J. L. McDONALD.

Adjustable Sluiceways.

No. 154,337. Patented Aug. 25, 1874.

Fig. 2

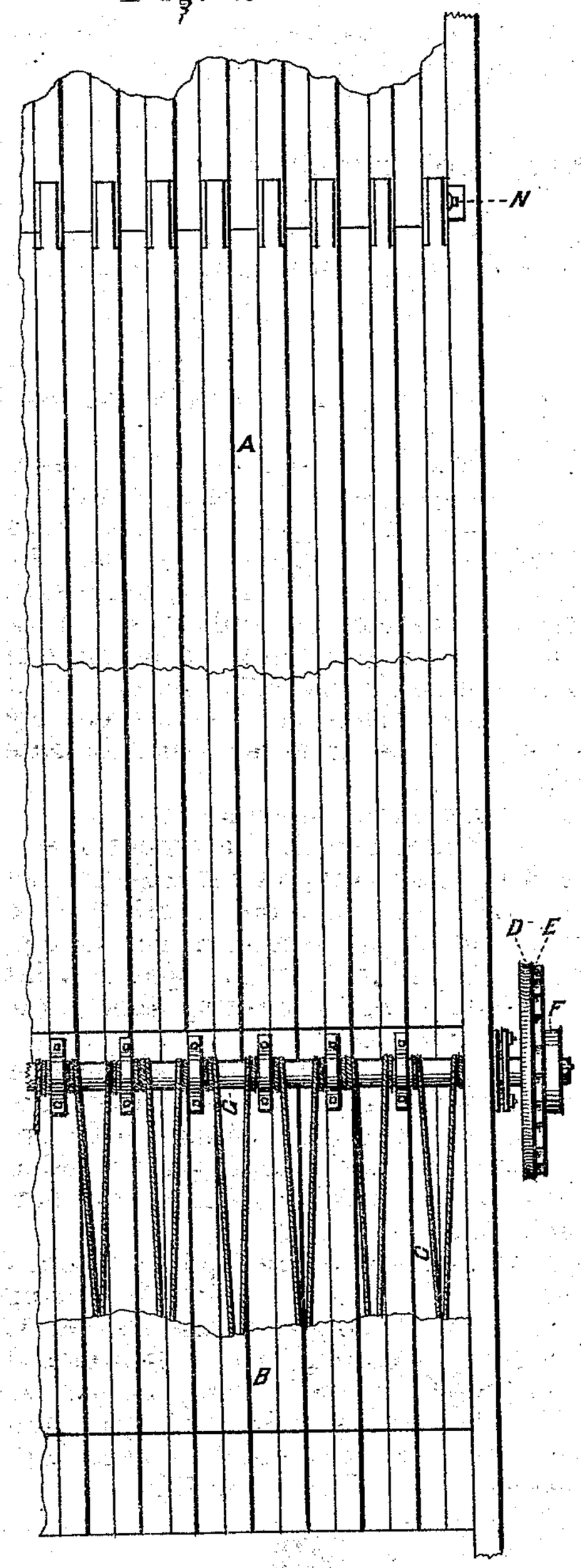
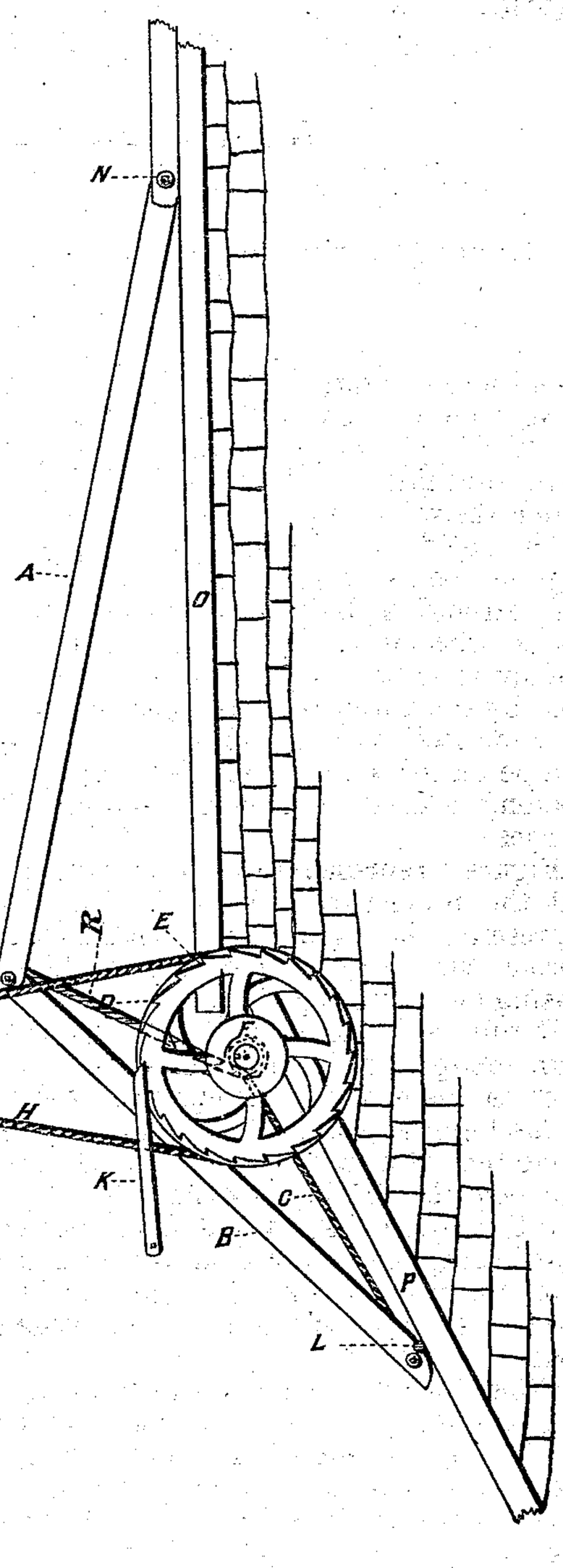


