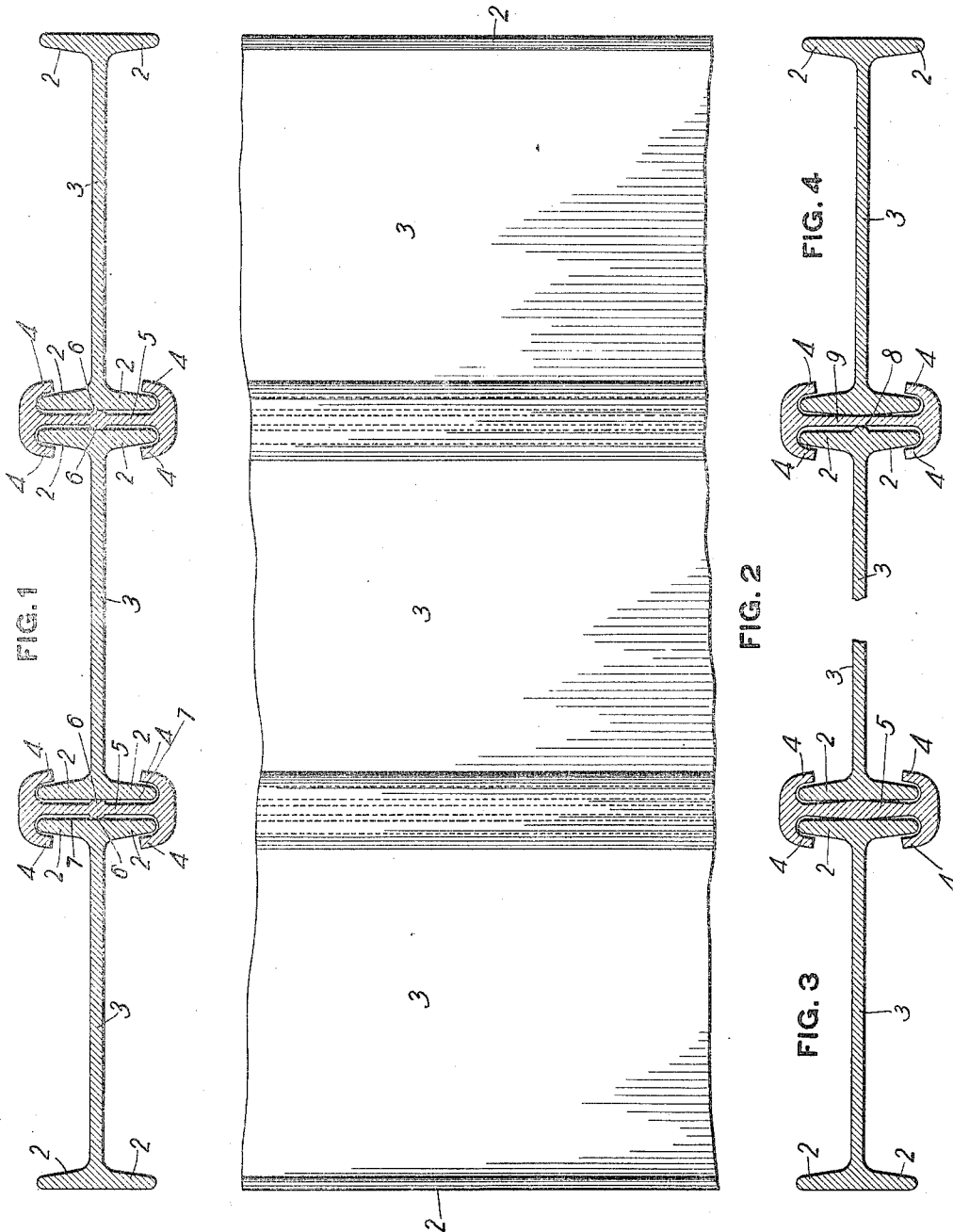


A. R. ARCHER.
SHEET PILING.
APPLICATION FILED MAR. 25, 1912.

1,030,761.

Patented June 25, 1912.



WITNESSES

R. Little
Chas. Foxterman

INVENTOR

A. R. Archer
by L. L. Litchman, R. B. Fuller
his Attorneys

UNITED STATES PATENT OFFICE.

AUGUSTUS R. ARCHER, OF PITTSBURGH, PENNSYLVANIA.

SHEET-PILING.

1,030,761.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed March 25, 1912. Serial No. 685,914.

To all whom it may concern:

Be it known that I, AUGUSTUS R. ARCHER, a subject of the King of Great Britain, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Sheet-Piling, of which the following is a specification.

My invention relates to the construction of metal sheet piling in which the piling members are joined together edgewise in forming the sheet piling wall.

One object of my invention is to provide an interlocking sheet piling having improved means for connecting the sheet piling units whereby the driving operations are facilitated, a more flexible construction is afforded and the separation of the members of the sheet piling is more easily accomplished.

The invention consists in providing means on the adjacent interlocked faces of the piling members whereby a curved surface opposes a plane surface and line contact is obtained between the opposing faces of the interlocking and interlocked members.

Referring to the accompanying drawings forming part of this specification, Figure 1 is a transverse section showing a series of piling units of sheet piling having an interlocking member with the adjoining faces of the interlocking and interlocked members constructed in accordance with my invention. Fig. 2 is a side elevation of a portion of the sheet piling as is shown in Fig. 1. Fig. 3 is a transverse section similar to that shown in Fig. 1, showing a modification in the construction of the opposing faces of the interlocked and interlocking piling members. Fig. 4 is a section similar to that of Fig. 3 showing a further modification in the construction of the opposite faces of the interlocked and interlocking members of the sheet piling.

