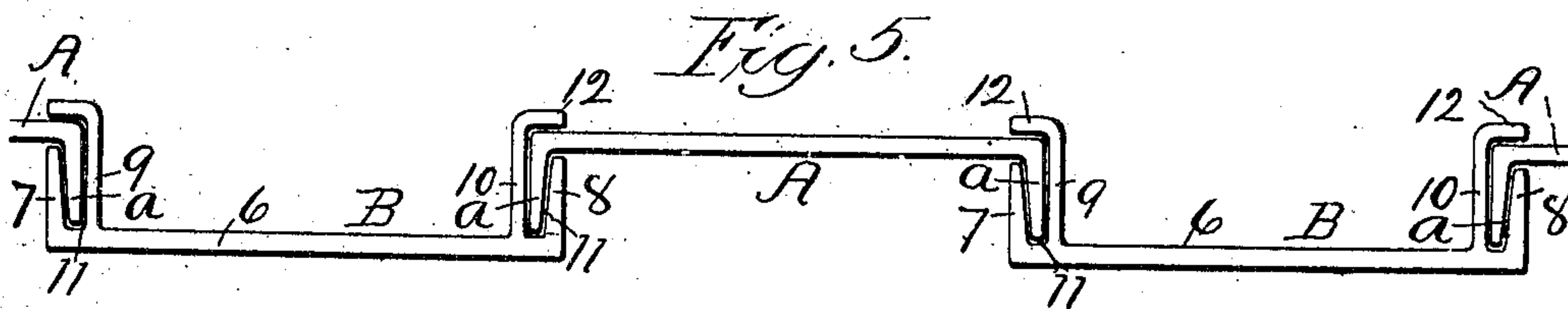
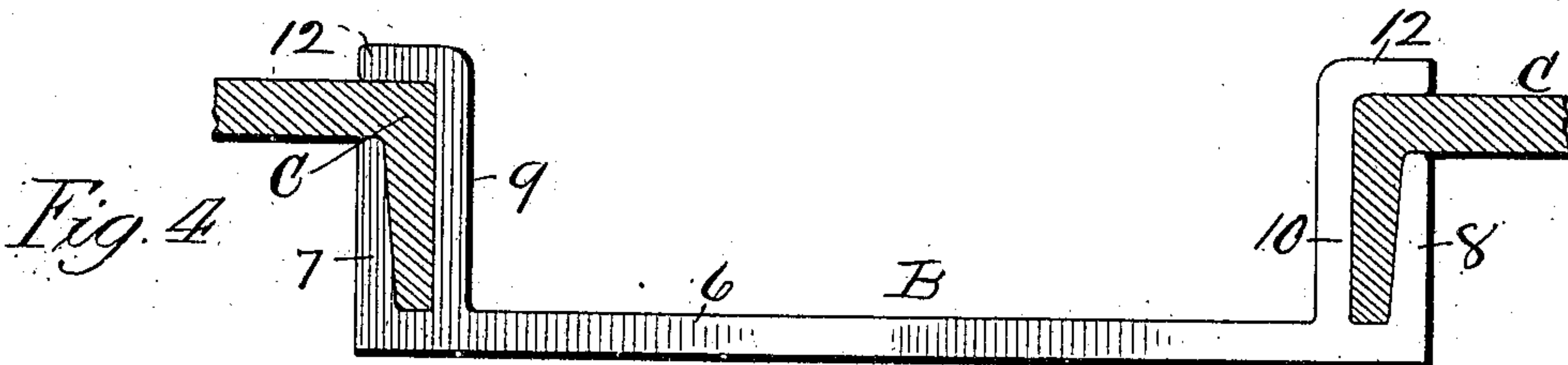
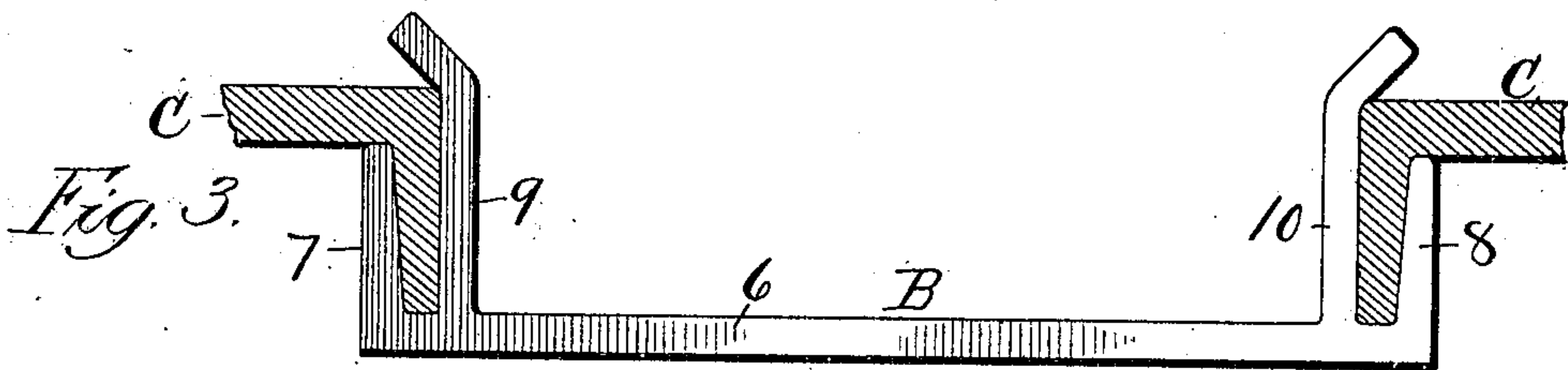
