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A Low Cost Kitchen Water System

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An abundant supply of good pure water, conveniently furnished, and a safe sanitary method of disposing of household wastes are two of the greatest conveniences that can be installed in any home. No type of equipment will return as much satisfaction for the money expended as a good water and sewage disposal system.

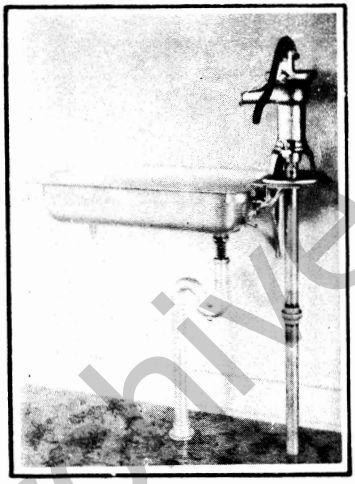

Fig. 1.—Pump, Sink and Drain—A convenient low cost method of bringing water into the kitchen from a near-by cistern or shallow well. The sink with drain makes easy the disposal of most of the kitchen waste.

The object of this circular is to give information regarding a simple and inexpensive, yet very effective method of bringing water into the kitchen and removing at least a part of the kitchen waste.

This simple system consists of pump, sink, and drain. Fig. 2 shows details of installation in a one-story house without a basement. If the source of water supply is a shallow well or cistern, located not more than 100 feet from the house, and if the low water level is not more than 20 feet below the sink, this complete system can be installed at very little cost. If such a water supply is not available the sink and drain can be installed without the pump.

The sink should be at least 18 x 30 inches of white porcelain enameled cast iron. It is fastened securely to the wall by means of two brackets. The pump is supported by brackets fastened to the sink or wall. There are several other simple ways of supporting the sink and pump that are equally satisfactory. The sink should be provided with a drain board at the other end. The height of the sink should be determined by the convenient working height for the worker. For the average height woman this height will be about three feet from the rim of the sink to the floor.

