(No Model.) 3 Sheets—Sheet 1.

G. H. LOMMER.

PORTABLE DAM FOR REGULATING CHANNELS AND BANKS.

No. 414,913. Patented Nov. 12, 1889.

Fig. 1.

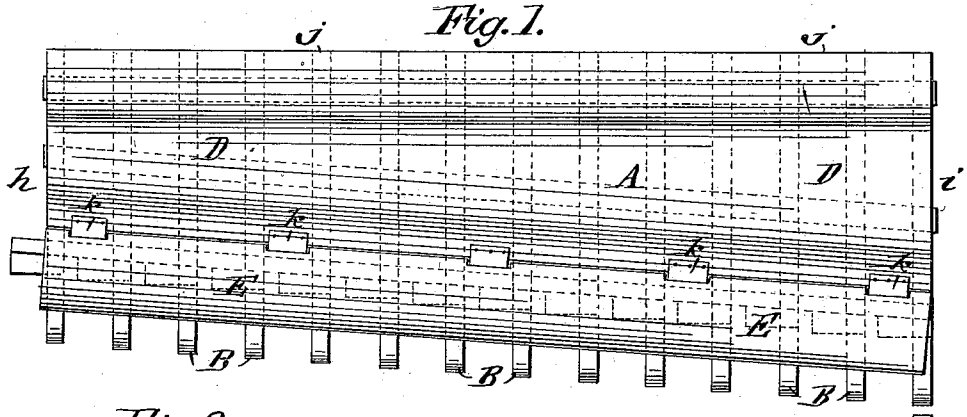


Fig. 2.

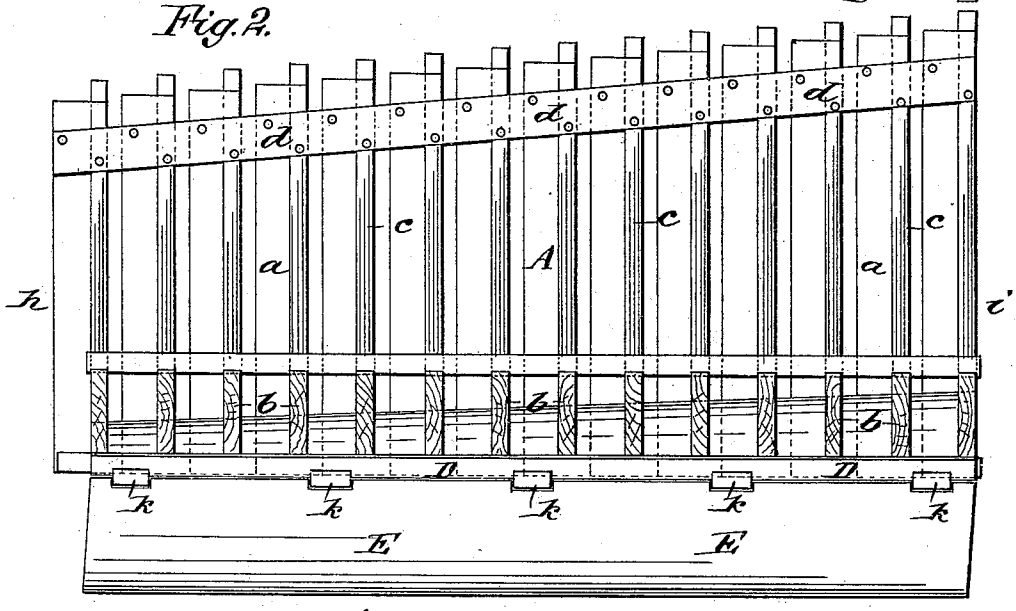
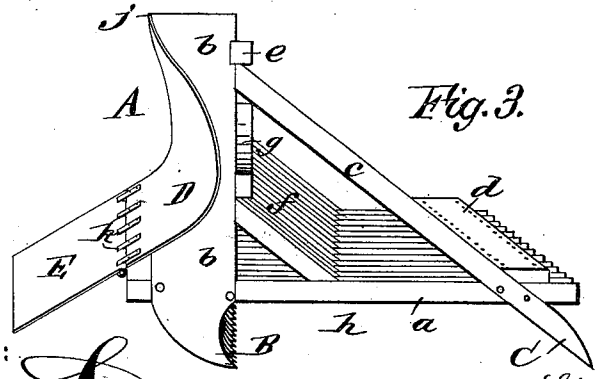


Fig. 3.



