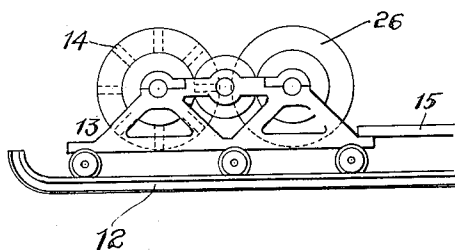
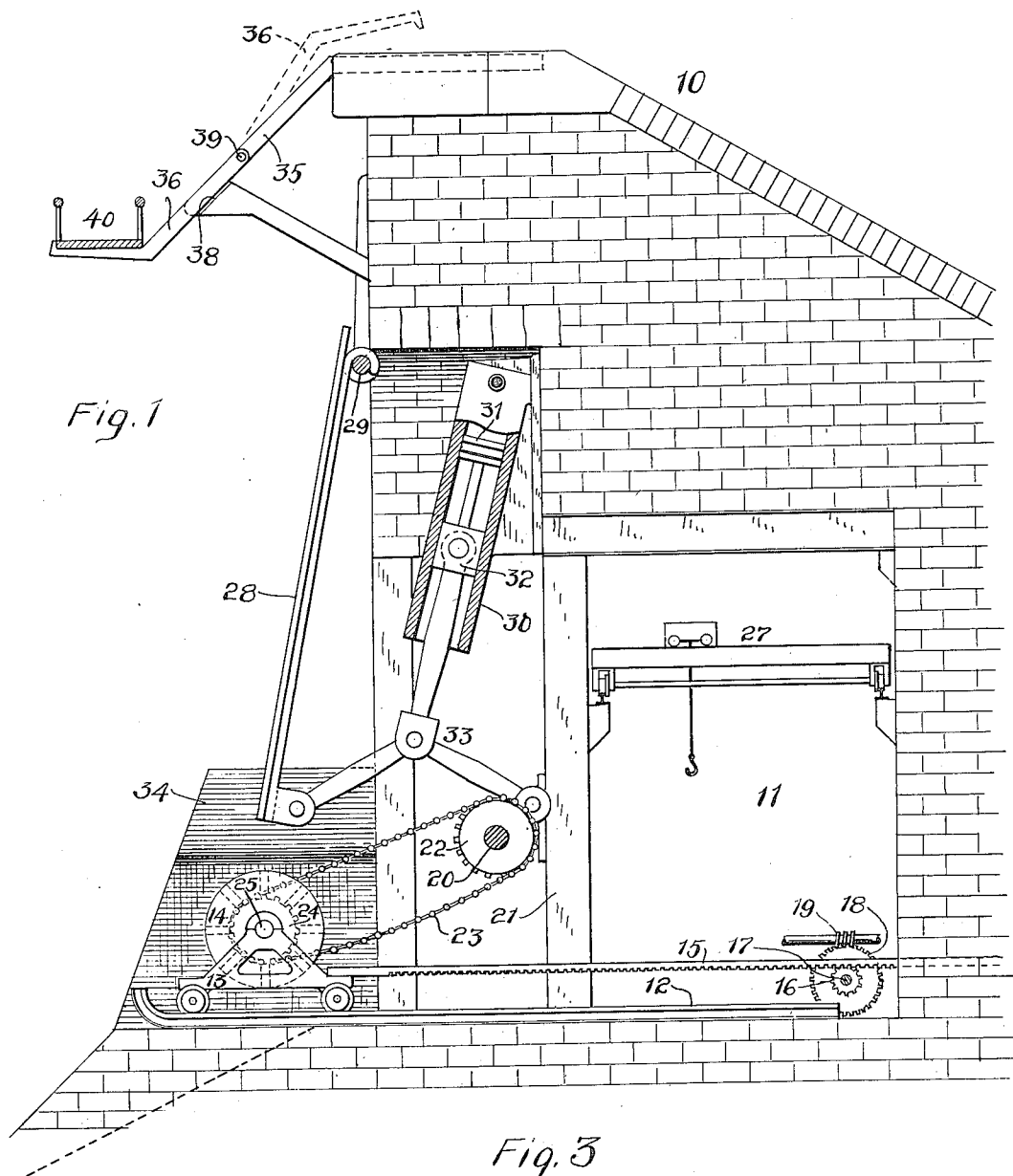


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APPLICATION FILED MAR. 2, 1912.

1,042,381.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 1.



WITNESSES:

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S. W. Atherton.

