June 21, 1955 M. E. TEMPLE 2,711,223

PREFABRICATED DRY WELL

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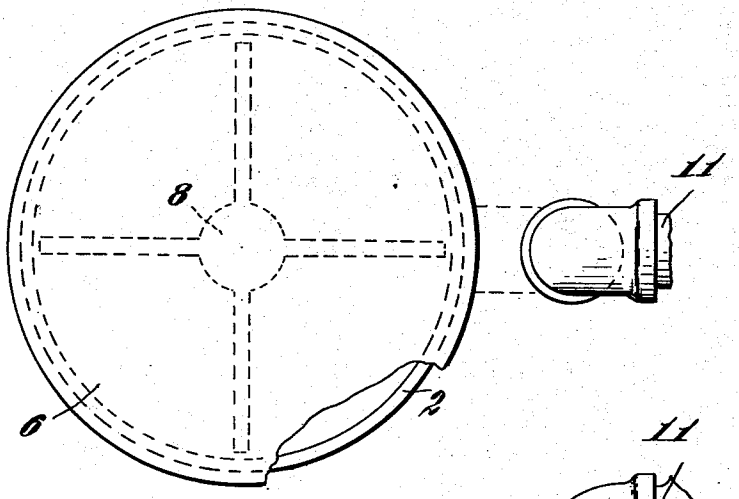

Fig. 1

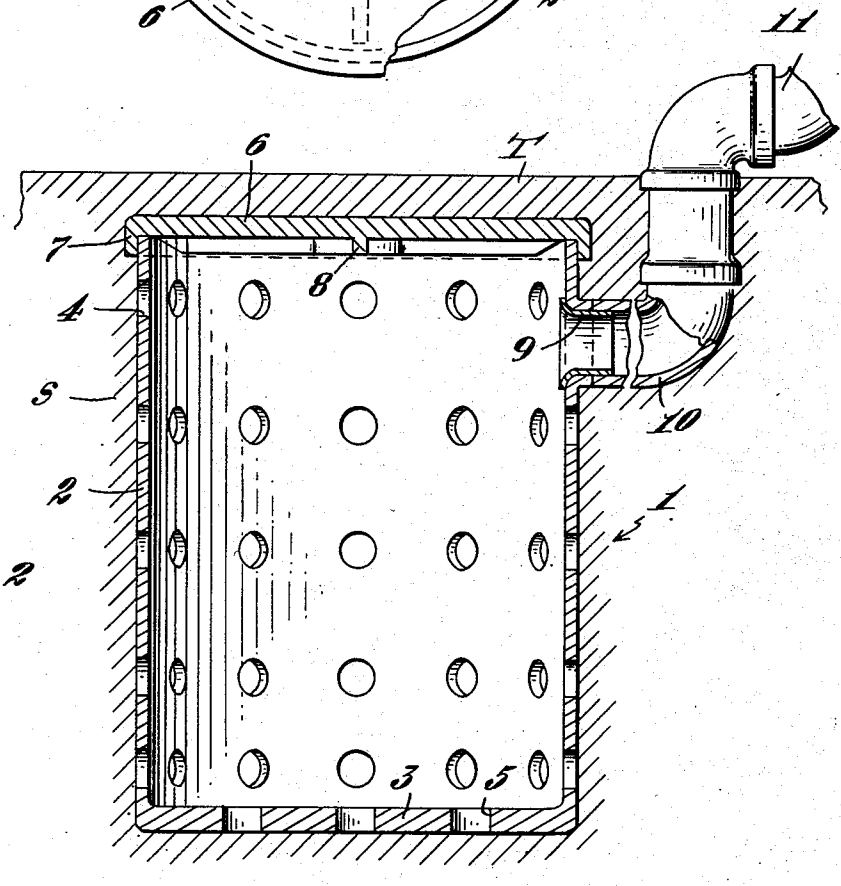

Fig. 2

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PREFABRICATED DRY WELL

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3 Claims. (Cl. 182—2)

