

Barbecue and Utility Furnaces



Issued By
The Agricultural Extension Service
The Texas A. & M. College System and
The United States Department of Agriculture
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ON THE COVER

This outdoor barbecue pit is made of sandstone set together with cement and lined with five inches of reinforced concrete. The top of the built-in oven attached to the chimney serves as a convenient shelf. The oven is floored with sheet metal. The fire and smoke pass under the metal floor of the oven on the way up the chimney. Heat in the oven is sufficient to cook food. Food may be kept hot in the oven until served. Ventilation is controlled by a small door at the front.

A ledge around the fire box holds up the rack or grate of metal rods.

The top opening of this chimney is two and one-half by twelve inches. The top openings extends to the floor of the furnace and slopes and enlarges as it nears the ground. This arrangement makes a good suction to carry off smoke.

The floor of the furnace was lined originally with coarse gravel. The first fire caused it to explode and break up but thereafter gave no further trouble.

Scene at the home of Dr. and Mrs. Fred W. Jensen, College Station, Texas. Left to right: Tyleen, Bernyce, and their father, Dr. Jensen.

S-357, A Barbecue With Oven, shown on page 16, gives more details of this barbecue.

Barbecue and Utility Furnaces

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Barbecue pits and furnaces have grown in popularity the last few years. 4-H girls and other landscape demonstrators rarely consider their work complete until they have some kind of outdoor cooking arrangements for the entertainment of their families and friends. Furnaces are appreciated as fire prevention measures for jobs which require a fire. Owners of picnic furnaces have been astonished to learn that they are useful in many ways besides broiling meats or toasting marshmallows.

When the barbecue furnace is located in the shade it is often used in making jelly and preserves. Meats, vegetables and fruits have been canned on outdoor furnaces to avoid disturbing kitchen routine. In summer, they make it possible to enjoy the cooler outdoor atmosphere for hot jobs. These furnaces are used in winter for heating water and rendering lard.

Plan the Furnace for Convenience

If you have a choice, let the furnace face prevailing summer winds. For example, in many parts of Texas the summer breeze comes from the south, then the chimney should be at the north side of the furnace. As far as design is concerned it is better usually to let the lines of the furnace parallel those of the yard in which it is placed.

A furnace used for cooking should be placed with some thought for the work required to carry vessels and food from the kitchen. If it is a part of entertainment feature of the landscape it should be convenient to the outdoor living room. It should be wholly or partially screened from the remainder of the private area, the public area and service area, by shrubs, vines or trees. Where space is limited, it may be made a part of the recreation areas or a part of the service area.

Plan for Durability

The area about the furnace should be paved with bricks, stones or concrete blocks to make work easier in wet weather, or the soil may be topped with gravel or sand.

The soil upon which the furnace is built should be a little higher than the surrounding soil to prevent water from collecting and standing inside. Soils which crack when they dry may cause the furnace to crack. An eight-inch foundation of native rock and sand will pre-

vent this. It helps to have several square feet about the furnace well drained so that it may be used immediately after rains.

Protect it from Weather

Trees and shrubs may be placed to make the barbecue furnace a more comfortable place to work or play by planting them to form a windbreak. Windbreaks make work and entertainment more pleasant in cold, windy weather. Care should be exercised to arrange plants so that summer breezes may be enjoyed. Hardy plants may be used to screen the area and at the same time lessen the force of disagreeable winds. Privets, pines, yaupons, cedars and other evergreens may make up the greater portion of these plantings. Some flowering plants such as desert willow, salt cedar, redbud, spirea and other shrubs may be used to add variety and furnish flowers. Shade trees are necessary for summer time.

Build the Kind Needed

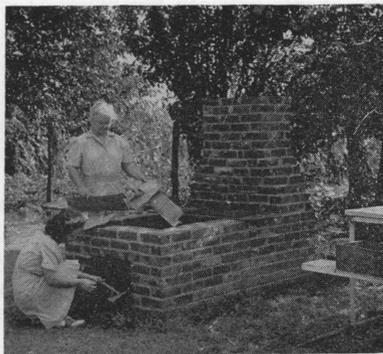
The furnace should be large enough to accommodate the uses for which it is made and small enough to harmonize with the house.



Native stone steps lead from the upper level. An old fashioned chuck wagon box was set on the low wall and covered with cemented stones. It is used for storing vessels and supplies. The door makes a convenient table. A keg with spigot protects drinking water. A low, wide rock wall is convenient for many uses. Entertaining in the open like this is pleasant and saves house work. (Rudolph Mellard Ranch near Marfa)

It should be high enough for convenience in working about it. It may or may not have a chimney. It is much more comfortable to work around one which has a chimney a little more than head high to carry away smoke. Do not make the bottom opening of the chimney too small nor too low; remember that smoke goes up. Native stone picked up in fields and pastures makes attractive structures. Brick and concrete blocks are easier to obtain in some places. Adobe and concrete reinforced with metal have been used successfully.

