A. J. SHEPARD.

DRAIN INLET GUARD.

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899,568.

Patented Sept. 29, 1908.

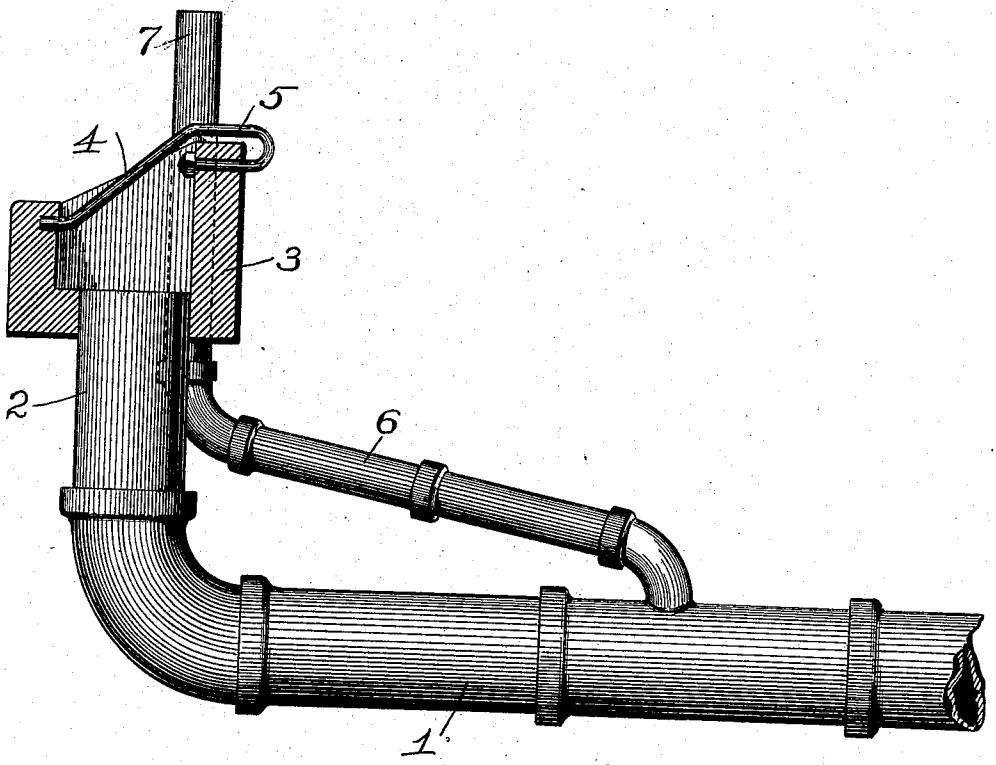


Fig. 1.

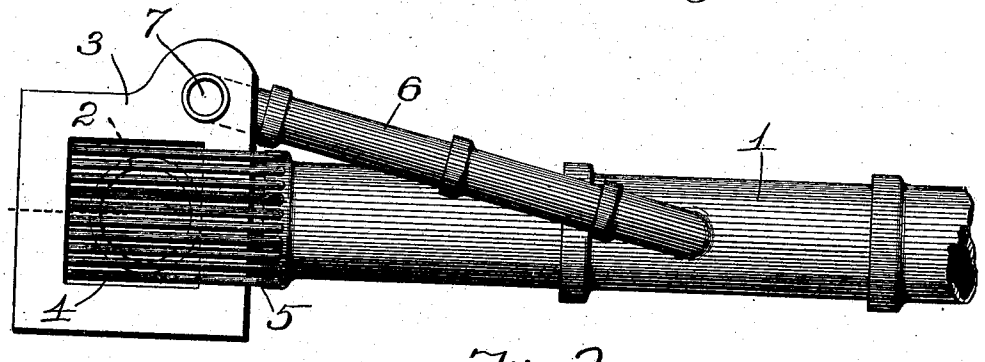


Fig. 2.

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UNITED STATES PATENT OFFICE.

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DRAIN-INLET GUARD.

No. 899,568. Specification of Letters Patent. Patented Sept. 29, 1908.

Application filed July 20, 1908. Serial No. 444,332.

To all whom it may concern:

Be it known that I, ANDREW J. SHEPARD, a citizen of the United States, residing at College Corner, Butler county, Ohio, have invented certain new and useful Improvements in Drain-Inlet Guards, of which the following is a specification.

This invention pertains to guards for the inlet end of drain pipes and is designed to facilitate the guarding of the inlet against the admission of trash, and to guard against the closing of the inlet by the accumulation of trash, and to provide against the choking of the drains in case of sudden violent flooding.

The improvements will be readily understood from the following description taken in connection with the accompanying drawing in which:—

Figure 1 is a vertical longitudinal section of my improved guard: and Fig. 2 a plan of the same, both views illustrating also the initial end of the drain pipe.

