

1,042,571.

T. LARSEN.  
SHEET METAL PILING.  
APPLICATION FILED APR. 15, 1912.

Patented Oct. 29, 1912.  
2 SHEETS—SHEET 1.

Fig. 1.

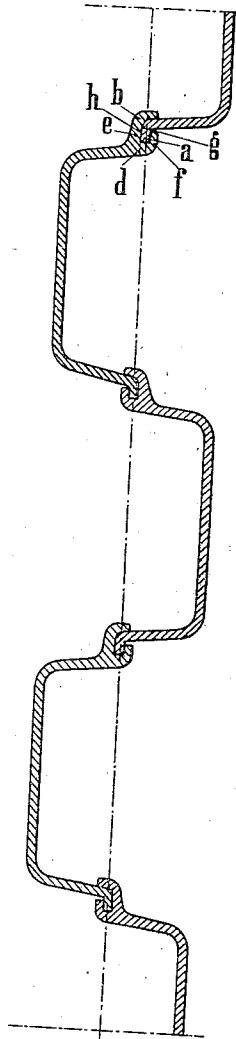
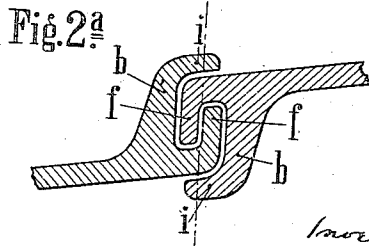
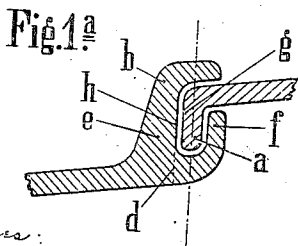
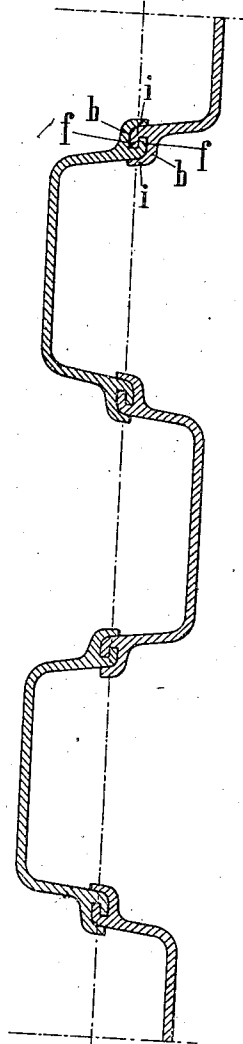


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

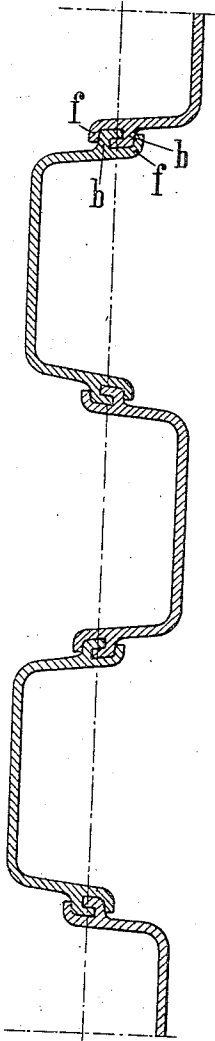


Fig. 4.

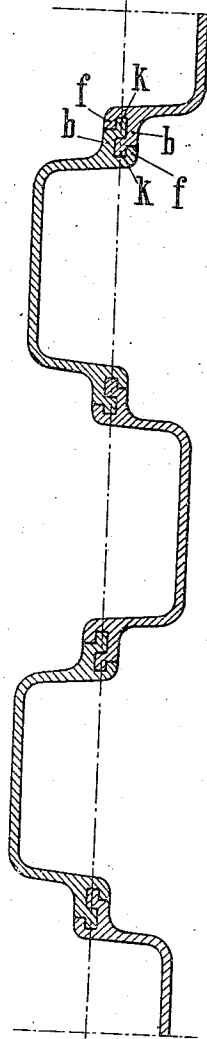


Fig. 3<sup>a</sup>.

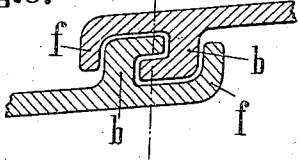
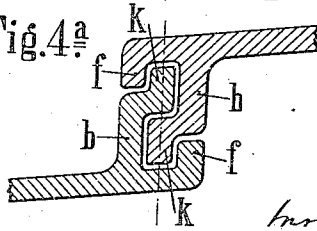


Fig. 4<sup>a</sup>.



