E. B. DAVIS.

LAND DRAINAGE SYSTEM.

APPLICATION FILED JUNE 18, 1919.

1,323,027. Patented Nov. 25, 1919.

Fig. 1.

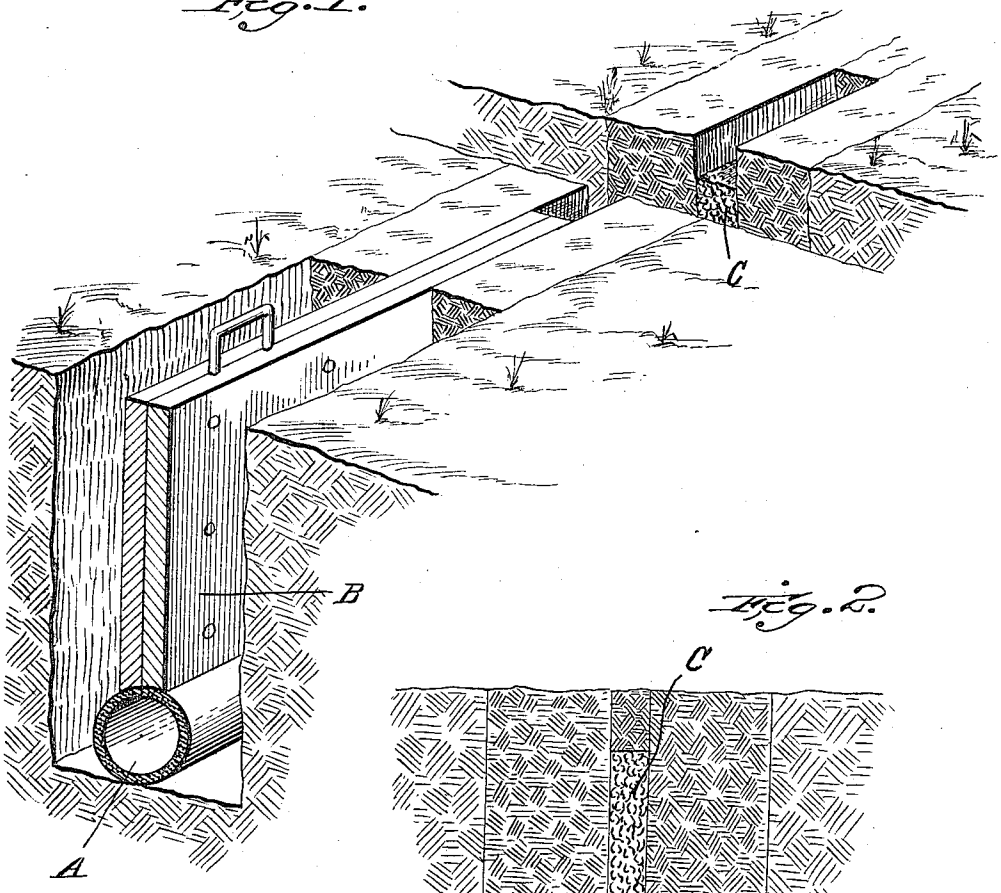
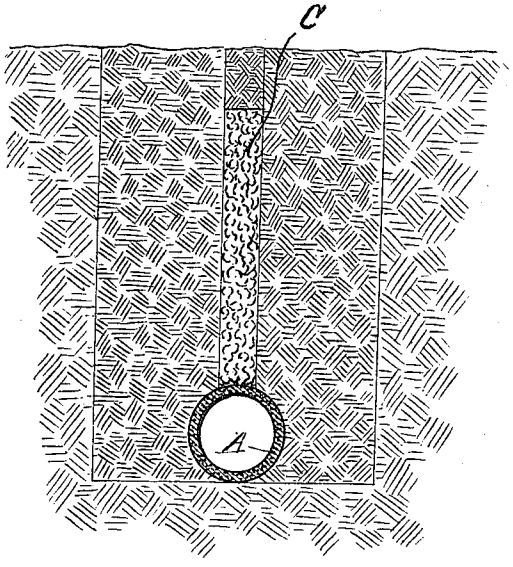


Fig. 2.



Inventor:

E. B. Davis

By Davis & Davis

Attorneys.

UNITED STATES PATENT OFFICE.

EDGAR B. DAVIS, OF COLUMBUS, KANSAS.

