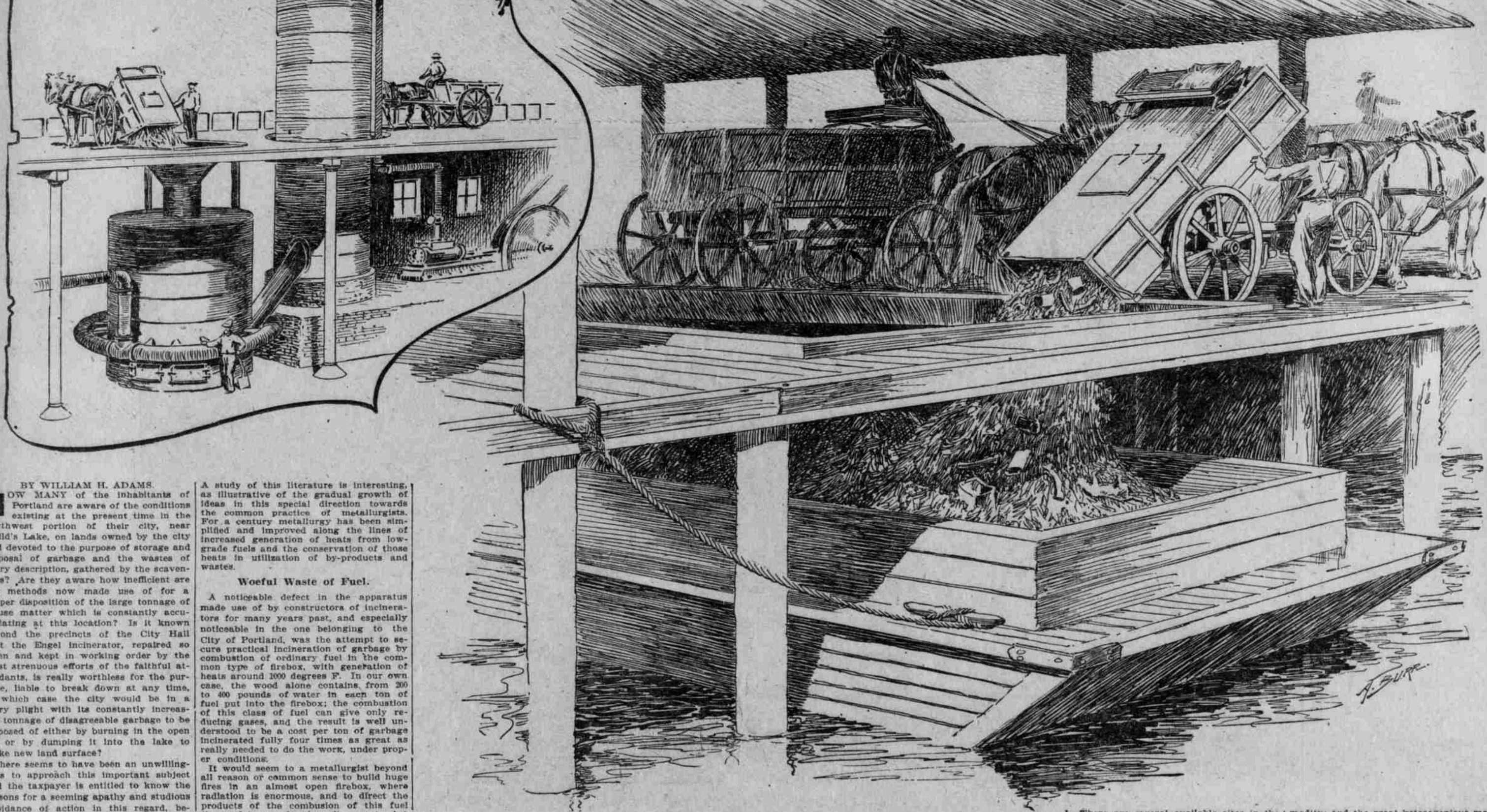


# DISPOSING OF A CITY'S GARBAGE

Strictly the Work of an Engineer Who Understands Modern Methods of Turning Waste Into Fuel

Portland Admirably Situated for Economical Collection of Garbage—Now Gathered at Great Expense

A MODERN INCINERATING PLANT



BY WILLIAM H. ADAMS.