This invention pertains to dry wells such as are employed for receiving the rain water from the roof of a building and from which the water is slowly dispersed by seepage into the surrounding soil, and relates more particularly to a dry well of prefabricated, portable type. Customarily, a dry well is prepared by digging a hole in the ground at the desired location, partially filling the hole with rocks, broken bricks or other irregular, lumpy, solid and insoluble material and then covering this filling with a layer of soil. The water from the down spout from the roof is led to the rock-filled hole and enters the interstices between the lumps of solid material and gradually seeps out into the soil. When first made and if properly prepared, such dry wells are reasonably effective for the intended purpose, but the intrusion of earth, roots, etc. gradually encroaches upon and fills the voids between the lumps until eventually the well must be dug up and re-made. It is not always easy to obtain the proper type of filling material and in some localities such material is quite expensive. Moreover, if the selected material is not of the proper type or if care is not exercised in applying the top covering of soil, the well may not be satisfactory from the start.

The present invention has for its principal object the provision of a prefabricated dry well of portable type properly designed for its intended function and by the use of which many of the difficulties attendant upon the use of dry wells of the ordinary type are avoided.

In order that a prefabricated device of this type may be of practical utility it is necessary that it be of relatively light weight, as compared with cement, concrete or ceramic materials, in order to keep transportation costs within reasonable limits. Accordingly, it is a further object of the invention to provide a prefabricated dry well which, while strong and rigid and capable of supportng the loads imposed upon it during use, is of light weight so as to make its transportation, over reasonably long distances, a practical matter.

Furthermore, in order that such a prefabricated dry well may be acceptable, it must be so devised that it is not subject to gradual deterioration from exposure to moisture or soil acids or bacteria. Accordingly, it is a further object to provide a dry well which is resistant to such deteriorating agencies. It is a further object to provide a dry well which may readily be cleaned at the necessary intervals to remove silt which may have been deposited within it, but without requiring that the dry well itself be dug up. Other and further objects and advantages of the invention will be pointed out in the following more detailed description and by reference to the accompanying drawings wherein

Fig. 1 is a plan view of the dry well with a portion of the cover broken away; and

Fig. 2 is a vertical section showing the dry well of the present invention installed in the position of use in the ground.

Referring to the drawings, the numeral **1** designates the improved, prefabricated dry well of the present invention, this dry well, as here illustrated, comprising a body portion which is of unitary construction and which has the side wall **2** and the bottom **3**. Either the side wall or the bottom, or preferably both, is provided with openings or perforations **4** and **5** respectively. These perforations may be formed in any desired way, but preferably during the moulding operation, if such be employed, by which the body of the dry well is formed. As here illustrated, the body of the dry well is of generally cylindrical shape, being circular in horizontal section, but it is to be understood that the particular shape of the dry well is unimportant except that for ease in manufacture the simpler shapes, such as circular or rectangular would ordinarily be preferred. Since dry wells are not required to hold large volumes of water, they need not be of a size comparable to that of usual cisterns or the like. Thus, merely as an example, a dry well, according to the present invention may be 18 inches in diameter and of a depth of 2 feet.

The dry well also comprises the removable cover **6**, here shown as having a marginal flange **7** which fits down over the upper edge of the body portion so as to keep the cover properly centered. As illustrated, the cover is provided with interior webs **8** to strengthen it so that it may be capable of supporting the load of the superimposed layer of soil T and any normal additional loads resting upon this layer of soil.

As here illustrated, the body portion of the dry well is provided, spaced a short distance from its upper edge, with an inlet port defined by a tubular nipple **9** which may be secured in any desired way to the wall of the body portion and which is designed to receive the end of a length **10** of terra cotta pipe, cast iron soil pipe or the like, which is connected in the usual way, by further lengths of such pipe, to the conventional down spout **11** leading from the roof of the building. While, as here shown, the nipple **9** is provided to facilitate proper connection of the pipe **10**, it is obvious that this nipple may be omitted and the side wall of the body portion of the dry well merely provided with an opening into which the end of the pipe **10** or its equivalent may project.