To make the furnace, use any type of brick, pieces of concrete or stones, except sand stone. Sand stone breaks when headed by direct flames. However, it can be used if the furnace is lined with fire brick or reinforced concrete. If the walls are lined with fire brick the furnace will last longer, regardless of the outside covering. The floor should slant toward the front enough to drain water. The floor may be of fire brick, gravel, sand, earth or concrete. Earth floor may wear down low enough to hold water unless it is built up occasionally.



A large all purpose furnace made of brick is shown here. Screened from the house by fruit trees and other plantings, it is partially shaded. The chimney is of a good height to carry off smoke.

Home of Mr. and Mrs. Ebner Enderbee, Cooke County.



Although a chimney about head high is usually tall enough to carry away smoke, a higher one might be needed in some locations because of air currents. This one will fit into the landscape better when the shrubs and trees near it have grown taller than the furnace to keep it from being conspicuous.

Mortar for holding brick or stone together should be made of one part cement and three parts of good mortar sand. Cleanliness of water, cement and sand is essential. A smoother concrete will be made by adding one-tenth part lime to the sand and cement and mixing thoroughly. If cement is not obtainable or if it cracks easily, glade mud may be used. To find glade mud, sometimes called lake clay, select a low spot where rain water collects and evaporates. Take up the small pieces of mud that dry and curl up. Remove all coarse particles. Leave only the fine sticky soil at the top of the pieces. Mix with enough water to make it stick together and fill

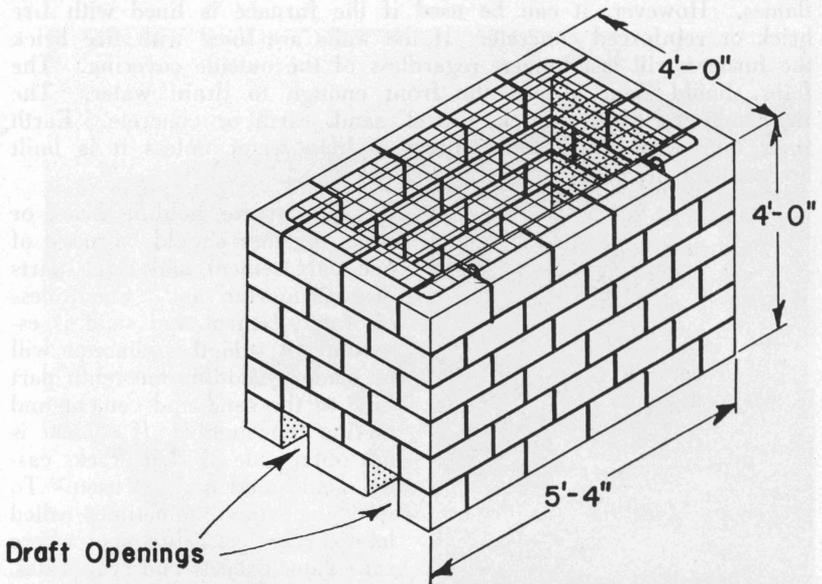
the spaces between the bricks, rocks or concrete blocks. A very good furnace can be made without mortar of any kind. Stack the rocks or bricks into the desired form. This kind is easily moved to a new location.

A grate or an arrangement of stones to hold the wood off the ground helps to make a better fire. If metal rods are set into concrete the ends should be wrapped with paper. This gives room for expansion and prevents heated rods from cracking the concrete. The rods may be moved back and forth a little in the wet mortar to make a space for expansion. This should be done just before the concrete hardens. Metal rods may be made of straightened wagon tires, old wagon rods or other suitable scrap metal.

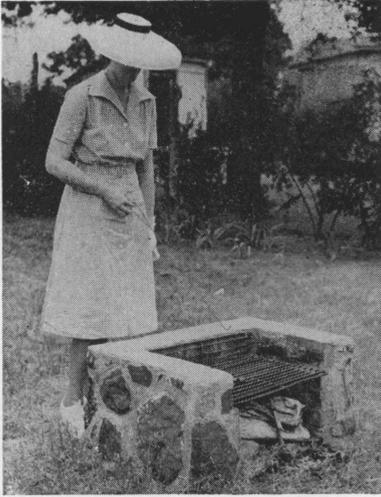
In building a furnace, remember that places will be needed for setting food and vessels which are being handled. Wide walls with flat surfaces are often used.

Manage and Use it Well

Since barbecue pits and furnaces are often used for burning trash, it is important to keep them free of half burned trash. If this



A trash burner is easily constructed from materials suitable for barbecue furnaces. A grate about 8 inches from the bottom to hold trash off the ground, and two draft openings, at one end, make a quick job of burning rubbish. The top should be covered with a lid of small mesh wire to prevent the escape of burning particles. Mesh wire makes a good lid to hold in burning particles and decreases the fire hazards. It should be made to fasten down or be weighted to keep it in place. The end opposite to the draft openings or one side of the furnace should be fitted with a door for convenience in removing ashes and other residue. Extension Plans No. S-209 and S-5198 are other designs.



