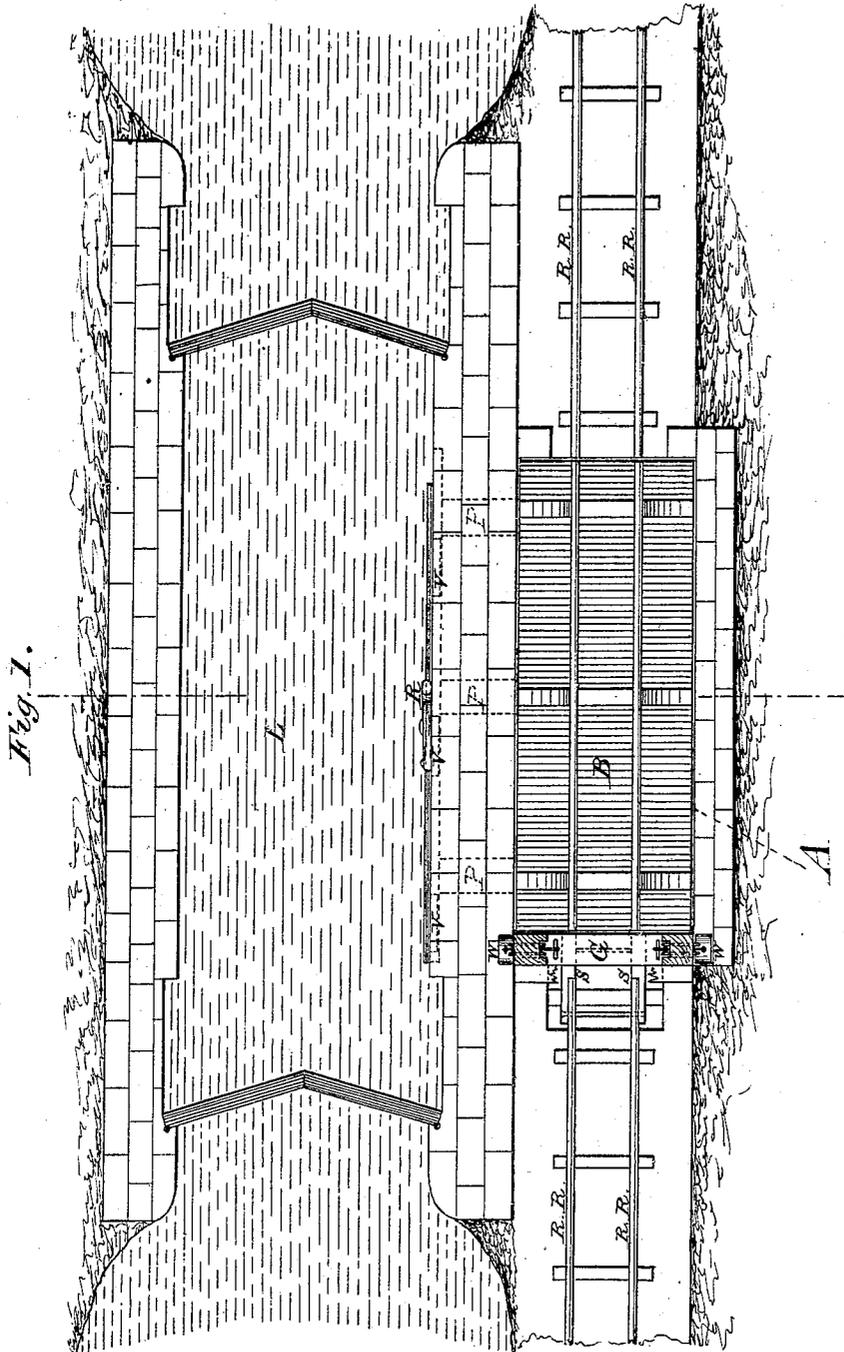


T. L. ROSSER.

Combination Locks for Combined Canals and Railroads.
No. 150,258.

Patented April 28, 1874.