**H**OW MANY of the inhabitants of Portland are aware of the conditions existing at the present time in the northwest portion of their city, near Guild's Lake, on lands owned by the city and devoted to the purpose of storage and disposal of garbage and the wastes of every description, gathered by the scavengers? Are they aware how inefficient are the methods now made use of for a proper disposal of the large amount of refuse matter which is constantly accumulating at this location? Is it known beyond the precincts of the City Hall that the Engel Incinerator, repaired so often and kept in working order by the most strenuous efforts of the faithful attendants, is really worthless for the purpose, liable to break down at any time, in which case the city would be in a sorry plight with its constantly increasing tonnage of disagreeable garbage to be disposed of either by burning in the open air or by dumping it into the lake to make new land surface?

A study of this literature is interesting, as illustrative of the gradual growth of ideas in this special direction towards the common practice of metallurgists. For a century metallurgy has been simplified and improved along the lines of increased generation of heat from low-grade fuels and the conservation of those heats in utilization of by-products and wastes.

### Woeeful Waste of Fuel.

A noticeable defect in the apparatus made use of by constructors of incinerators for many years past, and especially noticeable in the one belonging to the City of Portland, was the attempt to secure practical incineration of garbage by combustion of ordinary fuel in the common type of firebox, with generation of heat around 2000 degrees F. In our own case, the wood alone contains from 200 to 400 pounds of water in each ton of fuel put into the firebox; the combustion of this class of fuel can give only reducing gases, and the result is well understood to be a cost per ton of garbage incinerated fully four times as great as really needed to do the work, under proper conditions.

It would seem to a metallurgist beyond all reason or common sense to build huge fires in an almost open firebox, where radiation is enormous, and to direct the products of the combustion of this fuel into the house, where it must be against a sodden body of garbage, usually of great depth above the grate. Add to this mistaken practice the withdrawing of the entire bulk of combustible gases from the surface and depending upon a tall chimney for draft to carry off the foul fumes, and we have the utmost limit of a liberal way and yet meet it squarely, with the consequent extravagant cost of operation. In the homely sense this procedure has been likened to the burning of a house.

### Expensive Training Schools.

A careful perusal of the literature mentioned cannot fail to impress us with the facts, so well known to metallurgists, that the incineration plants of the many American cities have been expensive training schools, yet they have brought to notice of late successful practice—the results approaching if not equalling that of Europe.

### First Successful Incinerator.

Incineration of the wastes of a large city, on definite lines and for a settled purpose, is comparatively a modern idea. In the year 1856 the first successful municipal incinerator was constructed in Manchester, England, and this plant was in use for 30 years, a model for numberless plants of like character which are to be seen throughout Europe.

### Throwing Away Fuel Collected.

The millions of money spent in America in abortive attempts to handle garbage otherwise than by fire need never have been spent had the successes of the people in Europe been copied, and betted as is the habit of American engineers. To illustrate, the tonnage of fuel used at our city plant for the very imperfect incineration of the small amount of garbage handled each day is sufficient to incinerate three or four times the tonnage under proper conditions. Again, the waste material, such as wood, straw paper, etc., carried to the city's plant each day, and in no way utilized, is sufficient to carry on all the necessary incineration processes without the need of a cord of wood.

### Creating Fuel Out of Garbage.

Technically, the gradual evaporation of the moisture in animal or vegetable matter gives rise to a steam of noxious properties, due to the presence of hydrogen carbides, sulphides, etc.; this steam in its passage through incandescent fuel, is dissociated into its constituent elements and recombined into gaseous compounds which burn with nearly as great a degree of heat as the fuel on the grate, therefore there is no appreciable loss in the first fuel by this evaporated water.

