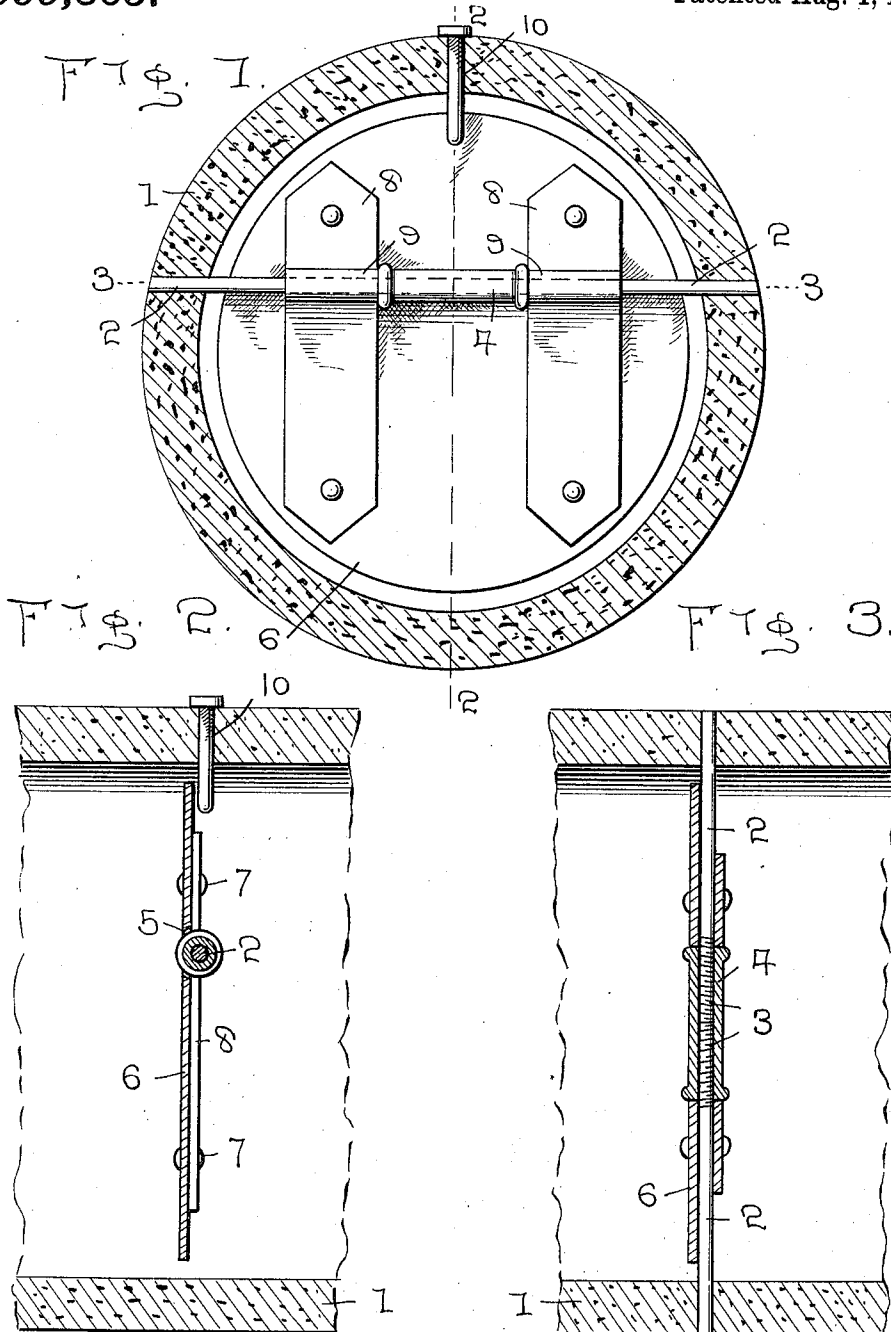


M. D. GURNETT.
 AUTOMATIC DRAINAGE GATE.
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999,305.

Patented Aug. 1, 1911.



WITNESSES:

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UNITED STATES PATENT OFFICE.

MICHAEL D. GURNETT, OF BARNUM, IOWA.

AUTOMATIC DRAINAGE-GATE.

999,305.

Specification of Letters Patent.

Patented Aug. 1, 1911.

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To all whom it may concern:

Be it known that I, MICHAEL D. GURNETT, a citizen of the United States, residing at Barnum, in the county of Webster and State of Iowa, have invented certain new and useful Improvements in Automatic Drainage-Gates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to drain pipes and more particularly to valves or gates therefor.

An object of the invention is to provide a gate or valve for a drain tile which will not materially check the flow of water into the final outlet, but will prevent rabbits, muskrats, mink, turtles, snakes, etc. from entering the outlet of the tile and becoming caught and dying therein during low water and thus clogging the tile and preventing the flow of the contents of said tile into the river, causing great annoyance to both owner and engineer, as it is almost impossible to locate said obstruction without incurring great expense.

