

MODERN
HOME
HEATING





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MODERN HOME HEATING

*A Discussion of the Oil Burner and
Its Place in the Modern Home*



Wayne

WAYNE COMPANY

FORT WAYNE, INDIANA



CONSTANT—EVEN—HEALTH-PROTECTING—THE UNIFORM WARMTH
OF THE AUTOMATIC OIL-BURNING SYSTEM MAKES THE HOME
INDEPENDENT OF THE WEATHER—A BETTER PLACE TO LIVE.

THE ACCEPTANCE OF THE OIL BURNER



OIL IS the modern fuel for home heating. The thousands of oil burners in use in homes throughout the country, the ever increasing number of oil burner installations, are proof of that.

Friends of yours, neighbors of yours, quite likely, are burning oil. They've thrown away their coal shovels, torn down their coal bins and are enjoying real winter comfort—real heating efficiency—with this modern fuel.

Oil fuel could not have achieved its present popularity merely as a substitute for coal. It is more than that. It is more efficient, more convenient, cleaner, more easily controlled and more satisfactory in every way than any solid fuel. It permits the maintenance of constant home temperature all winter long with not more than two or three degrees variation—something you could never accomplish with coal—and it does this automatically.

We people of the United States are proud of our homes and we prize home comfort. We have modern, labor-saving, comfort-giving devices on every hand. And now we are accepting—enthusiastically—the instrument of our emancipation from the coal bin and ash can.

While oil burners have made their greatest strides toward nation-wide use in recent years, they are not new. Oil as a fuel has been known and recognized in the United States for more than fifty years, and even that long ago oil burners were being used industrially with such a great degree of success that development and acceptance of the household oil burner was inevitable.

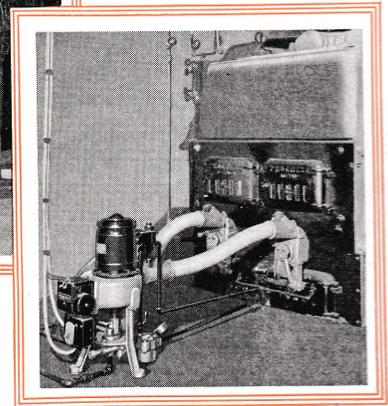
Now we see the visions and the prophesies of the oil burner pioneers in vivid reality. They said—as long ago as 1875—that some day homes would be heated with oil. Far visioned seers, they gave voice to these ideas at a time when even coal burning equipment was primitive, inefficient, and when wood more often served home heating needs than coal. The skeptics laughed their scorn. The conservatives withheld their views, although their doubts were ill-concealed. But the few whose minds could span the years were staunch in their belief.

Possibly because of the unswerving zeal of the few pioneers, oil is today the modern fuel for home heating.

Oil burners have been called the greatest contribution to home comfort since the advent of the electric light. Thousands and thousands of homes are already heated with oil, and so convincing is the performance record of oil burners in general that we are safe in predicting the coal-heated home will be the exception rather than the rule within a few more years.



A single Wayne can be employed to operate two boilers by using the "Y" connection illustrated here. Just another example of the flexibility of Wayne usefulness.



Thirteen apartments in this Oak Park, Illinois, apartment home are kept warm and comfortable by a Wayne-equipped heating system. There is a Wayne for every size and type of home, from the large apartment to the smallest bungalow.

The very nature of oil fuel gives it preference in the home. Being a liquid, it can be handled easily, without work or dirt. And because it can be converted into heat by simple mechanical means instead of by arduous manual effort, it eliminates drudgery from home heating. Finally, the oil burner that converts the oil into heat lends itself readily to automatic control and intermittent operation, with resultant economy as well as efficiency.

With this automatic control, constant home temperature is assured. Whims of weather cannot defeat the efficiency of the automatic oil burner. Severe winter storms find oil heated homes invulnerable. Cool days of spring and autumn that offer perplexing problems to coal shovelers who would keep their homes comfortably warm without overheating, find oil-heated homes provided with a constant warmth of just the temperature desired.

The cleanliness of oil fuel further emphasizes the advantages of convenience and efficiency. Through its cleanliness and its compactness, the oil burner serves to add another floor to your home. Coal deprives you of full use of your basement, not only because it requires space for coal bins, kindling boxes and ash receptacles, but because it dirties the entire lower floor. The oil burner gives back the space once occupied by the coal bin.



With soot, dust and ashes eliminated completely, the entire floor can be made as bright and cheerful as any other part of the house. Here is an ideal spot for romping children, tool-plying husbands, or water-splashing laundresses. Only your own ingenuity limits the usefulness to which this once-wasted space can be put.

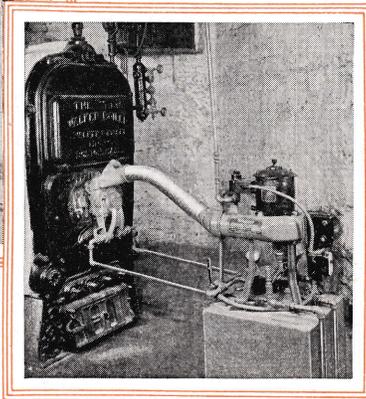
Oil fuel is safe, too. Engineers of the Underwriters' Laboratories, men experienced in fire hazards of all kinds, state that oil constitutes no greater hazard than the fuel it replaces. It is never exposed in the basement as coal is. Thousands of installations have been made without affecting established fire insurance rates in the slightest. It is a matter of record that in one year more fires resulted from the single act of dumping hot coal ashes into wooden receptacles than resulted from all causes with oil in the same period of time.

None of these things is mere theory. All are actual facts, proved by experience in more than 250,000 installations, serving not only homes of every size, but hospitals, hotels, apartments and public buildings as well.

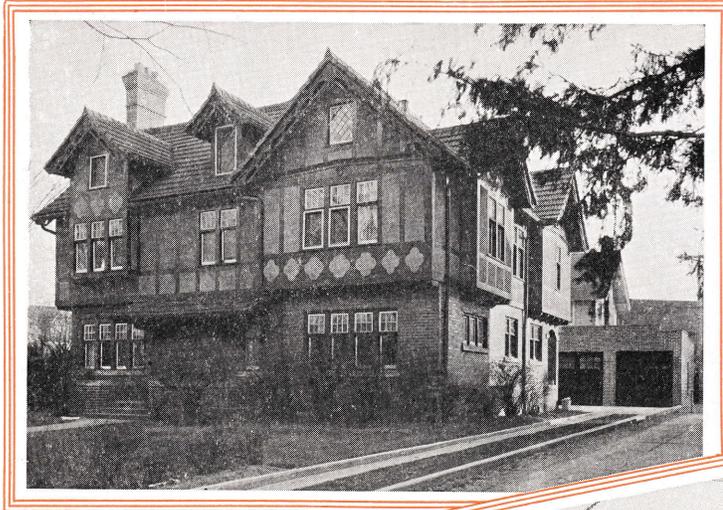
Oil has won this widespread acceptance by its own merit. Men like its freedom from attention, the elimination of the coal shovel, the kindling pile and the ash barrel. Women enjoy its cleanliness and its even, uniform warmth. Children have



This illustration shows how easily a coal fired boiler is transformed into a Wayne oil heating plant. Installation requires but a few hours time.



Wayne oil heat is ideally adapted to such buildings as the Forecki and Przybyla Company's combination store and office building at 442 Mitchel St., Milwaukee. Tenants enjoy the uniform warmth and the cleanliness of oil heat and the owner has eliminated the need for constant janitor service.



No home is hard to heat with a Wayne. Given an adequate heating system, the Wayne will find every nook and corner in the house, and keep it always warm, always uniform in temperature. The burner may be used with steam, hot water, vapor or, as shown below, hot air heating plants.

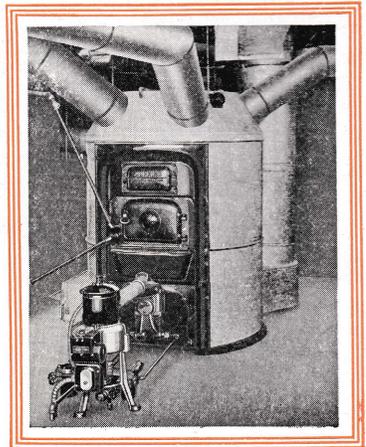
Above, the attractive home of Mr. Arthur Brown, Ann Arbor, Michigan. Wayne equipped.



Below, the residence of Dr. W. M. Osborn, Indianapolis, Indiana. A Wayne is employed for health, comfort and freedom from attention.



Above, a model home erected by the Brick Manufacturer's Association in Detroit. A Wayne provides the heat.



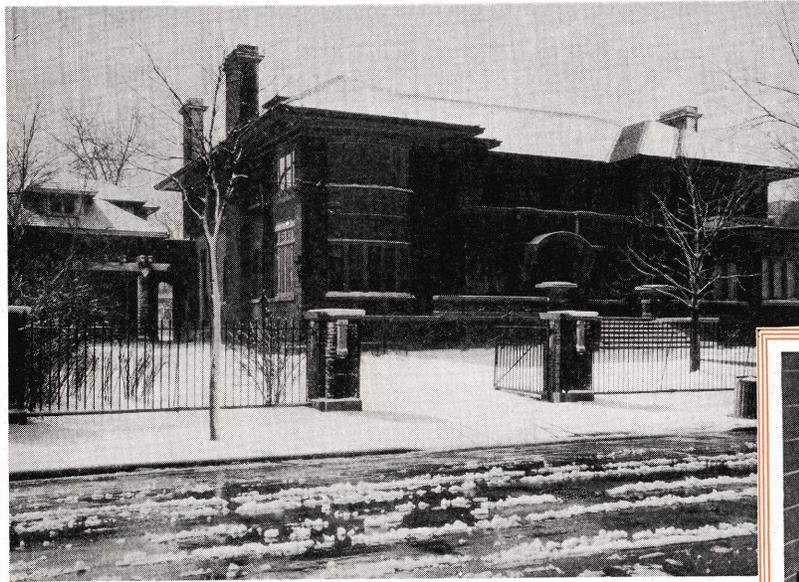


a better chance for health with the constant comfortable temperature that oil provides, while old folks find contentment and peace in ever-cozy, dependably warm, oil-heated homes.