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(No Model.) 3 Sheets—Sheet 2.

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Fig. 4.

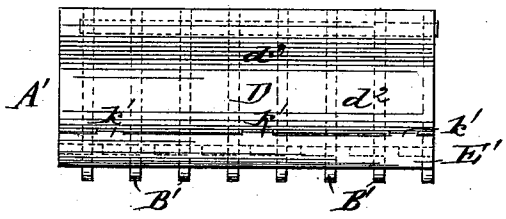


Fig. 5.

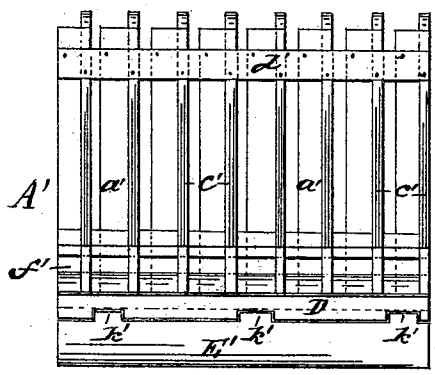
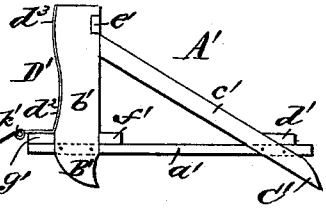


Fig. 6.



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(No Model.) 3 Sheets—Sheet 3.

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PORTABLE DAM FOR REGULATING CHANNELS AND BANKS.

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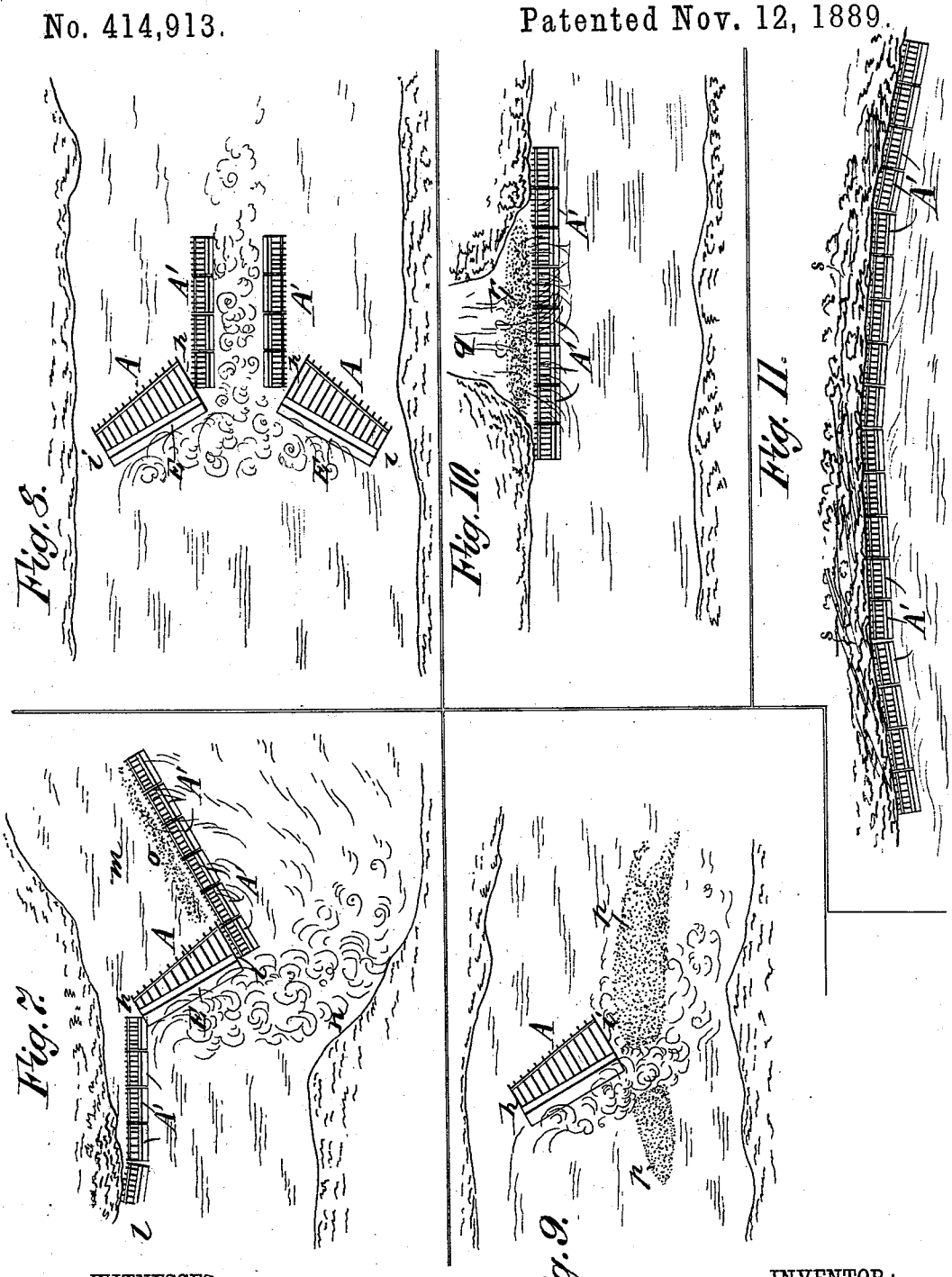