INVENTOR

William H. Baker

BY

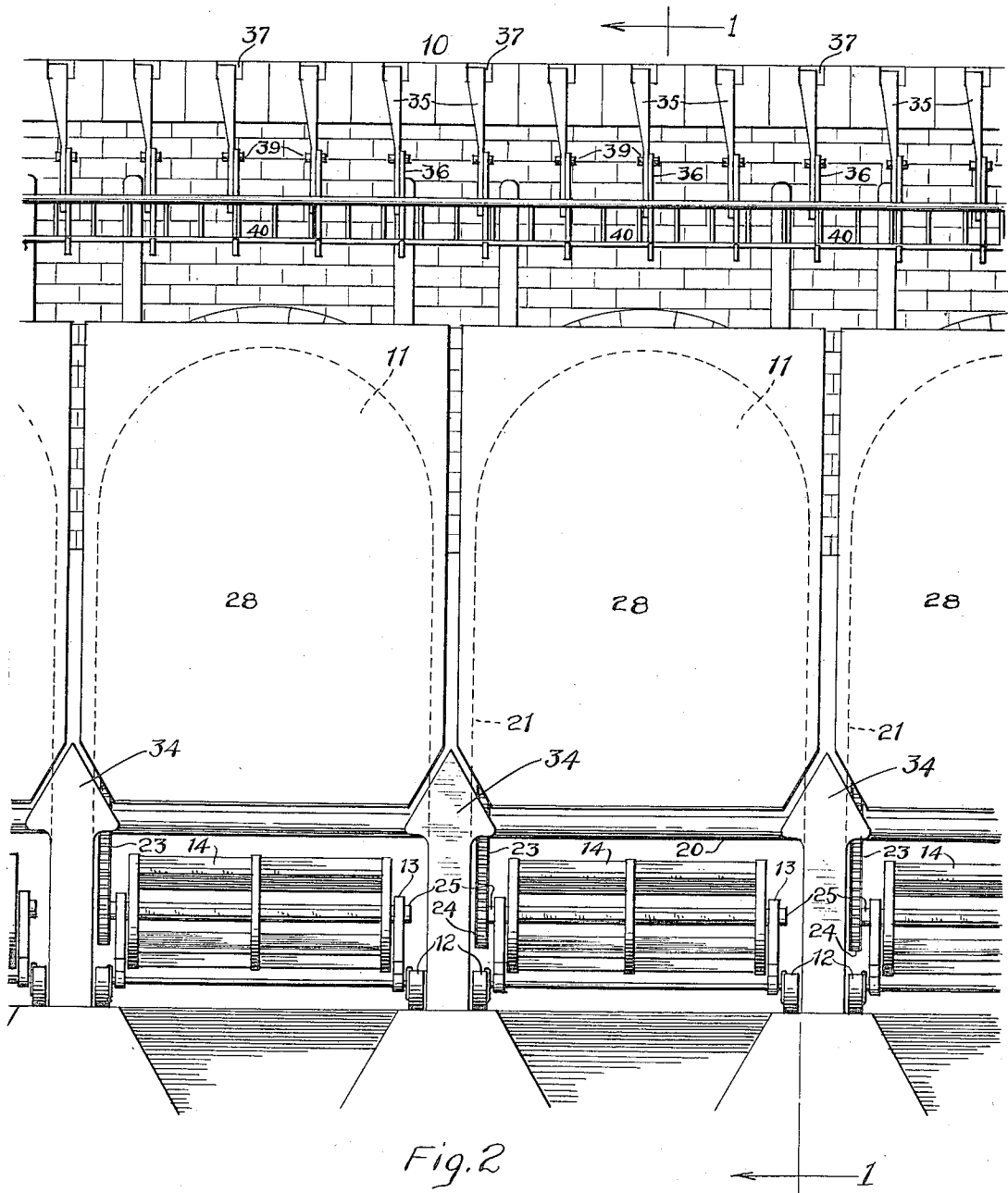
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UNITED STATES PATENT OFFICE.

WILLIAM H. BAKER, OF BRIDGEPORT, CONNECTICUT.

DAM AND HYDRAULIC-POWER TRANSMITTER.

Specification of Letters Patent.

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Application filed March 2, 1912. Serial No. 681,091.

To all whom it may concern:

Be it known that I, WILLIAM H. BAKER, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in Dams and Hydraulic-Power Transmitters, of which the following is a specification.

This invention has for its object to utilize to the greatest possible extent the dynamic energy of a water fall without in any way detracting from the scenic beauty or grandeur of the falls, and the invention consists in rebuilding the crest of the precipice over which the water passes in the form of a dam and providing in the face of the dam chambers for water wheels with means for moving the water wheels into and out of operative position independently, means for connecting the water wheels independently with a driving shaft and means for deflecting the water so as to utilize to the maximum extent the energy of the falls.

With these and other objects in view I have devised the novel dam and power transmitting means of which the following description in connection with the accompanying drawings is a specification, reference characters being used to indicate the several parts.