So definite and widespread is the approval of this modern method of home heating that today the oil burner is accepted on every side. Manufacturers of furnaces recognize it. Oil companies have established regular fuel delivery schedules to care for oil-burner users. Architects are designing homes with the definite thought of heating them with oil, utilizing basements as pleasant and useful rooms, or eliminating almost entirely basement excavation.

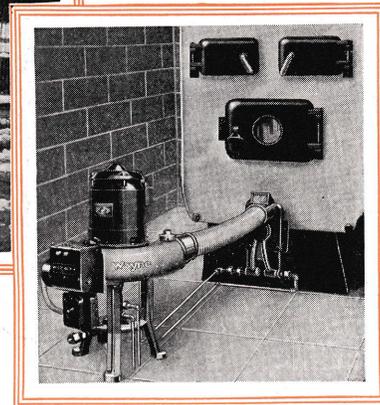
Best of all, oil is readily adaptable to existing heating plants. In spite of all that it does that coal cannot, it does not require new or special types of furnaces. If your present heating plant is anything but the most obsolete in type or size—no matter whether it is steam, hot water, hot air or vapor—an oil burner can be installed quickly and easily with only slight changes, requiring but a few hours' time, and this without interrupting normal household routine.

Oil is yours to enjoy, whatever your situation. The oil burner is established and proved in every way. It is no longer a question of "Shall we heat our home with oil?" but "How can we best heat our home with oil?"

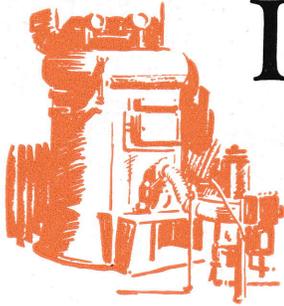


The imposing residence of Mr. J. M. Levis, 817 Kenesaw Terrace, Chicago, is warmed by a Wayne. The raw winters of wind-swept Chicago mean nothing with a Wayne in the basement.

A typical Wayne installation with a steam heating plant. Note how little space is occupied—no coal bins, no ash heaps, no shovels and brooms.



THE WAYNE WAY OF OIL BURNING



IT HAS been pointed out before that, while the popularity of the domestic oil burner is a matter of recent years, the use of oil as a fuel is at least fifty years old. Over a period of many years, the oil burner has been passing through an era of steady development. Engineers have made a constant study of oil and its characteristics. They learned what to expect from it—learned both its possibilities and its limitations. Very early they developed a number of definite fundamentals of oil burning which are basic in all burners—and these have governed the design of every successful burner since that time.

In perfecting the domestic type of oil burner, the problem, therefore, was not one of new and revolutionizing principles for the burning of oil, but simply a refined and more substantial mechanical application of these existing fundamentals.

In the most elementary of oil burners, it is recognized that oil must be gasified before it will burn. A heavy stick of wood is not ignited easily when you hold a match to it. Whittle that same stick into thin shavings and it will burn at the touch of a flame. Oil must likewise be converted from a liquid to gas before it is ignited.

And like all fuels, oil requires oxygen for proper combustion. A lighted match may be extinguished by plunging it into a bowl of oil. Hold the match to the surface of the liquid, where air reaches both flame and fuel vapors, and the oil will burn. This illustrates that a mixture of air and gasified oil is necessary for efficient combustion.

Think back to the days of the oil lamp and you will recall how carefully wicks had to be trimmed and kept even. As long as the flame burned evenly, entirely surrounded by air, all was well. But if the wick were ragged and gave off a tongue of flame which touched the glass chimney, a smoking lamp resulted and a film of soot and carbon formed inside the chimney.

In just the same way, engineers are careful to keep the oil flame from touching any part of the burner or furnace. They have learned that oil, to burn without smoke and soot, must be burned in suspension—that is, in air.

It is also desirable that the oil be burned in the presence of a refractory material, such as clay or fire-brick, which when heated reflects heat back into the combustion area, promoting complete combustion and consuming soot and free carbon. An example of this is the household electric heater, employing a polished copper bowl behind a heating element of wire. The heat from this element would seem small



with the bowl removed, but with the bowl in place an intense beam of concentrated heat is sent out, so definite in direction that it can almost be measured.

The fire-brick used with an oil burner also serve to absorb a part of the heat generated, acting as an insulating wall which protects the furnace parts from sudden wide changes of temperature and continuing to give off heat after the burner has stopped. There is another important factor to be considered. That is the control of combustion area, an unwritten law which dictates the amount of oil which can be efficiently burned in a fire-box of a definite size.

In designing the Wayne Oil Burner, Wayne engineers sought to apply all of these fundamentals in a way which would provide the characteristics demanded for efficient operation. First of all, simplicity of design and dependability of operation had to be embodied. Home owners wanted freedom from attention. Women asked for silence, and men wanted a fuel that could be secured anywhere, that would flow in the coldest weather—low in price and high in heating value.

Striving to meet these requirements, Wayne engineers first provided dependability through forced feed. Oil was drawn from the tank by a motor-driven pump—not an elaborate affair of pistons and plungers, but a simple pair of close-fitting gears, running constantly in oil. At once, this did away with the possibility of free oil flowing by gravity into the fire-box, and provided a way to break up the oil.



A match plunged into a vessel of oil will be extinguished because of lack of oxygen. Air is essential to the proper burning of oil—and one of the functions of the burner is to provide it.

So great is the pressure given the oil by the gear pump, that when the fuel is delivered through a pinhole orifice, it is broken up into a fine mist. It is the same principle as the nozzle on the garden hose.

Then came the question of air supply. Rapidly moving air creates sound; a strong wind whistles through trees and around corners, whereas a gentle breeze is silent. The "combustion roar" in some oil burners comes from the fact that the air, rather than the oil, is under pressure.

In the Wayne, the air moves at normal pressure and in adjustable volume, to assure the proper mixture of oil and air. The slow-speed motor that operates the burner makes far less noise than an electric fan.

No part of the Wayne extends either in or under the heating plant. The nozzle through which the oil is fed enters the fire-box door at an angle. The oil vapor is directed downward at the point where ignition takes place. As a result, the flame



Just as shavings burn more readily than a heavy stick, oil burns best when broken up into minute particles. This the oil burner must do—and do properly.



The smoky lamp chimney illustrates what happens when oil does not burn completely in air.

shoots down and curls back upon itself without touching any part of the fire-box. There is no place for carbon to form in quantities, and no chance for soot or greasy smoke. Every part is readily accessible for inspection.

The refractory material in the Wayne installation consists of a wall of fire-brick built into the fire-box, from which grates are removed. Part of the heat is reflected from these walls, part absorbed. That reflected back intensifies temperatures during operation of the burner, and assures complete combustion. That absorbed is radiated slowly after the oil ceases to burn, helping maintain an even load on the furnace, conserving fuel, and protecting the heating plant against extreme temperature changes.

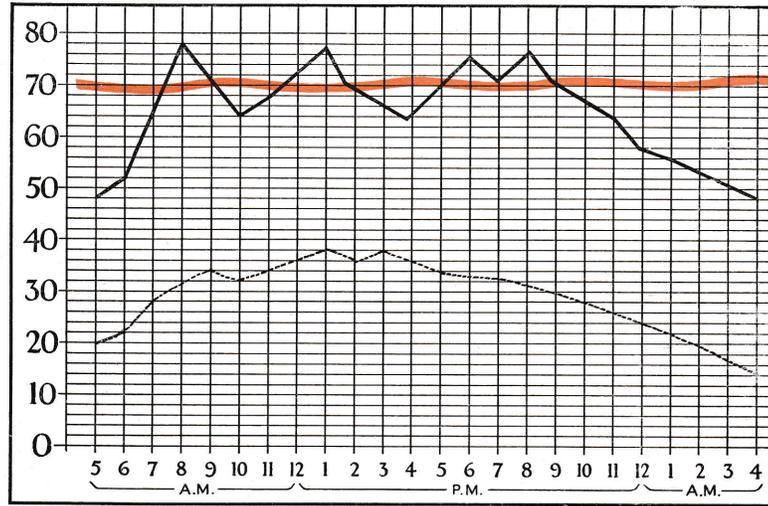
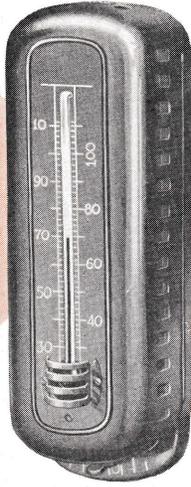
The Wayne Oil Burner will burn distillate, gas oil or any oil fuel down to and including 28° (Baume) gravity. These grades do not congeal readily nor will they freeze in pipe lines. At the same time they have a high ratio of heat units to cost and are obtainable generally from oil companies throughout the country.

Oil burner fuels are by-products of the manufacture of gasoline. As long as gasoline is used, an abundant supply of oil is assured for home heating. Oil companies are rapidly establishing standards which make it easy to be sure of getting the proper fuel, while delivery schedules are being arranged through which your supply tank is kept constantly full by periodic calls of the oil truck.

It is generally admitted that no oil burner is better than the man who installs it. Experience shows that the Wayne will require very little service after it is put into operation. But to assure you of trouble-free service from the very beginning, the makers of the Wayne select their retail agencies with care. The man from whom you buy must not only be able to make the original installation in the very best manner, but must also be prepared to render emergency service at any time of the day or night.

Accordingly, when you buy a Wayne, you buy oil heat rather than an oil burner. The purchase price includes the entire cost of the installation, including all gas, oil and electric connections. When the supply tank is filled, the Wayne man will explain how to start the burner, and you begin to enjoy oil heat at once. If for any reason you wish to have a service man call, he is ready to respond promptly, no matter what the hour of the day or night.

Thus the Wayne way of oil burning represents oil heating as the home owner wants it. The burner itself is soundly designed on principles recognized for years—as sturdily built as a truck, yet as precisely made as your watch. The fuel used is one which eliminates the problem of supply. Competent men make the installation, and local organizations stand back of it in case of emergencies.