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UNITED STATES PATENT OFFICE.

GUSTAV HERMAN LOMMER, OF CAIRO, ILLINOIS.

PORTABLE DAM FOR REGULATING CHANNELS AND BANKS.

SPECIFICATION forming part of Letters Patent No. 414,913, dated November 12, 1889.

Application filed August 17, 1889. Serial No. 321,165. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV HERMAN LOMMER, of Cairo, in the county of Alexander and State of Illinois, have invented certain new and useful Improvements in Portable Dams for Regulating Channels and Banks, of which the following is a full, clear, and exact description.

The object of my invention is to provide an improved sectional wing and portable dam for use in changing currents in rivers and opening new and deepening old channels therein and for washing out sand-bars, portions of the dam being adapted for use to support and build up caving banks, and for closing up offshoots or branches from the main stream.

The invention consists in a dam formed of portable main and auxiliary sections having current-deflecting plates to face upstream or at the required position relative to the current, and provided with projecting prongs for hold on the river bottom or bed, and with aprons hinged at the lower edges of the face-plates to prevent washing out or displacement of the dam-sections by under currents, the main and auxiliary sections being adapted to be placed in the river in various positions and places for the improvement of navigation, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the main portable dam. Fig. 2 is a plan view thereof, and Fig. 3 is an end view thereof. Fig. 4 is a front elevation of one of the smaller dam-sections. Fig. 5 is a plan view thereof, and Fig. 6 is an end view thereof. Figs. 7, 8, 9, 10, and 11 are diagrams illustrating some of the uses of the portable dams.

The main-dam section A consists of a series of base or sill timbers *a*, a corresponding series of vertical front timbers *b*, let into the side edges of the timbers *a*, or otherwise suitably fastened to the timbers *a*, and a series of braces *c*, which connect with the sill-timbers *a* at or near their back ends, and preferably by being mortised or let into the sill-timbers, said braces *c* inclining upward and foward to the backs of the timbers *b*, to which they may be spiked or otherwise secured. Strong timber cleats *d e* are secured to the timbers *a b*, respectively, behind the braces *c*, to make the joints of the structure more firm. I may use also a series of smaller braces *f* below or inside of the braces *c*, which braces *f* may be let into the timbers *a*, and have support at the upper ends by a cleat *g*, fixed to the timbers *b*, as in Fig. 3.

I make the front timbers *b* gradually longer or deeper from the shore end *h* of the dam A to its outside or channel end *i*, so that the timbers *a b* may rest on the sloping bank or bed of a river or water-course for the whole length of the dam, while the top *j* of the dam remains level, or nearly so, the sill-timbers *a* and the brace-timbers *c* increasing gradually in length toward the channel end *i* of the dam, so that the dam will be stronger and heavier the deeper it rests in the water for better resisting the pressure of the water on it. (See Figs. 1, 2, and 3.)

I make the faces of the front timbers *b* concave, said concavity increasing in width and height with the dam A, and also in depth toward the channel end *i* of the dam, and on the concaved faces of the timbers I fasten securely the face-plate D, which may consist of closely-jointed timbers or planks; but I prefer to make it of metal plates, as shown. This face-plate D is the water-current deflector of the dam, and when the dam is set the plate D faces upstream at a greater or less angle to the current, as hereinafter more fully explained.

