

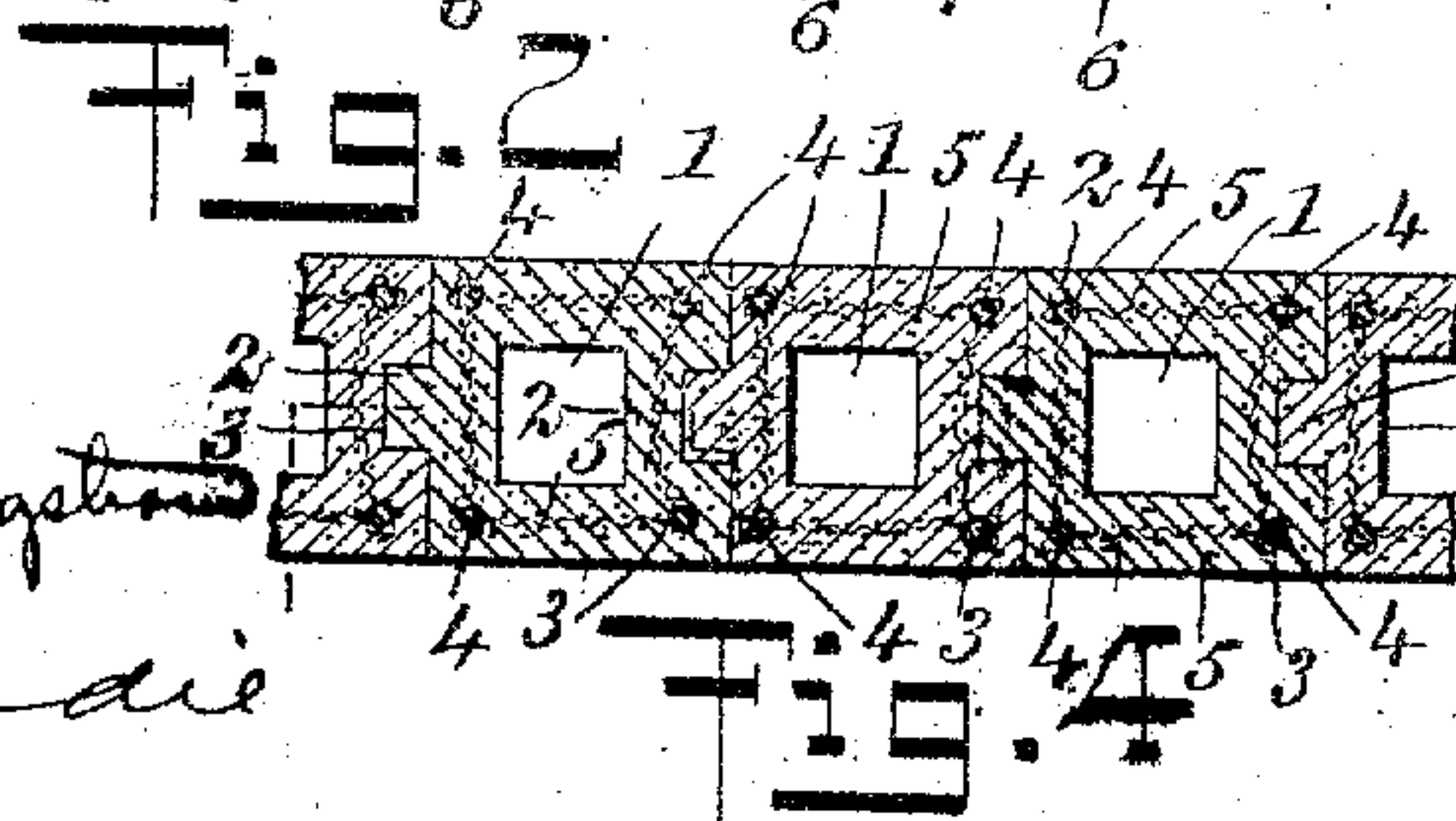
