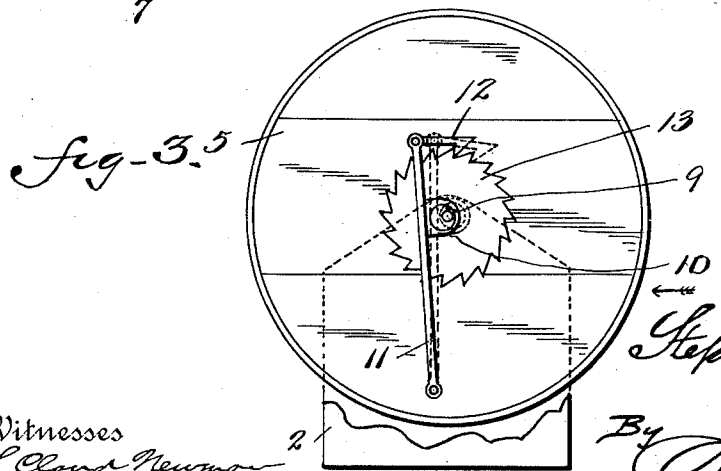
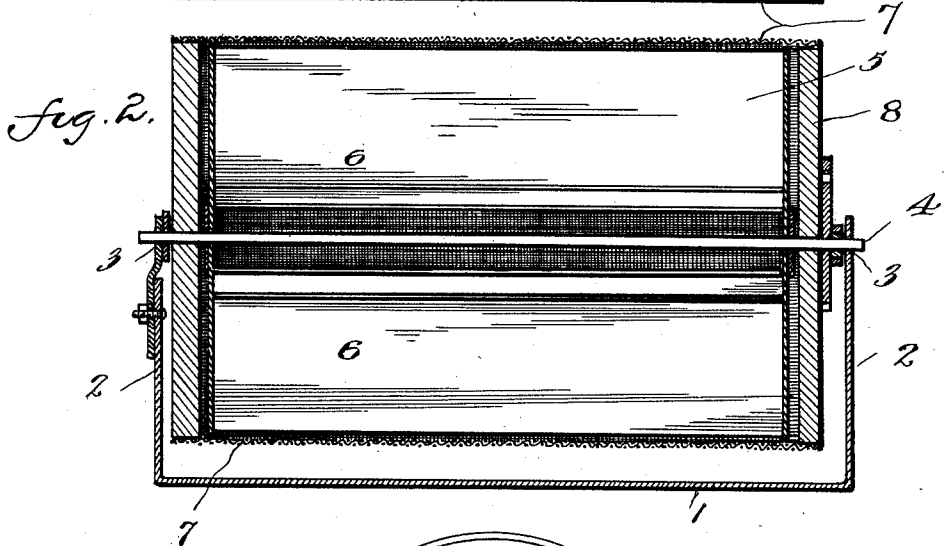
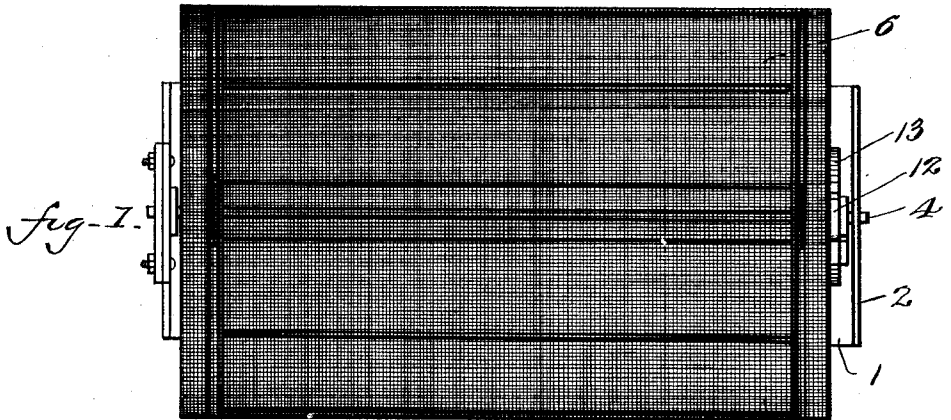


S. SMITH.  
FISH SCREEN.

APPLICATION FILED JAN. 24, 1910.

997,157.

Patented July 4, 1911.



Witnesses  
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# UNITED STATES PATENT OFFICE.

STEPHEN SMITH, OF MIDWAY, UTAH.

FISH-SCREEN.

997,157.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed January 24, 1910. Serial No. 539,819.

*To all whom it may concern:*

Be it known that I, STEPHEN SMITH, a citizen of the United States, residing at Midway, in the county of Wasatch and State of Utah, have invented certain new and useful Improvements in Fish-Screens, of which the following is a specification.

My invention relates to improvements in fish-screens, and the object of my invention is the provision of a screen adapted to be placed in a running stream, waterway, canal or ditch, which will permit rubbish or debris to pass over the screen but which will form a barrier and prevent the escape of fish.

