

T. H. SKINNER.
METHOD OF CONSTRUCTING DAMS, DOCKS, AND SIMILAR WATER RETAINING OR WATER
EXCLUDING STRUCTURES.

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973,821.

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Fig. 1.

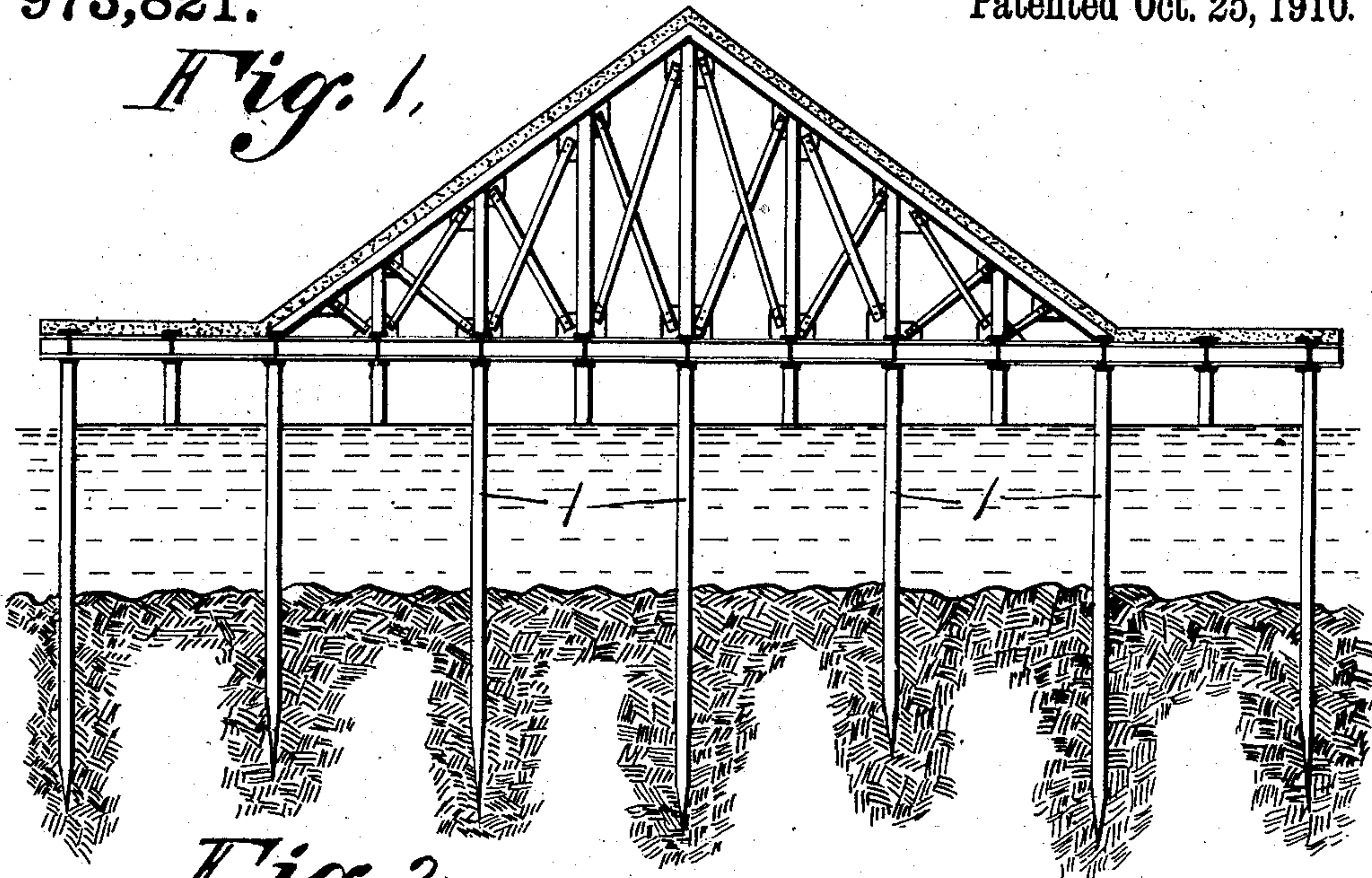


Fig. 2.