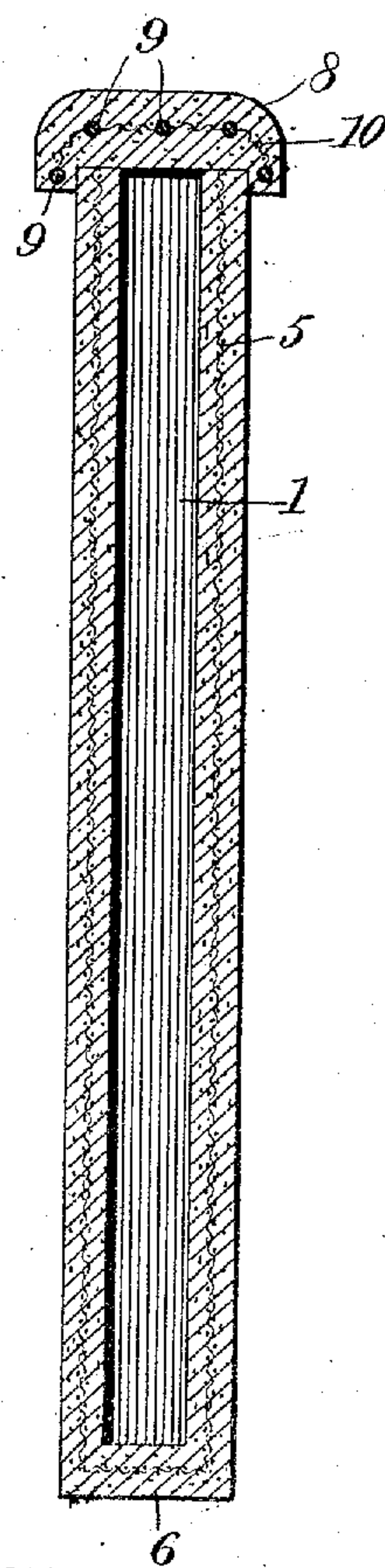
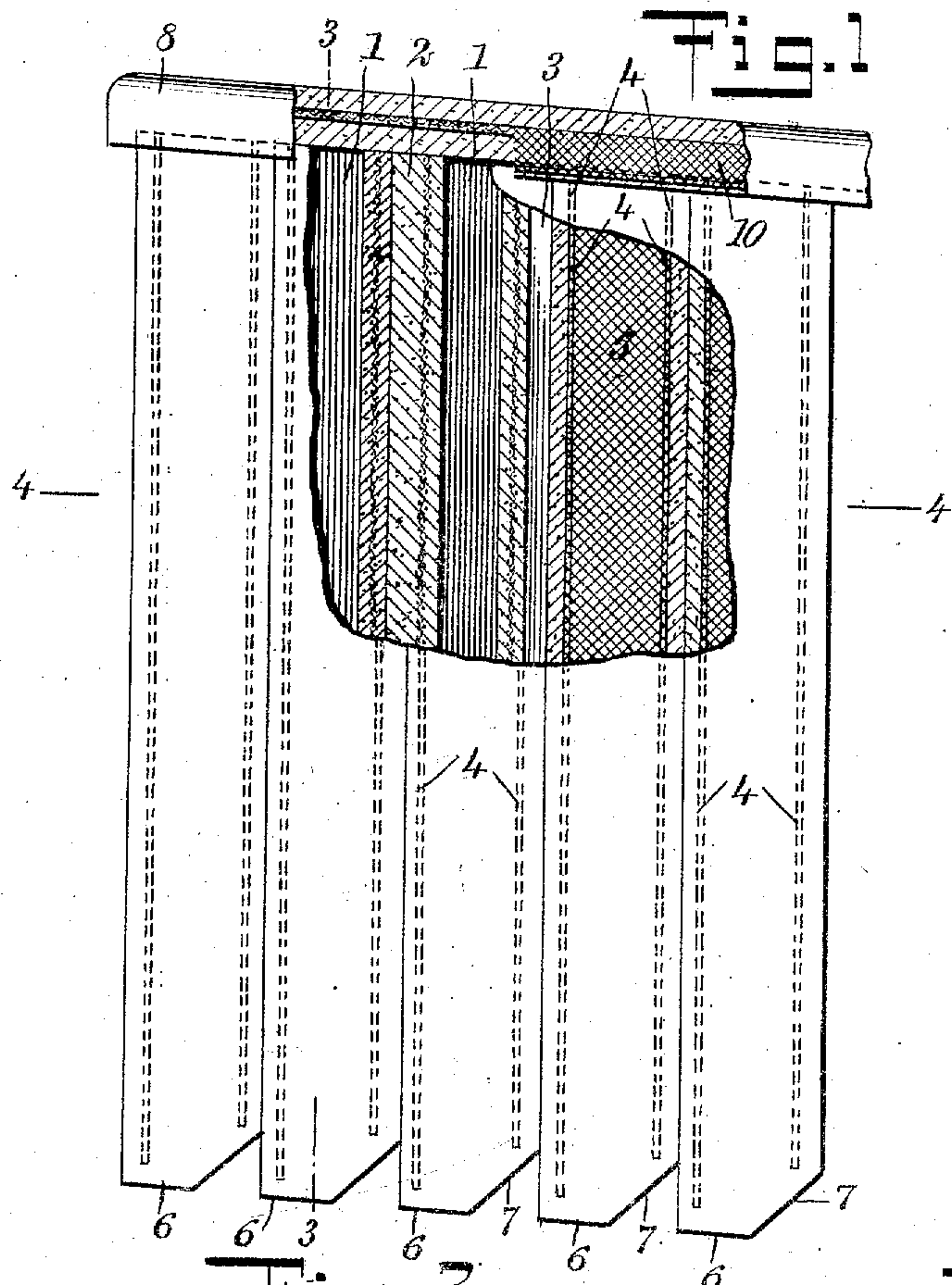
