No. 873,845. PATENTED DEC. 17, 1907.

W. H. CROW.

PORTABLE POWER DAM.

APPLICATION FILED MAY 13, 1907.

2 SHEETS—SHEET 1.

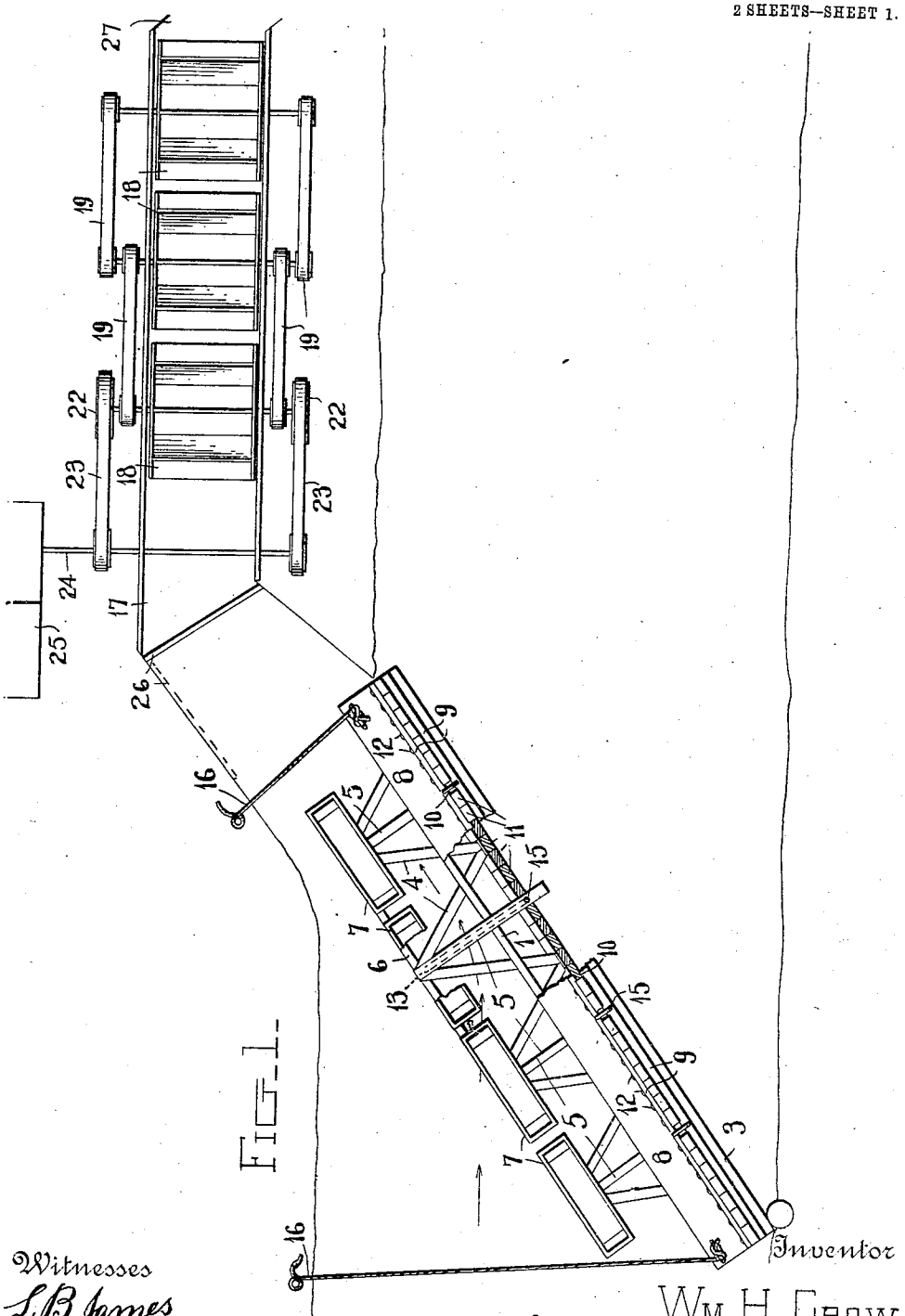


FIG. 1.

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2 SHEETS—SHEET 2.

FIG. 2.

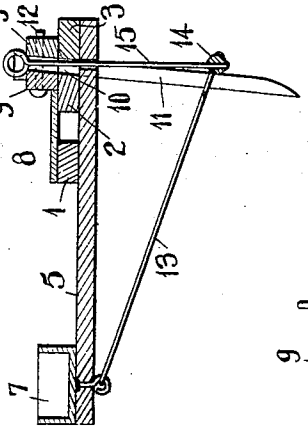


FIG. 3.

