W. S. EDGE & E. LITTLEFIELD.

DAM CONSTRUCTION.

APPLICATION FILED MAY 21, 1912.

1,050,930.

Patented Jan. 21, 1913.

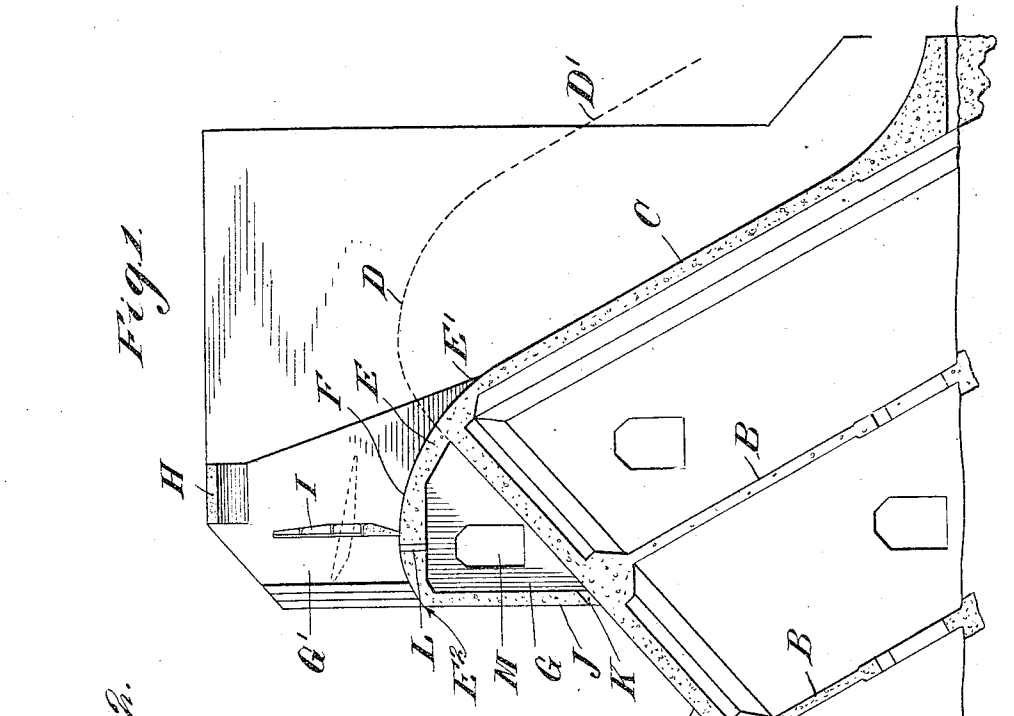

Fig. 1.

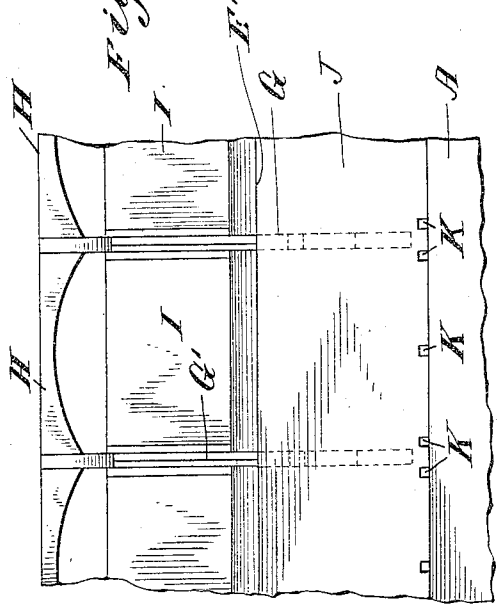

Fig. 2.

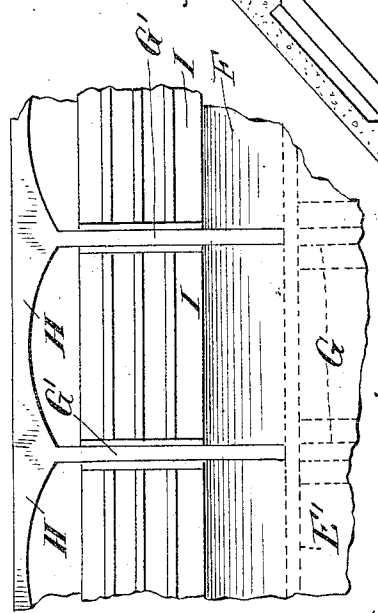

Fig. 3.

WITNESSES

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DAM CONSTRUCTION.

1,050,930. Specification of Letters Patent. Patented Jan. 21, 1913.

Application filed May 21, 1912. Serial No. 698,689.

To all whom it may concern:

Be it known that we, WALTER S. EDGE and EMMETT LITTLEFIELD, citizens of the United States, both residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Dam Constructions, of which the following is a full, clear, and exact specification.

Our invention relates to dam constructions and the object of our invention is to provide a dam construction at a lower cost for a given capacity.

Other objects of our invention will be set forth and the novel features of construction pointed out in the claims forming a part of this specification.

Referring to the drawings illustrating our invention Figure 1 is a cross sectional view of a dam construction made of concrete, and embodying our invention. Fig. 2 is a front view of a portion of the top of the deck and crest of the dam. Fig. 3 is a rear view of the construction shown in Fig. 2.