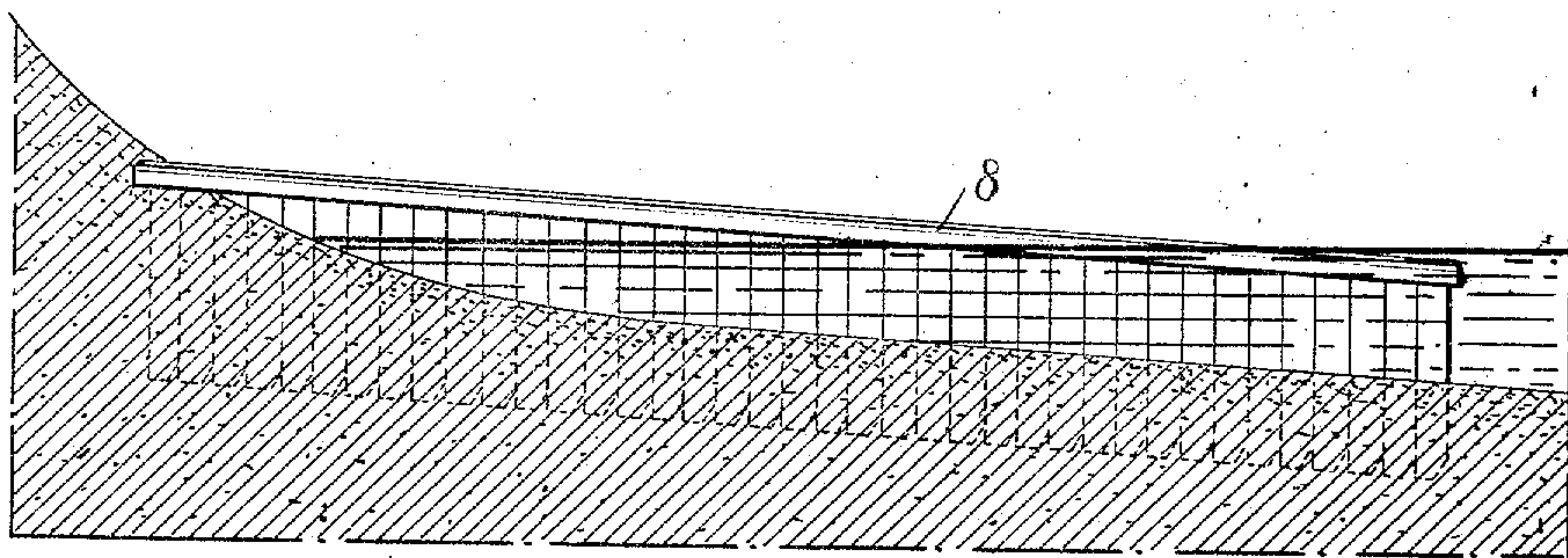
No. 867,802.