### Can Eliminate Cost of Fuel.

Judging from an inspection of the average refuse materials which have been carried to the city's plant during the past few years and calculating that the city should be much better cared for and no wastes be allowed to cumber the streets and vacant lots, it would be fair to state that there is sufficient fuel in the refuse materials now gathered to supply all necessary combustion to perfectly incinerate the garbage and refuse, and that no expense whatever need be incurred by the city for this item of fuel. The truth should be much better cared for and no wastes be allowed to cumber the streets and vacant lots, it would be fair to state that there is sufficient fuel in the refuse materials now gathered to supply all necessary combustion to perfectly incinerate the garbage and refuse, and that no expense whatever need be incurred by the city for this item of fuel.

### Belief in Ghosts and Immortality

Recent Views of Prominent Men Whb Have Made Psychological Research.

BY GEORGE A. THACHER.

**V**OUR recent editorial on ghosts and immortality says that the belief in ghosts arose from the belief in immortality. Permit me to ask how you know that it was not the other way around? Even the man with a disordered imagination starts from a fact in forming a hypothesis. Even the victims of lunacy have an impression of a fact to start with and they govern their actions accordingly. As their facts don't exist, their conduct is what we call crazy. Maybe our prehistoric ancestors put the cart before the horse, as you suggest, but if they predicted immortality because of something invisible that seemed to escape from the body at the moment of death, why did they claim it for men and deny it to the balance of the animals. The physical process of death is identical, so far as science has been able to determine.

### Honoring His Memory.

There were two little boys who recently went to visit a country aunt. They were allowed to run about and get dreadfully dirty, and consequently were very happy. They adored their aunt and tried to please her, and they succeeded in rather an odd way upon one occasion, as you will see. They were in the midst of a mud pie tournament when their aunt, carefully dressed, came out of the house and mounted into her carriage. "Where are you going, Aunt Mary?" asked John.

### Negro Prisoners Help Science.

Montgomery (Ala.) Advertiser.

The State Board of Health of Louisiana is trying sugar molasses, in which sulphuric acid is used, on negro prisoners, to determine whether it is injurious to human health.

### Fishing With Electric Light.

Elizabethtown (Ky.) News.

Bud Ashlock, who is one of the best fishermen in this section or any other section, is fixing to scoop up all the local sports who use the reel and line hereabouts. He has a new contrivance which he thinks is sure to catch them. A small wire runs through the eyelets on the pole down the line to just below the hook, where a small electric light is attached. The wire is connected on the bank with a small portable battery. When the line is dropped into the water the light is turned

### Competent Engineer Needed.

In arriving at definite conclusions and thereafter the active construction of an up-to-date plant to which all the wastes of this city shall be sent, and incident thereto the inauguration of a better method of house-to-house collection of those wastes, it would seem that the one sure way to arrive at results acceptable to our officials and their constituents is to follow the lead of European cities and employ the most competent engineer possible to obtain the best results. The admitted problem before us. So little discussion has been brought out by the action of the Council thus far and so little interest has been excited in public that it may fairly be taken for granted there is no proper education on the subject so vital to each one of us; therefore the absolute need of securing the highest grade of engineering talent, and our officials in settling upon a comprehensive plan which shall answer all purposes for years to come and give us satisfactory results.

### Compromising the Public Interest.

The millions of money spent in America in abortive attempts to handle garbage otherwise than by fire need never have been spent had the successes of the people in Europe been copied, and betted as is the habit of American engineers. To illustrate, the tonnage of fuel used at our city plant for the very imperfect incineration of the small amount of garbage handled each day is sufficient to incinerate three or four times the tonnage under proper conditions. Again, the waste material, such as wood, straw paper, etc., carried to the city's plant each day, and in no way utilized, is sufficient to carry on all the necessary incineration processes without the need of a cord of wood.

### Incineration of the Wastes of a Large City.

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