A, indicates the deck of the dam which is formed of concrete and supported by buttresses B—B, etc., and C indicates the rear wall of the spillway.

In dam constructions as heretofore built, it is usual to provide a curved crest as indicated by the dotted line D so that the water will flow evenly and in contact with the rear wall of the spillway which would follow the line D′, and therefore supporting walls or buttresses would have to be provided which would extend outward to the line D′, and this construction when carried across the stream required a large amount of material. Our object is to save the greater portion of this material in building a dam of the same capacity, and still retain the curved crest and form necessary to conduct the water down the spillway in a proper manner. This result we accomplish as follows: We omit building the construction of the deck from the point E along the line D and D′ and instead we build a crest portion F the top extending in a curve from the point E′ to point E^2, the portion from the point E to the point E^2 overhanging the main deck portion A and supported thereon by walls G—G, etc., illustrated in dotted lines, which are spaced apart from each other a predetermined distance. These walls may be also extended upwardly above the crest as shown at G′—G′, etc., and connected together by supporting members H—H, etc., the walls G′ serving to support the flood gates I—I, etc. A front wall J is also preferably employed to assist in supporting the crest portion F and is provided with openings K—K, etc., and when the front wall J is used, openings L are located in front of the gates I and openings M in the side walls G to equalize the pressure. The front wall J prevents ice from wedging beneath the crest portion F, but if preferred, iron bars could be used in place of the wall J for this purpose. The amount of material required to build the crest portion is much less than that required to build the dam out to the line D′, and where the flood gates are used, a still greater saving is effected since the walls G serve as base walls for the portions G′, as will be readily understood.

It will be understood that the concrete can be reinforced where necessary, with metal or other means. This class of concrete construction is now so well known and their building understood, that further description is deemed unnecessary.

Having thus described our invention, we claim as new:

1. A dam construction comprising an inclined deck having a crest formed integral therewith and overhanging a portion thereof, for the purpose set forth.

2. A dam construction comprising a deck of concrete material having a crest of concrete material which overhangs a portion of the deck and is formed integral therewith, and supporting walls which extend from the deck to said crest portion.

3. A dam construction comprising a deck of concrete material having a crest of concrete material, the upper side of which is curved, which overhangs a portion of the deck and is formed integral therewith, and supporting walls which extend from the deck to said crest portion.

4. A dam construction comprising a deck of concrete material having a crest of concrete material which overhangs a portion of the deck and is formed integral therewith, supporting walls extending above said crest and supported below the same, and a flood gate located above said crest between said walls.

5. A dam construction comprising a deck of concrete material having a crest of concrete material, the upper side of which is curved, which overhangs a portion of the deck and is formed integral therewith, supporting walls which extend from the deck to said crest portion, and an opening extending from beneath said crest to the upper side thereof.

6. A dam construction comprising an inclined deck of cement material, a crest portion of concrete material connected to the upper side of said deck and overhanging a portion thereof and formed integral therewith, the upper surface of which is curved, and supporting walls extending from said deck to the under side of said crest; said construction embodying an inclined spillway extending from the curved surface of said crest down to near the bottom of said construction.

7. A dam construction comprising an inclined deck of cement material, a crest portion of concrete material connected to the upper side of said deck and overhanging a portion thereof and formed integral therewith, the upper surface of which is curved, and supporting walls extending from said deck to the under side of said crest and spaced apart from each other, and a wall extending from the upstream edge of said crest to said deck, said last named wall being provided with an opening near its base and said crest being provided with an opening which extends from beneath the crest to the upper side thereof, for the purpose set forth.

8. A dam construction having an inclined deck formed of concrete material and provided with a crest, the upper surface of which is curved and which overhangs a portion of said deck and a front wall extending from the deck to the upstream edge of the crest and integral with both of said elements, the construction forming a chamber above a portion of the deck and beneath the crest, substantially as shown and described.

9. A dam construction comprising an inclined deck having a crest formed integral therewith and overhanging a portion thereof, walls extending above said crest, and a flood gate supported between said walls.

10. A dam construction comprising an inclined deck of cement material, a crest portion of concrete material connected to the upper side of said deck and overhanging a portion thereof and formed integral therewith, the upper surface of which is curved, supporting walls extending from said deck to the under side of said crest; said construction embodying an inclined spillway extending from the curved surface of said crest down to near the bottom of said construction, walls extending above said crest, and a flood gate controlling the flow of water to said spillway.

11. A dam construction comprising an inclined deck of cement material, a crest portion of concrete material connected to the upper side of said deck and overhanging a portion thereof and formed integral therewith, the upper surface of which is curved, supporting walls extending from said deck to the under side of said crest and spaced apart from each other, a wall extending from the upstream edge of said crest to said deck, said last named wall being provided with an opening near its base and said crest being provided with an opening which extends from beneath the crest to the upper side thereof, walls extending above said crest and formed integral therewith, and a flood gate supported by said walls.

In testimony whereof, we affix our signatures, in presence of two witnesses.

W. S. EDGE.
EMMETT LITTLEFIELD.

Witnesses:
H. R. THORNE,
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