PATENTED OCT. 8, 1907.

W. C. COTTRELL.  
REINFORCED CONCRETE JETTY.

APPLICATION FILED JAN. 29, 1907.

2 SHEETS—SHEET 1.



WITNESSES

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*R. H. Andie*

INVENTOR

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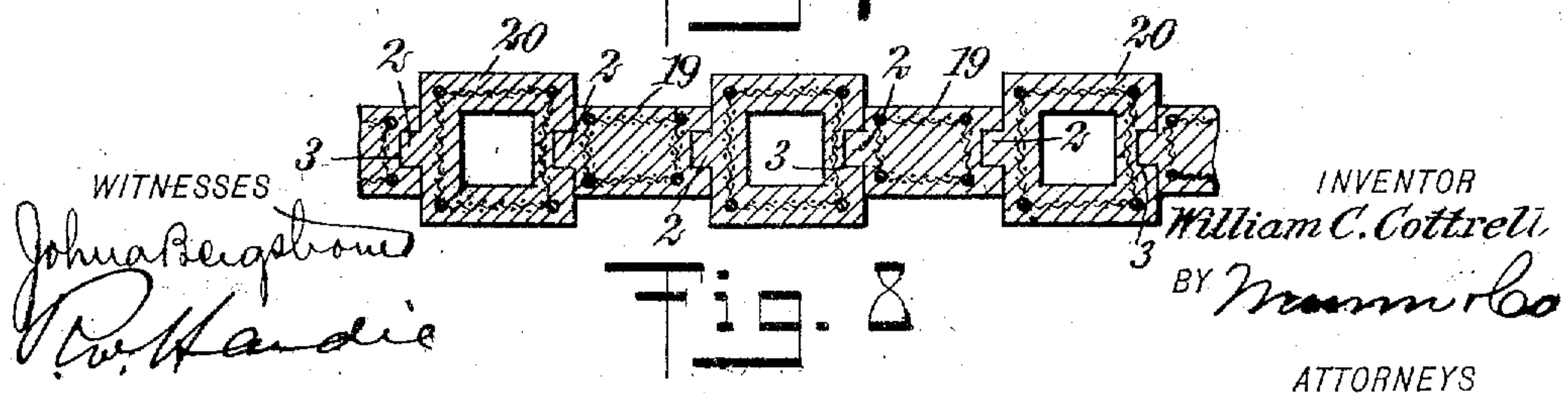
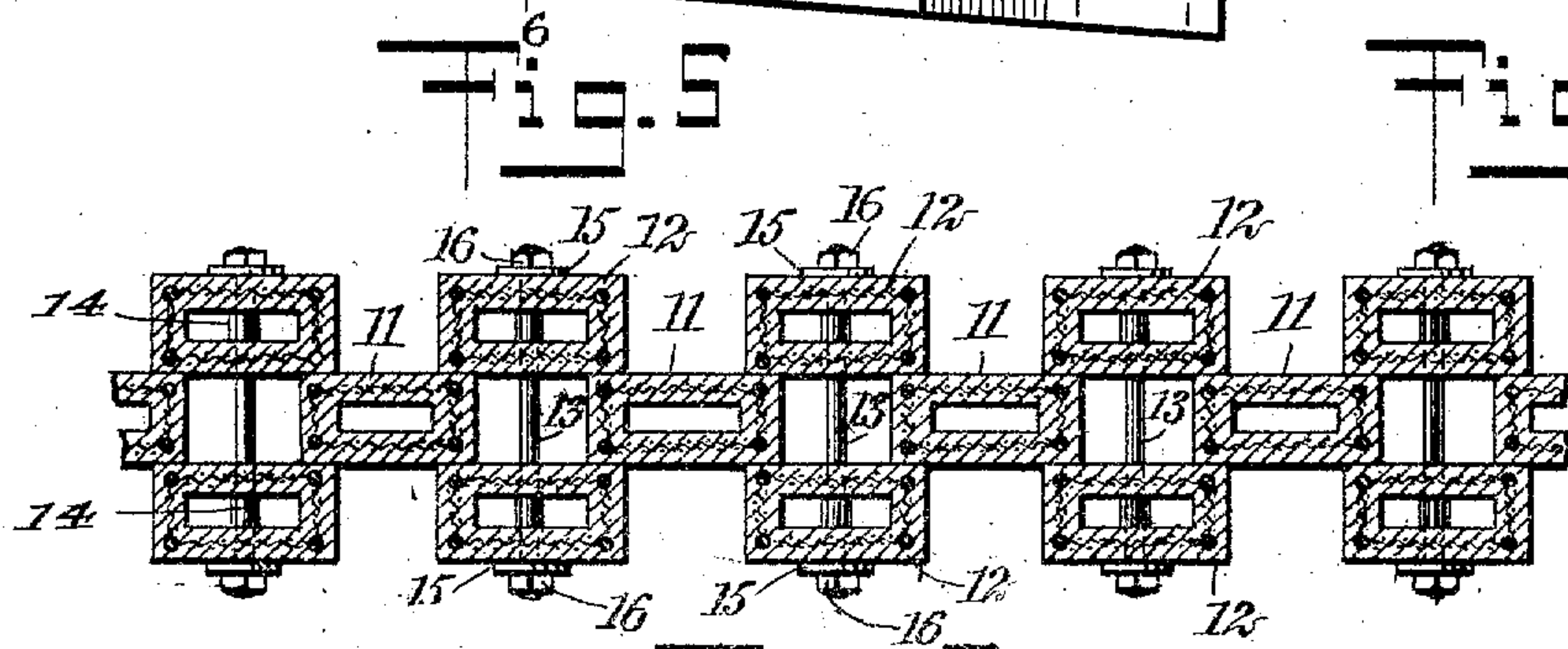
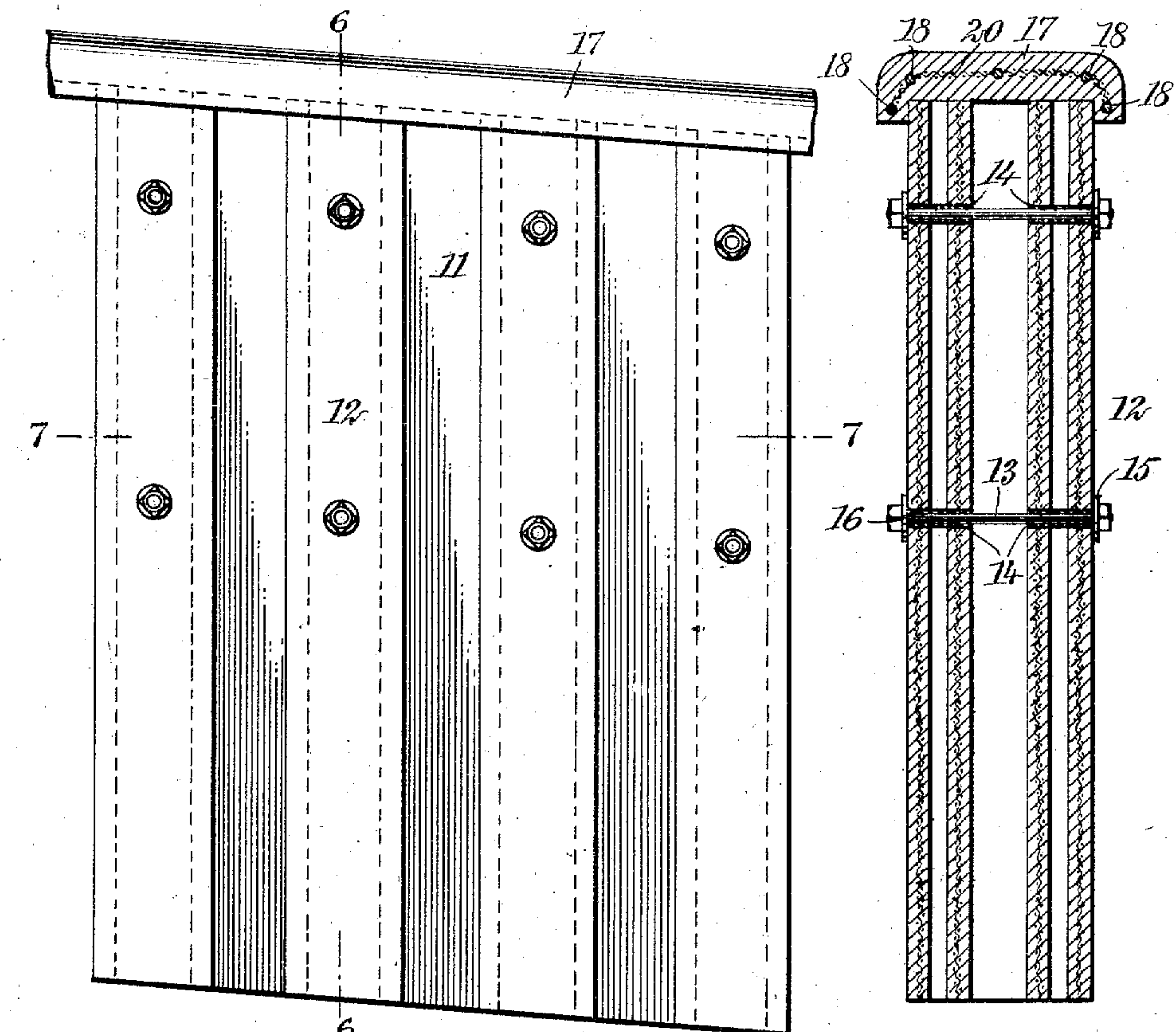
ATTORNEYS