In the drawings, referring to Fig. 1, the oppositely extending flanges 2 of rolled commercial I-beams having an integral web 3 and forming one piling member are connected by means of a flanged beam forming an interlocking member having oppositely extending hook flanges 4, 4 joined by an integral web member 5. In this construction a rounded projection 6 on each side of the web of the interlocking member 5 at about the middle of the width thereof extends lengthwise of the web 5 and holds the oppos-

ing faces 7 of the connected I-beams so as to prevent surface contact of the flanges with the web 5 of the interlocking member, in this way facilitating the driving operations and affording greater flexibility to the sheet piling. Instead of making the projection 6 continuous, knobs or a series of projections may be provided at intervals in the length of the piling members.

In the construction shown in Fig. 3, the I-beams forming the interlocked members have flanges 2, joined by an integral web 3 as in Fig. 1 and the hook flanges 4 on the beams forming the interlocking member are constructed and joined to the web 5 in the same manner as in Fig. 1. In Fig. 3, however, the web 5 of the interlocking member is thickened at the middle of its width and the double taper extends outwardly toward the flanges 4, 4 of the interlocking member in opposite directions from the curved portion at about the middle of the width of the web. The curved portion joining the outer faces of the tapering flanges together with the hook flanges on the interlocking members are arranged and co-act to obtain the desired result of preventing a surface contact between the opposing faces of the interlocking and interlocked members of the sheet piling when the piling units are assembled in interlocking position.

In the construction shown in Fig. 4 the flanged beam at the left hand of this figure, which has oppositely extending flanges 2 on each marginal edge of an integral web 3, is provided with a projection 8 in the middle of the width of the flanges which is curved in outline and which extends lengthwise of the beam. The beam at the right hand of Fig. 4 is provided with double tapering flanges which are thickest at the root of the flange and taper outwardly from the curved connecting portion toward the toes of the flanges, and the interlocking member in this figure is provided with a web 9 which has parallel faces, or what is the same thing, a web which is of uniform thickness throughout its width.

By reference to the drawings, it will be seen that in all cases the opposing faces of the piling members have a curved face opposite a plane face and the piling members are constructed so as to have a line contact and cannot have a surface contact extending entirely across the width of the flange faces.

The advantages of my invention will be apparent to those skilled in the art. By avoiding the use of a piling construction in which the interlocking member has a surface contact with the interlocked members, the piling is much more easily driven into place and is much more easily removed after the driving operation. The line contact of the interlocking members with the interlocked members affords greater flexibility in the driving operations.

Modifications in the construction and arrangement of the parts forming my improved piling may be made without departing from my invention, and the novel features of my invention may be used with types of sheet piling other than those shown within the scope of the invention as defined in the claims.

I claim:—

1. A metal sheet piling comprising interlocked piling members, the interlocked members having hook flanges connected by an integral web, and a projection on at least one of the opposed faces of said interlocked members whereby a line contact between said faces is obtained when the piling members are assembled in interlocking position.

2. A metal sheet piling comprising in combination interlocked and interlocking members, said interlocking members having a projection thereon engaging with the opposed face of the interlocked members to form a line contact therewith when the piling members are assembled in interlocking position.

3. A metal sheet piling comprising in combination rolled flanged beams forming interlocked and interlocking members, said interlocking members having hook flanges connected by an integral web and the web of said interlocking members having projections thereon engaging with the opposed faces of the interlocked members to form a line contact therewith when the piling members are assembled in interlocking position.

4. A metal sheet piling comprising in combination interlocked and interlocking members, said interlocking members having hook flanges connected by an integral web, longitudinally extending ribs on the opposite faces of said web, said ribs having curved surfaces whereby a line contact with the interlocked members is obtained when the piling members are assembled in interlocking engagement.

5. A metal sheet piling comprising in combination flanged metal beams forming interlocked and interlocking members, said interlocking members having hook flanges connected by an integral web member, the opposed faces of the interlocked and interlocking members having means whereby a line contact is obtained when the piling members are assembled in interlocking position.

6. A metal sheet piling comprising in combination flanged metal beams forming interlocked and interlocking members, the interlocking members having hook flanges connected by an integral web, and a rounded projection on at least one of the opposed faces of said interlocked and interlocking members whereby a line contact between said faces is obtained when the piling members are assembled in interlocking position.

7. A metal sheet piling comprising in combination rolled flanged beams, and rolled interlocking members having hook flanges connected by an integral web, said interlocking members having a rounded projection thereon engaging with the opposed face of the interlocked members to form a line contact therewith when the piling members are assembled in interlocking position.

8. A metal sheet piling comprising in combination rolled flanged beams forming interlocked members, and interlocking members having hook flanges connected by an integral web, the web of said interlocking members having a rounded projection thereon engaging with the opposed face of the interlocked members to form a line contact therewith when the piling members are assembled in interlocking position.

9. A metal sheet piling comprising in combination rolled flanged beams forming interlocked members, and rolled interlocking members having hook flanges connected by an integral web, said interlocking members having longitudinally extending ribs on the opposite faces of the web thereof, the ribs having curved surfaces whereby a line contact with the interlocked members is obtained when the piling members are assembled in interlocking engagement.

In testimony whereof, I have hereunto set my hand.

AUGUSTUS R. ARCHER.

Witnesses:

C. H. KENZEL,
C. B. FRIDAY.