The thickness of the side walls, bottom and cover will depend upon the material from which the dry well is made, it being obvious that if metal be employed, the walls need not be so thick as when other materials having less inherent strength are employed. If metals are used, they should be of a type not subject to rapid deterioration or corrosion in contact with moist soil. Copper, copper bearing steel or stainless steel may well be used with this object in view, but for ordinary purposes these materials, although otherwise well suited for the purpose, may be found too expensive. Accordingly it is preferred to employ some non-metallic material, for example a suitable solid, desirably in granular form, bound together by a plastic binder. Obviously the materials employed should be cheap enough to make their use practical for such a device. As above pointed out it is requisite, from practical considerations, that the device be as light as possible commensurate with strength. Among the solid materials which are considered to be useful (and which should form the major percentage of the mass) are wood sawdust, shavings or chips. Ground cork would be desirable if its cost were not prohibitive. Other organic materials may be employed, such as are found to have the desired characteristics. It is further contemplated that light weight porous granules of mineral origin, for instance pumice, may be used.

The binder material should have the characteristics above described of substantial immunity to injury from contact with moist soil together with adhesive strength, and should likewise be cheap enough to be practical. Among those which at present seem to have the best

possibilities are binders of the bituminous type such, for example, as asphalt and coal tar. Other binders which at present may be too expensive for such use are the phenol formaldehyde resins, rubber or synthetic rubber compounds, and thermoplastic synthetic resins.

Assuming, for example, that wood sawdust and an asphalt binder are to be employed, the sawdust should be mixed with the binder, the latter having been made fluid by application of heat, the binder being in proportion just sufficient to coat and bind together the granules of sawdust while in plastic condition. The material is then flowed into a mold of the proper dimensions or subjected to an injection or equivalent molding process, and after the binder has cooled and solidified, the body portion of the container is ready for shipment to the point of use. When made of such moulded material, the wall and bottom of the body portion may be of the order of 1¼ inches in thickness to insure the requisite strength, but this is merely by way of example. The cover may be of the same material as the body portion or of other material as desired, and also moulded to shape.

In use, the body portion is sunk into the ground to the proper depth, for example, so that there may be six inches or more of soil over it after the cover has been put in place. After the connecting pipes have been properly arranged the soil is filled in over the cover and the device is ready for use.

If, after a long period of use, the body portion of the well should become partially filled with silt, for example gravel brought down from the roof by rain water, the relatively thin layer of soil above the cover may be removed, the cover taken off and the silt removed from the body of the dry well without disturbing the latter or the pipe connections leading from the down spout.

While one desirable embodiment of the invention has herein been illustrated and described by way of example, it is to be understood that the invention is broadly inclusive of any and all modifications falling within the scope of the appended claims.

I claim:

1. A prefabricated, portable dry well for the reception and seepage disposal of rain water from a down spout of a building, said well comprising an open top receptacle having a flat bottom and a peripheral wall rising therefrom, the upper extremity of the wall constituting a rim at the open top, a cover for the top, said cover having a depending peripheral flange adapted to fit snugly on the rim of the receptacle, the bottom and wall of the receptacle being a homogeneous monolith of non-metallic material and having uniformly distributed perforations therethrough, said cover being composed of the same material and being imperforate and an inlet port at the upper part of the wall for reception of the lower extremity of the down spout.

2. A prefabricated, portable dry well according to claim 1, wherein the cover is reinforced by ribs at its underside to support the weight of the superimposed soil when the dry well is buried beneath the surface of the ground.

3. A prefabricated, portable dry well according to claim 1, wherein the receptacle and cover consist of granular organic material of a specific gravity less than 1, combined with a bituminous binder.

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