A story in three lines. The dotted line represents outside temperatures on a cold winter day. The solid black line illustrates the varying temperatures typical of a coal burning heating plant, while the colored line shows the uniformity of Wayne oil heat.

These facts assure to Wayne owners the greatest possible degree of oil heating efficiency and serve to explain why the Wayne Oil Burner is establishing new standards of performance—and of value, why Wayne has built up a degree of buyer preference that must be interpreted as a generous, unreserved tribute to Wayne superiority.

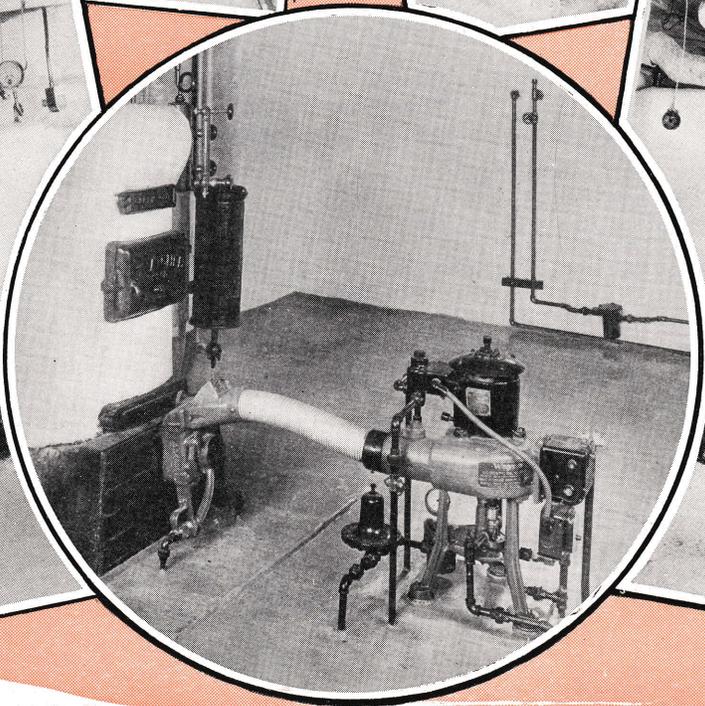
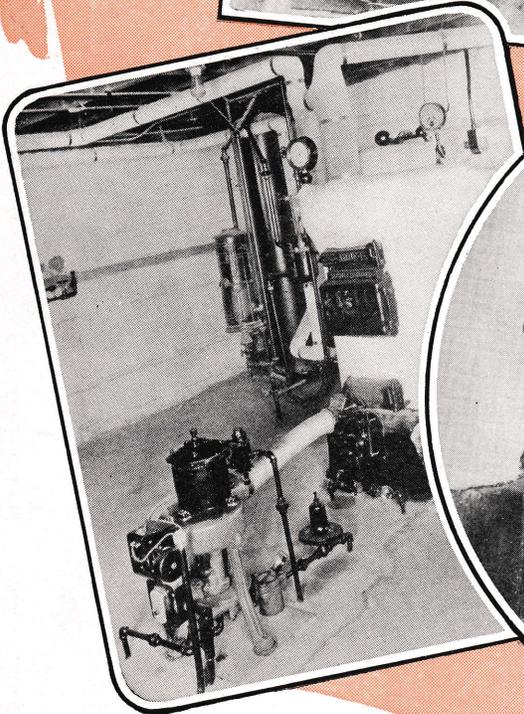
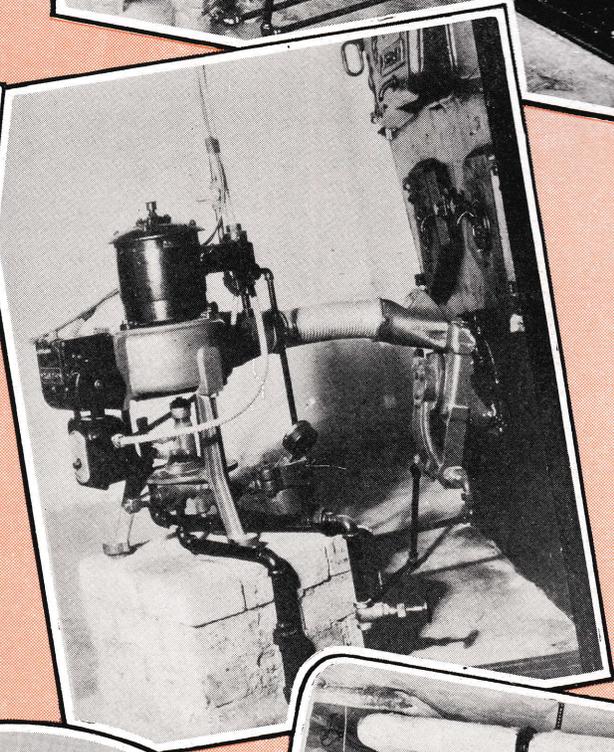
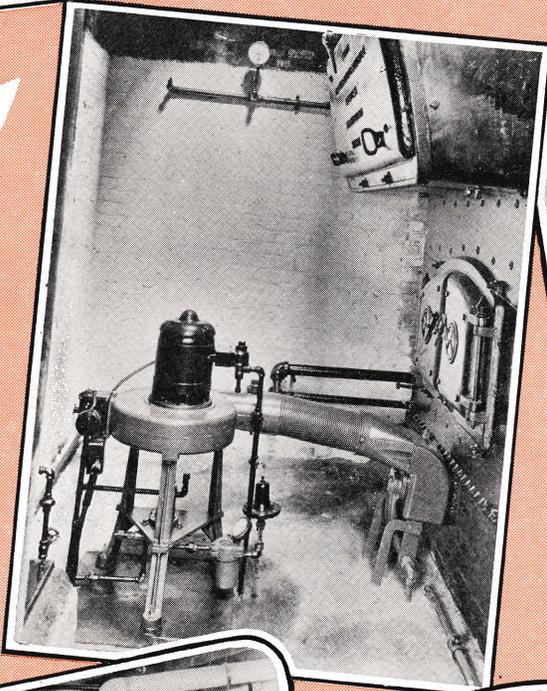
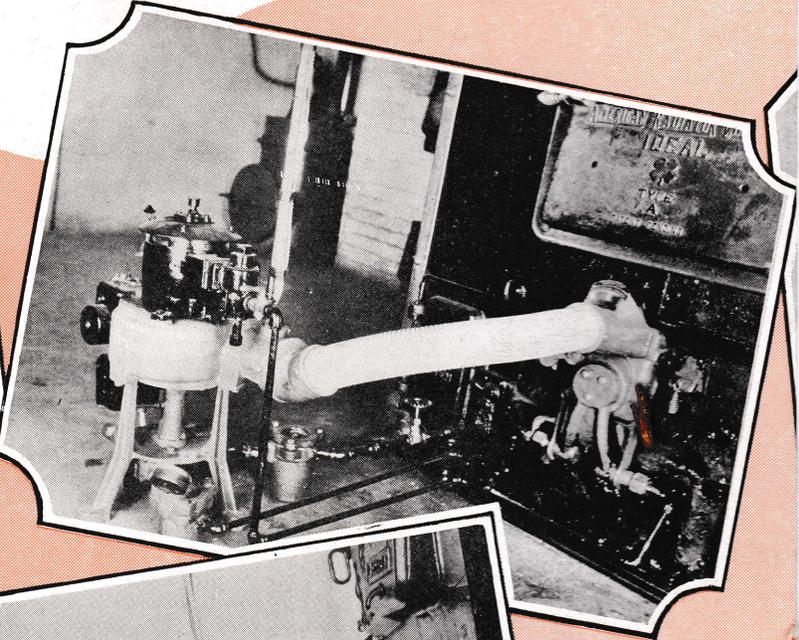
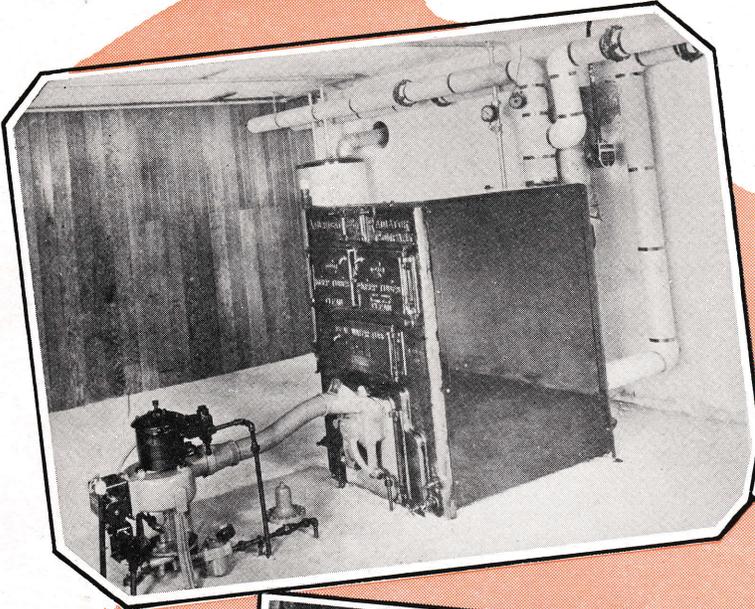
Here is an Oil Burner that gives all the advantages of oil heat in matchless combination—greater efficiency, greater home comfort, absolute cleanliness, freedom from manual attention and surprising economy of operation. Surely you will not accept less than this in an Oil Burner.

