

F. TRUMP.
LINK FOR OPERATING THE ANNULAR SERIES OF GATES FOR TURBINE
WATER WHEELS.

No. 109,560.

Patented Nov. 22, 1870.

Fig. 1.

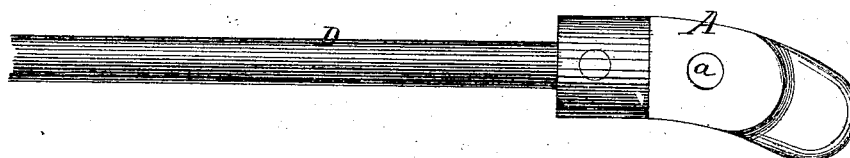


Fig. 2.

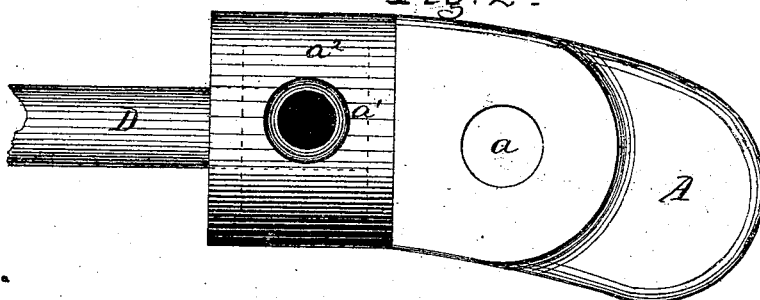


Fig. 3.

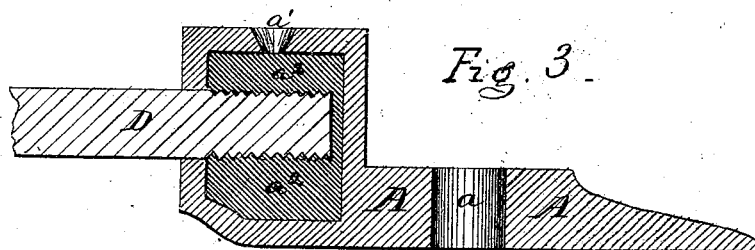
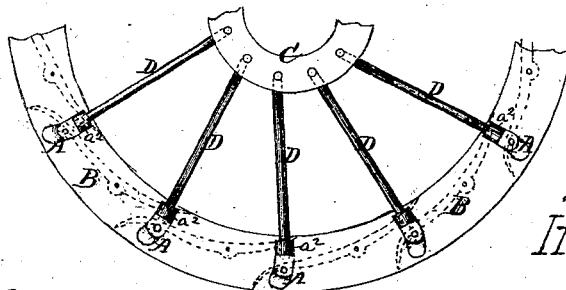


Fig. 4.



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United States Patent Office.

FULLER TRUMP, OF SPRINGFIELD, OHIO, ASSIGNOR TO JAMES LEFFEL & CO., OF SAME PLACE.

Letters Patent No. 109,560, dated November 22, 1870.

IMPROVEMENT IN LINKS FOR OPERATING THE ANNULAR SERIES OF GATES FOR TURBINE WATER-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FULLER TRUMP, of Springfield, in the county of Clark and State of Ohio, have invented a new and useful Improvement in Links for Operating the Gates of Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing making part of this specification, in which—

Figure 1 is a plan view of the link-rod and foot as completed;

Figure 2 is a similar view of the same without the metal which connects the two parts;

Figure 3 is a longitudinal section of the same; and

Figure 4 is a plan view, showing the link-rod and foot as they are connected with the gate and operating-ring.

In the several figures the same letters are employed in the designation of identical parts.

This improvement is intended for application to the oscillating gates of water-wheels operated upon the principle of those set forth in the patents issued to James Leffel originally on the 14th day of January, A. D. 1862, the link-rod and foot being intended to connect the gates with the ring or collar by which the gates are simultaneously operated.

It has been found, in practice, that it was very difficult to adjust the rods or links so as to act uniformly upon a number of gates where the rods were rigidly attached to the link-foot and to the ring or collar; and it is to facilitate this adjustment, by the adoption of a mode at once cheap and accurate, that this improvement is intended.

In the annexed drawing—

A is the link-foot, which rests upon the flange of the crown-plate immediately above the oscillating gates B.

A pin projecting upward from the gate passes through

a slot in the flange of the crown-plate, and enters the foot A, to which it is secured, through the hole a .

The rod or link D is attached at one end to the collar or ring C, and at the other to the foot A.

These rods have heretofore been attached either rigidly or by means of two set-screws, by means of which the length of the rods could be adjusted. My improvement combines the advantages of both the rigid and the adjustable connection, and is cheaper than either in the saving of time.

The foot is formed with a chamber, at a^2 , to receive the link-rod D, which may have a screw-thread or groove cut upon its end, which extends into the chamber.

A hole is left in the top at a^1 .

When the gates are in place, the rods D are hooked or otherwise attached to the ring C or other equivalent part by which the gates are to be operated, and their other ends passed into the chamber a^2 in the foot A.

The gates being all closed, so as to bear properly one against another, molten zinc or other hard fusible material must be poured through the holes a^1 to fill the chamber a^2 , which, on cooling, will confine the rods, and thus insure the accurate operation of all the gates in opening and closing.

What I claim as my invention, and desire to secure by Letters Patent, is—

The chambered foot A and rods D, attached by a hard fusible material, and used in combination with the oscillating gates of a water-wheel, substantially in the manner and for the purpose set forth.

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

FULLER TRUMP.

Witnesses:

W. A. SCOTT,
JAS. S. GOODE.