

(No Model.)

A. MITCHELL.
SYSTEM OF ROAD DRAINAGE.

No. 442,072.

Patented Dec. 2, 1890.

Fig. 1.

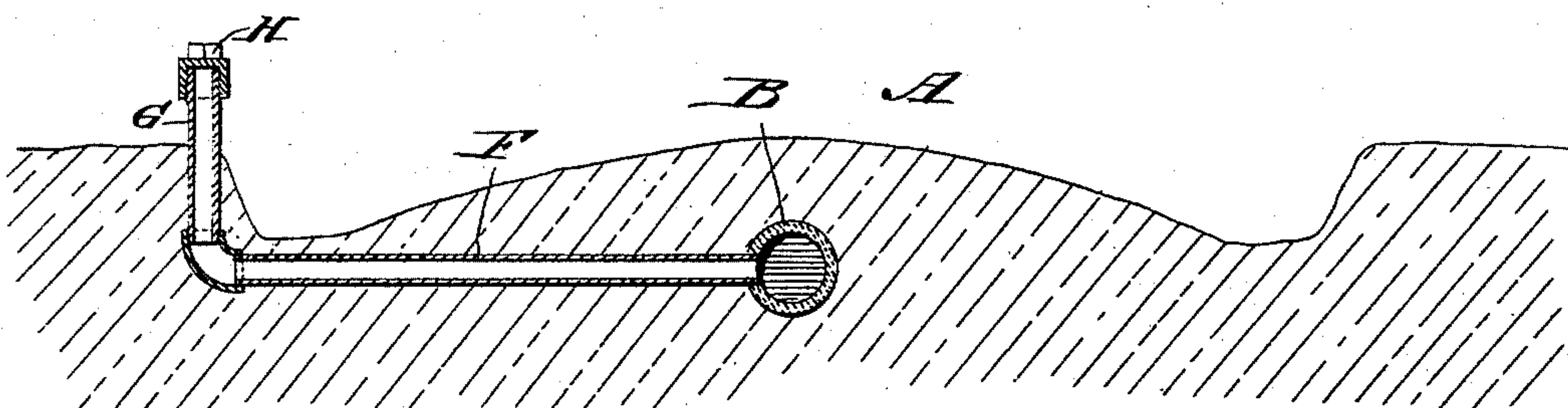


Fig. 2.