Witnesses:

J. C. Brecht
F. W. Ritter

Inventor:

Thos. L. Rosser

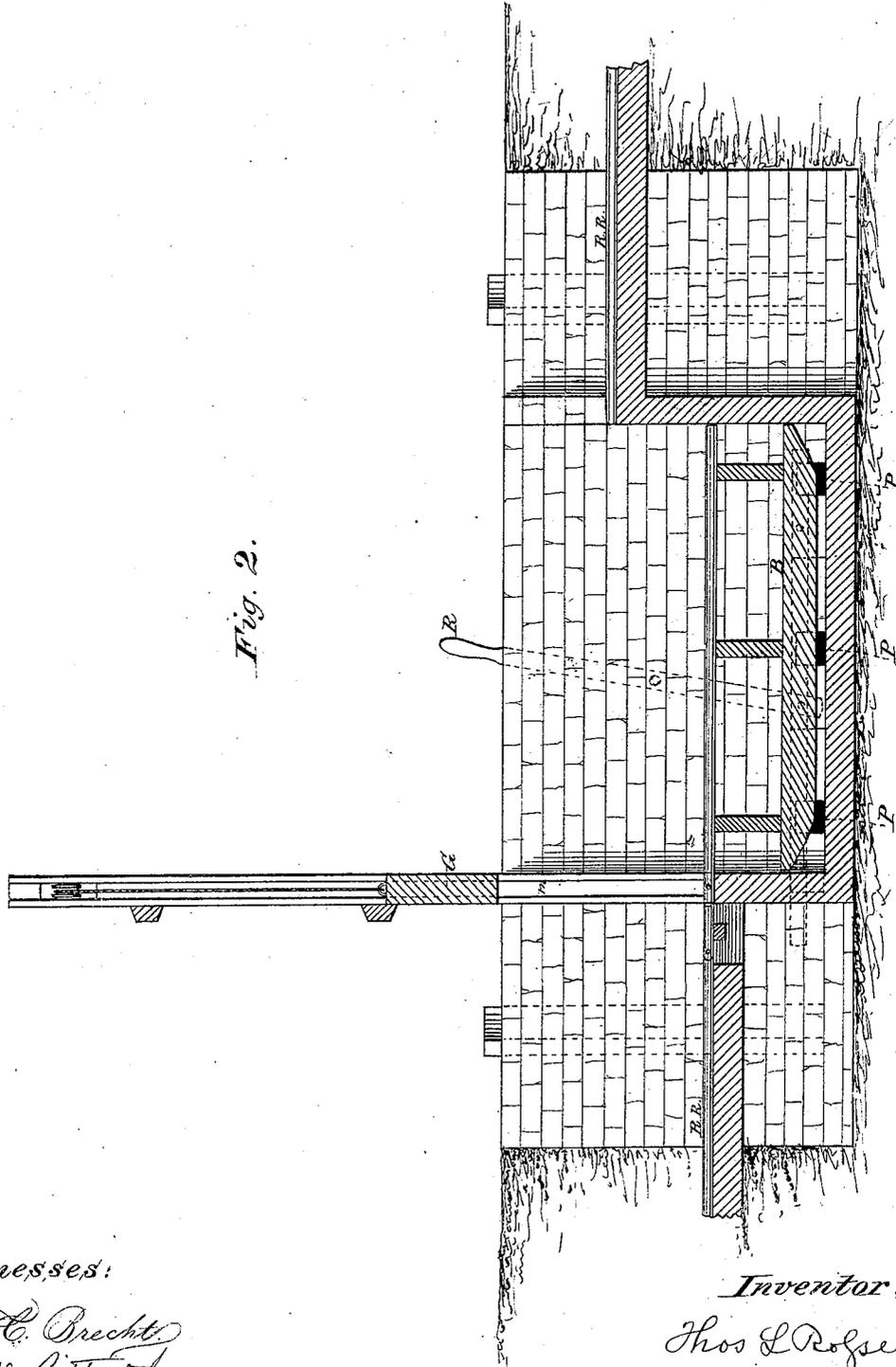
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Fig. 2.