To the lower edge of the deflecting-plate D, I hinge at *k* the apron E, which swings down with its lower or free edge close upon the river-bed, and serves to prevent the water-currents from cutting under the dam A, so that the hold on the bottom which the dam has by its prongs B C, which are or may be the downwardly-projecting ends of the timbers *b c*, will not be loosened by a rush of water, which, if allowed, would tend to wash away the bed or bottom from the prongs and shift the dam from its proper place. The force of the water-current against the dam face-plate carries the dam down to the river-bed.

I make the smaller or auxiliary dams A′ (shown in Figs. 4, 5, and 6) with sill-timbers

a', vertical front timbers b', and inclined braces c', and with bracing timber-cleats d' e' and a corner-cleat f', and it may be with a cleat g' outside of the timbers b', and the dam A′ has prongs B′ and C′, the structure of the small dam being substantially the same as regards its timbers to that of the large dam A, except that the small dam has a like width and depth for its whole length, and that the face of the vertical timbers b' is recessed, so as to support a face-plate or current-deflector D′, having a double curve vertically, or made concave in the lower part, as at d^2, and convexed at the upper part, as at d^3, so that the water-currents will easily flow along it and pass over it at high water. The small dams A′ have also the apron E′, hinged at the lower part at k', to fall to the river-bed and prevent displacement of the dams, as described above, for the dam A.

Referring now to the diagrams, Fig. 7 shows the use of the dams A A′ in changing the current or course of a river or water-course, the main-dam section A being placed at a suitable angle across the river, and the auxiliary dams A′ ranging—as many as required—from the shore end h of dam A upstream a suitable distance, and it may be close to the bank, as at l; and another line or series of dams A′ will range from the opposite end i of dam A downstream, and more or less in the line of the old course or channel m of the river, so that the current will be led to and impinge forcibly on the main dam, and be deflected against the opposite bank, as at n, to cut the new channel, and the sedimentary deposits will flow over the small dams A′ and lodge behind them, as at o, to form new land.

In Fig. 8 a couple of main dams A A are shown extending from the opposite banks of the river, so as to lead the water-currents to the center for deepening the channel, and the small dams A′ A′ may range in two lines or series from the ends of the dams A A backward downstream, as shown.

In Fig. 9 a main dam A is laid so as to direct the water-currents against a sand-bar p, for washing it away, and the dam is to be shifted in position, as required, to wash away the entire bar.

In Fig. 10 I show a series of small dams A′ placed across the mouth of a chute or branch stream q, so that the sedimentary deposits will flow over the dams and fill up the mouth of the branch, as at r.

In Fig. 11 a series of small dams A′ are set along a caving bank s of the river to protect the bank from the current and hold the sedimentary deposits washed over and behind the dams to make the bank firm and solid.

It will be understood that more than one of the main dams may be used aligned with each other to carry the dam to any required length by the aid of the smaller dams.

It is evident that these portable dams may be removed to any point along a river or water-course for use in various ways, as above described, for promoting safe navigation.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A portable dam for regulating the banks and channels of rivers or water-courses, consisting of a current-deflecting main-dam section A, having a concaved face, and of auxiliary-dam sections A′, with concavo-convex faces placed adjacent to the main section, substantially as shown and described.

2. In a portable dam, the main and auxiliary dam sections A A′, having projecting prongs to fasten themselves to the river-bed, substantially as shown and described.

3. A portable dam consisting of main and auxiliary sections having projecting bottom prongs to fasten themselves to the river-bed and aprons hinged at the lower face portions of the sections, substantially as shown and described.

4. The main-dam section A, made with a concave current-deflecting face D, bottom prongs B C, and hinged apron E, substantially as shown and described.

5. The main-dam section A, made increasing in depth from the shore to the channel end and with a concaved current-deflecting face D, bottom prongs B C, and hinged apron E, substantially as shown and described.

6. The auxiliary-dam sections A′, made of like width and height throughout and provided with a concavo-convex current-deflecting face, and hinged aprons E′ below said face, substantially as shown and described.

7. The dam-sections constructed with sill-timbers a, vertical timbers b, and brace-timbers c, said timbers b c projecting to form the prongs B C, substantially as shown and described.

8. A portable dam for regulating the banks and channels of rivers or water-courses, consisting of a main-dam section A, placed at an angle to the current and having a concave current-deflecting face D, an apron E, hinged below said face, the section A increasing in depth from the shore to the channel end, and one or more series of auxiliary dams A′, also provided with hinged aprons E′ and having concavo-convex current-deflecting faces, the sections A A′ having projecting prongs for hold on the river-bed and placed relatively with each other, substantially as shown and described.

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Witnesses:
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JOHN E. ENGLISH.