Figure 1 is a section of the dam on the line 1-1 in Fig. 2 looking in the direction of the arrows showing power transmitting means in one of the chambers; Fig. 2 a front elevation of the face of the dam showing a series of water wheels and deflectors; and Fig. 3 is a detached view illustrating a form of the invention in which a dynamo is mounted on a carriage with a water wheel. My invention requires that a portion or all of the water be deflected from its normal channel so that the entire crest of the precipice may be built over in the form of a solid dam of masonry either at one operation or in sections.

10 denotes the dam which extends from the base to the top of the precipice and effectually protects it and prevents wearing away. This dam is provided in its face at or near the base with chambers 11, which are suitably shaped to meet the requirements of the special conditions involved. Within each chamber are tracks 12 which lead out in front of the face of the dam. Carriages 13 carrying water wheels 14 are adapted to travel on these tracks. The car-

riages and water wheels may be of any ordinary or preferred construction. Each carriage is provided with suitable means for moving it and the water wheel carried thereby into and out of operative position, as by a backwardly extending rack 15 engaged by a pinion 16 whose shaft 17 carries a worm wheel 18 engaged by a worm 19.

20 denotes a driving shaft shown as mounted in bearings secured to pillars 21. This shaft may extend the entire length of the face of the dam and to a dynamo or other machine to be driven. The driving shaft carries a series of sprocket wheels 22 which are connected by sprocket chain 23 with similar sprocket wheels 24 on the shafts 25 of the water wheels.

In the form illustrated in Fig. 3 I have shown a dynamo 26 mounted on the carriage with the water wheel.

27 indicates a crane which travels transversely to the lines of movement of the carriages which may be used in removing and replacing water wheels, dynamos and other portions of the structure and apparatus.

28 denotes swinging deflectors hinged as at 29 to the face of the dam which may be used to regulate the volume of water coming in contact with the water wheels and are entirely concealed by the falling water. When a water wheel is to be removed or repaired, the corresponding deflector may be swung outward to carry all of the water away from the wheel so that it may be examined or repaired without moving it out of operative position. These swinging deflectors may be operated in any ordinary or preferred manner as by hydraulic or pneumatic power or steam.

30 indicates a cylinder whose piston carries a block 32 to which a toggle is pivoted. One of the links of the toggle being pivoted to the swinging deflector and the other to any fixed part as to a pillar.

Between the water wheels I place permanent deflectors 34 which protect the mountings of the water wheels and turn the water falling between the wheels inward upon them so that practically the entire volume of water passing over the dam may be turned upon the wheels and its energy utilized.

35 denotes ice guards which are rigidly secured to the crest and the face of the dam and act to carry cakes of ice far enough from the face of the dam to prevent the danger of injury to the water wheels.

36 denotes arms pivoted as at 39 to the ice guards, which, in winter, are turned over backward, as indicated by dotted lines in Fig. 1 and lie in channels 37 in the crest of the dam, in which the upper ends of the ice guards are secured. When there is no ice in the river these arms may be swung downward, as shown in full lines in Figs. 1 and 2, in which position they rest upon shoulders 38 on the ice guards, and may be used as supports for a walk or bridge 40 for observation purposes below the brink of the falls and beyond the water.

Having thus described my invention, I claim:

1. A structure of the character described comprising a dam for protecting the crest and face of a precipice, said dam having a chamber built therein, a carriage in said chamber, a water wheel mounted on the carriage, means for moving the carriage and wheel into and out of operative position and a swinging deflector to regulate the amount of water that can come in contact with the wheel.

2. A structure of the character described comprising a dam for protecting the crest and face of a precipice, said dam having a chamber built therein, a carriage in said chamber, a water wheel mounted on the carriage, means for moving the carriage and wheel into and out of operative position, a swinging deflector to regulate the amount of water that can come in contact with the wheel and deflectors on the opposite sides of the wheel which turn the water in upon it.

3. A structure of the character described comprising a dam for protecting the crest and face of a precipice, said dam having a

chamber built therein, a carriage in said chamber, a water wheel mounted on the carriage, means for moving the carriage and wheel into and out of operative position, a swinging deflector and a cylinder, piston and toggle for moving the deflector, for the purpose set forth.

4. A structure of the character described comprising a dam for protecting the crest and face of a precipice, said dam having a chamber built therein, a carriage in said chamber, a water wheel mounted on the carriage, and a rack and pinion for moving the carriage into and out of operative position.

5. The combination with a dam for protecting the crest and face of a precipice, said dam having a chamber in its face, of a water wheel in said chamber, a swinging deflector for the purpose set forth and ice guards secured to the crest and face of the dam for protecting the wheel.

6. The combination with a dam for protecting the crest and face of a precipice, said dam having a chamber in its face, of a water wheel in said chamber, a swinging deflector for the purpose set forth, ice guards secured to the crest and face of the dam and arms pivoted to said guards which are adapted to be swung backward out of the way or forward of the guards and a bridge supported by said arms when in operative position.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. BAKER.

Witnesses:

C. W. TAYLOR,
STUART R. W. ALLEN.