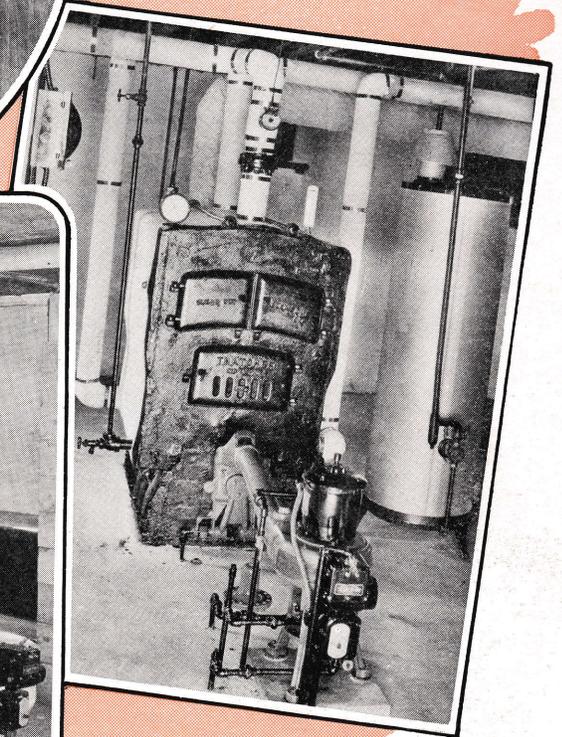
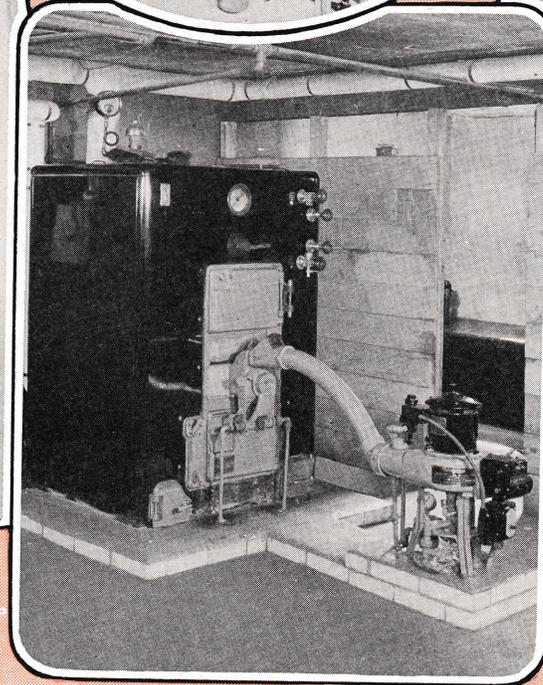
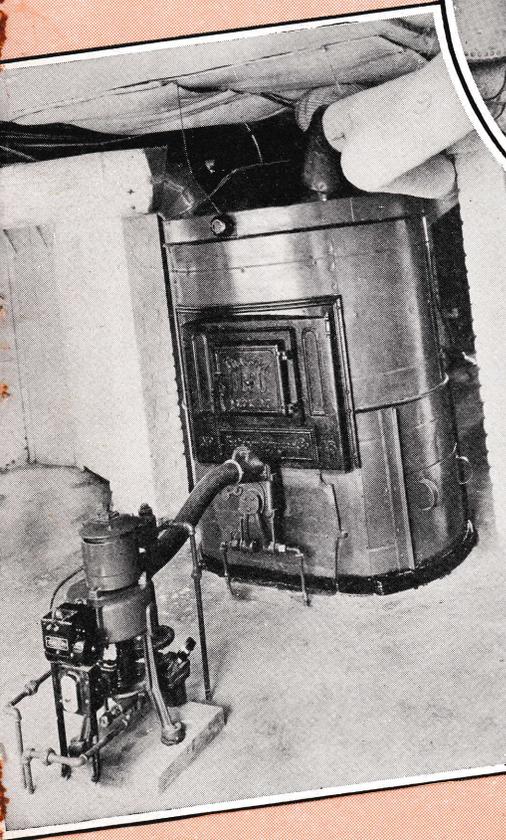
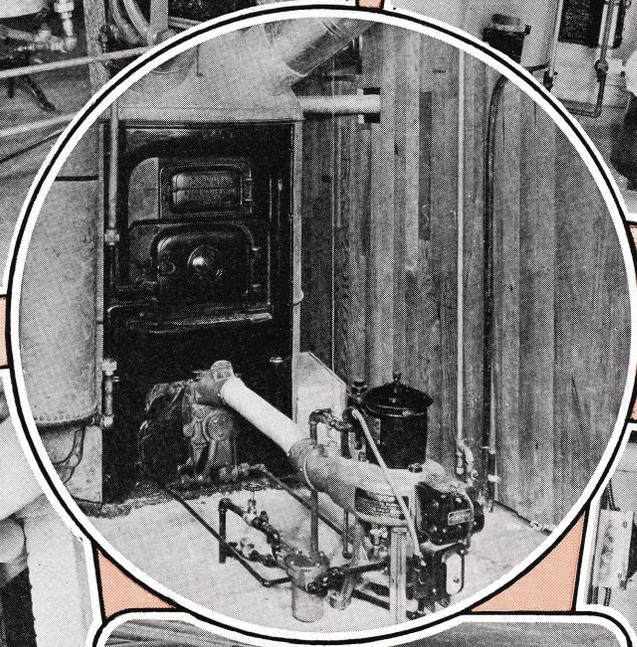
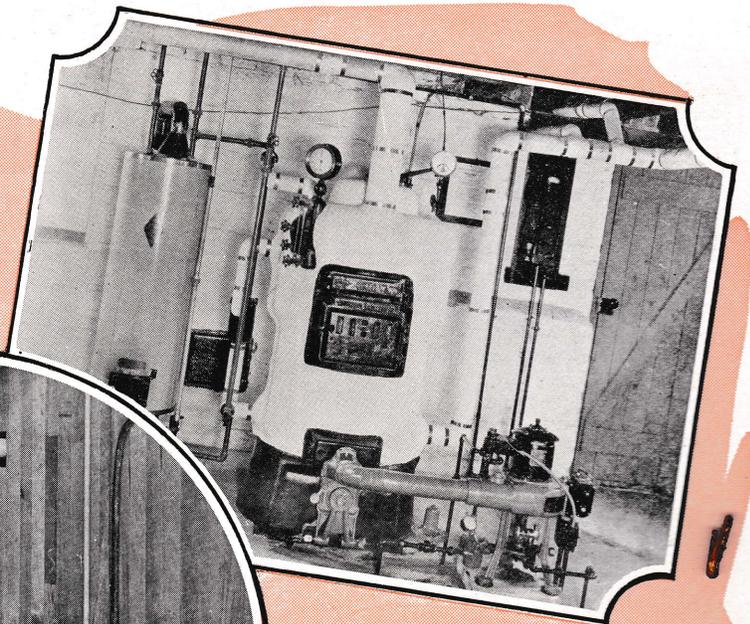
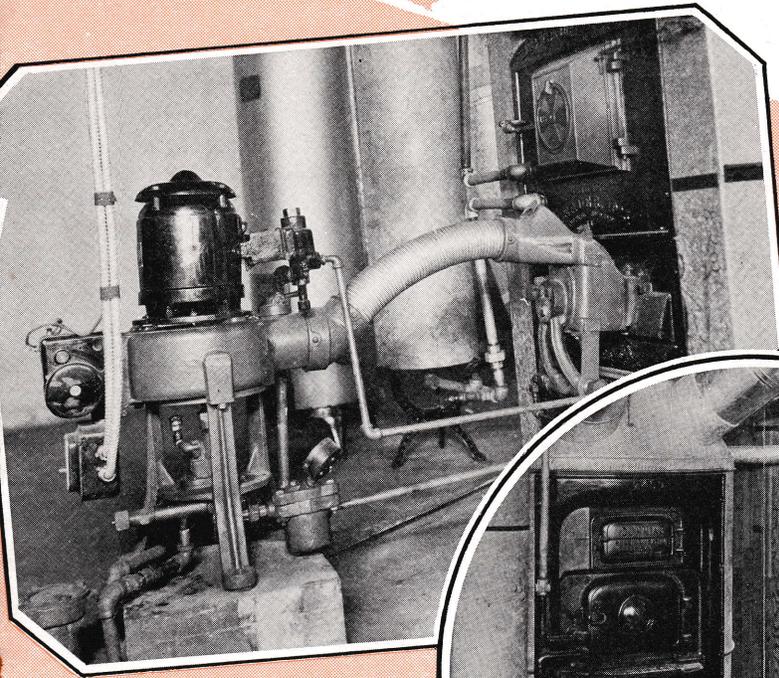
When you have finally decided what qualities your Oil Burner must possess, investigate all available makes. Regardless of the sort of comparison you make, whether you give consideration only to performance or make careful mechanical investigations, you will find one burner that dominates the field, that *looks* more rugged, substantial, dependable, finer—and that has a performance record to confirm these visible superiorities.

Quite likely you will decide as hundreds of others have done, that you cannot afford to accept less than you get in a Wayne.



The concentrated beam of heat from an electric heater illustrates how intense reflected heat becomes. It is the metal reflector which makes the heat of the coil effective.





OIL HEAT, like electricity, or running water,
makes any Home a better place to live / /

WAYNE-*the Better Oil Burner*

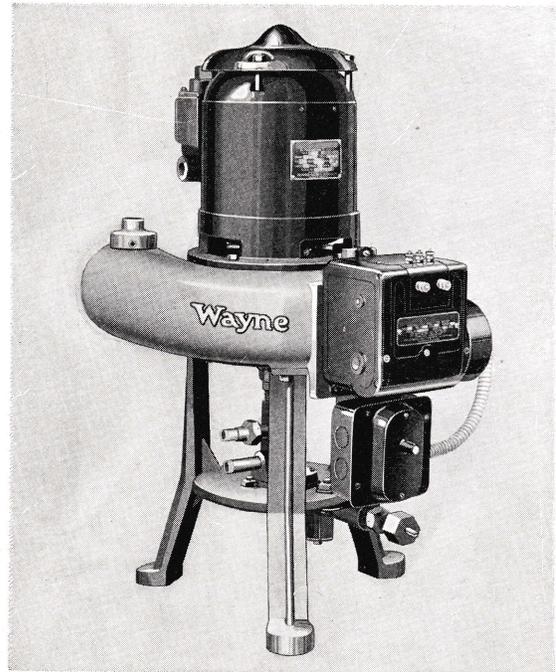


BEHIND the Wayne Oil Burner is a long record of successful production of oil equipment of various kinds. For thirty-five years, the Wayne Company has manufactured oil handling devices, and some of the largest and most successful industrial oil burner installations are Wayne designed and Wayne built.

