No. 636,747. Patented Nov. 14, 1899.

J. A. BLAKE.

FLUME AND WATER OUTLET THEREFOR.

(Application filed Feb. 25, 1899.)

(No Model.)

Fig. 1.

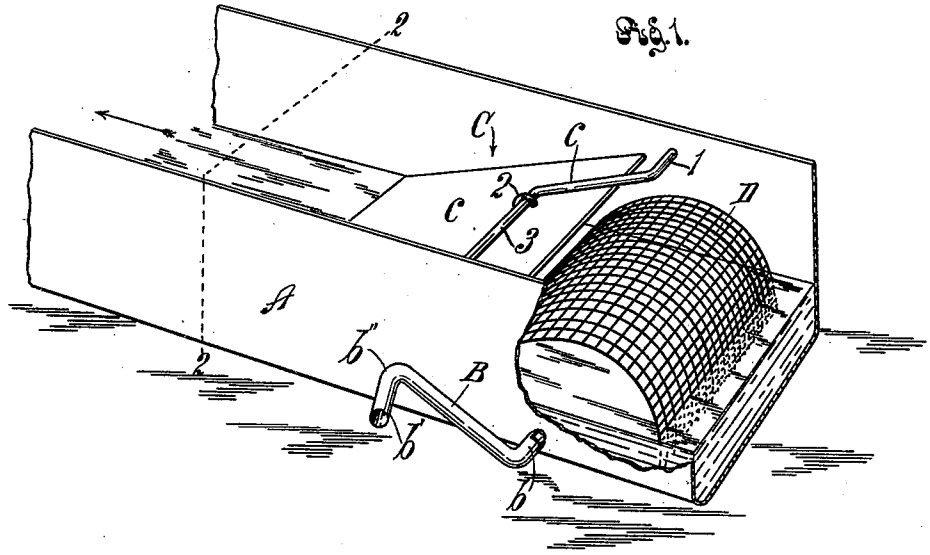


Fig. 2.

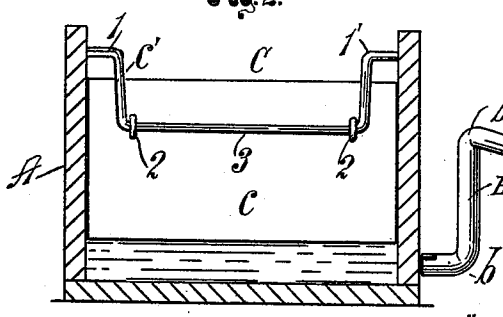


Fig. 3.

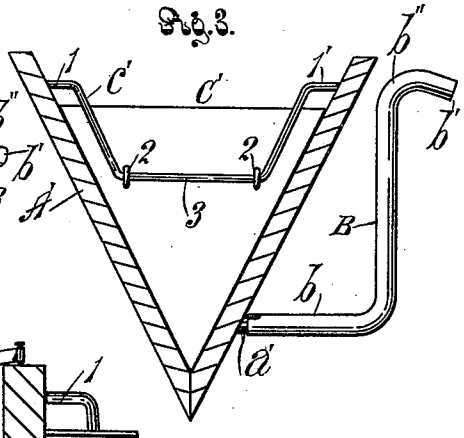


Fig. 4.

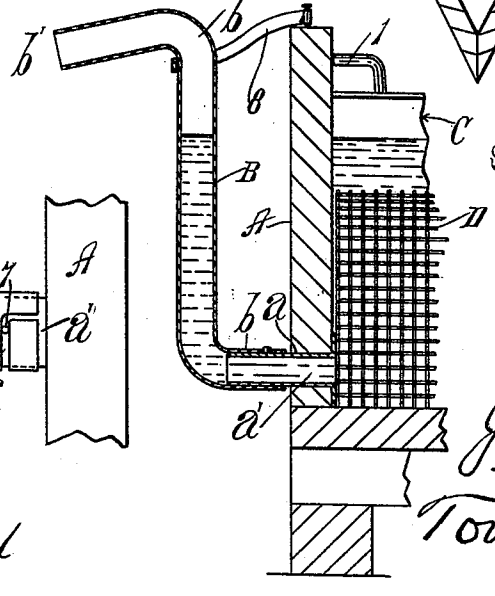
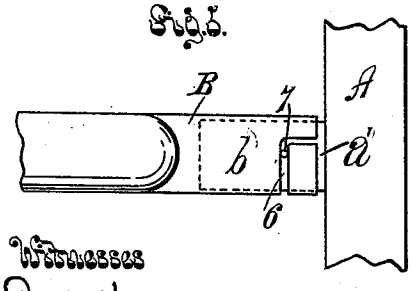


Fig. 5.



Witnesses
Percy Kingman.
F. Townsend

Inventor
J. A. Blake
by
Townsend Bros.
his attys.

UNITED STATES PATENT OFFICE.

JOHN A. BLAKE, OF REDLANDS, CALIFORNIA.

FLUME AND WATER-OUTLET THEREFOR.

SPECIFICATION forming part of Letters Patent No. 636,747, dated November 14, 1899.

