

G. BLAAUW.
DAM.
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1,049,981.

Patented Jan. 7, 1913.

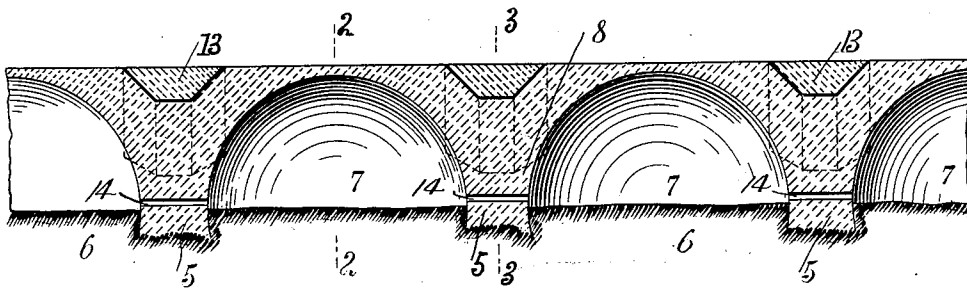


Fig. 1.

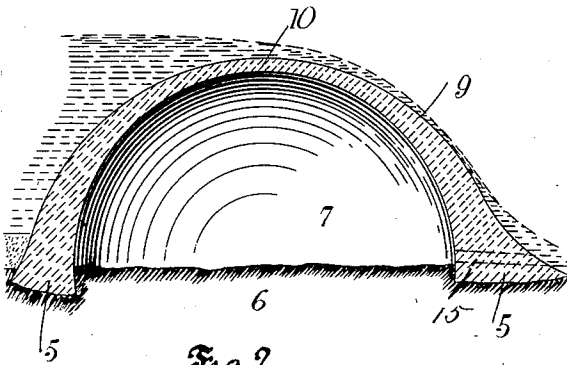


Fig. 2.

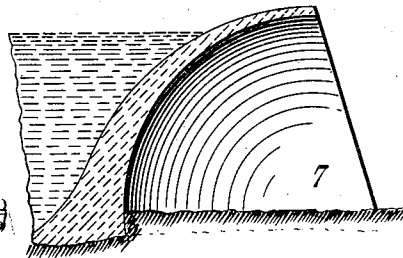


Fig. 4.

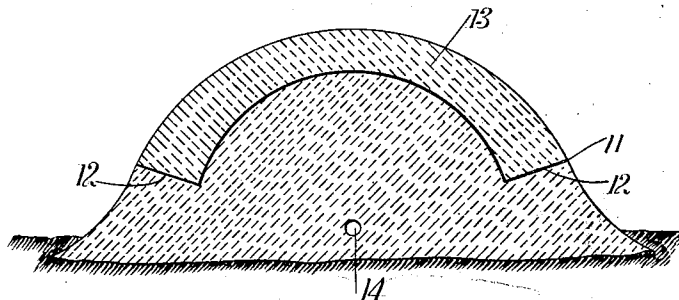


Fig. 3.

WITNESSES
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UNITED STATES PATENT OFFICE.

GEERT BLAAUW, OF MASSENA, NEW YORK.

DAM.

1,049,981.

Specification of Letters Patent.

Patented Jan. 7, 1913.

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To all whom it may concern:

Be it known that I, GEERT BLAAUW, a citizen of the United States, and a resident of Massena, in the county of St. Lawrence and State of New York, have invented a new and Improved Dam, of which the following is a full, clear, and exact description.

My invention relates to an improvement in hollow dams, preferably constructed of concrete or other suitable material.

An object of my invention is to provide a device of this character which will possess the maximum amount of strength, rigidity and stability, with the least amount of material.

A further object of my invention is to provide a structure in which the side thrust is resolved into a component bringing the strain downward.

I attain the above-outlined objects by constructing in the bottom of the dam, a series of semi-spherical depressions, which construction is regarded as an advance in the art over the arch-shaped openings extending throughout the length of the dam, in that it braces the dam in line with its side thrust; at the same time attaining the advantages inherent in dams having a continuous opening therethrough.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a longitudinal sectional view taken vertically through a dam showing a physical embodiment of my invention; Fig. 2 is a transverse sectional view through the dam, and taken on the line 2—2 of Fig. 1, showing the overflowing of flood waters; Fig. 3 is a transverse sectional view taken through the expansion joint and on the line 3—3 of Fig. 1; and Fig. 4 is a fragmentary view similar to Fig. 2, but showing the water at its normal level.

As shown more particularly in Figs. 2 and 3, the dam is arch-shaped in cross section, having feet 5 forming a foundation for the dam in the rock or earth-bed 6, and as is usual with devices of this character, is of a length sufficient to extend from bank to bank of a water course.

Extending transversely of the dam is a se-

ries of spaced-apart semi-spherical or dome-shaped pockets 7, forming therebetween, supporting arches 8, which arches terminate in the foundation feet 5. The outer surface of each dome is curved in cross section, said curve having a radius greater than the radius of the pockets 7, so that the dome will have a relatively thin top portion gradually increasing in thickness as it approaches the feet 5. In this way, the greatest resistance is obtained at the lower portion of the dome, that is, where the greatest strain occurs, it, of course, being true that the top of the dome need only be of a strength to support the weight of the flood waters. By this construction, an economical use of material is obtained, and, at the same time, the necessary bracing effect required of the dam is effected.

The top of each of the supporting arches 8 has a groove 11 therein, which groove, as shown more particularly in Fig. 1, is bevel-shaped in cross section, and, as shown in Fig. 3, is curved transversely of the dam. This groove terminates in shoulders 12 on opposite transverse sides of the dam. Disposed within each of these grooves is a joint or sleeper 13 of wood or other suitable material, which joint or sleeper is of a configuration to tightly fit within the groove. It will be noted that as the concrete or other material of which the dam is constructed expands or contracts the sleeper 13 will be forced out or will fall back into the groove, whereby the different portions of the dam may expand or contract without rupturing the same. An opening 14 extends through the supporting arches 8, adjacent the soil 6, so as to afford air communication between the different pockets 7, and to allow any water that may collect in the dam to flow out, an opening 15, as shown in dotted lines Fig. 2, is provided.

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

1. A hollow dam of concrete, comprising a wall arched in cross section, and having a series of semi-spherical pockets or domes spaced apart on the under side thereof.

2. A hollow dam of concrete, comprising a wall arched in cross section, and having a series of semi-spherical pockets or domes

spaced apart on the under side thereof, and an expansion joint on the outside of said dam between adjacent pockets.

3. A dam curved in cross section, having
5 a semi-spherical dome pocket in the under side thereof, said dam transverse of said pocket being of increasing thickness from the top to the bottom thereof.

In testimony whereof I have signed my name to this specification in the presence of 10 two subscribing witnesses.

GEERT BLAAUW.

Witnesses:

J. C. ANDREWS,
J. H. CLARK.