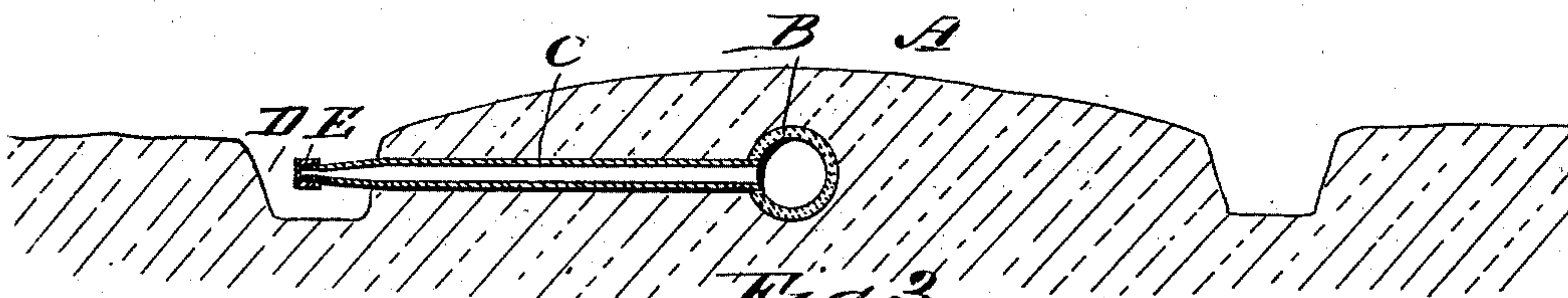
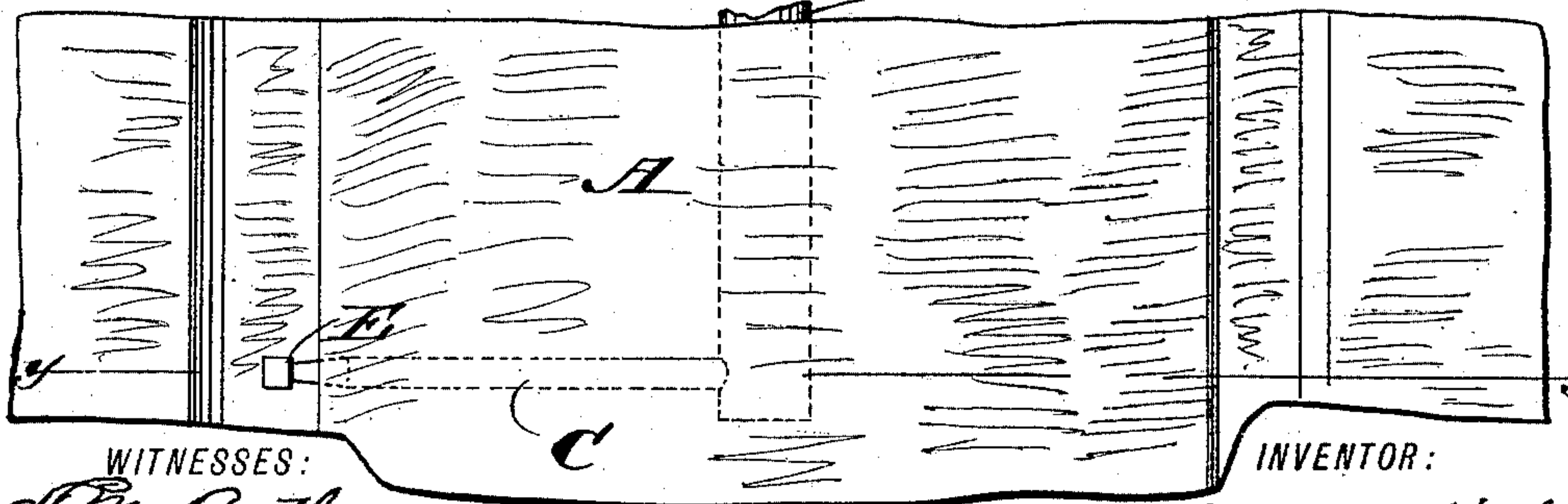
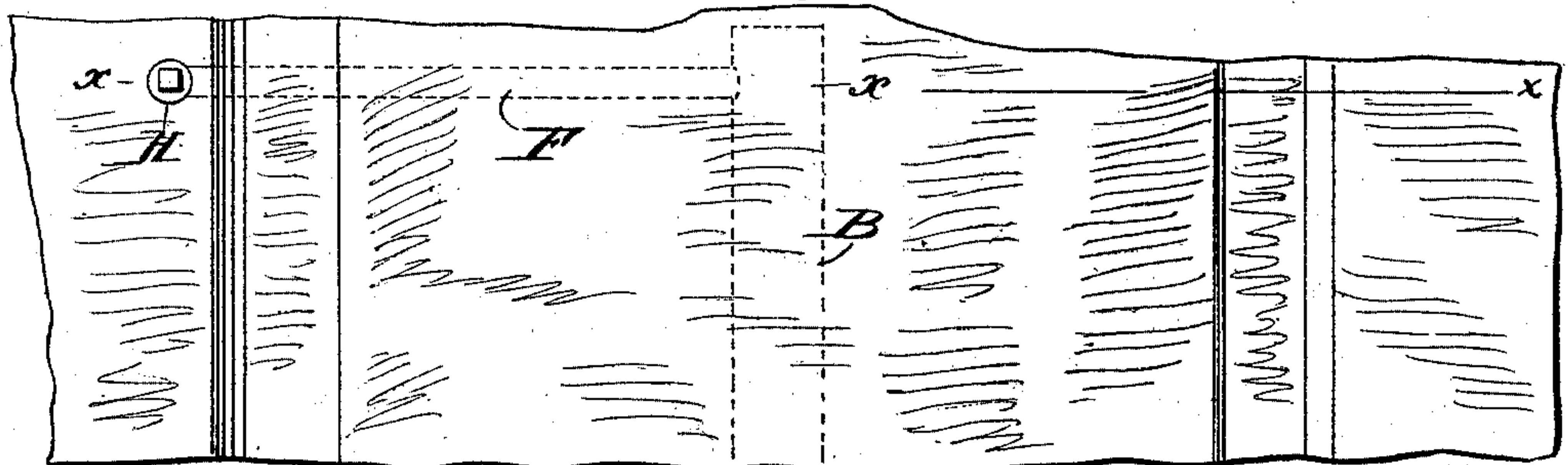


Fig. 3.