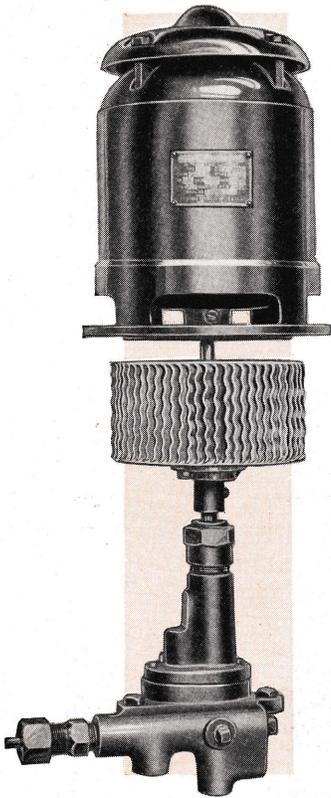
With this experience, it was a logical step to the development of the Wayne domestic burner. For three years the company worked, completing more than three hundred installations in homes, hotels, apartments and public buildings, before any public announcement of the Wayne burner was made. All of these installations were in regions where winters are severe, so that the burner was fully tested under the most rigorous service conditions. It is eloquent testimony to the soundness of Wayne design that from the very start all of these three hundred installations performed faultlessly, and are today giving the best of service after years of use.

This record is due in large measure to the simplicity and ruggedness which has characterized the Wayne design at all times. Clean-cut in line and compact in size, by its very appearance the burner reveals its remarkable freedom from intricate parts. In the entire installation, there are only three moving parts—far less than in any other completely automatic power burner—and all of these are mounted on a single motor shaft. The simplicity of design is even further emphasized when the entire installation is analyzed part by part.

The Wayne installation may be regarded as consisting of four important units—the supply tank, the motor block, the combustion tube (nozzle and spray tip), and the controls. Each of these has its own important function, and while the Wayne calls for even less mechanical knowledge of its parts than



The very appearance of the Wayne Oil Burner marks it as a superior product. Its clean-cut, compact design is evidence of Wayne's finer engineering and manufacturing ability, the result of more than a third of a century of experience in the manufacture of precision devices for the handling of oil and volatile liquids.



Motor, fan and pump assembly, showing ruggedness and simplicity of the Wayne's three moving parts, operating on one shaft.

an automobile, it is well to be familiar with each element, when considering the purchase of an oil burner.

The supply tank is the reservoir in which the oil is stored. It is usually buried in the yard, outside of the house, although it can be installed in the basement itself. The supply pipe carries oil from the tank direct to the burner. The tank is filled through a pipe located at any convenient point outside of the house. Supply men never have any reason to enter the building.

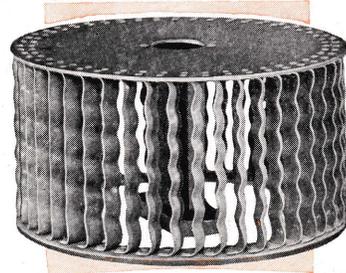
The pipes which carry oil from the supply tank to the burner are laid either on or under the floor. The pump employed to circulate the oil is typical of the rugged simplicity of the entire installation. Far from being the complicated mechanism of plungers and valves its name might imply, it consists simply of two precisely made gears, one of brass and one of steel. The intermeshing of these gears in a confined area creates sufficient suction to draw oil from the tank and at the same time, such pressure is developed as is necessary to break up or gasify the oil when it is forced through the fine orifice of the spray tip. As the two gears work constantly in a bath of oil, there is little or no wear on these parts.

Just above the pump, mounted on the same motor shaft, is the fan which provides the air necessary for combustion. This consists of a number of fabricated blades, which are designed to give a large volume of air at low pressure and without noise. Traveling at a low velocity, air reaches the nozzle in adjusted volume through a large flexible metal hose. The motor which drives both oil pump and fan is mounted at the top of the motor block. It is a slow-speed motor

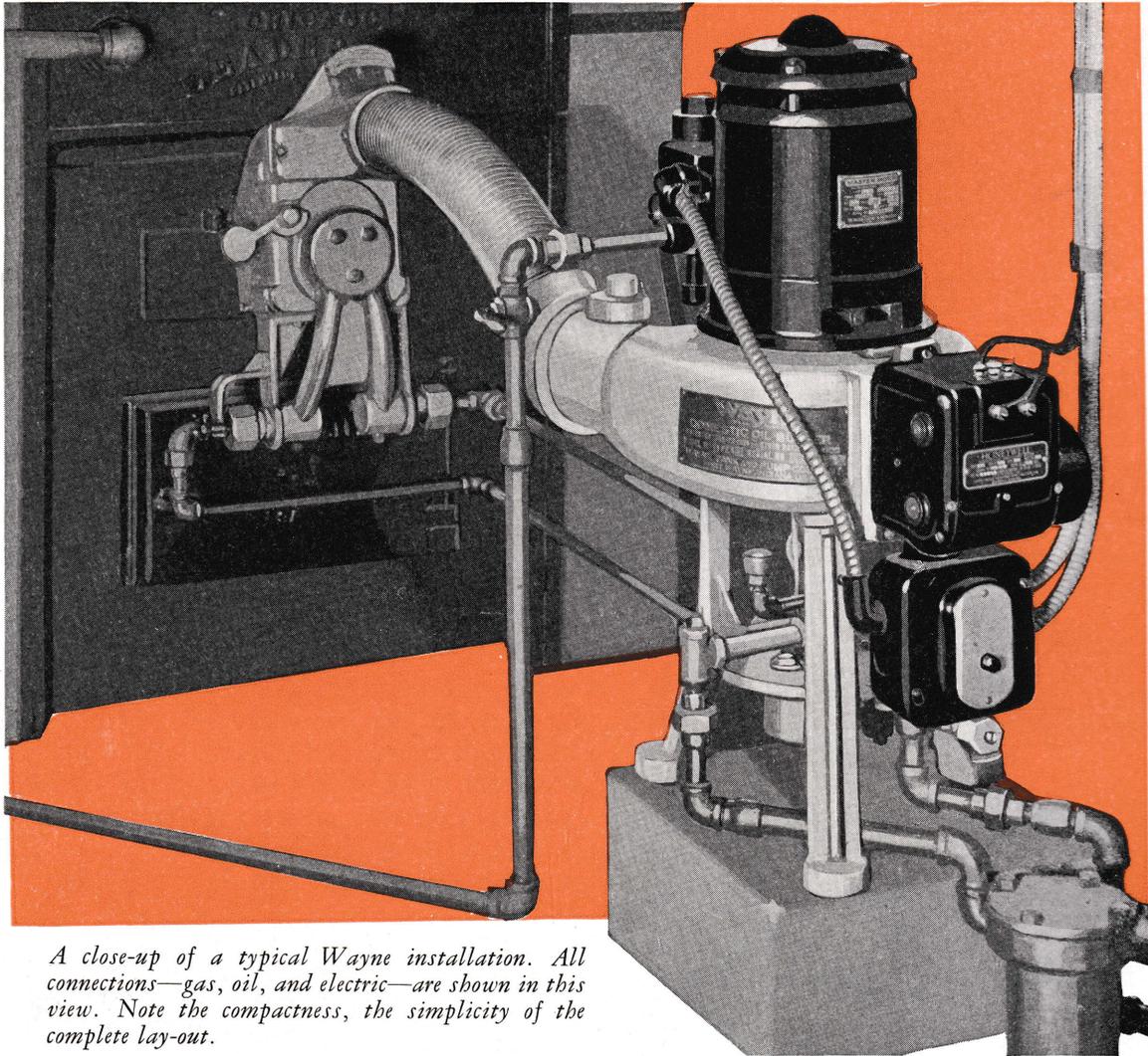
and operates from regular house circuits. The motor, pump and fan are the only three moving parts in the entire burner. These three parts, with their housings, make up the motor block.

The third unit in the Wayne installation is the combustion tube, which is mounted in a door of the heating plant. It is here that the oil is broken up, mixed with air and ignited.

In the center of this combustion tube is the firing nozzle, an aluminum cylinder supported on hinged brackets, so that it can be easily reached for inspection. In the fire-box end of this tube is the spray tip, a carefully machined head with a pin-hole orifice for the passage of oil. So fine is this hole that when oil is forced through it under its own pressure, the liquid



