(No Model.)

W. H. DECHANT.

WICKET AND CAISSON FOR MOVABLE DAMS.

No. 249,024. Patented Nov. 1, 1881.

Fig. 1.

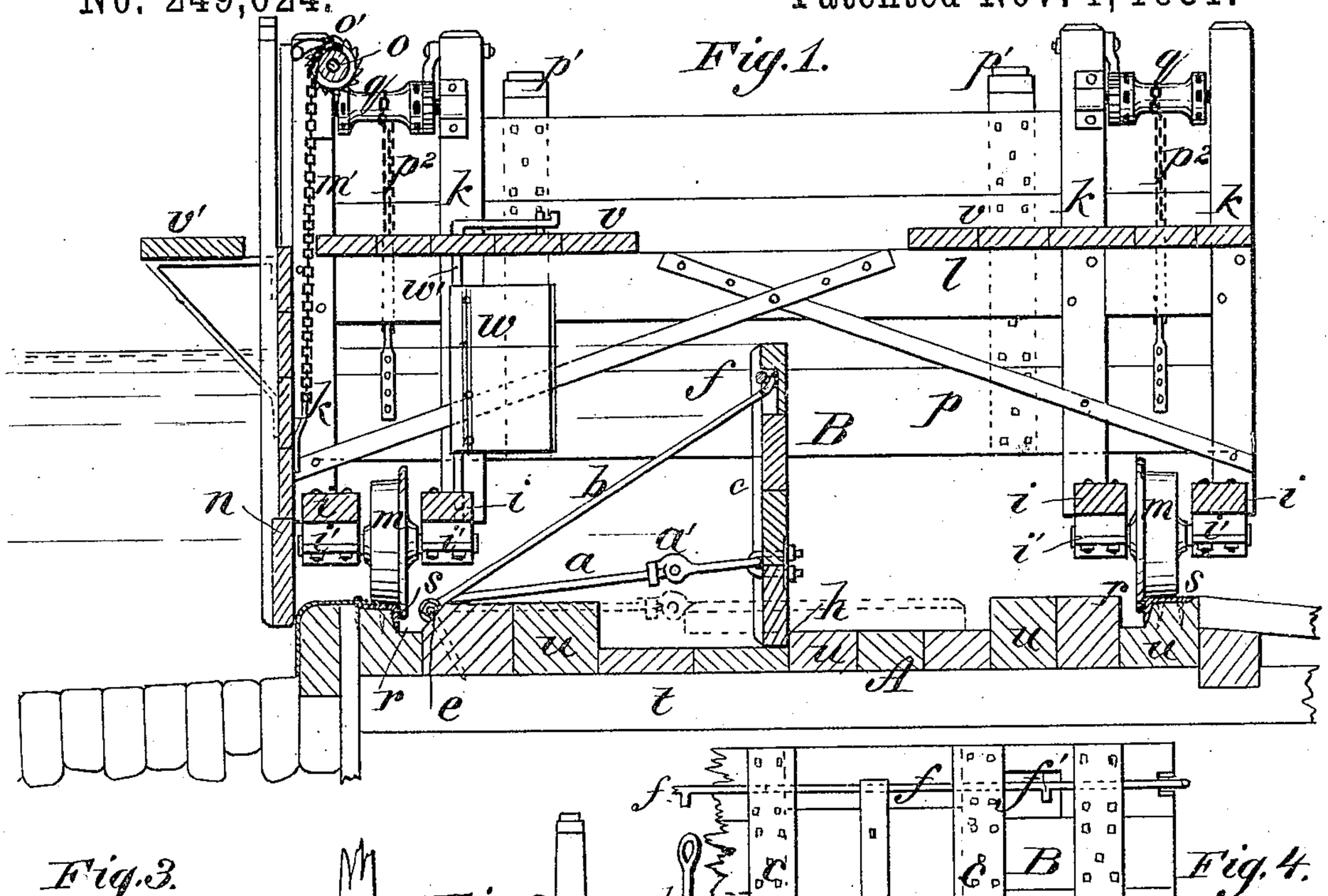


Fig. 2

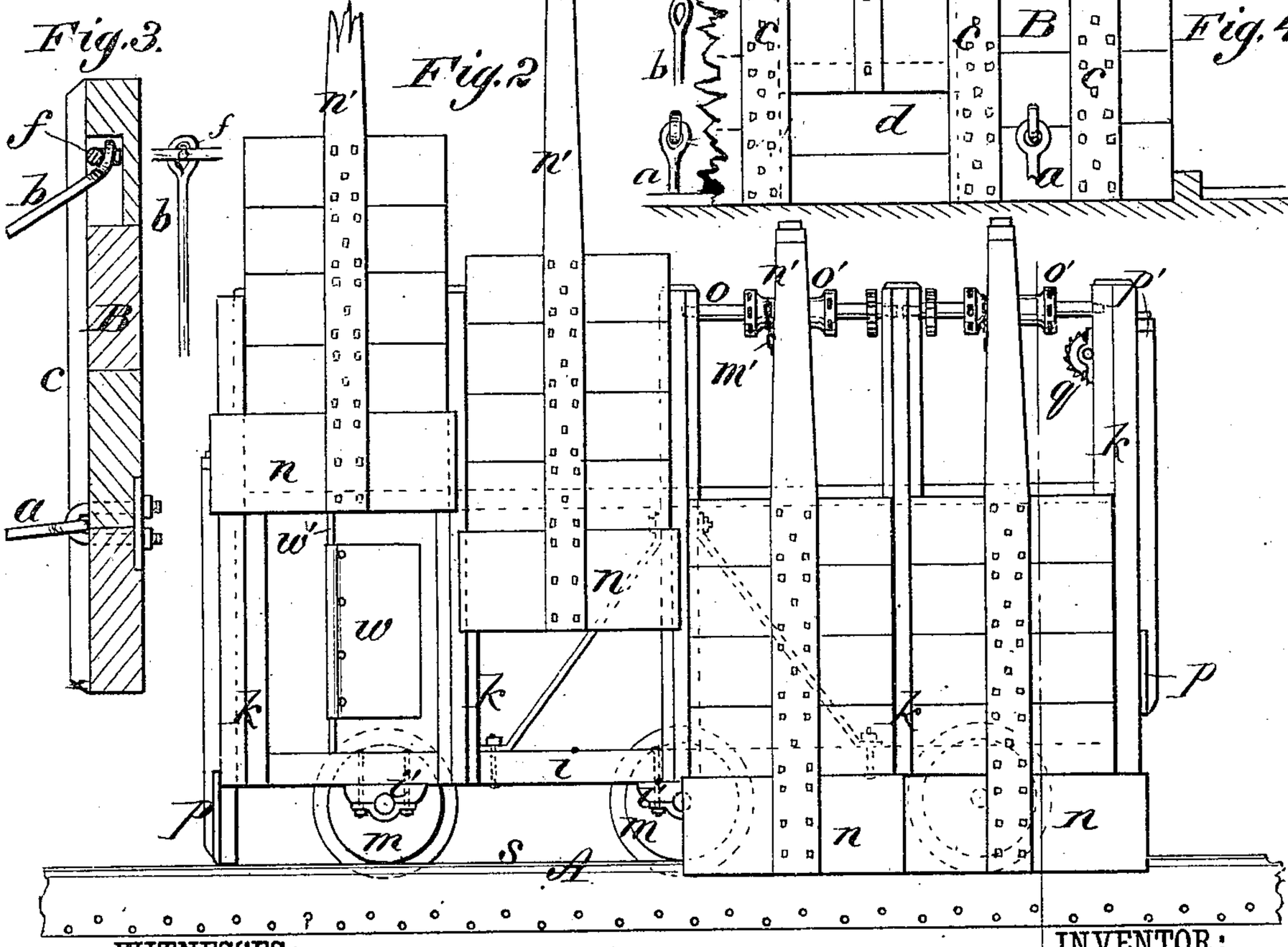
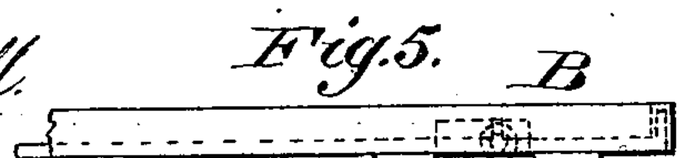


Fig. 3.

Fig. 4.

Fig. 5.



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WICKET AND CAISSON FOR MOVABLE DAMS.

SPECIFICATION forming part of Letters Patent No. 249,024, dated November 1, 1881.

Application filed July 6, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DECHANT, of Reading, in the county of Berks and State of Pennsylvania, have invented certain useful Improvements in Wickets and Caissons for Movable Dams, of which the following is a specification.

My improvements have reference to the construction of movable dams applied in rivers for deepening the channels by backing up the water.