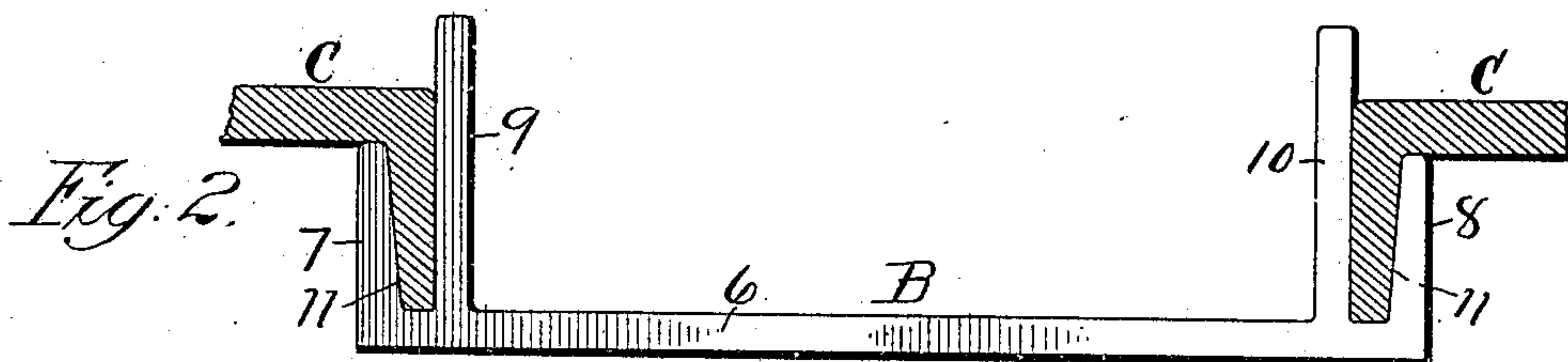
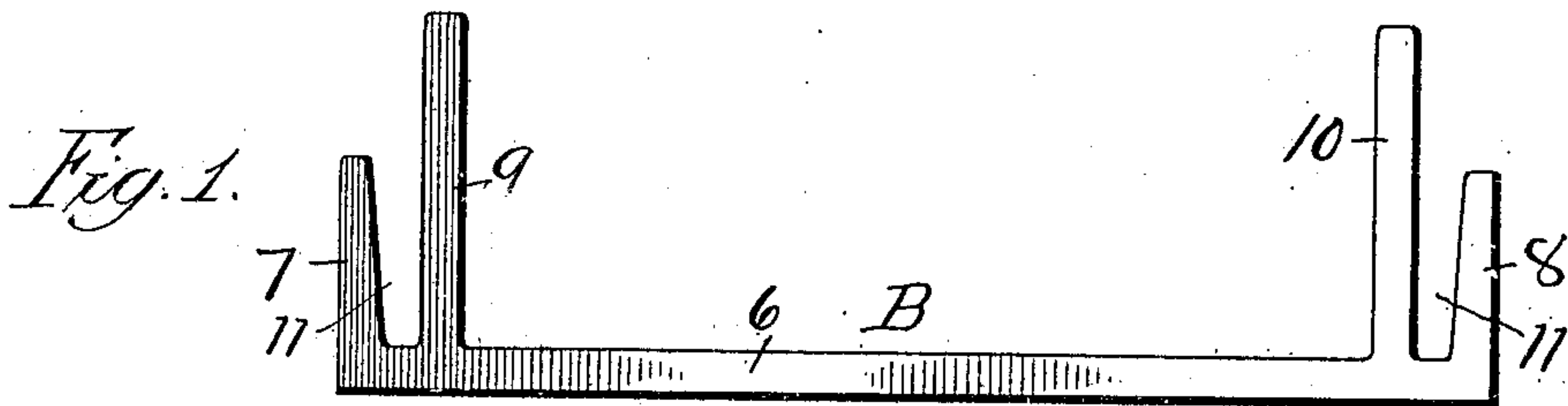


