

OUTDOOR FIREPLACES

The outdoor fireplace may be as simple or as complex as you wish to make it, but in general, it should create an impression of naturalness and simplicity. No one type will meet all conditions but all types should be practical to use and not be fire hazards or eyesores. If the fireplace is to be built by unskilled labor, simple designs are advisable.

Before starting construction, read your city or county codes and regulations on incinerators and fireplaces.

LOCATION

Locate the fireplace in a natural setting, easily accessible from the kitchen. The more convenient it is, the more inducement there will be to use it. In the absence of a natural setting, you may develop one by making plantings in the background, far enough away to avoid injury from the fire. Masking the house as seen from the direction of the fireplace will accent the feeling of naturalness and privacy. In areas of prevailing winds, the fireplace should be faced toward the wind to provide for smoke disposal and good draft.

FOUNDATION AND WALLS

The foundation of the wall should extend below the frost line to protect it against heaving. The part of the foundation below the soil line may be made of concrete, rocks, brick, cement blocks, or other convenient material. If concrete is used, the ratio of cement to sand should be no weaker than one to four.

In mild climates, build the fireplace on a concrete slab which provides a solid foundation on which to build.

The walls of most outdoor fireplaces are constructed of available rocks. The thickness of the wall varies from 6 to 12 inches, depending upon the size of the rocks to be used. To carry out a natural scheme, lay the rocks in their natural positions, and select those which when incorporated into the wall contribute to an impression of naturalness. Avoid flashy and conspicuous colors. The ratio of cement and sand in the mortar should be one to three. It is well to reinforce the wall with iron rods or similar material to guard against cracking.

FIREBOX

The size of the firebox has a direct bearing upon fuel consumption. One used only for cooking need not be as wide as one used for cooking and heating. The cooking surface should be sufficient to accommodate at least a frying pan and a coffee pot. For the average family in areas where fuel is quite accessible, approximately 2 1/2 square feet of cooking surface (16 in. x 24 in.) is desirable. The depth of the firebox should be about 10 inches if most efficient use of the glowing coals is to be obtained. It is well to slope the floor from the back toward the front to provide drainage. A concrete floor provides for easier cleaning of the ash pit.



FIREBOX WALLS

The walls of the firebox are sometimes exposed to extreme changes in temperature, especially if water is used to extinguish the fire. To avoid injuries from these changes, the walls should be protected by or constructed of fireclay brick. Pieces of sheet iron made to fit the walls are sometimes used where firebricks cannot be purchased. Lava rock withstands wide temperature fluctuations better than do many other kinds.

The standard size of fireclay bricks is 9 inches x 4 1/2 inches x 2 1/2 inches. Third class, or moderate heat duty bricks, should be satisfactory. Bricks are usually laid on their natural bed, but sometimes on edge. While the protection from temperature changes is not as good when the bricks are laid on edge, the protection so provided probably is sufficient for average conditions.

The mortar used in laying the brick should consist of fireclay, three parts, and cement, one part. The mortar should be sufficiently thin to make it possible to make the joint between the bricks no thicker than approximately 1/16 inch. If the joint is too thick it will weaken the lining wall. When the fireplace is completed, it is well to maintain an intense fire in it for four or five hours to set the fireclay. No moisture should be allowed to get into the space between the fireclay brick lining and the rest of the wall.

An ash pit may be provided by placing a grate 10 inches below the cooking surface, allowing the space below the grate for ashes. This grate may rest on a shelf constructed on each side of the firebox. Such a construction will increase the draft which may be needed in areas where fuel is damp and fog common.

GRATES

The solid plate is the ideal top where the fireplace is used frequently. It provides draft and draft regulation. It avoids unnecessary burning of food, especially in frying.

An open grate, however, affords a place for warming and grilling. A combination cooking surface in which the back half has a solid top and the front half an open grate provides the conveniences of both.

Black iron is better than steel for a plate because steel rusts readily when exposed to weather. It should be approximately 3/8 inch thick. If thicker, it heats slowly and if thinner, it is inclined to warp and sag. The plate may be reinforced by riveting 1 inch x 1 inch L-angle iron on the two sides and one end. One or two holes placed in convenient places will facilitate handling the plate.

If open grates, the bars should be approximately 1 1/2 inches apart. If further apart, pieces of meat will easily drop into the fire. They should be 1/2 inch to 3/4 inch in diameter, to withstand adverse conditions to which they are subjected.

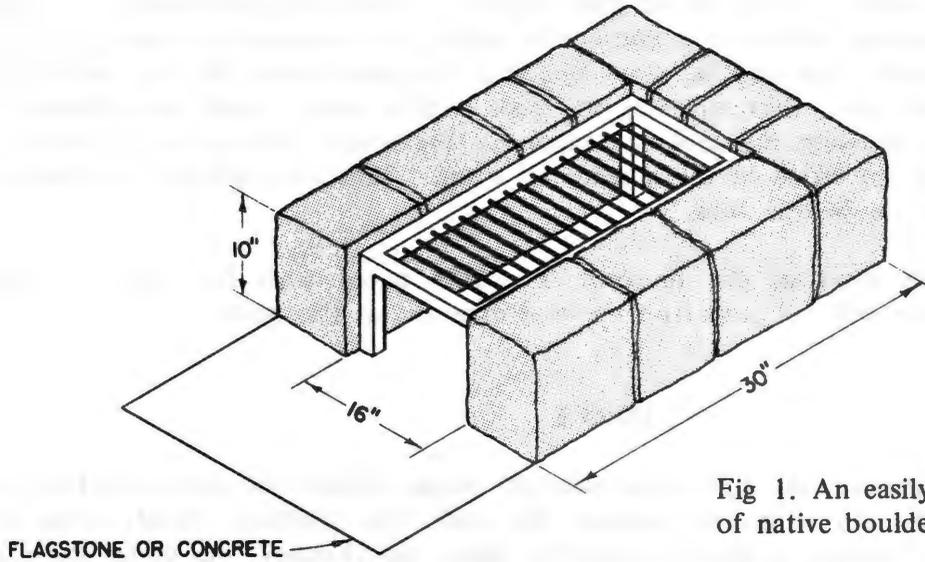


Fig 1. An easily constructed fireplace made of native boulders.

