

**The Knowledge Bank at The Ohio State University**  
**Ohio State Engineer**

**Title:** A New Field For Gas

**Creators:** Galloway, Walter A.

**Issue Date:** Feb-1928

**Publisher:** Ohio State University, College of Engineering

**Citation:** Ohio State Engineer, vol. 11, no. 4 (February, 1928), 8, 20.

**URI:** <http://hdl.handle.net/1811/34288>

**Appears in Collections:** [Ohio State Engineer: Volume 11, no. 4 \(February, 1928\)](#)

### A NEW FIELD FOR GAS

By WALTER A. GALLOWAY '30

For many years steam has been doing the work of the world. In locomotives, boats, and electric generating plants steam is used for power. Of late steam has assumed many new and varied roles. It has come to play an important part in food production, textile, rubber, laundry, chemical and many other plants. For such applications the gas boiler rather than the coal boiler is much to be preferred. In general design and exterior appearance these boilers resemble the corresponding coal boilers but there are two essential differences between them. Gas boilers are smaller than coal boilers of equal capacity and the gas boiler is more efficient.

The gas boiler exists in the same types as the coal boiler. Gas fired steam boilers are generally equipped with an automatic gas regulator. This regulates the flow of gas to the burners in proportion to the amount of steam taken out of the boiler and can be adjusted for any desired steam pressure. This device is a gas saver and helps to increase the operating efficiency of the equipment. A coal burning outfit has no such flexibility. A gas boiler although practically automatic requires all the usual fittings that are found on the coal boiler, namely, the steam gauge, the water column, try cocks, and safety and blow off valves.

A gas burner must be connected to a copper flue to give the best operating conditions. In a case where the boiler is located in a well ventilated room the flue connection may be dispensed with. If large amounts of gas are to be burned a flue is practically necessary. Unless the flue is properly designed the results may be altogether unsatisfactory. A flue giving a reasonably uniform draft gives the best results. The flue must not be unduly long nor crooked. The flue used in a gas burner is generally smaller than that for a coal burner. The flue size is regulated by the gas consumption.

The necessity of flue connecting gas fired boilers is not because draft is essential to proper combustion. Under special atmospheric conditions the products of combustion might not be carried out the top of the flue. This in turn would cause the flame to float or possibly go out. A back draft converter overcomes this difficulty. A flue is used mainly to provide a safety device for accidents in operation, which, while infrequent, are known to occur and should therefore, be carefully guarded against. Draft is an important feature in the conversion of high pressure boilers.

The gas boiler has a characteristic of being the only boiler that may be installed practically any place in the plant. It can just as well be placed on the top floor as on the first floor or basement. Gas being the fuel it can be piped anywhere. This quality of convenience of location enables the boiler to be placed near the place where the steam is to be used, thereby cutting down the losses in piping the steam to a distant point of consumption.

A book published by the American Gas Association contains the account of a 150 horse power boiler in a candy factory being converted from coal to gas. This boiler was operated at one hun-

(Continued on Page 20)

---

### A NEW FIELD FOR GAS

(Continued from Page 8)

dred pounds pressure. The steam was used for heating the building in the winter and for supplying process steam for candy making. An expense sheet showed an actual saving of \$1,395 in a year with gas costing \$1.10 per thousand cubic feet. This saving included the proper charges for additional investment, depreciation, etc. And while this amount did include the credit for the savings and labor, it did not give credit for the increased speed and operation secured by having an adequate pressure available at the equipment. The improved results came from setting the boiler close to the job and cutting out unnecessary runs of piping.

The trend seems to be toward gas fired boilers in comparatively small installations, while in the larger boilers, of 200 horse power or over, the coal fire still reigns supreme.

# WIRE

automobile and airplane wires, electrical wires, submarine cables, bridge-building cables, wire rope, telegraph and telephone wire, radio wire, round wire, welding

wire, flat wire, star-shaped and all different kinds of shapes of wire, sheet wire, piano wire, pipe organ wire, wire hoops, barbed wire, woven wire fences, wire gates, wire fence posts, trolley wire and rail bonds, poultry netting, wire springs, concrete reinforcing wire mesh, nails, staples, tacks, spikes, bale ties, steel wire strips, wire-rope aerial tramways. Illustrated story of how steel and wire is made, also illustrated books describing uses of all the above wires sent free.

## AMERICAN STEEL & WIRE COMPANY

Sales Offices

Chicago New York Boston Cleveland Worcester Philadelphia Pittsburgh Buffalo Detroit Cincinnati Baltimore  
Wilkes-Barre St. Louis Kansas City St. Paul Oklahoma City Birmingham Memphis Dallas Atlanta Denver Salt Lake City

Export Representative: U. S. Steel Products Co., New York

Pacific Coast Representative: U. S. Steel Products Company, San Francisco, Los Angeles, Portland, Seattle

Order Your Flowers From—  
**BLOCK'S**

*The*  
**University Flower Shop**  
Corner Sixteenth Avenue and High  
Walnut 1452

### The Ohio State Engineer

Offers Valuable Experience to  
Engineers interested in Tech-  
nical Journalism, Advertising  
or Salesmanship.



**THE PHILLIPS PRINTING CO.**  
257 Cleveland Avenue  
Phone: ADams 9341