it necessary.

Section 20. *And be it enacted and ordained,* That no more than one proposition shall be received from any one person for the same contract, and all the propositions of the person offering more than one shall be rejected.

Section 21. *And be it enacted and ordained,* That all sealed proposals for contracts shall be for a sum certain as to the price to be paid or received, and no proposition which is not thus definite or certain, or which contains any alternative condition or limitation as to price, shall be received or acted on.

Section 22. *And be it enacted and ordained,* That it shall be the duty of the Joint Water Committee of the City Council to inspect the works twice a year in their extent and details, and in the most thorough and complete manner, and to make report thereof to the City Council.

Section 23. *And be it enacted and ordained,* That they shall also, immediately after each inspection of the Works, appoint a committee of three of their body to search and examine all the books, accounts and vouchers of the Department, and the receipts of the water rents, and for connections with sewers, and make report thereof to the City Council.

Section 24. *And be it enacted and ordained,* That the Water Rates shall be the same as those charged by the Baltimore Water Company, until the first day of May, 1855.

Section 25. *And be it enacted and ordained,* That the Water Board have and keep all movable property in their charge insured.

SAMUEL G. SPICER,  
 President of the First Branch.  
 JAMES ARMITAGE,  
 President of the Second Branch.  
 SAMUEL HINKS,  
 Mayor.

Approved,  
 JAS M & THSW

**WATER RENTS - DEPARTMENT OF WATER,** S. W. corner of FIFTH and CHESNUT Streets—January 4, 1855.—By a Supplement to an Ordinance organizing the "Department for Supplying the City with Water," it is provided, That all Water Rents shall be payable to the Register of Water Rents, at his office, annually, in advance, on the Second Monday in January; and upon all Water Rents unpaid upon the first day of April, in any year, there shall be charged the sum of five per centum; and all rents unpaid on the first day of July, in any year, there shall be charged an additional sum of ten per centum; and if any such rent, with the 15 per centum charge, shall remain unpaid on the first day of September, in any year, the ferrules of all such delinquent water tenants shall be detached and suits instituted for the recovery of such rent, and all premises in arrears will be deprived of the water until the said arrears are paid, and the sum of two dollars incurred for the expense of cutting off.

In accordance and in compliance with the provisions of the said Ordinance, notice is hereby given to the Water Rent payers of the city of Philadelphia, that the Water Rents for the year 1855, will be received at the Office of the "Department for Supplying the City with Water," (late City Treasurer's Office,) S. W. corner of FIFTH and CHESNUT Streets, and after MONDAY, the 8th inst. Office hours, from 9 o'clock, A. M. until 3 o'clock, P. M.

dell-618 GEORGE W. MOHMAN, Register.

**32-4**  
**A VALUABLE TABLE.**

The State Superintendent of Weights and Measures, of New York, has compiled the following tables which will be found exceedingly useful to those who will take the trouble to preserve them. The measurements are internal and intended to be even.

A box 30 inches long, 22 2-5 inches wide, and 10 inches deep will contain a barrel, 5 bushels.

A box 24 inches long, 16 inches wide, and 14 inches deep, will contain half a barrel, 2½ bushels.

A box 21 inches long, 12 4-5 inches wide, and 8 inches deep, will contain 1 bushel.

A box 12 inches long, 11 1-5 inches wide, and 8 inches deep, will contain half a bushel.

A box 12 4-5 inches long 7 inches wide, and 6 inches deep, will contain one p. k.

A box 8 inches long 8 inches wide, and 4 1-5 inches deep, will contain one gallon.

A box 7 inches long, 4 4-5 inches wide, and 4 inches deep, will contain half a gallon.

A box 4 1-5 inches long, 4 inches wide, and 4 inches deep, will contain one quart.

**THE DEBT OF GREAT BRITAIN.**

The Public debt of Great Britain at the peace of 1815 was £864,800,000, and had decreased in January, 1854, to £770,923,000. The total debt at 3 per cent, was £508,000,000; at 3½ per cent, £218,000,000; and the debt of Ireland, £39,000,000; miscellaneous, £5,923,000. Total, £770,923,000; with an annual charge of about £27,800,000.

**THE DEBT OF FRANCE.**

The public debt of France is much smaller than that of England, but her credit is no better if as good. Her debt consists in Rentes at 3, 4, and 4½ per cent, amounting in January, 1853, to 5,576,952,000 francs, or £223,078,109. For the last fourteen years there have been very extraordinary deficits in the French revenues; in 1847 the deficit amounted to the enormous sum of 287 millions of francs. During this period of fourteen years, the year 1852 alone shows an excess of revenue over expenditures. New and large loans of the present year of course have added to the growth of the debt of the country.