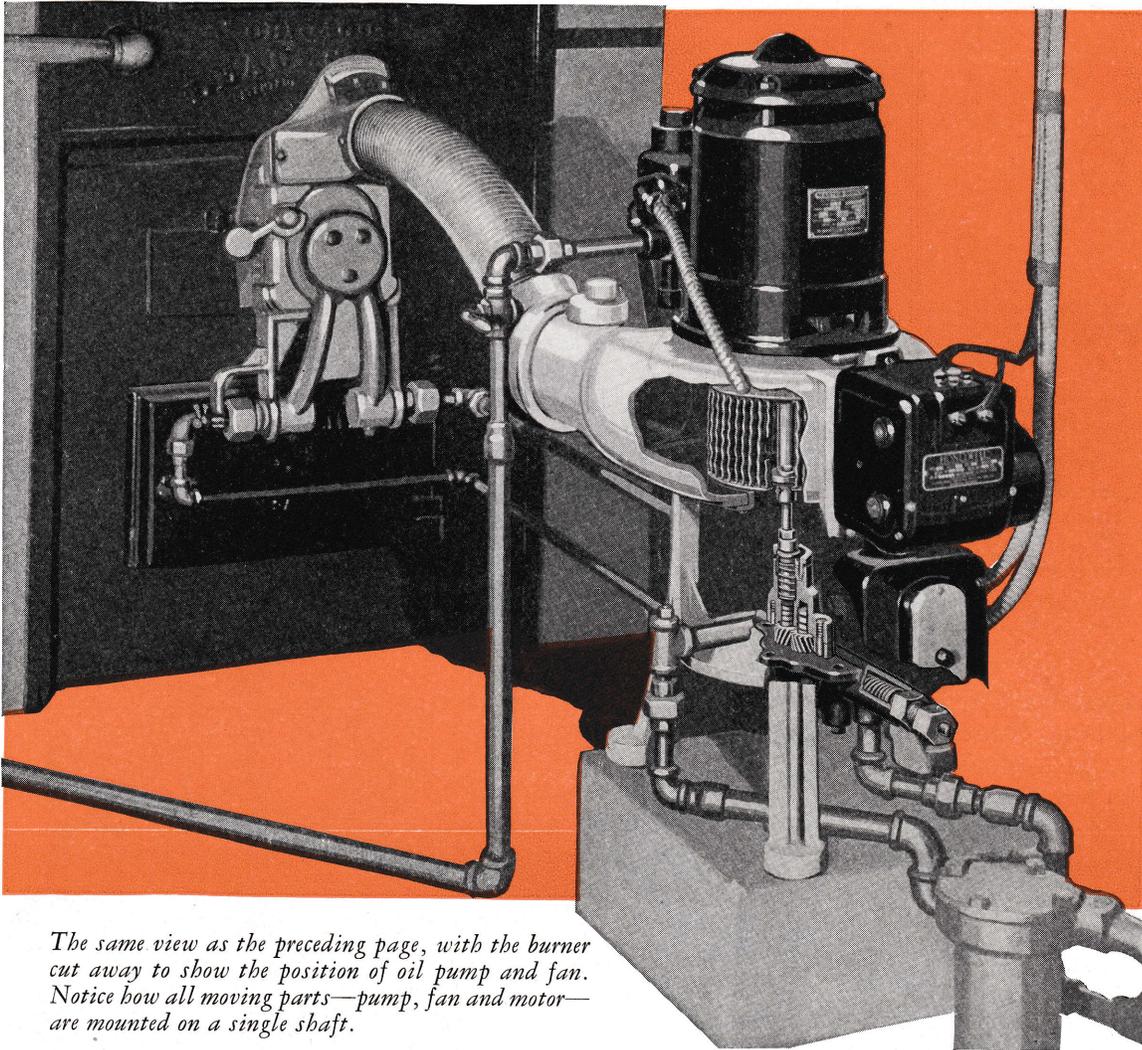
The blades of the Wayne fan are the result of scientific study to determine a design which provides a large volume of air at slow speed. The Wayne is as silent as a gentle breeze.



A close-up of a typical Wayne installation. All connections—gas, oil, and electric—are shown in this view. Note the compactness, the simplicity of the complete lay-out.

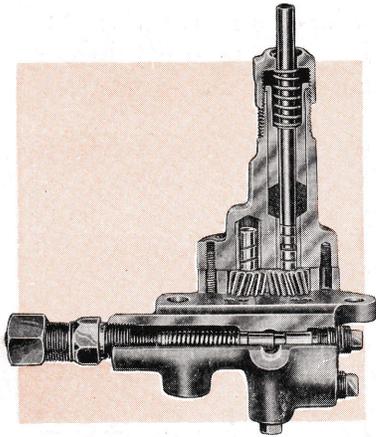
is gasified. Either gas or electricity may be used for ignition. In the case of gas, gas jets are set in the tube at either side of the spray tip, pointed inward and downward to the point of combustion. When the burner is not in operation, the gas pilot lights are but about one-half inch in length. When the burner starts, the two pilot flames extend to converge in the path of the gasified oil, which is at this point mixed with air. Where gas is not available, constant spark ignition is provided by electrodes which are fixed in the path of the gasified oil and air.

In operation, the oil is pumped to the tube and passed through the center of the firing nozzle to the spray tip. Air enters from the flexible tube on all sides of the firing nozzle, and as the gasified oil is sprayed forth, the air mixes with it at the point of combustion. At this time, ignition takes place, the resulting flame



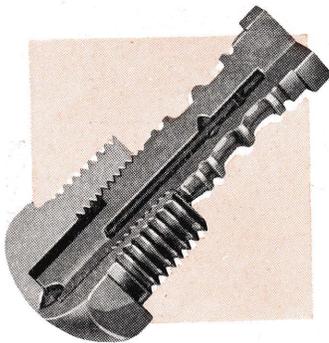
The same view as the preceding page, with the burner cut away to show the position of oil pump and fan. Notice how all moving parts—pump, fan and motor—are mounted on a single shaft.

being directed downward into the fire-box by the angle at which the nozzle enters the fire-box door, an angle calculated to provide the utmost flame travel and the most efficient use of heat to warm the cold air or water returns where they enter the heating plant. Completing the installation, and controlling the entire system, are the four automatic control devices which assure proper operation. These are the thermostat; the stack control; the auxiliary boiler control, which may be either an aquastat, vaporstat or airstat; and the motor switch. In addition, a Square-D type master switch is provided, much as a master control is provided for your house lighting circuit, and serving a similar purpose. The thermostat is your immediate control of the heating plant. It is mounted on any convenient wall, and can be had either with or without clock attachment. On it is a small lever, with a scale



Two carefully machined spiral gears make up the pumping unit of the Wayne Burner. They draw the oil from the storage tank and deliver it under heavy pressure to the combustion tube.

excessive temperatures or boiler pressures in the heating plant, the aquastat, vaporstat or airstat would function, promptly stopping operation of the burner. The aquastat performs this function on hot water plants, the vaporstat on steam or vapor installations, and the airstat on hot air furnaces. Between these devices and the stack control, the burner is positively prevented from operating except when everything is as it should be.

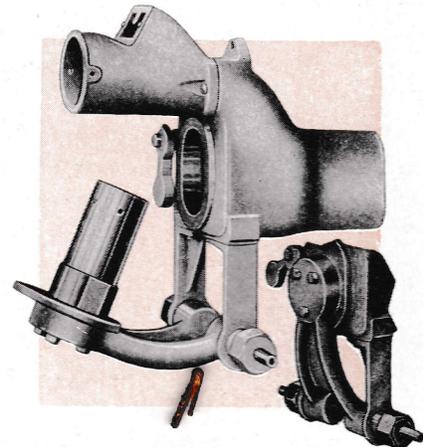


The oil, under pump pressure, passes into the firing nozzle, finally spraying forth from this spray tip, as a fine mist at point of combustion.

running either way from seventy degrees. By adjusting this lever, you raise or lower the temperature of the whole house. The entire system then operates to keep the temperature within two or three degrees of this established point at all times. Thus you really stoke your furnace with a button. The thermostat becomes your furnace man. Set it at the temperature you want to maintain, and the rest is taken care of automatically.

The stack control, mounted in pipe leading to the chimney, prevents operation of the motor in case of ignition failure. Should the oil supply be cut off or exhausted, or should ignition service be interrupted, no heat would be generated in the furnace. The stack control would then function, turning off the motor and preventing waste of oil.

The auxiliary boiler control safeguards the furnace or boiler against overheating. Should any condition arise which might cause

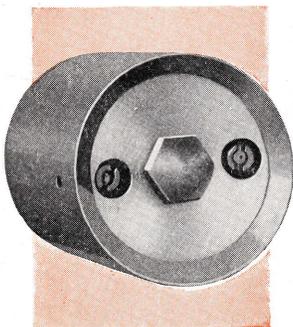


The combustion tube is hinged and lowering it as shown permits inspection of the firing end of the firing nozzle without muss or fuss. When the tube is lowered electric connections are automatically broken.

The motor switch is the controlling element at the burner for

all of these devices. It is mounted on the fan housing, in the motor block, and must be thrown before the burner is first put into operation. Should the stack control function for any reason, the motor switch is automatically thrown out. It must then be reset by pushing a button of the ordinary wall-switch type. This is further protection against irregularity of operation.

With the various parts of the installation in mind, it is interesting to trace the procedure when your burner



This front view of the combustion tube shows the placing of the spray tip and pilot lights. Gas pilots are here shown; electric ignition, with electrodes replacing the gas lights, may be had if desired.

is put into operation. The burner has been installed, for illustration; the supply tank is filled, the Square-D master switch is thrown, and the button of the motor switch is pressed. Desiring a household temperature of seventy degrees upstairs, you set the lever on the thermostat at that point. Household temperatures being below that, the thermostat functions. Electric connections are made and the motor starts. Oil is pumped from the tank to the combustion tube, passed through the spray tip and broken up. Air flows in from the flexible metal tube and is mixed with the gasified oil. At the same time, the gas pilot lights meet in the path of this vaporized oil, or a spark leaps across the electric ignition electrodes. Instantly, a clean, hot flame is burning in the fire-box, only a few seconds after the thermostat was set. Soon the house is warm. The thermostat registers a temperature of seventy degrees. Again it functions, this time breaking electric connection. The motor stops, oil ceases to flow, the gas

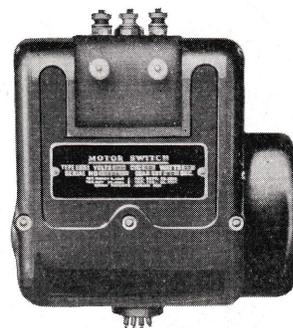
pilots are lowered or the electric spark discontinued, and the flame dies out.

But the brick walls of the fire-box continue to radiate heat. For a time the heating plant continues to warm the house. Very slowly the rooms cool, until eventually the thermostat indicates the temperatures have fallen slightly below seventy. Again it functions, as in the first instance, and the whole process is repeated.