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ALEXANDER MITCHELL, OF WALDRIP, TEXAS.

SYSTEM OF ROAD-DRAINAGE.

SPECIFICATION forming part of Letters Patent No. 442,072, dated December 2, 1890.

Application filed July 30, 1890. Serial No. 360,358. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER MITCHELL, of Waldrip, (Lohn P. O.,) in the county of McCulloch and State of Texas, have invented a new and Improved System of Road-Drainage, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved system of road-drainage especially designed for use on dirt and other roads, and adapted to quickly dry the road after a heavy rainfall without disturbing the road-bed.

The invention consists of a drain arranged longitudinally under the road-bed and provided with outlet-pipes placed suitable distances apart, and each adapted to be closed at its outer end, and branch air-pipes also extending from the said drain and adapted to be connected with an air-pump for pumping the air out of the drain.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a transverse section of the improvement on the line $x x$ of Fig. 3. Fig. 2 is a similar view of the same on the line $y y$ of Fig. 3, and Fig. 3 is a broken plan view of the same.

Underneath the road-bed A, of dirt or other loose material, is arranged longitudinally in about the middle of the bed a drain B, formed of a ditch covered with tiles or made of porous drain-pipes, so that water saturating the road-bed can pass into the said drain. From the drain extend transversely, suitable distances apart, pipes C, leading at their outer contracted ends into a ditch D, formed on one side of the road-bed or leading from the road-bed to a convenient point of discharge. The outer end of this outlet-pipe C is adapted to be closed by a cap E or other suitable means. The outlet-pipes C are preferably arranged along the road at the lowest place. Another series of pipes F are also connected at suitable intervals with the drain B, the said pipes extend-

ing to one side of the road-bed, and provided at their outer ends with pipes G reaching to the surface of the ground, and each adapted to be closed by a cap H or other means. When the cap H is removed, the outer end of the pipe G is adapted to be connected with an air-pump of any approved construction. The air-pipes F are preferably arranged at the highest point of the road-bed.

After a heavy rainfall the road-bed A is more or less saturated with rain-water, and then, in order to quickly dry the road by this system of drainage, one or more operators, carrying an air-pump, attach the latter to the first air-pipe G after the cap H has been removed, the caps E on the other pipes C being left on. By working the air-pump the air in the drain B is discharged, so that a vacuum is formed therein, whereby the water with which the road-bed A is saturated naturally flows into the drain B to accumulate therein. When the drain B is filled or partly filled with water, the operators remove the cap E of the next following discharge-pipe C, so that the water from the drain flows out into the ditch to be discharged into the open country. This operation is repeated on all the successive air-pipes F G and the outlet-pipes C, so that the water in the road-bed is removed from the latter, and the road-bed is comparatively dry.

Thus it will be seen that by a very simple device the surplus surface water can be removed from the road-bed in the course of a couple of hours without the least injury to the road-bed.

The device may also be applied on farms for speedily drying sheep, cattle, and hog pens.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A system of road-drainage comprising a drain arranged longitudinally under the road-bed, outlet-pipes placed suitable distances apart and connected with the said drain, and branch air-pipes also connected with the said drain and adapted to be connected at their outer ends with an air-pump for discharging the air from the said drain, substantially as shown and described.

2. A system of road-drainage comprising a drain arranged longitudinally under the road-

bed near its middle, a series of outlet-pipes
leading from the said drain to one side of the
road-bed, means for closing the outer ends of
the said outlet-pipes, and branch air-pipes ex-
5 tending transversely from one side of the
road-bed to the said drain, the outer ends of
the said pipes being adapted to connect with
an air-pump for pumping the air out of the
drain, substantially as shown and described.
10 3. In a system of road-drainage, the combi-
nation, with a drain arranged longitudinally

under the road-bed near its middle, of a
branch air-pipe extending transversely and
connected with the said drain; the outer end
of the said air-pipe being adapted to connect
with an air-pump to discharge the air from the
drain, substantially as shown and described.

ALEXANDER MITCHELL.

Witnesses:

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