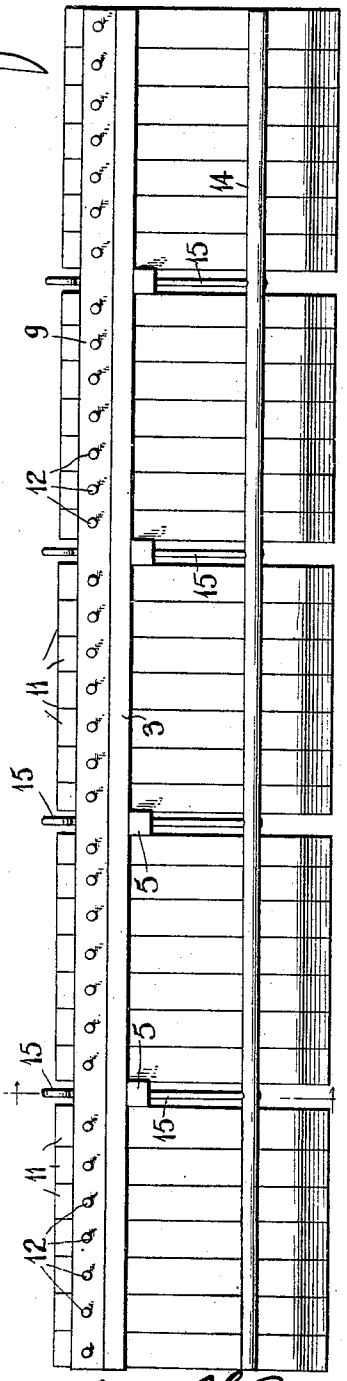
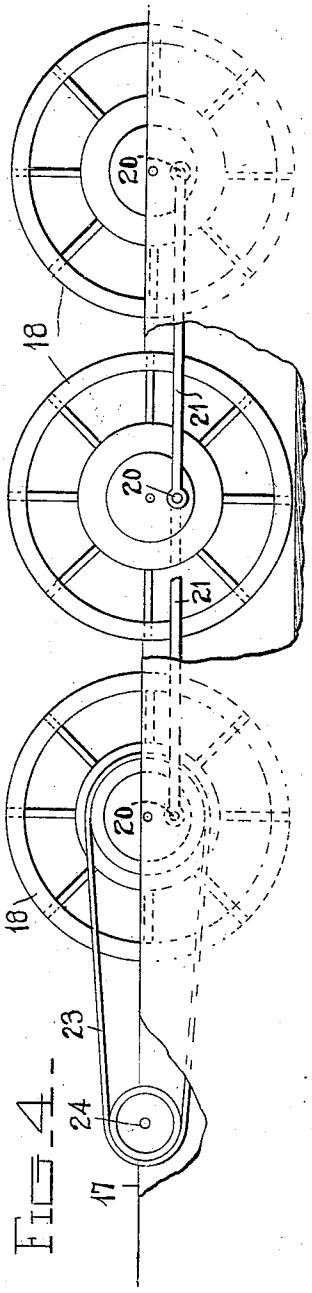


FIG. 4.



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UNITED STATES PATENT OFFICE.

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PORTABLE POWER-DAM.

No. 873,845. Specification of Letters Patent. Patented Dec. 17, 1907.

Application filed May 13, 1907. Serial No. 373,285.

To all whom it may concern:

Be it known that I, WILLIAM H. CROW, a citizen of the United States, residing at Pueblo, in the county of Pueblo and State of Colorado, have invented certain new and useful Improvements in a Portable Power-Dam; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to portable dams, and has for its object to provide a device which can be placed upon or across streams of water whereby a portion or substantially all of the water may be diverted or thrown to one of the shores and thereby caused to be passed through a suitable race-way in which are placed water wheels. In this manner the force or energy of the stream or as much of it as may be desired can be utilized through one or more water wheels for developing power that can be used for any purpose, preferably for elevating a portion of the water after it has been passed through the race-way and using it for irrigation purposes.

In the accompanying drawings, which illustrate the invention, Figure 1 is a broken top plan view of my combined dam and power developer; Fig. 2 is a transverse sectional view through the dam; Fig. 3 is a rear elevation of the same; and Fig. 4 is a broken side elevation of the motor or power generator.

Referring more particularly to the drawings, 1, 2 and 3, indicate a series of beams or timbers which are adapted to be secured together parallel with each other, but at a slight distance apart, by means of braces, 4 and 5. Said timbers extend the entire length of the dam and the braces are arranged in sets, with the braces 4 of each set converging toward each other and terminating at a point in front of the timbers, and the other brace of each set extends from the point or apex of the opposite braces to the rear of the rear timber, 3, and thereby holds it in the desired position relatively to the other timbers. The braces 4 and 5 are secured to the under surfaces of the timbers and are arranged at any desired distance apart, and are preferably connected at their front ends by means of braces 6, which extend lengthwise of the dam.

Pontoons 7 or other suitable floats are secured to the forward ends of the braces 4 and 5 and thereby hold the forward edge of the dam up substantially even with the surface of the stream. A plank walk 8 is preferably arranged between the pontoons and the rear timber and is nailed or otherwise securely fastened to the forward timbers, 1 and 2.

If desired, additional timbers 9 may be secured to the adjacent edges of the rear timbers, 2 and 3, so as to project slightly above the same and thereby afford a greater bearing surface along said adjacent edges than would be secured by the timbers.