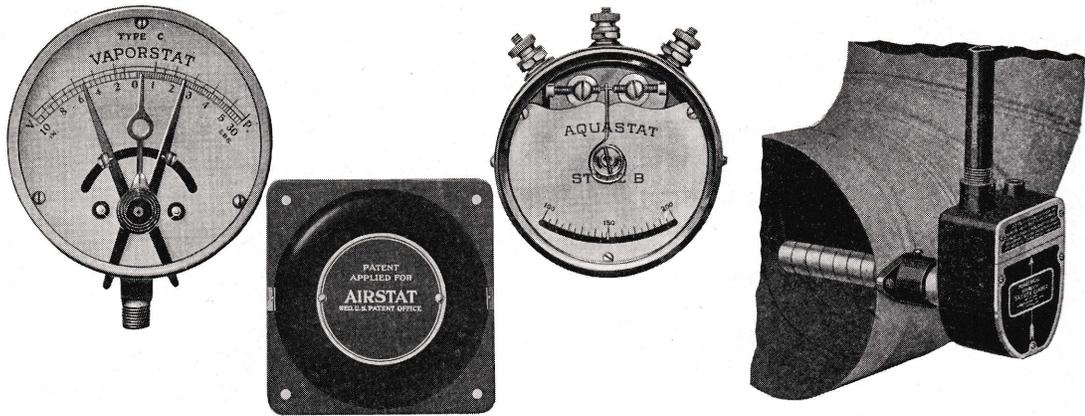
All of this is automatic. You have paid not the slightest attention to the burner after setting the thermostat. You may never have noted that the temperature has changed, for the controls are so sensitive that the house never varies more than two or three degrees in temperature—never more than a degree or two above or below the set point.

It makes no difference if you are out of the house. Night and day, as long as there is oil in the tank, the system will continue this automatic, intermittent operation, until you throw one of the control switches. At night, you may lower household temperatures by setting the thermostat down. If you use clock attachment, you may set a time for heat to come on in the morning. Watch oil supply, set thermostat, and forget everything else.

The best of it is that emergencies are taken care of with the same certain, automatic watchfulness. If the oil supply is depleted or ignition temporarily exhausted, the stack control shuts off the burner. If furnace temperatures or boiler pressures rise too high, the aquastat, airstat or vaporstat records that fact and breaks the controlling connections. Both of these functions are positive, certain; the burner cannot operate unless it is operating properly.



Above is the motor switch in which all temperature and safety controls are centralized. The burner must function properly or not at all.



The first three devices above—the aquastat for hot water, the vaporstat for vapor and steam, and the airstat for hot air—prevent excessive operation and dangerous furnace temperatures or boiler pressures, shutting off the burner at the first signal of such conditions. Operation is resumed automatically when normal conditions are reached.

At the right is the stack control, showing the thermostatic element within the flue-pipe. This device shuts off the burner if no heat is registered within ninety seconds after the burner begins to function.

The Wayne is not only designed to function in this way, but built to do so dependably at all times. In all the time the Wayne Oil Burner has been on the market, cases of failure in operation are almost unknown. Service calls, when they have been made, have usually been for minor, outside difficulties, often nothing more serious than a forgotten and empty supply tank. This is easily taken care of by having the oil company call on a regular schedule to see that the tank is filled. Beyond that, a woman or child can care for the service attentions which will arise in normal operation.

In the final analysis, the Wayne means heating service that actually achieves freedom from attention, effort and thought. It means constant, even heat in spite of the weather. It means warmth on those first fall days when you hesitate to build a furnace fire. It means comfort on cool, late spring days, when the coal-fired heating plant is ordinarily shut down. It means cleanliness—freedom from the dust and dirt of coal and ashes. It means all of these things because the Wayne is soundly designed and precisely built, competent in every way to take over the entire task of keeping your house comfortable.



Specifications—Wayne Type “A” Oil Burner

THE Wayne Oil Burner has been built according to established standards and practices of oil burner construction. The principles utilized in its operation likewise have been proved in actual practice. Wayne superiority, therefore, is traceable, not to new or mysterious principles, but to more efficient application of existing practices. The following specifications describe briefly the features of construction which are evidence of Wayne finer engineering—the result of 35 years’ experience in the mechanical field:

TYPE—Atomizing type. Mechanical draft. Completely automatic power burner.

MOTOR—Vertical type, slow speed, standard make. From 1/4 horsepower on smallest size to 3/4 horsepower. Direct connected to fan and pump.

IGNITION—Either gas or electricity is provided at the option of the buyer.

FAN—Turbine type providing ample volume of air to combustion tube at low pressure, and quietly. It operates off the motor shaft.

FAN HOUSING—Heavy casting designed to permit air passage without interference.

PUMP—Gear type, carries oil from supply tank to burner unit by suction and delivers it to combustion tube under pressure. High efficiency assures steady flow of oil under uniform pressure. Operates off motor shaft.

BASE—Tripod design. Cast iron, insuring stability and ruggedness. Cork feet.

D. S. S. MOTOR SWITCH—Operation of all temperature and safety controls centralized in special motor switch.

COMBUSTION TUBE—Gray iron casting, may be placed in firing, clinker or ash pit door of any standard boiler or furnace. Affords exceptional flexibility of installation to meet individual needs.

FIRING NOZZLE—Cylindrical aluminum casting mounted on swinging breech fitting into combustion tube. Contains atomizing tip, and pilot lights where gas ignition is used.

SPRAY TIP—Brass stem with brass or steel head; intake oil passage covered with fine strainer screen. Oil atomized by pressure through minute orifice in head of tip.

THERMOSTAT—Plain type. Positive control. Clock type optional at extra cost.

COMBUSTION CONTROL—Prevents operation of motor and flow of oil in case of ignition failure.

AUXILIARY BOILER CONTROL—Aquistat for hot water plants; vaporstat for steam and vapor plants and airstat for hot air furnaces; prevents overheating of furnace or boiler.

AIR TUBE—Flexible, seamless metal; permits location of burner at either side or in front of heating plant.

SUPPLY TANK—May be located in basement or may be buried outside. Outside tanks generally used. Capacity to suit convenience of buyer.

BRICK WORK (in heating plant)—Fire brick combustion chamber built to give utmost heating efficiency. Radiates heat after burner is shut off; protects walls of heating plant against extreme changes in temperature.

UNDERWRITERS—Listing and approval of New York Bureau of Standards and Appeals; Massachusetts Department of Public Safety, etc.

Radiation Capacities

Burner Size	CAPACITIES IN SQUARE FEET RADIATION				Gallons per Hour Required
	Direct Steam	Direct Water	Indirect Steam	Dir.—Ind. Steam	
A-3	450	720	225	338	1.9
	1850	3000	925	1388	5.5
A-4	1850	3000	925	1388	5.5
	2500	4000	1250	1875	7.5
A-5	2500	4000	1250	1875	7.5
	5000	8000	2500	3750	15.0
A-6	5000	8000	2500	3750	15.0
	10000	16000	5000	7500	30.0

Dimensions—Motor Sizes

Burner Size	Overall Height	Fan Housing Diameter	Motor Size	Weight, Burner Only
A-3	26"	12"	1/4 H. P.	105 lbs.
A-4	32"	14"	1/4 H. P.	162 lbs.
A-5	35"	16"	1/2 H. P.	220 lbs.
A-6	44"	23"	3/4 H. P.	330 lbs.

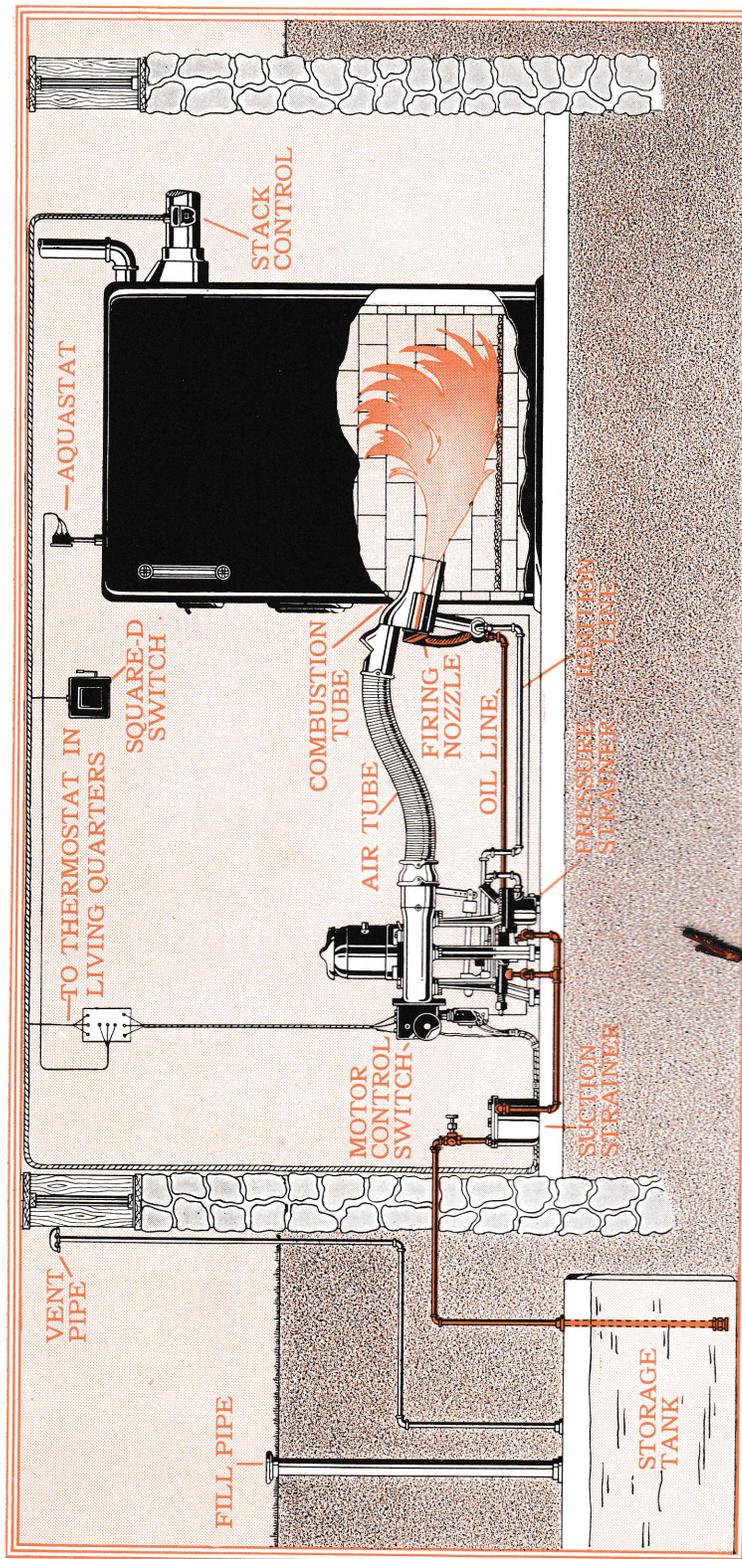


DIAGRAM OF THE WAYNE INSTALLATION

Showing the simplicity of lay-out and installation of the Wayne Oil Burner. Adaptable to practically any size or type of heating plant.