In the drawing:—1, indicates an ordinary drain pipe laid under ground or in a trench: 2, the upturned inlet end of the drain pipe: 3, an open-topped box formed of concrete connected with the inlet end of the drain pipe, the pipe entering through the floor of the box: 4, guard-bars disposed side by side and forming the roof of the box, these bars being inclined so as to present the sloping surface formed by them against the direction in which the inflowing waters are received by the box and drain pipe: 5, the upper ends of the guard-bars, passing forwardly over the front wall of the box: 6, an air-pipe connected with the drain pipe a short distance from the inlet end of the latter and extending back to a point below the box: and 7, the upturned inlet end of the air-pipe, the same extending up through the wall of the box to a point some distance above the top of the box.

The guard-bars 4 have their rear ends seated in sockets in the inner surface of the rear wall of the box, the forward ends 5 of the bars being turned downwardly in front of the box and then turned rearwardly and passed through the front wall of the box, nuts being provided on these inturned ends to keep the bars from forward displacement.

The waters received by the drain are to be assumed as coming from the left and reaching the sloping surface formed by the guard-bars, the water then passing downward between the guard-bars and into the box and thence into and way through the drain pipe. As intercepted trash is accumulated by the sloping surface formed by the guard-bars, it becomes washed upwardly along the sloping surface and over and off of the forward portion of the bars and lodged forward of the box. In case of a heavy or sudden flood, requiring the maximum passing capacity for the guard, any accumulated trash is quickly swept upwardly and onwardly beyond the box, owing to the comparatively smooth uninterrupted surface formed by the guard-bars, and at the same time the sloping character of the surface formed by the bars tends to offer free invitation for the entry of water into the box and drain pipe.

It often occurs that in the case of sudden violent flooding the water so thoroughly seals the spaces between the guard-bars that the air cannot rise from the drain pipe. In the present case the air-pipe provides for the air leaving the pipe in advance of the in-rushing water and through an outlet independent of the guard. The location of the inlet end of the air-pipe at the box permits it to be well supported by the box and brings it to a position where it forms practically no more obstruction to the land than does the box alone, and at the same time the box and the inlet end of the air-pipe are brought so close to each other as to be subject to an inspection in common. The inlet end of the air-pipe requires to project some distance above the surface and, being immediately at the guard-box, is in territory where it is not likely to be injured during the cultivation of land, and at the same time the land elsewhere than in the neighborhood of the guard-box is left uninterfered with.

My improvements are adapted for agricultural drains generally. Where there is a single inlet to the main drain there will be a single one of the drain guards, and where a drain pipe is provided with several inlet branches the inlet end of each branch will of course be provided with one of the inlet-guards, it being understood, however, that in the case of a main drain having a plurality of inlet branches one air-pipe will answer for the lot of inlets providing its connection with the main drain pipe is at a point beyond the point of branching.

I claim:—

1. A drain inlet guard comprising, an

open-topped box formed of concrete and adapted to have the inlet end of a drain pipe connected with its base, and a series of guard-bars arranged parallel with each other and forming the roof to the box, the series of guard-bars forming an inclined surface from one end to the other of the bars, combined substantially as set forth.

2. A drain inlet guard comprising, an open-topped box formed of concrete and adapted to have the inlet end of a drain pipe connected with its base, and a series of guard-bars arranged parallel with each other and forming the roof to the box, the series of guard-bars forming an inclined surface from one end to the other of the bars, the higher ends of the guard-bars passing over and beyond the wall of the guard-box, combined substantially as set forth.

3. A drain inlet guard comprising, an open-topped box formed of concrete and adapted to have the inlet end of a drain pipe connected with its base and having a front wall higher than the rear wall, a series of guard-bars arranged parallel with each other and arranged upon an inclination, the lower ends of the guard-bars being socketed into the lower wall of the guard-box and their upper ends projecting over the higher wall of the guard-box, combined substantially as set forth.

4. A drain inlet guard comprising, an open-topped box formed of concrete and adapted to have the inlet end of a drain pipe connected with its base and having a front wall higher than the rear wall, a series of guard-bars arranged parallel with each other and arranged upon an inclination, the lower ends of the guard-bars being socketed into the lower wall of the guard-box and their upper ends projecting over the higher wall of the guard-box, the forward higher ends of the guard-bars being turned downwardly in front of the guard-box and thence passed rearwardly through that wall, combined substantially as set forth.

5. A drain inlet guard comprising, a drain pipe having an upturned inlet end, an open-topped guard-box connected with the inlet end of the drain pipe, a series of guard-bars disposed parallel with each other and forming a guarded roof for the guard-box, an air-pipe connected with the drain pipe at a point a distance from the guard-box, and an upturned inlet end for said air-pipe connected with the guard-box, combined substantially as set forth.

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