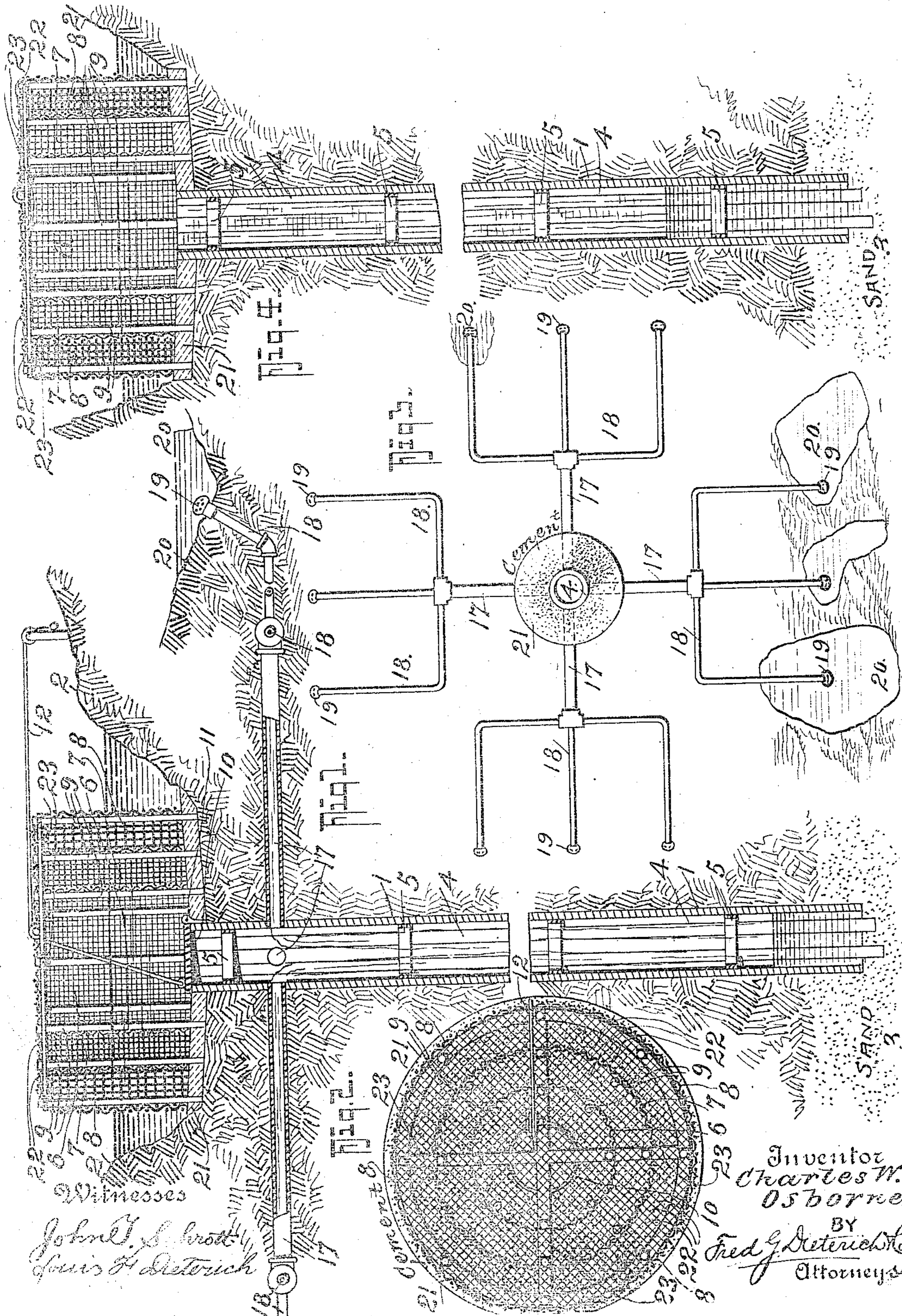


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DRAINAGE SYSTEM.  
APPLICATION FILED OCT. 12, 1910.

Patented June 6, 1911.

994,600.



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# UNITED STATES PATENT OFFICE.

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## DRAINAGE SYSTEM.

994,600.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed October 12, 1910. Serial No. 586,628.

*To all whom it may concern:*

Be it known that I, CHARLES W. OSBORNE, residing at Lubbock, in the county of Lubbock and State of Texas, have invented a new and Improved Drainage System, of which the following is a specification.

My invention relates to certain new and useful improvements in drainage systems for use in draining low, wet lands, lake basins or for use in draining ditches along roadways or railways and the like.

More specifically the present invention comprises a modification of or addition to the system disclosed in my prior Patent No. 963,316 of July 5, 1910.

The invention consists in providing means whereby several areas, more or less separated, may be drained through a single drainage tube, well or cribbing by piping the water from the outlying areas to the draining tube or well.

My invention also includes an improved construction of strainer or trap for the head of the drainage tube, the improvement consisting in the provision of a cement collar around the entrant end of the drainage tube or well in which the strainer posts may be securely embedded if desired, and the invention further resides in providing a straining top or cover for the annular strainers to provide a completely closed straining trap over the entrant end of the draining tube or well.