The principle of operation is as simple as the burner itself. When the thermostat calls the burner to action, oil is pumped by suction from the storage tank and delivered under pressure to

the firing nozzle. At the same time the ignition is turned on, air is supplied and combustion takes place within the fire-box.

The resulting flame burns quietly and steadily until the temperature reaches the predetermined point for which the thermostat is set. The burner then remains idle until called to action again.

THE WAYNE IN YOUR HOME

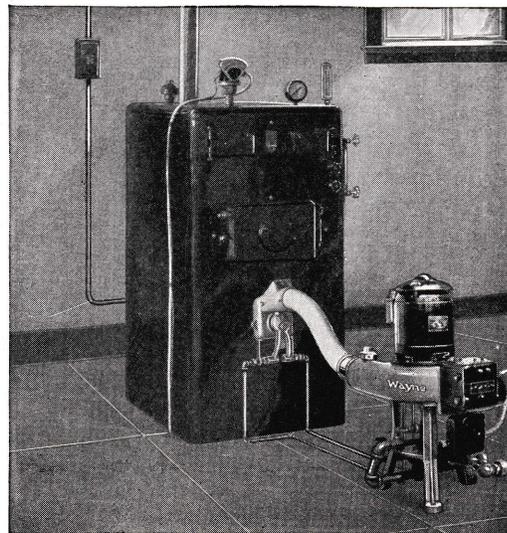


WAYNE USERS have summed up the whole difference between coal and oil in two significant sentences. "Until we installed our Wayne", they remark, "we supposed our home was about as comfortable in the winter as it could be. That was before we knew what could be accomplished by automatic oil heating service."

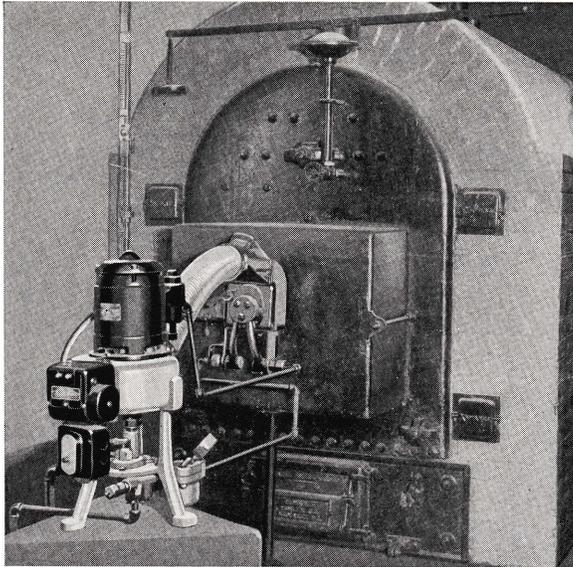
In truth, the whole story lies in these two words—"we supposed". Home owners have known no other fuel but coal for so many years that its limitations have been accepted without question. Men grumbled and tended furnaces because they felt they had to. Women countenanced uneven temperatures and soot-soiled homes and occasionally took a hand at the shovel, because such things seemed inevitable. Winter came to be regarded, too, as a period when colds and sickness were unavoidable, very largely because such a thing as absolutely uniform household temperatures through zero weather was regarded as impossible. These are the presumptions the Wayne Oil Burner proves false. Automatic control demonstrates that even, healthful temperatures are possible in spite of the weather.

Oil fuel eliminates the annoyance of cutting kindling, firing a furnace and carrying ashes. The house ceases to be a thing to be coddled through each succeeding cold snap, and becomes self-heating—comfortable—a bit of the semi-tropics all your own. Dirt and drudgery disappear; down in the basement, new, useful rooms blossom forth, adding to the utility and value of the home.

The best of it all is that these advantages may be enjoyed with the heating plant you are now using. The Wayne can be employed with any type of modern heating plant, whether steam, vapor, hot water or hot air. The size of the house will not affect either the installation or effectiveness of this plant; if your furnace is efficient and in good condition, in a short time and with only a few



A Wayne burner installed with a modern hot water furnace. The trim, compact lines of the modern heating plant, as well as its efficiency, are matched by the Wayne.



An unusually large household steam heating plant, with a Wayne installed. The Wayne is adaptable to various size furnaces; the Wayne line includes a burner for every heating requirement.

hours interruption of heating service, the Wayne can be installed and made ready for immediate use.

The price of the Wayne includes the cost of making the complete installation. The merchant from whom you buy has an organization equipped to do the whole job. His men will build up the lining of fire-brick, in your present furnace, make the necessary gas and electric connections and turn the entire system over to you, ready to use. You do not buy a burner in the store—you buy a heating service completely installed and ready for work.

It is almost futile to attempt to compare the cost of operating an oil burner with the cost of a coal furnace. Coal and oil differ too greatly in characteristics and in results. There is no kindling to be bought and cut with oil, and no furnace man to be hired. There will be no ashes to be hauled away, and an appreciable saving in the cost of keeping the house clean is to be expected. Oil is delivered virtually at the furnace door—not at the curb—and there is no rehandling cost.

Without taking these savings into consideration, it may be stated that oil at ten cents per gallon, will cost approximately the same as coal at thirteen dollars a ton, taken over the entire season (*130 gallons of oil equals 1 ton of coal*). Virtually all of this cost is for fuel; the cost of gas and electricity used will hardly be noticed. If you have been paying more than thirteen dollars for coal, oil should save you money; if you have been paying less, you spend only a trifle for convenience, cleanliness and comfort that coal can never provide. Many users write us that oil costs them less than coal. Others say it costs a little more. All say they would not be without it for twice its cost. In the end, when you consider what oil means in increased benefits, coal can cost less only by giving less.

The importance of buying from a responsible local organization can never be too greatly emphasized. It is possible to buy oil burners at almost any price. It is possible to buy them even by mail on an install-it-yourself basis. But in the end you get only what you pay for.

With Wayne installations, emergency service is provided at all times. The chances are that you will never have cause to call a Wayne service man; hundreds of Wayne users have never done so. At the same time, it is comforting to know that in case anything should happen to interrupt the satisfactory service of your

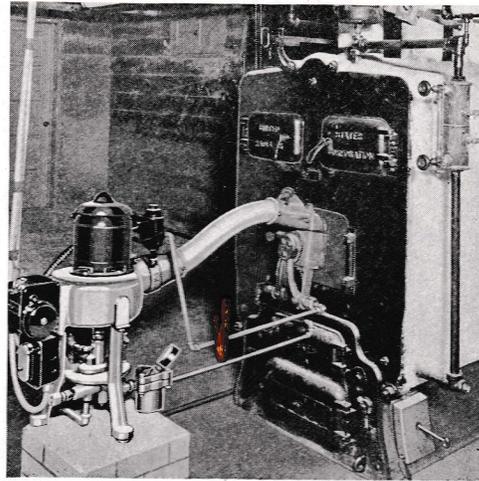


burner, a Wayne trained man, reliable and experienced, is available, night or day. Simply telephone the office from which you bought the burner, and the service man will report promptly, no matter what the hour.

Standing back of all this, a final resource which is absolute in its protection of your investment, is the character and reputation of the manufacturer, the Wayne Company, a leader in the oil equipment field for more than a third of a century.

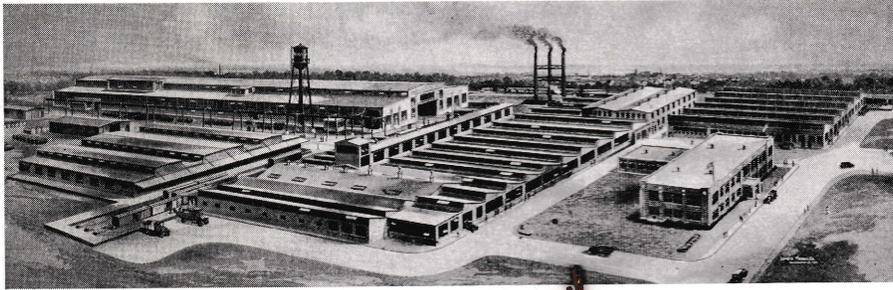
In the end, deciding upon an oil burner involves just two things; a decision on your part between the obsolete and the modern methods of home heating; and a judicious selection of the burner itself. The widespread use of oil, the enthusiastic endorsements of users, the evident superiorities of this fuel over coal, leave no question as to the desirability of oil. And a careful comparison, point by point, with other reputable oil burners is all that Wayne asks to prove its case.

There is a Wayne dealer near you with facilities for demonstrating the Wayne Burner in actual operation. It will take but a few minutes of your time to see the Wayne Burner and to learn just what it will do for you. Incidentally, you will also learn why thousands of home-owners, buying on the basis of carefully weighed values rather than matching of price tags, are turning to oil heat the Wayne way.



The Wayne is here shown in use with a vapor heating plant. The type or size of furnace employed makes no difference; the Wayne is built for use with any furnace which satisfactorily heats your home.





THE WAYNE Oil Burner is manufactured by the Wayne Company, an Indiana Corporation, established in 1891. The Wayne Company is now and has been for many years one of the world's leaders in the manufacture of precision devices for the handling of oils and volatile liquids, an industry closely allied with Oil Burner production.

That Wayne is today a world-wide organization of unimpeachable integrity is due to the honesty, the dependability of Wayne products. The same skill, the same zealous endeavor that has won high place for Wayne gasoline and oil equipment is also devoted, whole-heartedly, to maintaining public confidence in the Wayne Oil Burner, and in its companion products, the Wayne Water Softener, and the Wayne Electric Refrigerator.

*You may buy a Wayne Oil Burner
with absolute confidence*



W A Y N E C O M P A N Y

F O R T W A Y N E , I N D I A N A

