W. H. DOANE.

[3.]

Improvement in Canals.

No. 118,699. Patented Sep. 5, 1871.

Fig. 1.

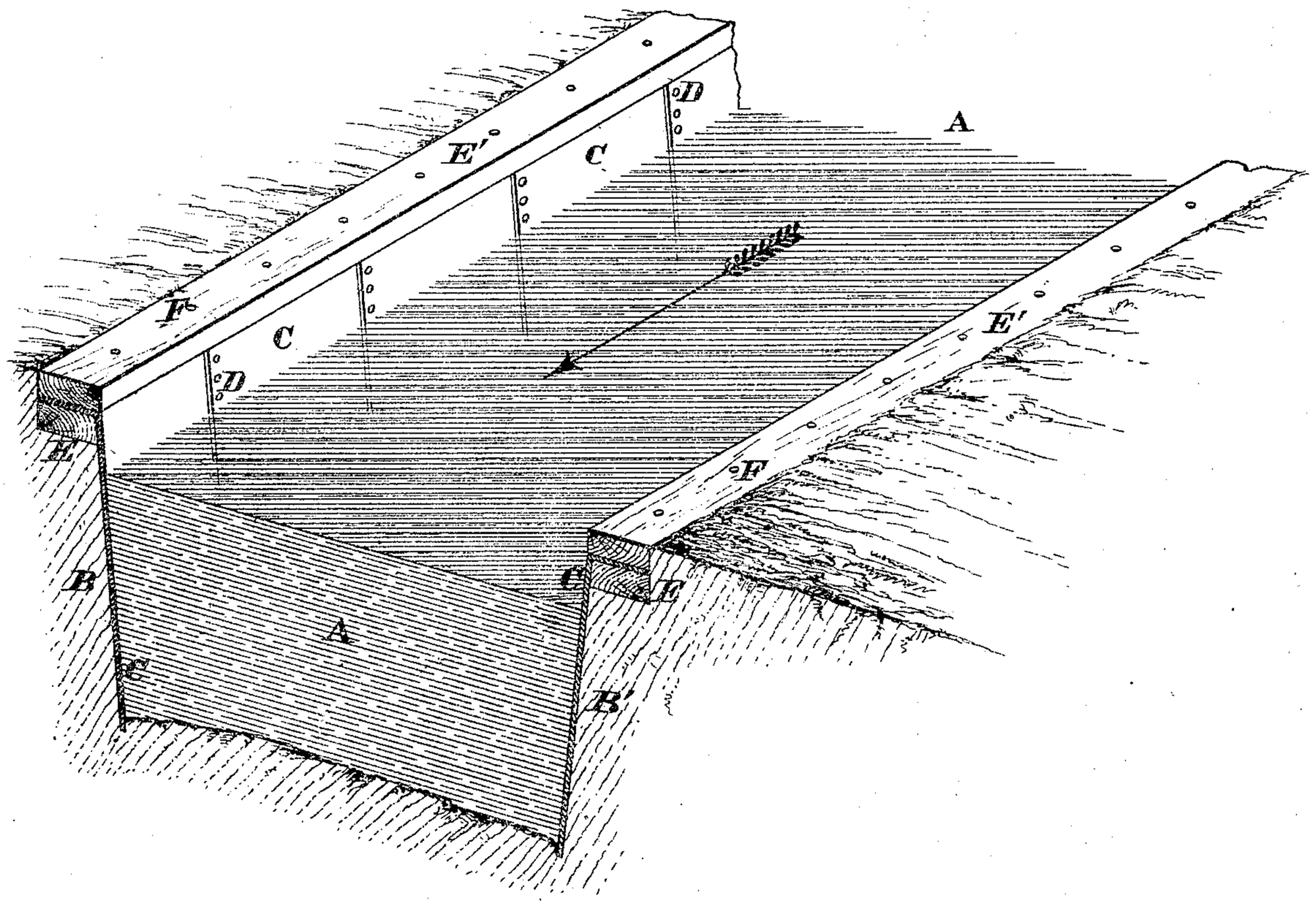
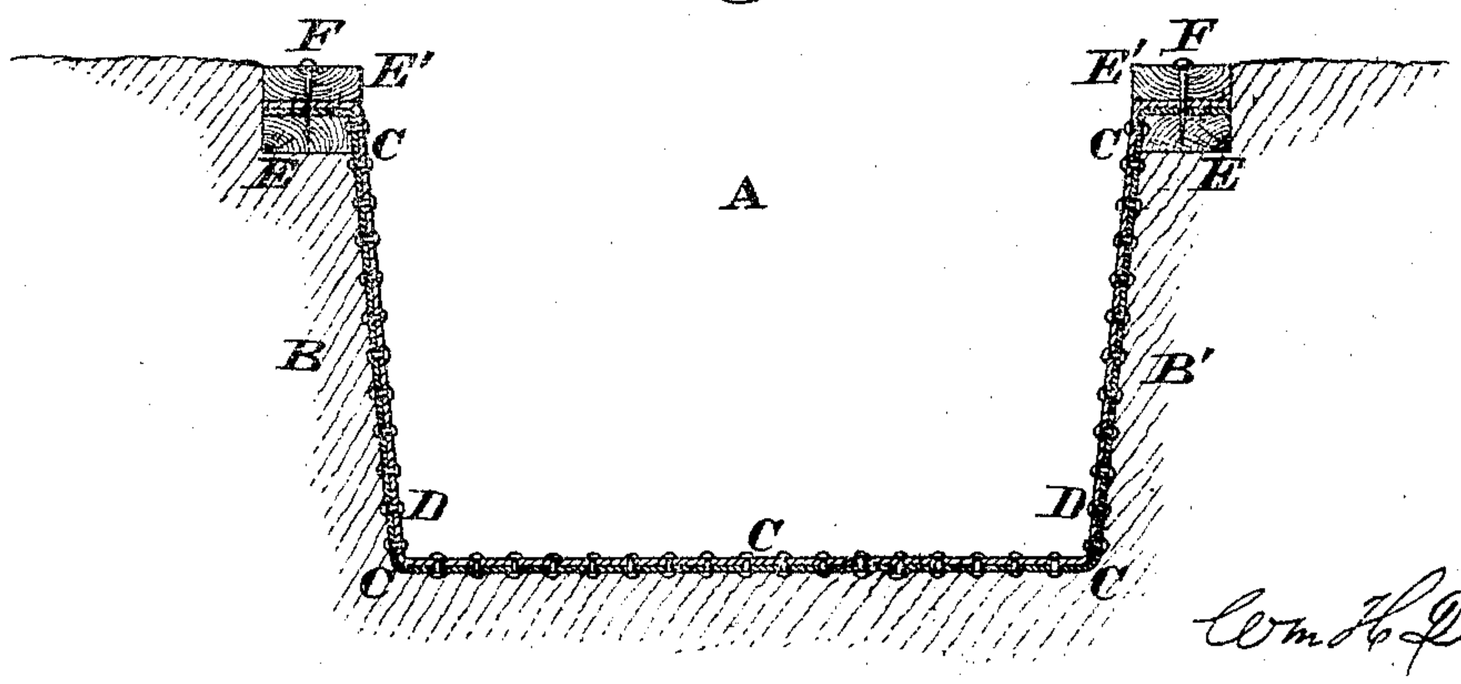