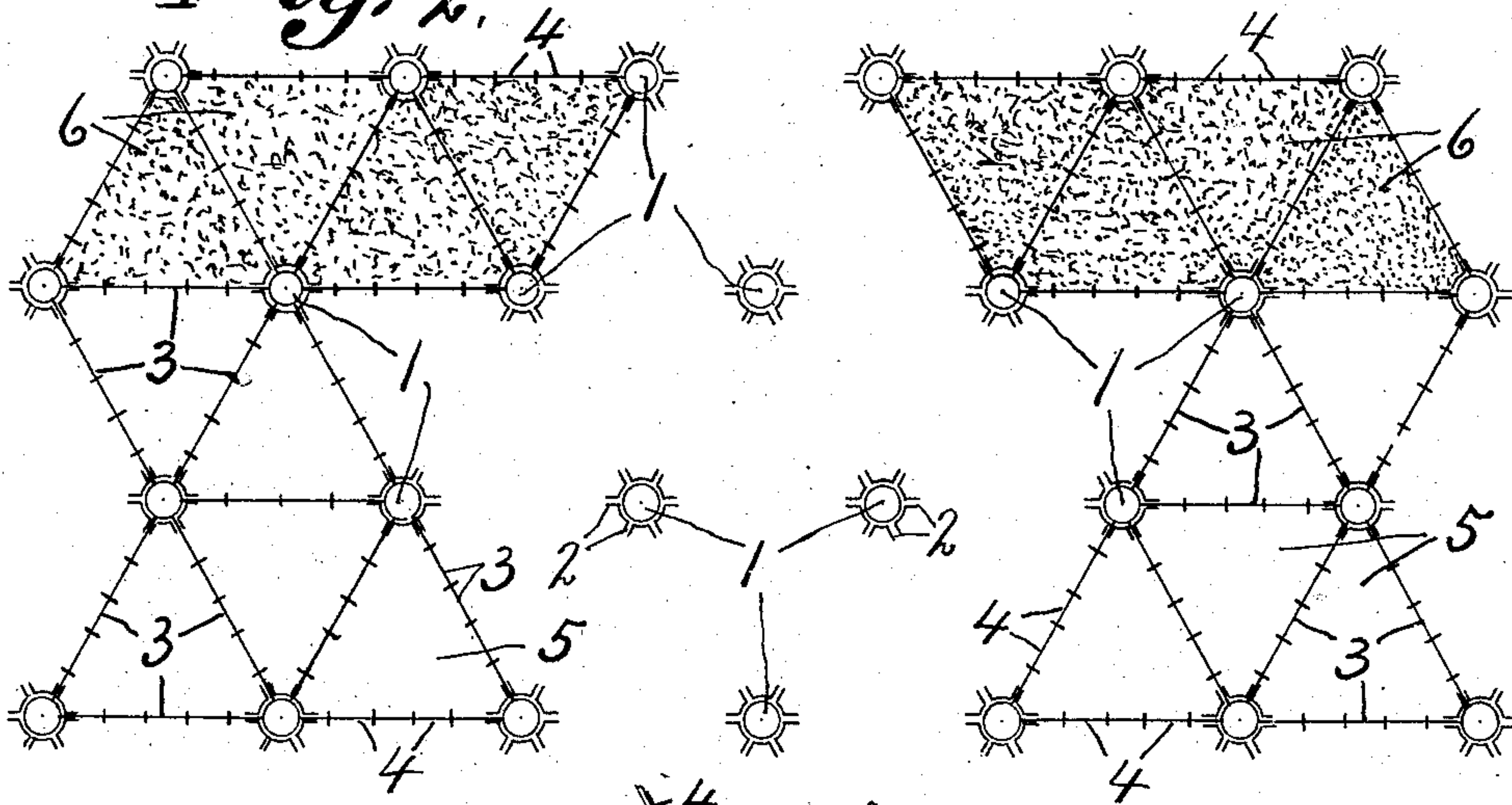