The space, 10, between said timbers 2 and 3, and the additional timbers 9, is slightly inclined towards the front of the dam, and vertically arranged planks 11 are adapted to be placed within said space with their lower ends extending down below the top of the timber as far as it is desired to stop or dam up the current of the stream. The planks may be adjustably held at any desired vertical position, as by means of pins or bolts 12, through the timbers 9, and through said planks 11.

Pivotally secured to the under side of the points of each set of braces is a stay rod 13, which is adapted to engage at its rear end with a brace beam or timber 14, which extends from one end of the dam to the other and is adapted to engage with the rear surface of the planks 11, and thereby prevent their being broken off by the force of the stream or any drift that may be carried down by the water.

Vertical rods 15 are connected at their lower ends to said brace beam 14 or the stay rod 13 and pass upward out through the rear ends of the braces 5 and through the space 10 or the rear timber 3, as may be desired. The upper end of each rod is formed into a hand-wheel, by means of which the rod may be moved vertically and thereby move the brace beam 14 up or down as the case may be to adapt it for properly bracing the planks.

The dam is adapted to be secured at any desired position upon a stream of water, as by means of guy ropes, 16, the ropes being of such length that the outer end of the dam is preferably farther up the stream than the lower end, whereby the dam is caused to stand at an angle to the course or direction of the stream. By changing the length of the ropes, the dam may be drawn in adjacent to the shore as for putting in the planks where the current is too swift to permit of

their being placed in position when the dam is across the stream, or for preventing drift wood or other obstructions engaging with the dam, as in case of high water, etc., or when it is not desired to deflect the stream of water for power purposes.

Located adjacent to the inner or shore end of the dam, is a race-way, 17, into which the water from the stream is adapted to be deflected by the dam and caused to actuate suitable water wheels, 18. In the drawings I have shown ordinary under shot water wheels with their shafts journaled on top of the race-way and their outer ends provided with means for connecting them together, belts, 19, being shown in Fig. 1, and wrist pins, 20, and links or pitmen, 21, in Fig. 4.

The shaft or axle of the first water wheel is provided preferably with one or more large pulleys 22, from which motion is adapted to be transmitted through belts 23 to a shaft 24, within the power house, 25. From the shaft 24 power may be transmitted in any desired manner, either by belting, gearing, or electric apparatus, as is most convenient or desirable. A suitable head gate, 26, is arranged at the upper end of the race-way for permitting the water to pass in under the wheels, and a suitable outlet 27 is provided at the lower end of the race-way for conducting the water back into the stream after it has been utilized for generating power in the above described manner.

In utilizing my combined dam and power generator as above described, the dam is prepared and anchored to one of the shores, and the vertical planks are driven down the desired distance, depending upon the size of the stream and the amount of water to be taken therefrom. As most streams hardly ever exceed five feet to ten feet in depth, therefore, the planks need not be over six or eight feet long, and are preferably three or four inches thick. By inclining their lower ends slightly up stream, they will have a tendency to deflect the water laterally lengthwise of the dam, and will also have a tendency to hold the dam down onto the surface of the stream and thereby utilize the dam for deflecting the water to the greatest possible extent.

The entire mechanism is very simple and can be easily placed in position by any one who desires to utilize all or a portion of the stream of water for irrigation purposes, or for generating power to be used in any desired manner.

Having described my invention, I claim:

1. In a portable dam, longitudinally arranged timbers, braces secured thereto, floats at the forward ends of said braces, and vertically movable members connected with the dam for deflecting water laterally.

2. In a portable dam, longitudinally arranged timbers spaced at a distance from each other, braces connected with said timbers, floats at the forward end of said braces, and vertically movable plank passed through the space between two of said timbers.

3. In a portable dam, longitudinally arranged timbers spaced at a distance from each other, sets of converging braces secured to said timbers, a float for each set of braces, and vertically movable plank between the space between the rear timbers.

4. In a portable dam, longitudinally arranged timbers having spaces therebetween, sets of converging braces secured to the forward timbers and having their ends joined at a distance therefrom, a brace extending from the point of each set of braces underneath said timbers to the rear timber, floats connected with the forward ends of said sets of braces, and vertically arranged planks in the space between the rear timbers.

5. In a portable dam, longitudinally arranged timbers at a distance apart, additional timbers on the adjacent edges of the rear timbers, inwardly extending braces secured to said timbers, floats connected with the forward ends of said braces, a plank walk secured to the forward timbers, and vertically arranged plank in the space between the adjacent edges of the rear timbers and the additional timbers thereon.

6. In a portable dam, longitudinally arranged timbers having a space formed therebetween, braces connected with said timbers, floats for said braces and vertically arranged plank in said spaces, the lower end of said planks being adapted to be inclined up stream.

7. In a portable dam, longitudinally arranged timbers, sets of forwardly extending braces secured thereto, floats for said braces, stay rods pivotally secured to the forward ends of said braces, a brace beam secured to the rear ends of said stay rods, vertically arranged planks through the space between the rear timbers and having their lower portions engaging with the forward side of said beam, and rods connected with said beam and extending above the top of the dam and formed into hand wheels.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM H. CROW.

Witnesses:
H. SANDOW,
H. A. MOESER,