Witnesses:

J. C. Dreht
F. W. Ritter Jr

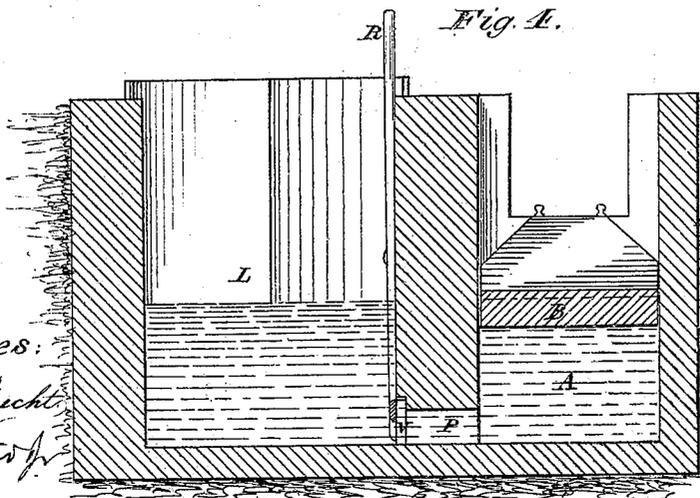
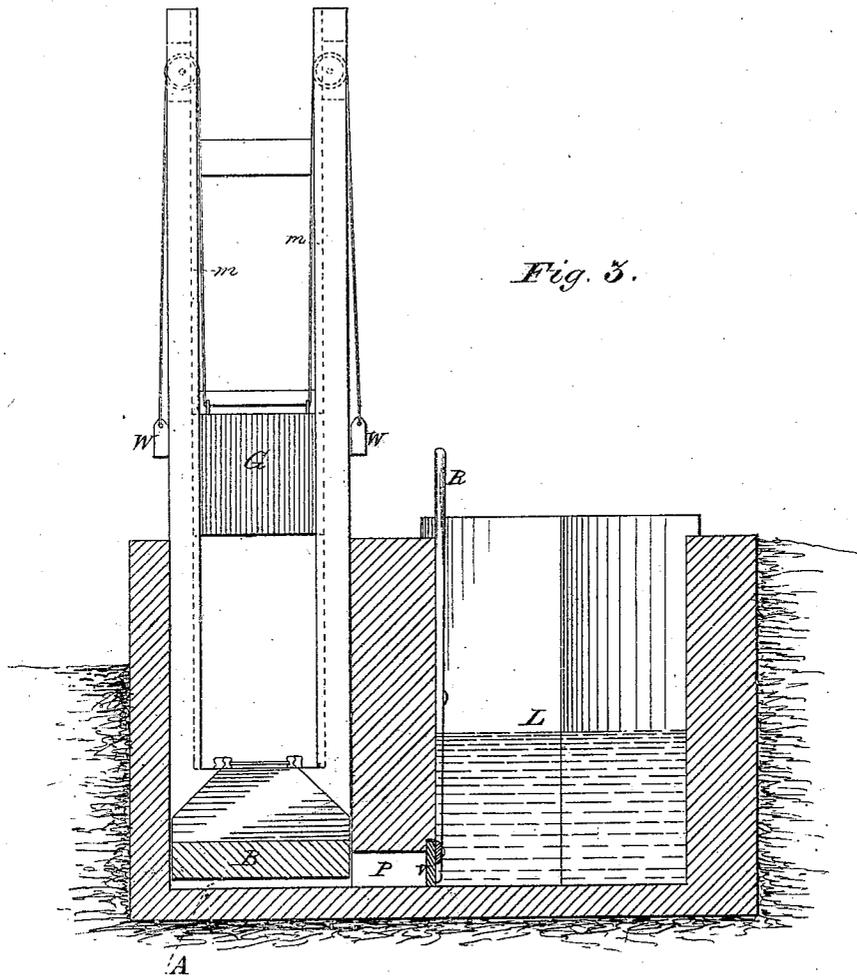
Inventor:

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J. C. Drecht
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UNITED STATES PATENT OFFICE.

THOMAS L. ROSSER, OF MINNEAPOLIS, MINNESOTA.