Application filed February 25, 1899. Serial No. 706,846. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. BLAKE, residing at Redlands, in the county of San Bernardino and State of California, have invented new and useful Improvements in Water-Outlets for Flumes, of which the following is a specification.

My invention relates to improvements whereby the amount of water discharged from any outlet can be readily gaged without any change in the cross-sectional area of the outlet, thereby avoiding danger of clogging and also avoiding danger of leakage.

The accompanying drawings illustrate my invention.

Figure 1 is a fragmental perspective view of a section of flume provided with my invention. The large arrow shows the direction in which the water flows. Fig. 2 is a cross-sectional view of the flume with weighted flap or gate for use in flumes where the water flows rapidly, the purpose of this flap or gate being to cause sufficient back pressure to allow the water to flow out of the bent outlet-pipe. Line 2 2, Fig. 1, indicates the line of section. Fig. 3 is a like view of a V-flume. Fig. 4 is a fragmental detail, in vertical mid-section, showing the outlet-pipe turned to shut off the flow. Fig. 5 is a fragmental detail plan of the outlet-pipe connection.

My invention comprises any form of flume, as A A', having an outlet or gate consisting of a bent discharge-pipe B, having its intake-limb *b* rotatably connected with the flume, so that the outlet end *b'* can be raised or lowered by turning the pipe on the axis of its limb *b*. The pipe may be connected with the flume by any suitable means which will allow the pipe to turn on the axis of its connecting-limb *b*.

a indicates a hole in the flume.

a' indicates a thimble passed through the wall of the flume from the inside thereof, and onto the outer end of which the pipe is fitted.

When it is desired to shut off the flow of water, the outlet-pipe B is turned up until the upper bend *b''* of the pipe is above the level of the water in the flume. When it is desired to allow water to flow out at the gate B, the pipe is turned downward until the upper bend *b''* is far enough below the level of the water in the flume to allow a stream of the desired capacity to flow out. The range of capacity will be greater or less, depending upon the arc through which the bend *b''* can be moved below the level of the water in the flume.

In flumes where the water moves swiftly a weighted gate C is provided to rest in the water to retard the movement thereof, thus giving sufficient back pressure for the water to pass out through the lateral opening at *b*. This gate is pivoted in the flume to rest in the water below the outlet *b*, and preferably comprises a plate *c*, a bent bar *c'*, having its end members *l l'* coaxial to form journals for the gate, and said bar being bent into U shape between said end members and mounted on the plate and fastened thereto by staples 2 over the middle member 3 of the U.

D indicates a screen across the flume above the intake-mouth *b* of the pipe. This screen serves a double purpose, being in one instance to prevent the entrance of rubbish into the intake-mouth of the pipe and in the other instance to form an impediment to the water to check the same sufficiently to allow the water to flow out through the pipe.

The screen D is preferably of arched form and rests upon the bottom of the flume both above and below the intake-mouth of the pipe V. The arch allows rubbish to be washed over the screen and carried on down the flume, so as to avoid accumulations at the screen.

The limb *b* may be fastened to the thimble *a'* in any suitable manner.

6 indicates a bent slot in the limb *b*, and 7 is a pin projecting from the thimble *a'* into the slot to hold the pipe in place.

It is to be understood that the size of the pipe is to correspond to the amount of water to be discharged at the outlet and that the pipe and flume and other parts shown may be made of any suitable material. The pipe may be made to fit the thimble so closely that friction will hold it at any desirable inclination. Other means may be provided, however, to positively hold the pipe at the desired angle. Means for this purpose are indicated by the cord 8 in Fig. 4.

The float fastened in the flume not only produces a back pressure of the water in the flume, but it also prevents splashing of water

over the sides of the flume when the float is placed at steep parts of the flume, where water is liable to splash.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A flume having a gate consisting of a bent tubular member one limb of which is rotatably journaled in the wall of the flume.

2. The combination with a flume having a hole through its wall thereof; a thimble flanged at one end and inserted through the wall of the flume; and a bent discharge-pipe with one of its limbs rotatably journaled in the thimble.

3. The combination of a flume; a bent discharge-pipe with one end rotatably connected with said flume; and a floating gate in the flume below the inlet into said pipe.

4. The combination of a flume; a bent discharge-pipe with one end rotatably connected with said flume; a screen across the flume above the intake-mouth of the pipe; and a floating gate in the flume below the mouth of the pipe.

5. The combination with a flume, of a bent bar with ends journaled in the sides of the flume; and a sheet or plate fastened to the bent portion of said bar substantially as set forth.

6. The floating gate for flumes comprising a plate; a bent bar having its end members coaxial to form journals for the gate and said bar being bent into U shape between said end members and mounted on the plate and fastened thereto by staples over the middle member of the U substantially as set forth.

7. The combination with a flume provided with an outlet, of a float pivoted in the flume below the outlet to produce a back pressure of water at the outlet in the flume substantially as set forth.

J. A. BLAKE.

Witnesses:
JAMES R. TOWNSEND,
R. DUNKELBERGER.