In its more subordinate nature the invention also includes those novel details of construction, combination and arrangement of parts, all of which will be first described in detail, then be specifically pointed out in the appended claims and illustrated in the accompanying drawings, in which:—

Figure 1, is a central, vertical section showing the invention. Fig. 2, is a top plan view of the strainer. Fig. 3, is a diagrammatic view of the invention. Fig. 4, is a central, vertical cross section of another form of the invention showing how the same may be used for draining ditches.

Referring now to the accompanying drawings in which like numerals and letters of reference indicate like parts in the figures, 1 represents a vertical passage or well which may be drilled or dug from the surface 2 of a lake basin to a lower strata 3 of sand, gravel or the like, and through which the water draining from the surface 2 will pass.

4 is a lining tube or cribbing for the pas-

sage 1 which may be of any suitable construction, preferably that disclosed in my patent hereinbefore referred to. The tube 4 may be braced by rings 5 as in my former construction. The lining 4 may be composed of an annular series of longitudinal sections of staves, the alternate staves having their ends projecting beyond intermediate ones, as indicated in Figs. 1 and 4 of the drawings, and as fully set forth in my patent before referred to.

Surrounding the upper end of the tube or cribbing is a series of annular concentric strainers 6, 7, 8 made from different sized mesh woven wire and secured to a series of upright posts 9.

The strainers 6, 7 and 8 are preferably constructed as indicated in my patent hereinbefore referred to, the outermost strainer 8 being comparatively coarse wire netting, the intermediate one 7 being made of somewhat finer mesh netting while the inner one 6 is of still finer mesh material.

In order to permit the upper end of the well or passage 1 to be closed so that water may be allowed to remain in the basin long enough to saturate the soil, a removable top or cover 10 for the entrant end of the well is provided, which cover is preferably hinged at 11 and is adapted to be raised or lowered through the medium of an operating wire cord 12 or the like.

So much of the construction just herein described is similar to that disclosed in my patent hereinbefore referred to, the present invention differing from that of my prior patent in the provision of a series of mains or pipes 17 which radiate from the drain tube or well 1 and from which mains 17 one or more laterals 18 lead off to the different areas 20 which it is desired to drain.

The ends of the pipes 18 may be protected by suitable screens or refuse traps such as protect the main entrance to the well 1, or as shown in the drawings simple strainers 19 may be used, if desired.

My present invention also differs from that of my prior patent in that I place a cement ring or collar 21 around the mouth of the well 1 in which some or all of the posts 9 may be embedded if desired, thereby not only preventing the water from seeping down around the neck of the well 1 but serving to readily sustain the posts 9.

Cross bars 23 are supported on the posts

9 and serve to support the screen mesh top 22, thus forming a complete screen trap over the mouth of the well 1.

In draining ditches along roadways or 5 railway rights of way the mains 17 may be omitted as may also be the cover 10, to effect a continuous drainage of the ditch, the well tube being placed at the lowest point in the ditch.

10 From the foregoing, taken in connection with the drawings it is thought the complete construction, operation and many advantages of my invention will be readily apparent.

What I claim is:—

15 1. The combination of an upright drain pipe extending from the surface of the ground downwardly, a series of concentric rows of posts rising from the surface of the ground around the top of said pipe, concentric 20 strainers of different size mesh of woven wire secured to said posts, cross bars over said posts and a screen cover supported on said cross bars.

2. The combination of a drain pipe arranged in the ground and extending from 25 the surface downwardly, said pipe being composed of an annular series of longitudinal sections or staves, the alternate staves having their ends projecting beyond the intermediate ones, supporting rings for said 30 staves arranged within the tube, a series of annular concentric upright strainers arranged on the surface of the ground around said pipe, and a strainer covering on the top 35 of said concentric strainers.

3. The combination of an upright drain pipe or well extending from the surface downwardly, a straining device or screen over the upper portion of said well, a lid 40 for the top of the pipe or well, means for actuating said lid, and mains leading into said well and laterals delivering into said mains from distant drainage areas.

4. The combination with a drain tube or well, and a plurality of distant surface exposed areas to be drained, of a set of drainage pipes leading into said well, the entrant ends of said drainage pipes being located in said areas to be drained and the end of said pipes that lead into the well being located in 50 a lower plane than the ends of said pipes that are located in the areas to be drained.

5. A drain tube or well, a set of mains delivering into the well, laterals delivering into said mains, the entrant ends of said 55 laterals being located in the several areas to be drained.

6. The combination with a drain tube or well and a plurality of surface areas to be drained, of a main delivering into said well 60 and a plurality of laterals delivering into said main and having their entrant ends located in the several areas to be drained.

7. A drain tube or well, a screening device over the entrant end of the same, a set of 65 mains delivering into the well, laterals delivering into said mains, the entrant ends of said laterals being located in the several areas to be drained.

8. The combination with a drainage ditch, 70 a draining well or tube therefor, and a concrete collar around the mouth of said well.

9. The combination with a drainage ditch, a draining well or tube therefor, and a concrete collar around the mouth of said well, 75 a set of upright supports around the mouth of said well, cross bars supported over the mouth of said well, by said upright supports, and a screen cover wholly inclosing said uprights and said cross bars to protect 80 the entrance to said well.

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Witnesses:

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