**SCIENCE, ART AND DISCOVERY.**

**STEAM AS AN INDUSTRIAL AGENT.**—Mr. William Fairbairn, whose great services in developing mechanical science can never be overlooked or forgotten in any quarter of the world where mechanical talent possesses rank at all, has just given one more proof of his attention to the exigencies of the times, by delivering two elaborate lectures at the Manchester Mechanics' Institution, on "Steam, its Properties and Application to the Useful and Industrial Arts." In the great centre of steam power, such a subject, commented upon by such an authority, and coming, too, in the wake of the movement there making to secure a better system of steam superintendence, was certain of meeting with more than ordinary attention; and we are glad to find that the lecturer's efforts were duly appreciated by the large audiences assembled to meet him. In that portion of his discourse which related to boilers, he stated that the cylindrical or spherical was the most eligible and the strongest form in which iron plates would resist internal pressure. The deduction for loss of strength, on account of riveted joints, and the position of the plates, was about 30 per cent, for the double riveted joints, and 44 per cent, for the single ones; the strengths (calling the plates 100) being in the ratio of 100, 70, and 66. He found that 34,000 lbs. to the square inch was the ultimate strength of boilers having their joints crossed and soundly riveted. Flat surfaces, frequently essential, were not so objectionable with respect to strength as they appeared to be at first sight, but when properly stayed, were the strongest part of the construction. This was proved by the result of experiments made on the occasion of the bursting of a boiler at Longsight. Two thin boxes, 22 inches square and 3 inches deep, were constructed. One corresponded in every respect to the sides of the fire-box of the exploded boiler, the stays being in squares, 5 inches asunder, and the side containing 18 squares of 16 inches area. The other contained 25 squares of 16 inches area. The stays being 4 inches asunder. One side of both boxes was a copper plate ¼ inch thick; and the other side of both an iron plate three-eighths inch thick. To these the same valve, lever, and weight were attached, and the pumps of an hydraulic press applied. That divided into squares of 25 inches area, swelled .03 inch with the eighth experiment, at a pressure of 455 lbs. to the square inch. At the nineteenth experiment, with a pressure of 785 lbs. to the square inch, the sides swelled .08-inch; and at a pressure of 815 lbs. the box burst by the drawing of the head of one of the stays through the copper, which, from its ductility, offered less resistance to pressure in that part where the stay was inserted. The tenth experiment, with the other box of 16 inch areas, resulted in a swelling of .01-inch, the pressure being 515 lbs. to the square inch. At 935 lbs. the swelling was .08-inch, and from that point up to 1365 lbs. the bulging was inappreciable. With the forty-seventh experiment, at a pressure of 1625 lbs., one of the stays was drawn through the iron plate, after sustaining the pressure upwards of 14 minutes; the swelling at 1595 lbs. having been .34-inch. The first series of experiments proved the superior strength of the flat surfaces of a locomotive fire-box, as compared with the top or even the cylindrical part of the boiler. The latter evidenced an enormous resisting power, much greater than could be attained in any other part of the boiler, however good the construction; and they showed that the weakest part of the box was not in the copper but in the iron plates, which gave way by stripping or tearing asunder the threads or screws in part of the iron plate. According to the mathematical theory, the strength of the second plate would have been 1373 lbs.; but it sustained 1625 lbs., showing an excess of one-fourth above that indicated by the law, and that strength decreased in a higher ratio than the increase of space between the stays. The experiments show a close analogy as respects the strengths of the stays when screwed into the plates, whether of copper or iron; and riveting added nearly 14 per cent. to the strength which the simple screw afforded. These experiments were conducted at a temperature not exceeding 50 degrees Fahrenheit. His experiments on the effects of temperature on cast iron, did not indicate much loss of strength up to a temperature of 600 degrees; and he concluded that the resisting stays and plates of locomotive boilers were not seriously affected by the increased temperature to which they were subjected in a regular course of working. At the termination of the second lecture, Messrs. E. T. Bellhouse, Fenton, and Kay, severally explained a set of models and drawings of safety valves. Mr. Bellhouse directed the attention of the audience to Cowburn's "oscillating safety valve," as illustrated by us last month; he also explained some diagrams of vacuum and float valves, the joint invention of himself and Mr. Cowburn. Mr. Fenton's valve was shown to be composed of two globe valves under the same lever; at one end of the lever is an adjustable spiral spring, which when set, can be covered up and locked, so as not to be interfered with; the other end of the lever has an extraordinary spring balance. The peculiarity of this valve is, that if a greater weight be put on the exposed end of the lever, the one ball valve becomes the fulcrum, and causes the other valve to be raised, and allows of the exit of steam at a lower pressure than the spiral spring is set to. Mr. Kay's valve is on the piston principle, so arranged as to afford a large area for the emission of steam.—From the Lond. Pract. Mechanics' Jour., April, 1855.