Fig. 2.



Attest.
Jas. H. Layman.
John Kilbourn

Wm H. Doane
INVENTOR.
By Knight Bros
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM H. DOANE, OF CINCINNATI, OHIO.

IMPROVEMENT IN CANALS.

Specification forming part of Letters Patent No. 118,699, dated September 5, 1871.

To all whom it may concern:

Be it known that I, WILLIAM H. DOANE, of Cincinnati, Hamilton county, Ohio, have invented a certain Improvement in Linings for Canals, of which the following is a specification:

This invention consists in applying to the banks and bottom of canals a lining which is composed of smooth plates of sheet metal that are riveted together so as to prevent the passage of water between their joints, and whose upper edges are clamped between two stout sills or string-pieces, by which arrangement said lining is secured in its proper position and its upper portions protected from injury.

Figure 1 is a perspective view of a canal provided with my improved lining, and Fig. 2 is a vertical section through the same.

A represents a canal, and B B′ are the embankments thereof, the exposed faces of the latter being provided with a lining which is composed of smooth or uncorrugated plates of sheet metal, C.

It is preferred that these plates should be long enough to extend from the top to the bottom of the embankments, and their joints are united by rivets D. In order that the upper portions of these plates may not be injured by the horses' feet or otherwise, they are bent down to a horizontal position and then securely confined between two longitudinal sills or stringers E E′, which latter are united by spikes or bolts F. The lower portions of these plates may also be attached to sills, if preferred; or they may extend a suitable distance below the bed of the canal and be maintained in their proper position by the earth, as shown in Fig. 1.

In some places it may be desirable to extend the lining completely across the bottom of the canal, as shown in Fig. 2. The lining-plates may be composed of copper, galvanized iron, or any other suitable sheet metal. This lining will not only preserve the banks from being washed by the passage of boats through the canal, but it will also prevent the percolation of minute streams of water through the earth, which are the well-known cause of the most disastrous breaks. Such a lining as herein proposed will effectually prevent muskrats and other vermin burrowing through and injuring the banks.

A canal provided with my improved lining will be especially adapted for steam navigation, and boats can be propelled therein at the highest speed without injuring the banks in the least; indeed, the more active the use of such canal, the better condition it will be in.

I prefer using smooth plates, as the ribs or projections on corrugated ones would be liable to be struck by the boats or other passing objects, and thus destroy the utility of the lining by opening the seams and allowing the water to escape.

It is preferred that the lap of the joints should be in the direction of the flow, as such an arrangement will prevent eddies, and by inducing a more rapid current there will be less opportunity for sediment to deposit in the canal.

I am aware that corrugated metal has been proposed as a material to be employed in the construction of canal-locks, and therefore I do not propose to claim, broadly, a metallic lining for canals; but

I claim as my invention—

Lining the sides and bottom of a canal with smooth sheet-metal plates C, whose seams are united by rivets D, and whose upper portions are secured between and protected by the sills E E′, as herein described.

In testimony of which invention I hereunto set my hand.

WILLIAM H. DOANE.

Witnesses:

GEO. H. KNIGHT,

JAMES H. LAYMAN.