No. 871,582.

PATENTED NOV. 19, 1907.

L. P. FRIESTEDT.
SHEET PILING.

APPLICATION FILED MAY 6, 1904.



Witnesses:
Ed. Gaylord
John Enders

Inventor:
Luther P. Friestedt,
By *L. B. Coupland*
Att'y

UNITED STATES PATENT OFFICE.

LUTHER P. FRIESTEDT, OF CHICAGO, ILLINOIS.

SHEET-PILING.

No. 871,582.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed May 5, 1904. Serial No. 206,484.

To all whom it may concern:

Be it known that LUTHER P. FRIESTEDT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, has invented new and useful Improvements in Sheet-Piling, of which the following is a specification.

This invention relates to metal sheet piling of the class, and for the various purposes, set forth in a number of prior patents issued to me dating from August 26, 1902.

The object of this invention is to provide beam piling-sections embodying integral interlocking means and dispensing with the necessity of using special or separate devices, such as Z-bars and the like, for the purpose of loosely retaining the sections in their engaged position when being assembled in a wall structure.

A further object is to provide a means or method whereby any desired form of an integral interlock may be given to the joining edges of the piling sections.

In the drawing, Figure 1 is an end plan of a beam piling-section embodying the improved features. Fig. 2 is a similar view showing the second step in the operation of forming a special beam-section. Fig. 3 is a similar view showing the third step. Fig. 4 is a similar view showing the last step in completing the operation. Fig. 5 is a plan of a wall structure composed of the beam piling-sections.

The sheet-piling-sections entering into a wall structure are composed of a standard channel beam A and a special rolled beam B, arranged alternately with reference to each other, as shown in Fig. 5.

The piling-section B used in illustrating one form of interlock is in substance a metal beam of the channel type comprising a web 6, the usual right angled edge flanges 7 and 8 and the additional inside flanges 9 and 10 providing the integral interlocking features. The flanges 9 and 10 extend at right angles to the web part 6 and parallel with the flanges 7 and 8, and are set inward far enough therefrom to leave a space 11 longitudinally therebetween for the engagement of the respective flanged edges of the joining sections A, as shown in Fig. 5. The inside flanges 9 and 10 on sections B, are of a greater width than the outside edge flanges 7 and 8 adjacent thereto, so that a part of flanges 9 and 10 may be bent over at an angle to provide

overlapping flanges 12 lying in a plane parallel to the web or body of the piling-sections B and leaving a space 14 (which opens into space 11) between the adjacent surfaces of flanges 7 and 8 and the flanges 12 for the convenient insertion of joining interlocking sections. This form of construction provides an L-shaped recess or groove in the respective edges of the sections B which run the whole length thereof and corresponds to the contour of the engaging flanged edges of beams A in assembling the piling sections.

The bent locking shape of flanges 9 and 10 on sections B is given thereto by means of an L-shaped former or mandrel C inserted in the space between the outside and inside flanges and used in the operation of rolling. The operation will be described progressively step by step in order to be clearly understood. In Fig. 2 the first relative position of the former and flanges is shown. In the next step (Fig. 3) the outer edges of flanges 9 and 10 are bent at an inclined angle over the corner of the former. In the next and final step the inclined edges forming the flanges 12 are bent to the locking position shown in Fig. 4.

In assembling the piling sections they are telescoped together endwise, the edge recesses forming a guide groove and the flange 12 overlapping the corners of the joining beams in locking the sections together against lateral displacement.

The use of a former or any similar device makes it possible to roll metal beams or plates having integral interlocking features that would be impossible to produce by the ordinary methods. It is obvious that a former of any desired design may be used in reproducing a corresponding shaped interlock in the piling sections. It is also obvious that the process of rolling the beams and interlocking features may be completed at one operation instead of in the order shown and described.

Having thus described my invention, what I claim is:—

1. In a beam-section, an integral plate or web member, said member having edge flanges and interlocking flanges set inward from said edge flanges with an interlocking space for the engagement of the corresponding flanged edges of adjoining beam-sections.

2. In a beam-section, an integral plate-member having edge flanges and interlocking

flanges spaced apart therefrom and all located on the same side of said plate-member and adapted to receive the flanged edges of a joining beam-section.

5 3. In a beam-section, an integral channel plate member having, in addition to the usual flanged edges, interlocking flanges set inward therefrom and located on the same side therewith and adapted to receive the
10 flanges of adjoining beam-sections in interlocked engagement.

4. In a beam-section, an integral plate member having double flanges formed on one side thereof, the inside interlocking flanges
15 being of a greater width than the flanges adjacent thereto and adapted to engage corre-

sponding flanged edges of adjoining beam-sections.

5. In a beam-section, an integral plate-member of the channel type provided with 20 interlocking flanges located on the same side and adjacent to the usual edge flanges of said plate-member and positioned to engage the flanges of adjoining duplicate beam-sections.

In testimony whereof I have signed my 25 name to this specification in the presence of two subscribing witnesses.

LUTHER P. FRIESTEDT.

Witnesses:

L. B. COUPLAND,
G. E. CHURCH.