**AMERICAN ACADEMY OF MUSIC.**  
**TO ARCHITECTS.**—At the request of Architects,  
the time for the receipt of competition designs for the  
Opera House to be erected at Philadelphia, has been ex-  
tended until the fifteenth day of December, 1854.  
By order of the Building Committee.  
oc23 3t:tf 32-7 SAMUEL BRANSON,  
Secretary.

**AREA OF STATES AND TERRITORIES.**

According to the Census Report, the area of the United States and Territories is 2,936,166 square miles. The following table, taken from that document, but transposed so as to give each its proper rank, shows the area of each State and Territory.

State or Territory	Square Miles	State or Territory	Square Miles
Nebraska Ter.	335,822	North Carolina	50,704
Utah Territory	269,170	Mississippi	47,156
Texas	237,504	New York	47,000
New Mexico Ter'y.	207,007	Pennsylvania	45,000
Oregon Territory	185,031	Tennessee	43,000
Minnesota Ter'y.	166,025	Louisiana	41,355
California	155,980	O. io.	39,954
Washington Ter'y.	123,022	Kentucky	37,680
Kansas	14,798	Indiana	33,809
Indian Ter. (Kansas)	71,127	Maine	31,766
Missouri	67,380	South Carolina	29,385
Virginia	61,354	Maryland	11,124
Florida	59,263	Vermont	10,222
Georgia	58,000	New Hampshire	9,280
Michigan	56,243	New Jersey	8,310
Illinois	55,405	Massachusetts	7,900
Wisconsin	53,924	Connecticut	4,674
Arkansas	52,198	Delaware	2,120
Iowa	50,914	Rhode Island	1,306
Alabama	50,722	District of Columbia	60

The Nebraska Territory is large enough to cut up into seven States of the size of New York, and leave a surplus of territory large enough for a State the size of Connecticut. Kansas Territory has an area sufficient to make two States of the size of Ohio and one of the size of Indiana. Texas will make four States of the size of Alabama and one of the size of Indiana; and California has a sufficient area to convert into sixteen States of the size of New Hampshire, and leave a surplus to make one about the size of Massachusetts.

**THE DEBT OF THE UNITED STATES.**

The public debt of the United States outstanding on the 20th of November, was as follows:

Loans of 1842	\$4,823,170 81
" " 1843	2,400 00
" " 1846	2,268,013 25
" " 1847	15,710,500 00
" " 1848	12,576,591 80
Texas indemnity	4,364,000 00
" unissued	5,000,000 09
Old funded and unfunded debt	114,118 54
Treasury notes	113,061 64
Corporate cities' debt	3,600,000 00
<b>Total</b>	<b>\$41,975,456 05</b>

Of this, \$5,000,000 is not issued.

32-6 For the Pennsylvania Inquirer  
**The Opera House.**

DEAR SIR:—Some time since I found in your paper a copy of the Circular of the Building Committee of the new Opera House, addressed to architects, with a partial descriptions of what they desired to be done. When I read the Circular, I could not help making the following observations and remarks:—

1. As the lot on which the building is to be erected, is not of sufficient depth, it will be necessary to have four instead of three rows of boxes, if being otherwise impossible to seat 4000 persons.

2. It is necessary to know, whether the Theatre is to be arranged for summer and winter performances, or the latter only?

3. It is very essential, nay, necessary, that the street on the south of the Opera House should be at least thirty feet wide—for if only fifteen feet wide, as proposed, it would not only prove insufficient for the exit and entrance of the spectators, but a nuisance, and would make it a very warm resort in Summer.

4. Whether closed seats are desired, and to what extent, should be mentioned, as it requires a particular arrangement.

5. It should be stated whether it is desired to have the parterre or the parquette the largest?

6. They should state whether they desire to have besides corridors also refreshment rooms, or not?

7. If they wish to have rooms for rehearsal or not?

8. Whether they desire the janitor to live in the house or in the portico, or not?

9. And finally, whether it would not be advisable, rather than spoil the whole enterprise and its object, to raise funds, if such should be wanted, by a mortgage on the property, provided they could not be raised in any other way.

If you deem these observations worthy of the attention of the Committee and Stockholders, please insert them in your valuable paper, and add that in my estimation, the outside of the Opera House should be that of a plain, but dignified and respectable house, and the principal aim should be to render the inside of the house in every respect comfortable, and as elegant as possible.

AN ARCHITECT WHO HAS BUILT THEATRES.