Fig. 1



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UNITED STATES PATENT OFFICE.

JAMES L. McDONALD, OF OIL CITY, PENNSYLVANIA, ASSIGNOR OF THREE-EIGHTHS HIS RIGHT TO GEORGE H. PORTER, OF SAME PLACE.

IMPROVEMENT IN ADJUSTABLE SLUICEWAYS.

Specification forming part of Letters Patent No. **154,337**, dated August 25, 1874; application filed January 16, 1874.

To all whom it may concern:

Be it known that I, JAMES L. McDONALD, of Oil City, Venango county, Pennsylvania, have invented an Improved Sluiceway, of which the following is a specification:

The object of my invention is to open a passage for boats, rafts, or other floating material, through a slack-water dam during high water, without the use of a lock, by means of the apron A, held in place and raised and lowered by the apron B B, operated by the chains C, connected with the shaft G. The aprons can be placed at the bottom of a lock or in an opening in the dam provided especially for the purpose.

Figure 1 represents the side elevation without the protecting wall at the side. Fig. 2 represents the ground plan with part of the aprons cut away to show the machinery for raising and lowering the aprons.

It will be evident that when the water is high enough both below and above the dam to cover the end M of the apron A when raised to the highest point, it is only necessary to remove the latch K from the ratchet-wheel E, and turn the driving machinery in the direction to unwind the chains C from the shaft G, thus letting the apron B move down the bed P on the roller L until the apron A rests on the bed O, thus allowing a free passage for boats.

When the water is too low to allow the boats to pass without the use of a lock, by turning the driving machinery in a direction to wind the chain C around the shaft G, the lower end of the apron B will be drawn toward the shaft, and the end M of the apron A be thereby raised to a sufficient height to keep the water above the dam at a depth suitable for navigation.

A cord or chain, R, is attached to the apron at or near the joint M, and passes around the shaft G in a direction opposite to that taken by the cords C, so that it will wind upon the said shaft as the cords C unwind therefrom. The object of the cord or cords R is to draw down the apron A B in case the pressure of the water should not be sufficient to start it when the cords C are released, or prevent any reaction of the water from rendering the gate unsteady.

What I claim as my invention is—

1. In combination with the aprons or sections A B of a sluiceway, hinged together and at their upper end, the cord C, attached to the lower end of the section B, for raising, and the cord R, attached to the apex or point of the sections A B, for lowering them, substantially as described.

2. In combination with the sections or aprons A B of a sluiceway constructed substantially as described, and cords C R for operating them, the pawl and ratchet-wheel E K, band H, and pulley I, as and for the purposes described.

3. The combination of the apron or section A, hinged to the bottom section N, raising apron or section B hinged to the section A, bed P, roller L, operating-ropes C R, attached to the sections A B, and driving mechanism E K H I, all constructed, arranged, and adapted to operate substantially as described.

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