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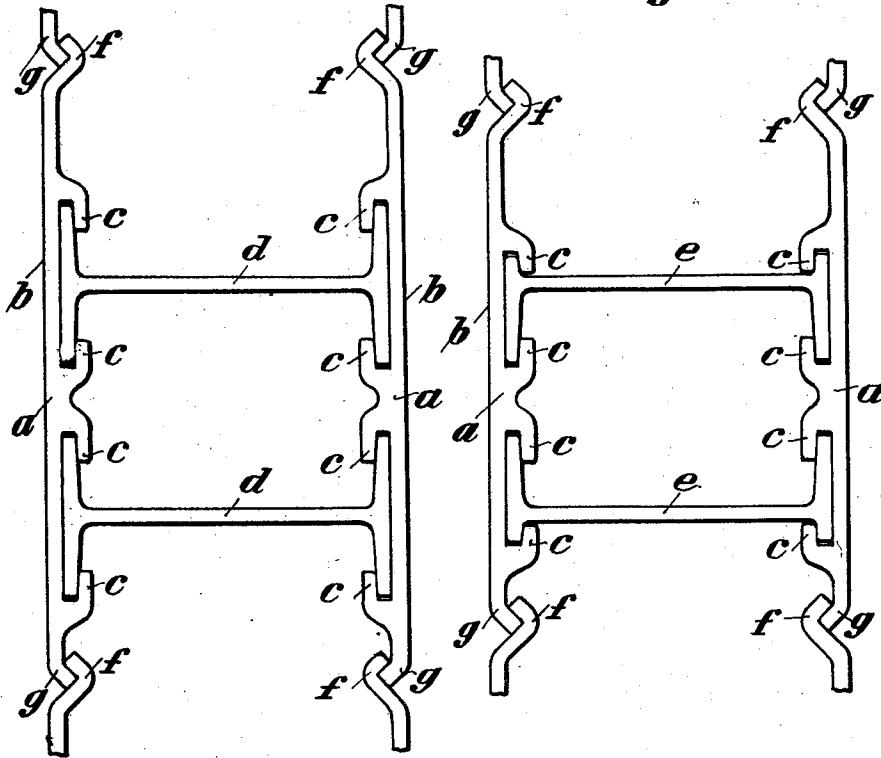
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METAL SECTION FOR SHEET PILING

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*Fig. 1.*

*Fig. 2.*



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## METAL SECTION FOR SHEET PILING

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My invention relates to a metal sheet pile for the construction of strong caisson or box walls. One problem of my invention is to construct a particularly strong caisson, because, in many instances, the moment of resistance of ordinary sheet-piling walls is inadequate. Another point that has also been borne in mind is that the individual sheet piles must be of such shape that they are easy to roll, and nevertheless form watertight joints with the adjacent piles of the wall. With this object I have designed a metal section of the plate type, which is provided with an inwardly directed claw on the one edge, and an outwardly directed claw on the other, the inwardly directed claw on the one end coacting with the outwardly directed claw on the adjacent metal plate. These metal plates are provided on the inner side with claws or grooves for the insertion of one or more suitable sections, preferably I-sections. Two of the plates according to my invention are connected together by one or two I-sections to form a caisson or box and the unit thus formed is rammed as a whole, whereupon the plate section or caisson to be next rammed is assembled in the same way, and is rammed in such a way that the claws thereon engage with the claws of the preceding unit.

Two embodiments of my invention are illustrated in the drawing, Fig. 1 representing an end view of an assembled box pile, with the connecting parts of the adjacent pile, whilst Fig. 2 is a similar elevation of a box pile, in which the connecting iron sections are asymmetrical.

$a$ ,  $a$  are the new type of plate iron section according to my invention. They have a smooth side  $b$ , and an inner side provided with claws  $c$ , the latter being arranged to face one another in pairs. For plates of otherwise equal dimensions, the claws  $c$  of each pair may be spaced differently, as shown in Figs. 1 and 2 in order to meet different requirements in respect of the moment of resistance. Moreover, each plate may be provided with one or more such pairs of claws. In both examples, two pairs of claws are shown on each plate  $a$ .

The plates  $a$  are connected together in pairs by inserted rolled sections of the usual type, particularly I-sections. The spacing of the pair of claws  $c$  is selected in accordance with the I-sections to be used for connecting the plates, and the I-sections will be heavier or lighter in accordance with the moment of resistance desired. In the embodiment according to Fig. 1 the two plates used for making the box pile are connected together by means of two I-sections  $d$ , the normal flange width of which corresponds to the spacing of the claws  $c$ . In the embodiment according to Fig. 2 the ends of the outer flanges of the two iron section  $e$  have been shortened by cropping, so that a comparatively heavy section can be used with a short spacing of the claws  $c$ . Moreover, this enables the webs of the I-sections to be situated nearer the edges of the plates.

The plates  $a$  are each provided at one end with a bend  $f$ , and at the other with a corresponding inward angular bend  $g$ . Taken together, the members  $f$  and  $g$  form a pair of claws, by means of which the plates  $a$  of the one box pile can be secured to the corresponding plates of the adjacent box pile in such a manner that the plates  $a$  of the successive box piles all lie in the same plane.

For constructing walls of sheet piling, two plates  $a$  are connected to form a unit by one or more I-sections, as shown in the drawing. This unit is driven in the usual way. The next pile is then assembled in the same manner, and is driven in such a way that its claws  $f$  and  $g$  engage the claws  $g$  and  $f$  respectively of the previously driven unit.

The claws for connecting the adjacent parts may be modified in any known manner. The essential feature of my invention is the iron plates  $a$  with the pairs of facing claws  $c$  for the reception of the connecting sections  $d$  or  $e$ .

Having described and illustrated my invention I declare that what I desire to have protected by a patent is as follows:—

1. A metal section of plate type for construction of hollow sheet piles, with pairs of claws located inwardly of the edges of the plate, on the one side, adapted to receive

I-sections for the purpose of connecting it to a facing plate section of similar shape, and means for connecting the assembled pile to an adjacent pile of corresponding design.

5 2. A metal section of plate type having a plurality of pairs of claws on the one side, for the reception of an I-section connecting said section with another facing plate section, an inwardly directed claw on the one  
10 edge, and a corresponding outwardly directed claw on the other edge.

3. A metal pile structure including opposed plate-like members arranged in groups, pairs of companion claws on the inner faces  
15 of the plate-like members of each group, and a pair of I-sections associated with the plate-like members of each group, the heads of the I-sections being received in said claws and forming with the plate-like members a box-  
20 like structure whereby each pile section presents a rigid undeformable unit.

In testimony whereof I have affixed my signature.

WILLEM COENRAAD KÖHLER.

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