Another object of my invention is the provision of a screen of the character and for the purpose stated which will be particularly useful and desirable for use in connection with fish hatcheries to insure the retention in the stream of the fish after they have been taken from the hatchery.

Another object of my invention is the provision of a screen of the character and for the purpose named which will be of the most simple and durable construction, which will be thoroughly efficient and practical from every standpoint, and which can be produced at a very low price.

With these objects in view, the invention consists of a supporting frame, a screened drum revolving in said frame, a paddle wheel or motor mounted in said drum screen, and connections for causing the motor to revolve in one direction and the screened drum to revolve in a reverse direction.

The invention further consists in a fish screen embodying novel features of construction and combination of parts substantially as disclosed herein.

Figure 1 represents a top plan view of my complete fish screen. Fig. 2 represents a central longitudinal sectional view of the complete screen, and Fig. 3 represents an end view showing the mechanism for imparting motion from the paddle wheel to the screened drum in a reverse direction.

In the drawings: the numeral 1 designates the frame or supporting structure which is of rectangular form having the sides 2 provided with the shaft bearings 3, and this frame is mounted or placed in a sluice or in any manner secured in a running stream and extends completely across the sluice or stream. In the bearings 3 is mounted the shaft 4 to which is rigidly secured the pad-

dle wheel made up of a series of radially disposed blades 6, and surrounding said wheel is the screened drum 7, the ends or heads 8 of which are mounted on the shaft 4. From this construction it will be seen that the paddle wheel is rigid with the shaft and is subjected to the action of the water and that the screened drum entirely surrounds and incloses the paddle wheel, and to impart a rotary motion to the screened drum in the opposite or reverse direction to the rotation of the paddle wheel I secure to the shaft 4 the eccentric 9, which revolves in the yoke 10 mounted on the lever 11, to the upper end of said lever being connected pivotally the ratchet or dog 12 which engages the ratchet wheel 13 carried by one of the heads of the screened drum.

In operation, the water in its course of travel passes through the screened drum and engages the paddle wheel, revolving said wheel and in its revolution actuates the lever carrying the gravity pawl which engages the ratchet carried by the screened drum, causing the drum to rotate in the opposite or reverse direction to the rotation of the paddle wheel, permitting debris or foreign matter to pass over the drum but forming a barrier and preventing fish from escaping from the sluice or stream.

I claim:

1. A fish screen, comprising a frame, a shaft journaled therein, a drum rotatably mounted on the shaft, a water wheel within the drum for rotating the shaft, a cam mounted on the end of the shaft, and means operated by the cam for rotating the drum in a step by step movement.

2. A fish screen, comprising a supporting member, a shaft journaled therein, a paddle wheel secured on the shaft, a drum screen inclosing the wheel and loosely mounted on the shaft, a ratchet secured on the end of the drum, an eccentric on the shaft of the paddle wheel adjacent the ratchet of the drum, and a pawl engaged by the eccentric and serving when moved thereby to engage the ratchet and advance the drum in a step by step movement.

3. A fish screen, consisting of a paddle wheel, an inclosing drum screen, a ratchet wheel connected to the drum screen, and a pawl engaging said ratchet and operated by the shaft of the paddle wheel to turn the drum screen in a direction opposite to the direction of the paddle wheel.

4. A fish screen, comprising a frame, a transverse shaft journaled therein, a water wheel secured on the shaft, a screen drum rotatably mounted on the shaft and surrounding the paddle wheel, a ratchet wheel secured on and concentric with one end of the drum, a lever pivoted to the drum, a yoke formed on said lever, an eccentric secured on the shaft and engaging the yoke, and a pawl pivoted to the free end of the lever and engaging the ratchet, the movement of the eccentric oscillating the lever and through the pawl imparting a step by step movement to the drum.
5. In a fish screen, the combination with a supporting frame, of a shaft carried thereby, a paddle wheel mounted on the shaft, a screened drum inclosing said wheel, and connections between the wheel and the drum for rotating the drum step by step in the opposite direction to that in which the wheel rotates, the drum advancing a step at every revolution of the wheel.
6. In a fish screen, the combination with supporting members, of a shaft journaled therein, an eccentric carried thereby, a screened drum and a paddle wheel mounted

on the shaft, and means operated by the eccentric for causing said drum and wheel to revolve in opposite directions.

7. In a fish screen, the combination with supporting members, of a shaft journaled therein, a paddle wheel secured to the shaft, a screened drum loosely mounted on the shaft and surrounding the wheel, a ratchet wheel carried by the drum, a pawl secured to the support adjacent the ratchet, and means carried by the shaft for shifting the pawl to cause the step by step revolution of the drum.

8. In a fish screen, the combination with the supports, of a driven shaft journaled therein, a drum loosely mounted on the shaft, and connections between the drum and shaft for revolving the former in a constant direction irrespective of the direction of rotation of the shaft.

In testimony whereof I affix my signature, in presence of two witnesses.

STEPHEN SMITH.

Witnesses:

I. O. WALL,  
B. M. SMITH.