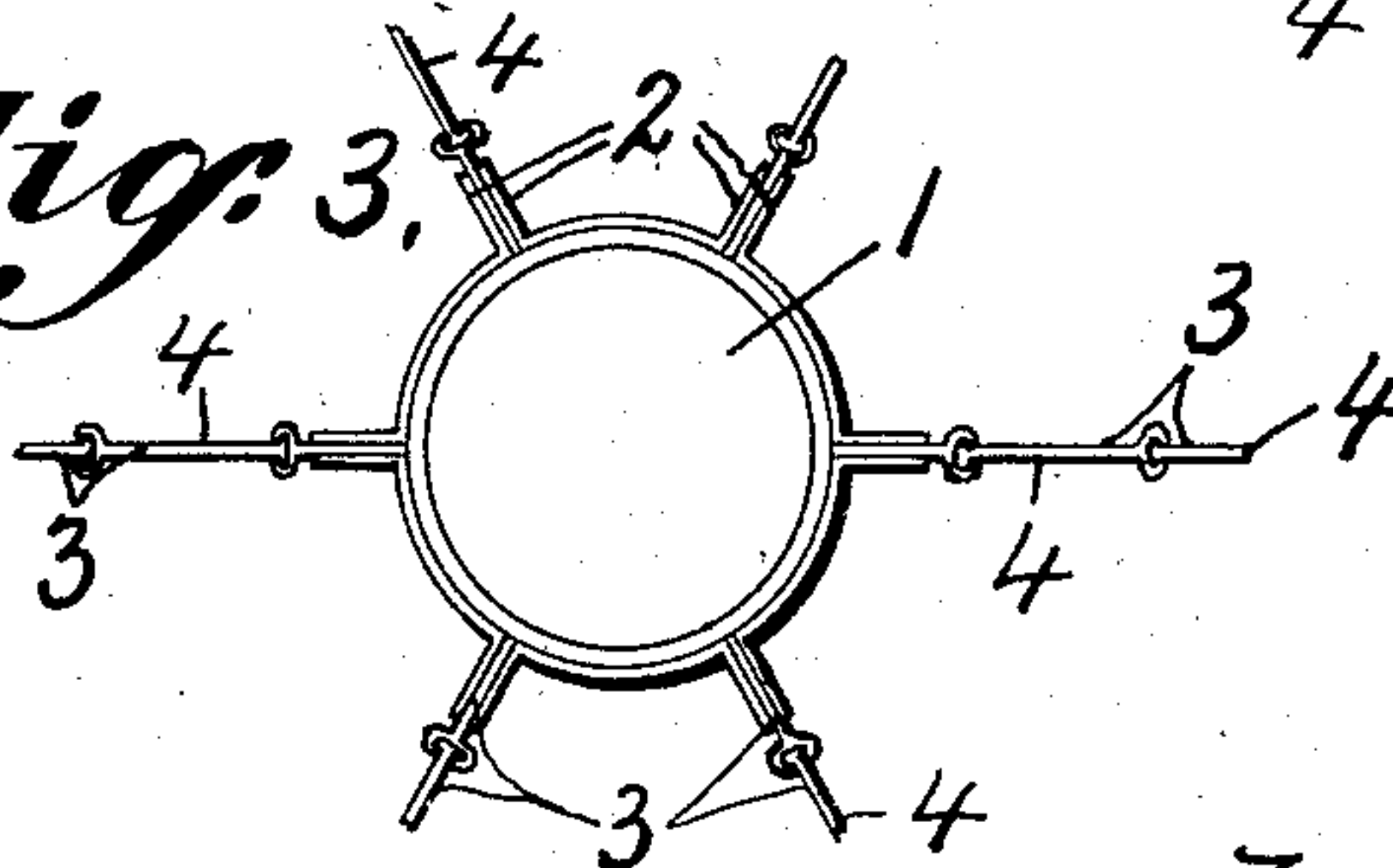