A small open type furnace made of red stones is lined with fire brick. It was made small for the convenience of children. The grate which is supported by a ledge of brick may be taken out. The long bent wire is used for broiling food over coals. Windbreak, screen and shade may be planted later.

Home of Mrs. Steve Arthur, Tarrant County.

is allowed to accumulate it is unattractive, causes bad odors, attracts flies and is unsanitary. It is always better to build a trash burner than to use your barbecue pit, as it will clutter it up.

Closing a furnace tightly when a big fire is blazing may cause it to crack. After a fire has burned to coals it may be covered with safety.

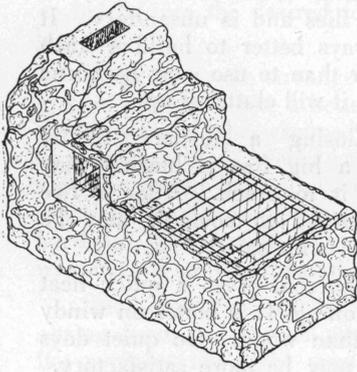
Charcoal gives a quick heat for broiling. It is better on windy days than wood. On quiet days wood may be more satisfactory.

Some handy utensils are: Long forks, spoons, and wire broilers, all with extra long handles. Tin trays to hold on the lap or wide-arm chairs make serving easier. A large cast iron broiler is useful for hamburgers. Stiff wires bent at the ends may be used for broiling or toasting food.

A furnace is good fire protection because it keeps fire confined to one place. The use of a furnace for heating wash water, for burning trash and for other fires lessens fire hazards. Less fuel is needed than for open fires about wash pots. Fire can be held and directed to the place needed. Special furnaces, indoors or outdoors, for wash pots and other uses are made on the principles outlined above.

Placing lights near the furnace make it convenient to work or entertain at night.

Outdoor Furnace with Oven—Plan S-357



OBLIQUE VIEW

BILL OF MATERIALS

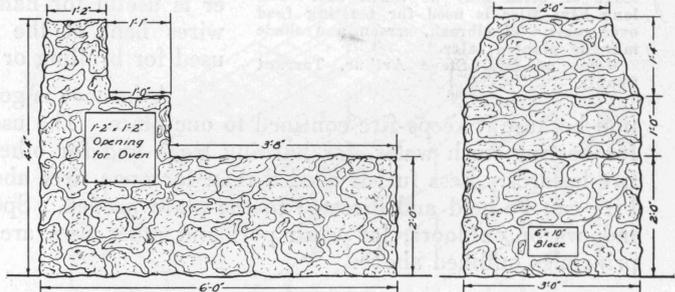
- 8 pcs. $\frac{1}{4}$ " \times 2'-2" Steel Rods
- 19 pcs. $\frac{3}{8}$ " \times 2'-2" Steel Rods
- 3 pcs. $\frac{1}{4}$ " \times 3'-0" Steel Rods
- 2 Pcs. $\frac{1}{4}$ " \times 1 $\frac{1}{2}$ " \times 2 $\frac{1}{2}$ " \times 1'-8" Angle Iron
- 2 pcs. $\frac{1}{4}$ " \times 1 $\frac{1}{2}$ " \times 2 $\frac{1}{2}$ " \times 3'-0" Angle Iron
- 1 pc. $\frac{1}{4}$ " \times 1 $\frac{1}{2}$ " \times 2 $\frac{1}{2}$ " \times 1'-6" Angle Iron
- 8 cu. ft. Clay

FOR BRICK CONSTRUCTION

- 124 Firebricks
- 525 Common Bricks
- 8.0 cu. ft. Mortar

FOR RUBBLE STONE CONSTRUCTION

- 124 Firebricks
- 1.2 cu. yds Rubble or Native Stone
- 13.0 cu. yards Mortar



SIDE VIEW

FRONT VIEW

REFERENCES:

- Extension Service Blue Print No. 195, Small Commercial Barbecue Pit
- Extension Service Blue Print No. 196, Large Commercial Barbecue Pit
- Extension Service Blue Print 5609, Home Size Barbecue Furnace
- Extension Service S-209, Trash Barrel for Backyard
- Extension Service S-5198, Incinerator
- Extension Circular C-233, How to Build with Native Stone
- Extension Service, S-239, Outside Furnace
- Extension MS-178, Outdoor Barbecue Stove
- Extension Service S-357, Outdoor Furnace with Oven
- Extension FHH-374, Picnic Table
- Extension Plan 363, Lawn Chair
- Extension Plan 207, Lawn Chair

Cooperative Extension Work in Agriculture and Home Economics, The Texas A. & M. College System and United States Department of Agriculture Cooperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.