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# UNITED STATES PATENT OFFICE.

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SHEET-METAL PILING.

1,042,571.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed April 15, 1912. Serial No. 690,823.

To all whom it may concern:

Be it known that I, TRYGGVE LARSEN, a citizen of the German Empire, residing at Bremen, Germany, have invented certain new and useful Improvements in or Relating to Sheet-Metal Piling, of which the following is a specification.

The specification of Letters Patent No. 839608 describes the construction of sheet metal piling consisting of dished piles, *i. e.* sheets of approximately U-shaped cross section, facing alternately right and left, and joined together at their edges.

The object of the present invention is to better utilize the depth of the undulation afforded by the dished shape of the piles, and thereby considerably increase the moment of resistance, without adding to the bulk of material used. This is effected by providing the plates, at the S-shaped ends of their limbs, with hook shaped projections or flanges extending outward from the webs of the said S-shaped flanges and coacting with the latter to make the joint. In joining two plates, one or both of which are so constructed at the joint, the outer faces of the flanges are caused to meet, the engagement being made by means of the hook or hooks, whereas in the previous construction referred to the inner surface of a flange with a single bend and the inner surface of the S-shaped flange abutted against one another and consequently reduced the depth of the undulation by the double flange thickness. Since the profile of the S-flange and the hook can be rolled, it is advantageous to provide the edges of both plates with symmetrical flanges and hooks. The symmetrical form provides a double flange connection which results in a tighter joint as well as being advantageous from the point of view of rolling and construction. The symmetrical shape of the edges of the plates also prevents strains from occurring during the rolling process, which is particularly important in the case of long planks. Strained and distorted planks entail a considerable amount of after labor to straighten them and this operation produces impressions in the surface which prevent smooth passage during the ramming operation, with resultant strains in all the joints.

The invention is illustrated in the accompanying drawings in which—

Figures 1, 2, 3 and 4 are sectional views showing four forms of construction, Figs. 1<sup>a</sup>, 2<sup>a</sup>, 3<sup>a</sup> and 4<sup>a</sup> being detail views showing the respective joints, drawn to a larger scale.

Referring in the first instance to Figs. 1 and 1<sup>a</sup>, *a* is the downwardly bent flange of one plate, and *b* the S-shaped edge of the other plate. The S-shaped flange has a hooked projection extending outward from its web *e*, beyond the plane *d*, in which the flanges meet, and this hook *f* engages under the flange *a*, and locks the outer face *g* of the latter against the outer face of the S-flange.

In the construction shown in Figs. 2 and 2<sup>a</sup>, the plate is provided symmetrically at both edges with the S-flange and hook. The two hooks at the joint engage with each other, and the two outer parts *i* of the S-flanges embrace the hooks.

In the construction shown in Figs. 3 and 3<sup>a</sup>, the two S-flanges *b* engage with each other internally, and the hooked parts *f* embrace the S-flanges.

In the construction shown in Figs. 4 and 4<sup>a</sup>, the S-flanges *b* have an additional bend, or are provided with extensions *k* which engage the hooks *f*. This construction has the advantage of leaving both sides of the joint smooth.

What I claim is:—

1. Sheet piling composed of sheets of U-shaped cross-section, facing alternately in opposite directions and provided at each junction with an integral interlocking S-shaped flange, the web of said flange having an integral hooked projection adapted to interlock with a flange abutting against said web.

2. Sheet piling composed of sheets of U-shaped cross-section facing alternately in opposite directions and provided at each junction with an integral S-shaped flange, each sheet having symmetrical S-shaped flanges and hooked projections at the junction.

3. Sheet piling composed of sheets of U-shaped cross-section facing alternately in opposite directions and provided at each junction with an integral S-shaped flange

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and a hook, said flanges and hooks adapted to intermesh and form an interlocking joint at the junction.

4. Sheet piling composed of sheets of  
5 U-shaped cross-section, facing alternately in opposite directions and provided at each junction with an integral S-shaped flange, the web of said flange having a hooked projection, said flanges having bent extensions

adapted to intermesh with said hooked pro- 10  
jection forming an interlocking joint.

In testimony whereof I affix my signature  
in presence of two witnesses.

TRYGGVE LARSEN.

Witnesses:

WILLY KNOP,  
MAX FRITSCHE.