The object of the invention is to facilitate the work of construction and repair in connection with such dams; and the invention consists, first, in the wickets for the dams and their connections to the bed; and, second, in a movable caisson by which convenient access can be had to the wickets, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a cross-sectional elevation of a dam and caisson constructed in accordance with my invention. Fig. 2 is a side elevation of the caisson. Fig. 3 is a cross-section of one wicket. Fig. 4 is a front view, and a Fig. 5 a top view, of the same.

Similar letters of reference indicate corresponding parts.

A is the foundation, of stone or wood, constructed on the river-bottom.

B is the movable wicket, sustained in the raised position by the braces *a b*. The dam will consist of a number of the wickets B of convenient length, each of which is constructed as follows: The longitudinal planks composing the wicket are tied together by cross-strips *c*. In the lower portion two or more gates, *d*, are provided for use as required. The lower braces, *a*, on which the wicket swings, are attached by eyebolts at about one-third the height of the wicket, and their outer ends are connected to eyebolts *e*, which are secured in the foundation. The braces *a* are jointed at *a'* by knuckle-joints, which permit the braces to bend upward, so as to facilitate the movement of the wicket in falling in case any obstruction should get under the braces. The upper braces, *b*, are hung on the eyebolts *e*, and connect by eyes on their ends with lugs *f'* formed on a rod, *f*, at or near the upper edge of the wicket. The rod *f* is sustained lengthwise of the wicket in suitable bearings, which permit the rod to be moved endwise and turned for simultaneous disconnection of the braces *b*. When the rod *f* occupies the position shown in Figs. 1 and 3 of drawings the braces *b* are securely held; but when the rod is turned so as to throw the lugs *f'* into the position shown in Fig. 4 of the drawings the braces readily become disconnected from the rods.

The foundation is formed with a depressed portion for receiving the wicket when down, so that its upper surface shall be level with or below the surface of the foundation. A ledge or shoulder, *h*, is also provided for sustaining the lower edge of the wicket in its raised position.

The movable caisson is of a size for inclosing one of the wickets B, and is constructed as follows: Sills *i i*, extending lengthwise of the foundation, and fitted with posts *k k*, are connected by cross-beams *l l*, which are bolted securely to posts *k* at a height to pass freely over the top of the wicket. To the sills *i* are secured boxes *i'* for the short axles of flanged wheels *m*, by which the caisson is supported. On the up-stream side of the caisson there are sliding gates *n*, fitted to move in rabbets formed in the posts *k*. The upper ends of the posts sustain a shaft, *o*, on which are windlasses *o'*, and chains *m'* from the windlasses connect with the gates, so that they can be raised by operation of the windlass-shaft. At each end of the caisson is a single gate, *p*, sustained by chains p^2 from separate windlasses *q*. The gates *n p* are provided with center posts, *n' p'*, respectively, by which they can be forced down to place. As shown at *r* in Fig. 1, the foundation is grooved, and plates *s* of angle-iron applied at the outer edges of the grooves to form a tramway for the caisson, so that it can be moved over the wickets from place to place.

The method of construction is to first lay the sills *t*, and upon these secure the timbers *u* of the foundation, which is then ready to receive the caisson. The caisson being then moved to the place desired, the gates are shut and the wicket B can then be put in place. A flooring, *v*, is applied upon the beams *l*, for convenience in carrying on the work and for loading the caisson, and a platform, *v'*, is sustained on posts *k*, outside the gates *n*, for convenience in closing the gates. The caisson is to be used in the same manner for repairs to the foundation and wickets.

For propulsion of the caisson I provide the paddles *w*, which are hung on vertical shafts *w'*, so that they can be turned at any angle to the current of water. The current acting on the paddles will assist to force the caisson along the tramway.

The wickets may be used in rivers, canals, and other water-ways for deepening channels and for improvement of slack-water navigation.

Both the wicket and caisson may be constructed of wood or iron, as may be most convenient or desirable.

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

1. The combination, with the bed A and wicket B, of the braces *b*, hinged or pivoted to the bed and detachably connected with the wicket, as and for the purpose specified.

2. The jointed brace *a* and detachable brace *b*, in combination with the wicket B, substantially as shown and described.

3. The slide-rod *f*, formed with lugs *f'*, and the braces *b*, formed with eyes at their outer ends, combined with the swinging wicket B, substantially as and for the purposes set forth.

4. A wheeled caisson provided with gates at its sides and end, in combination with a foundation laid on the river-bottom and constructed with a tramway for receiving the caisson, substantially as shown and described.

5. The movable caisson consisting of sills *i*, posts *k*, beams *l*, wheels *m*, and gates *n p*, substantially as shown and described, combined for operation as set forth.

6. The hinged paddles *w*, in combination with the wheeled caisson, substantially as and for the purposes set forth.

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