LAND-DRAINAGE SYSTEM.

1,323,027. Specification of Letters Patent. Patented Nov. 25, 1919.

Application filed June 18, 1919. Serial No. 305,073.

To all whom it may concern:

Be it known that I, EDGAR B. DAVIS, a citizen of the United States of America, and a resident of Columbus, county of Cherokee, and State of Kansas, have invented certain new and useful Improvements in Land-Drainage Systems, of which the following is a full and clear specification.

This invention relates to that type of drainage systems in which a drainage-pipe is laid below the surface of the ground, and a porous body of material such as gravel or sand is arranged above and all along the pipe, whereby the moisture in the earth above the pipe will seep into the porous body and thence into the drainage-pipe, as more fully hereinafter set forth.

In the drawings—

Figure 1 is a view partly in perspective and partly in vertical section showing the manner of constructing my drainage system;

Fig. 2 is a vertical sectional view showing completion of the drainage ditch.

In practising my invention on cultivated land, I first dig a ditch and lay in the bottom thereof a drainage-pipe A. I mount on the top-side of the pipe a form B that is in the shape of a long flat body and which is wide enough reach to or near the surface of the soil. I then fill-in the ditch on both sides of the form, packing the earth lightly against the form. I then withdraw the form and fill-in the narrow space thus provided along the top-side of the pipe with material which will form a porous drainage body C; I prefer sand or gravel, but any other material such as crushed corn-stalks, weeds, hay, etc., may be used, as is evident. This body of porous material is considerably narrower than the drainage-pipe A, so that it will be entirely supported on the pipe and the drainage water will be directed with certainty to the top-side of the pipe. In land that is to be cultivated, I terminate the porous body within plow-depth of the surface of the ground and fill-in the space above the porous body with the surrounding top soil, as shown in Fig. 2. In laying my system in non-cultivated land, I prefer to carry the body of porous material entirely to the surface of the land, so as to thereby more effectually drain-away the surface water.

I have shown in Fig. 1 a solid form B, which, of course, must be entirely withdrawn before the porous material is poured into place, but it will be understood that in those cases where the drainage-pipe is large enough to permit it I will employ a hollow form consisting of a pair of separated walls connected together or spaced apart in any suitable manner, the gravel or other material being poured into the space between the parts before they are removed. In the former case, the earth will, of course, be unsupported when the form is withdrawn, but in practice I have found that with a little packing of the earth against the form the earth will remain in position until the gravel or other material is poured or dumped into place. Where a hollow form is used and withdrawn after the porous material is placed therein, the spaces left by the walls after the withdrawal of the form will be quickly filled up by the expansion or gravitation of the porous material. In fact, it will be understood that the drainage body may be formed in any suitable manner, the essential feature of the invention being the employment of a vertical porous body resting on the top-side of the pipe and being in all cases narrower than the pipe so as to be completely supported by the pipe so as to effectually direct the drainage water to the top-side of the pipe. It will be obvious that this system will be extremely inexpensive in view of the comparatively small amount of the porous-body making material that will be needed; and it will be observed also that my system will be unusually durable in that the weight of the porous body is borne by the pipe and will, therefore, be maintained in position throughout the length of the pipe for a long time, since the only tendency to dissolve and dissipate the porous body into the earth will be the tendency of the particles composing the body to spread laterally into the surrounding earth, but this tendency will be counteracted by the tendency of the earth to compress the porous body and hold it in position vertically above the pipe.

It will be understood that the drainage-pipe is of the usual type, namely, a tile sectional pipe or a porous concrete pipe. In a sectional tile pipe, the drainage water will enter the pipe through the usual loose joints along the sides and at the ends of the pipe sections; and in a concrete pipe which is

porous, the water will seep through the wall of the pipe at any point where it comes in contact therewith.

The nature and scope of the invention having been thus indicated and its preferred embodiment having been specifically described, what is claimed as new is:

In a drainage system, a drainage-pipe embedded in the earth below the surface thereof, and a porous drainage body arranged vertically over the pipe and resting on the pipe along the line of perforations, this drainage body being narrower than the pipe so as to be entirely supported thereon, the surrounding earth being in contact with the porous body throughout its height to thereby form a lateral support for the porous body.

In testimony whereof I hereunto affix my signature.

EDGAR B. DAVIS.