Fig. 3.



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METHOD OF CONSTRUCTING DAMS, DOCKS, AND SIMILAR WATER-RETAINING OR WATER-EXCLUDING STRUCTURES.

973,821.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, THEODORE H. SKINNER, of Oneida, in the county of Madison, in the State of New York, have invented
5 new and useful Improvements in the Method of Constructing Dams, Docks, and Similar Water-Retaining or Water-Excluding Structures, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.
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This invention relates to certain improvements in the construction of dams, bulwarks, docks and similar structures which require the building up of the foundations and superstructures in streams and other bodies of water or on marsh lands for retaining or
15 excluding water.

The main object is to obviate the use of coffer-dams and consequent expensive excavations and at the same time to avoid the necessity of diverting the stream or any portion thereof through artificial channels by permitting the water to flow through its natural channel during progressive building
20 of the structure. In other words I have sought to produce a practical method of building up such walls from the bed of the stream, or other body of water, through and any distance above the level thereof without
25 the use of coffer-dams, caissons or other temporary structures and also without excavating any portion of the bed of such stream or body of water.

A further object of this method of construction is to permit the wall to be built progressively in sections, so that each section may be capable of resisting the strains to which it may be subjected and at the same time leaving a sufficient opening for
30 the free flow of the water through its natural channel.

Other objects and uses will be brought out in the following description.

In the drawings, Figure 1 is an elevation partly in section of a structure in a partly completed state. Fig. 2 is an enlarged top plan of a portion of the same structure showing particularly the systematic arrangement of the piles and connection between them and also showing portions of the compartments formed by the partitions between the piles as filled with concrete. Fig. 3 is an enlarged top plan of one of the piles showing the manner of connecting the
45 sectional partitions.
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In constructing the dam or other water retaining or water excluding wall under this method, a series of piles or posts —1— having suitable attaching members as flanges —2— secured thereto are sunk through the water into the bed thereof, so as to project some distance above the water level, said piles or posts being systematically arranged at the apexes of a plurality of adjoining equilateral triangles covering the area upon which the wall is to be constructed, after which the piles or posts are connected along the sides of the triangles by partitions —3— preferably made up of sections or plates —4— of sheet steel or equivalent material detachably interlocked with each other, the end sections being similarly interlocked with the attaching members —2— on the piles, thereby forming a series of triangular compartments —5—. As each compartment is thus completed by the insertion of the partitions —2— which are also embedded at their lower ends in the bed of the stream or body of water and rise some distance above the level thereof, the water, sand or other light material which may be retained in the compartment is pumped out and the compartment filled with concrete —6— resting upon the bed of the stream and rising to the height of the partitions. In this manner compartments may be progressively formed and filled with concrete in any direction either from the banks toward the center, or from the center toward the banks, so that when the structure is built in flowing water a sufficient space may be left at any part of the wall for the free passage of the water therethrough, thus permitting the entire superstructure to be completed before filling in the vacant triangular spaces, it being understood that when the wall is built for a dam, suitable water ways and gates are provided in the completed sections to allow the passage of water therethrough, while the last vacant spaces of the series are being completed.
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In the construction of a dam, the piles are preferably arranged in straight parallel rows a uniform distance apart transversely of the stream, so that the bases of the triangular compartments toward the upstream side of the wall will lie in the same transverse plane thus permitting the completion of the wall between the first two transverse rows of piles to effectively dam
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up the water before the remaining portions of the wall are completed, if desired.

What I claim is:

- 5 1. The method of constructing dams, docks and other water retaining or water excluding walls which consists in sinking a series of piles or posts in the bed of a stream or body of water at the apexes of a series of triangles, then connecting the piles
10 with partitions to form separate triangular compartments, then pumping out the water and other substance from the compartment, and finally filling the compartment with concrete.
- 15 2. In the construction of dams, docks and other water retaining or water excluding walls, a system of piles driven into the bed of the stream or other body of water and projecting some distance above the level of
20 the water and spaced uniform distances apart, partitions connecting adjacent piles forming a series of compartments, and fillings for said compartments.
- 25 3. A dam, dock or other water retaining or water excluding wall, comprising a system of piles located at the apexes of a series of equilateral triangles and having their

lower ends embedded in the bed of the stream or other body of water, sectional partitions connecting adjacent piles and concrete fillings between the partitions. 30

4. The method of constructing dams, docks and other water retaining or water excluding walls consisting in gradually partitioning off a predetermined area or body
35 of water in smaller subdivisions or compartments, and displacing the water from each compartment by a concrete filling.

5. The method of constructing dams, docks and other water retaining or water
40 excluding walls which consists in securely positioning a series of piles so as to extend from the bed through and above the surface of the water and some distance apart, progressively connecting said piles by parti-
45 tions in such manner as to form compartments, and replacing the water in the compartments with concrete.

In witness whereof I have hereunto set my hand on this 17th day of February 1910. 50

THEODORE H. SKINNER.

Witnesses:

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