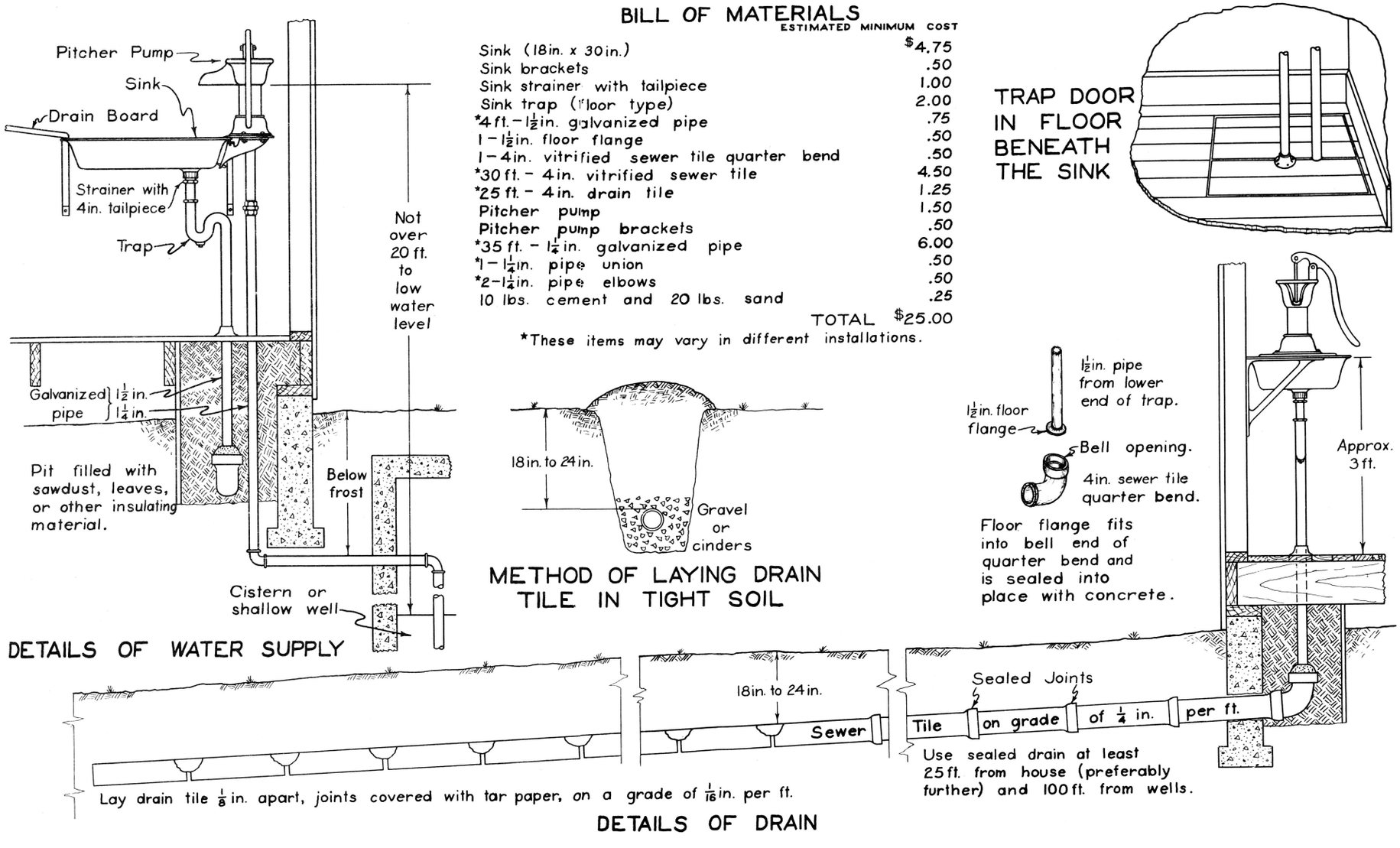

Fig. 2.—Installation details of pump, sink and drain.

the pump handle and thus prevent freezing. Care should be taken that all connections are tight and that the pipe from the house to the well is below the frost line. In cases where low floors or concrete foundations make it impossible to do the plumbing under the house from the outside, it is advisable to cut a hole through the floor under the sink. This hole should be from 18" to 24" square. The boards that are removed should be replaced in the form of a two-section trap door which may be removed to install insulation for winter.

Water is supplied to the sink by a pitcher pump, through a 1-¼ inch galvanized pipe that extends down through the floor and out into the shallow well or cistern. A check valve or foot valve on the end of this pipe may or may not be desirable. If a cheap pitcher pump, with valves not capable of holding water in pipe, is used the check valve will prevent water from draining back into well and thus eliminate the necessity of frequent priming. Without the check valve, however, it is easy to allow pipe to drain back into the well by lifting

The sink should have a strainer. This can be secured with a tailpiece for connection to the sink trap. In order to prevent foul odors from coming back into the kitchen, a sink trap must be installed underneath the sink. This trap should have a clean-out plug or a removable section for cleaning. A sink trap which reaches to the floor may be obtained. A 1-½" pipe is run from the lower end of the trap into the

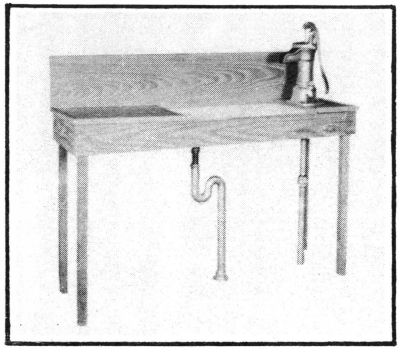

Fig. 3.—Homemade drainboard and support for pump and sink. Brackets may be used instead of the legs if the sink is to be fastened to wall. A cabinet similar to the one shown in Fig. 4 could be built.

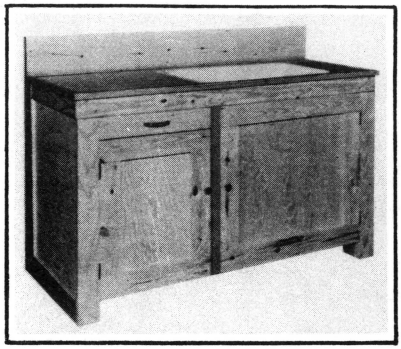

Fig. 4.—Homemade sink cabinet with place for pump. Plywood is used for the top, sides and doors. This cabinet is easily moved and therefore may be well suited to needs of renters.

open end of a 4" sewer tile elbow. To seal the joint where the pipe enters the elbow a 1-½" floor flange is screwed onto the end of the pipe and set into the bell opening of the elbow, and a concrete mixture placed in the bell over the floor flange. The concrete mixture consists of one part cement and two parts clean sand with enough water added to make a thick mix. Sewer tile with concrete packed joints should carry the waste water to a point where it will not endanger the water supply, 100 feet in clay soil and a greater distance in the more open soils. If excessive amounts of grease are to be run through sink a grease trap may be desirable in the drain (see Missouri Extension Circular 401, "Water and Sewage Disposal"). From the end of the sewer tile, the water may be carried in ordinary farm drain tile for final disposal. In sealing the joints in the tile line, a small amount of waste or okum is packed into the bell to prevent concrete from working through. The sealed sewer lines should be laid with an even fall of about ¼ inch per foot for best results. The open drain tile on the end of the sewer tile should be laid with an even fall of 1/16 inch per foot to allow seepage at open joints. The tile should be laid about ⅛ inch apart and at a depth of 18 to 24 inches below the surface of the ground. The length required to get rid of the waste will vary with different type soils and amount of waste. Not less than 25 feet should be used. Laying tile in a gravel filled trench as is shown in Fig. 2 helps greatly in tight soils. A rock or gravel pit at the end of the tile line is sometimes used.

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