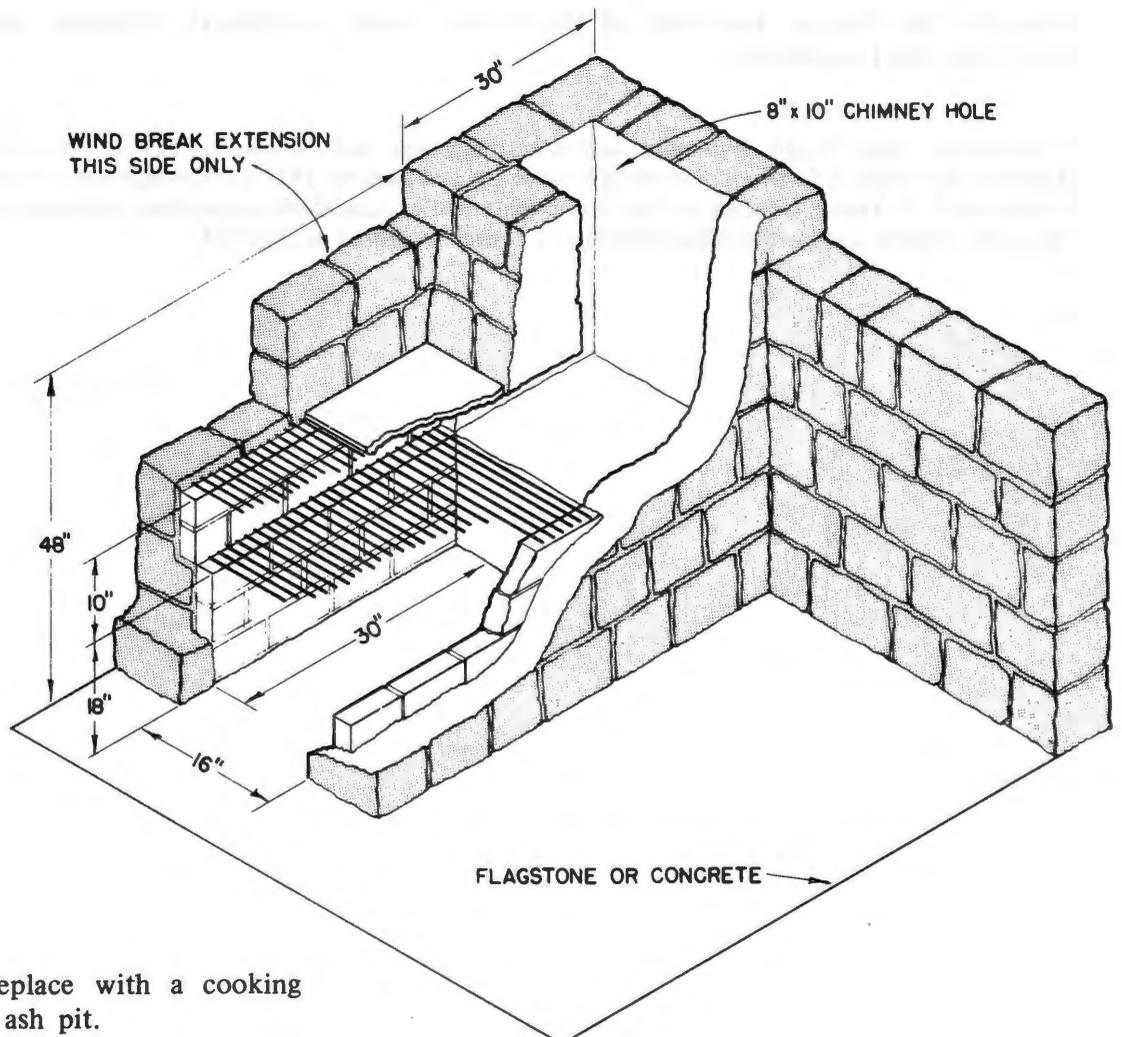


Fig. 2. Outdoor fireplace with a cooking grate, fire grate, and ash pit.

HEARTH

The distance from the cooking surface to the grate (firebed) should be approximately 10 inches. In order to have the cooking surface at a convenient height, it is necessary to raise the firebed if an ash pit is not desired. This may be done by filling the space below the grate with coarse cinders, gravel, or crushed rock, thus replacing the grate with a raised hearth, and allowing the desired space (10 inches) between the cooking surface and the hearth. The surface of the hearth should be constructed of fire brick in the absence of a grate. Moisture must not be allowed to get into the filling below the hearth floor.

The area immediately in front of the fireplace is usually paved with flat rocks or similar material because lawn grass will not withstand the heat exposure at this point.

DRAFT

In fireplaces without chimneys, the draft is provided by proper orientation with respect to wind direction. A raised back may ordinarily increase the draft. The chimney affords more draft control than is possible without a chimney and the higher the chimney, the better the draft. The cross-section area of the chimney opening, at the narrowest point, should be at least 1/8 that of the maximum opening at the front of the firebox. A damper in the chimney and closeable openings in the door of the firebox found in elaborate fireplaces, provide maximum draft and draft regulation.

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