IMPROVEMENT IN COMBINATION-LOCKS FOR COMBINED CANAL AND RAILROAD.

Specification forming part of Letters Patent No. **150,258**, dated April 28, 1874; application filed December 17, 1873.

To all whom it may concern:

Be it known that I, THOMAS L. ROSSER, of the city of Minneapolis, State of Minnesota, have invented a Canal and Railroad Combination-Lock, of which the following is a specification:

It is a well-established fact that the capacity of a canal for the purposes of navigation depends wholly on the size of the ditch and locks and the speed of the boats.

To increase the capacity of canals by simply increasing the speed of its boats, and thus obviate the necessity of widening and deepening the ditch and enlarging the locks, which would involve large expenditures of money, I have invented the canal and railroad combination-lock herein described, which will facilitate the use of locomotives running on a railway by the side of the canal, and towing the boats in trains, and thus greatly increase their speed beyond that attained by any other method, giving a like increase to the capacity of the canal.

By means of my combination-lock the locomotives are passed from one level to another as the boats pass through the ordinary lock, and thus continue towing their respective trains from one end of the canal to the other.

My combination-lock consists of a water-tight box, designated in the accompanying drawing as A, the bottom of which is on the same horizontal plane as the bottom of the ordinary lock L. This box is securely and strongly built of timber, brick, or stone, and is water-tight. Connecting this box A with the ordinary lock L there are two or more pipes or openings, P, of suitable dimensions to accommodate the size of the lock. Covering these pipes or openings P are water-tight valves or gates V, worked by a lever, R, by means of which the water in the lock L is freely let into or shut out of the box A. Inside of the box A there is a float or boat, B, which is strongly constructed, and is as near the size of the box A as may be to allow it to rise or fall with the water without rubbing the sides of the box. On this boat B is constructed a railroad-track, so that when the

lock is empty this railroad-track is of the same elevation as the railroad-track outside of and below the lock; and when the lock is full of water this railroad is of the same elevation as the railroad-track outside of and above the lock. Closing the lower end of the box A is a water-tight gate, G, suspended between two leaders, *m m*, by means of weights *w w*, which allow it to rise and fall, as required. Connecting the track outside of the box A on the lower end and the track inside of the box there is a short switch, *s s*, which makes the railroad-track continuous. This switch is raised out of the way of the closed gate by means of a rope attached to the weights *w w*.

The mode of operation is as follows:

First, in case of a train passing from a lower to a higher level, the engine runs in under the gate G, which is then closed behind it. The boat in tow runs in the ordinary way into the lock L at the same time. The water is then let into the lock L in the ordinary manner and into the combination-lock A by opening the valves *v v v*. The boats then rise with the rising of the water. When the lock L is full, and the transport ready to pass out, the locomotive will have been raised high enough to allow it to run out on the track above the lock and resume its work.

Second, in case of a train passing from a higher to a lower level, the locks L and A being full, the locomotive, on arriving at the lock A, will find the track inside the lock on the same level with the one on which it stands, and, consequently, runs immediately into the lock A, as the transport does into the lock L. The water is then drawn off in the ordinary way from the lock L, which also drains the lock A, and thus lowers the track in the lock A to the grade below, when the gate is raised and the engine runs out and resumes its work.

When engines are not passing the valves are closed between the locks L and A, and no water is wasted from the ordinary lock.

For this purpose of towing canal-transport by means of engines, as shown in my invention, it would only be necessary to use a

narrow-gage road with light engines and light iron; consequently the lock A would be in most cases small and the railroad-track light and not expensive.

The grades being level between locks, the locomotives could tow large trains of boats rapidly, thus greatly diminishing the cost of transportation and increasing the capacity of the canal for business so much needed by the public at this time.

I claim, therefore, as my invention—

The combination-lock herein described, consisting of the double lock A L, connected by valved passages P and the float B, for the purpose of transferring boats and a draft-locomotive simultaneously from one level to another, substantially as specified.

THOMAS L. ROSSER.

Witnesses:

BEN. R. SHEKELL,
JNO. L. MILLS.