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2 SHEETS—SHEET 2



WITNESSES

*John Bergstrom*  
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# UNITED STATES PATENT OFFICE.

WILLIAM C. COTTRELL, OF ASBURY PARK, NEW JERSEY.

## REINFORCED CONCRETE JETTY.

No. 867,802.

Specification of Letters Patent.

Patented Oct. 8, 1907.

Application filed January 28, 1907. Serial No. 354,693.

To all whom it may concern:

Be it known that I, WILLIAM C. COTTRELL, a citizen of the United States, and a resident of Asbury Park, in the county of Monmouth and State of New Jersey, have invented a new and Improved Reinforced Concrete Jetty, of which the following is a full, clear, and exact description.

This invention has for its object to construct a jetty of reinforced concrete piles, adapted to hold the sand washed along the beach by the currents of the ocean, and thereby build up the beach to the desired height.

Other objects relating to the specific construction and special arrangement of the several parts of my invention will be understood by the following description and accompanying drawings, in which drawings like characters of reference indicate like parts throughout the views, and in which

Figure 1 is a side elevation of a jetty embodying my invention; Fig. 2 is a side elevation of a series of piles and coping therefor, partly broken away, showing the interior construction of the piles and coping; Fig. 3 is a vertical section taken on the line 3—3 of Fig. 2; Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 2; Fig. 5 is a side elevation of a jetty embodying a modification of my invention; Fig. 6 is a vertical section taken on the line 6—6 of Fig. 5; Fig. 7 is a horizontal section taken on the line 7—7 of Fig. 5; and Fig. 8 is a horizontal section of another modified form of my invention.

As illustrated in the drawings, the piles forming the jetty are preferably made with a hollow interior 1, and with longitudinal tongues 2 formed on one side of the piles and corresponding grooves 3 formed on the opposite side, whereby the piles are adapted to be arranged in inter-locking series forming a jetty having plain walls on opposite sides thereof, as shown in Fig. 4. The piles are reinforced preferably by means of longitudinal rods 4 connected together by wire netting 5, or other suitable means. The ends 6 of the pile to be embedded in the sand may be closed, and a portion 7 of the ends may be beveled, as indicated in Fig. 2. The embedded ends of the piles may be open, however, if desired. A coping 8 is built along the upper ends of the pile and provided with longitudinal reinforcing bars 9 connected together by means of netting 10, or used independently of such material, if desired. By means of such coping the upper ends of the piles are protected from injury and the piles bound together. The piles when constructed are arranged to form a jetty, as shown in Fig. 1 of the drawings, the embedded ends of the piles resting on hard pan, and the upper ends projecting above the beach to the extent to which it is desired to add to or build on to the beach. While the side walls of the jetty may be plain, as already described and shown in Fig. 2, I prefer in most instances to construct the jetty with vertical grooves or depressions and alter-

nate ribs, thereby adapting the side walls of the jetty to more readily hold the sand washed along the beach by the current. To accomplish such purposes I prefer in most instances to arrange the piles in overlapping series, as shown in Fig. 7, in which the jetty is formed of a central series of piles 11 spaced from each other and overlapped on their edges by piles 12 arranged in outer series, the corresponding piles of the outer series being clamped together by means of bolts 13 extending through said piles. For this purpose I prefer to provide the piles with transverse sleeves 14 adapted to receive the bolts 13 and enable said bolts to be used without injury to the piles. In this connection I prefer also to use broad washers 15 which distribute the strain on the side of the piles caused by the nuts 16, thereby protecting the piles from injury. A coping 17 is used in such construction, as well as in the construction hereinbefore described, and such coping is reinforced by means of longitudinal rods 18 which may, if desired, be connected by means of metallic netting 20.

Other constructions may be used to provide the side walls of the jetty with vertical grooves and alternately arranged projections. Thus the piles may be provided with tongues and grooves as already described, and each alternate pile made narrower than its adjacent pile, as shown in Fig. 8. To this end the narrow piles 19 may be made solid, if desired, while the adjacent piles 20 are constructed with a hollow interior. When a jetty is constructed of piles of this character, their upper ends are preferably provided with a coping similar to that shown in Figs. 1 and 5.

While in most instances I prefer to construct the piling with a hollow interior such construction is not essential to my invention.

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

1. A jetty comprising reinforced concrete piles arranged in interlocking series with alternate vertical projections and depressions formed in the side walls of said jetty, substantially as shown and described.

2. A jetty comprising a series of hollow reinforced concrete piles interlocking with each other, and a reinforced concrete coping extending across the upper ends of said piles, substantially as shown and described.

3. A jetty comprised of a series of tongue and groove reinforced concrete piles provided with alternate vertical ridges and depressions formed in the wall of said jetty, substantially as shown and described.

4. A jetty comprising reinforced concrete piles arranged in interlocking series, with the sides of some of the piles projected beyond the face of the adjacent piles, so as to form vertical depressions in the wall of said jetty, substantially as shown and described.

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

WILLIAM C. COTTRELL.

Witnesses:

ROBERT W. HARPIS,  
JNO. M. RITTER.