Another object is to provide a gate for drain tiles of simple and novel construction, and one which will be adjustable to tiles of various diameters.

A further object is to provide a gate pivoted upon its center and adapted to swing outwardly upon a slight pressure against its inner surface caused by the increase in the outward flow of the contents of the drain, but which will not open inwardly by pressure against its outer side to allow the entrance of the above mentioned nuisances or floating objects within the river, creek, or drainage canal, during high tide, and, a further object is to provide a gate of this character which will automatically close when the flow of water within the tile ceases and thus prevent the invasion of such animals as invariably seek refuge in such places as drain tiles during low water or inclement weather, entering the smaller lateral tile lines and finding it impossible to turn around to make their exit when water begins again to flow from above on the line, are drowned therein, thus forming an obstruction which is very difficult and expensive to locate and remove.

Other objects and advantages will be hereinafter set forth and pointed out in the specification.

In the accompanying drawings which are made a part of this application, Figure 1 is a cross section through a drain tile provided with my gate. Fig. 2 is a vertical section on the line 2—2 of Fig. 1, and, Fig. 3 is a horizontal section on the line 3—3 of Fig. 1.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 represents a draining tile, to which are secured the outer ends of the rods 2 which have their inner ends provided with oppositely threaded portions 3, which are adapted for threaded engagement within the opposite ends of the sleeve or turn-buckle 4.

The turn-buckle 4 is adapted to extend through the passage 5 within the disk 6, which has secured, by rivets or other suitable means 7, upon one of its faces the parallel vertically extending bracing straps 8, which are provided with the offset semi-circular portions 9 to either side of the opening 5. The rods 2 are surrounded by the disk 6 and the rounded portions 9 adjacent the opposite ends of the interiorly threaded sleeve 4. Thus it will be seen that the straps or braces 8 also serve as hinges. It will further be seen that the disk 6 is pivotally secured within the drainage pipe 1 at a slight distance above its center, which serves to automatically return the disk or gate 6 to a perpendicular position when the pressure against its inner side is relieved.

To prevent the lower portion of the disk 6 from swinging inwardly, there is provided a stop-pin 10 extending downwardly through the upper side of the drainage pipe 1. The lower end of the pin 10 extends a short distance below the upper edge of the disk 6 outwardly of the latter, preventing the said upper edge from swinging outwardly and thereby making it impossible for the lower portion of the disk 6 to swing inwardly.

By reason of one of the rods 2 being provided with left hand threads and the other one with right hand threads to be engaged within the oppositely threaded ends of the sleeve or turn-buckle 4, the gate may be adjusted to drainage pipes or tiles of various diameters. It will be understood that the openings for the outer ends of the rods 2 and for the pin 10 are formed through the drainage pipe 1 before the latter is baked when it is constructed of clay or similar material. Should the pipe within which the gate is to

be secured be made of metal it is immaterial whether the openings referred to above be provided during the process of making the pipe, or whether they be drilled after the completion of the pipe. This, however, is not a part of the invention, the invention being the novel construction and arrangement of parts forming the gate and the means for controlling the swinging thereof.

It will be readily apparent that the water flowing through the drainage pipe 1 will automatically open or swing the gate upon its pivot to allow the lower portion of the gate 6 to swing outwardly for the passage of the water to the river, drainage canal or other destination, said flowing water retaining the gate in this position until the last of the water has passed underneath the gate. As soon as the pressure upon the inner side of the lower portion of the gate disk 6 ceases, the gate will return to its perpendicular position, as previously described. Any pressure, however, upon the outer side of the lower portion of the gate disk 6 will only serve to press the upper portion thereof against the stop-pin 10, which latter will prevent the gate from opening inwardly to permit the entrance of any of the above mentioned nuisances which seek refuge in such places or of floating objects within the river, canal or other body of water into which the drainage pipe empties, and, it will also be seen that this gate is of substantial construction and will withstand the strong pressure upon its outer side and it will be

thoroughly durable in use and efficient in operation.

What I claim is:

1. A gate for a pipe consisting of a disk having a sleeve receiving aperture and brace straps to either side of said aperture, said brace straps having offset portions adapted to receive pivot rods, pivot rods secured in said offset portions and having their inner ends oppositely threaded, a sleeve having opposite internal threads adapted to receive the threaded ends of said rods, said sleeve adapted to be received in the said sleeve opening of said disk, and means for preventing the swinging of the gate in one direction.

2. The combination with a drainage tile having a stop-pin aperture and pivot rod apertures above the center thereof, of a stop-pin secured in said stop-pin opening, a sectional pivot rod having its outer ends secured in said pivot rod apertures of said tile, means for adjusting the length of said sectional pivot rod, a braced swinging gate adapted to swing in one direction hingedly supported above its center upon said pivot rod, and means for connecting said braced gate upon said pivot rod.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MICHAEL D. GURNETT.

Witnesses:

J. H. EASTMAN,
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