W. A. KREIDLER.

SHEET PILING.

APPLICATION FILED JUNE 4, 1906. RENEWED FEB. 17, 1909.

1,007,454. Patented Oct. 31, 1911.

Fig. 1.

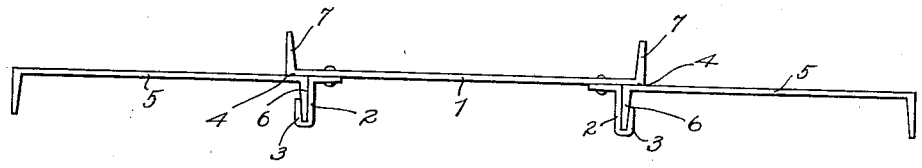


Fig. 2

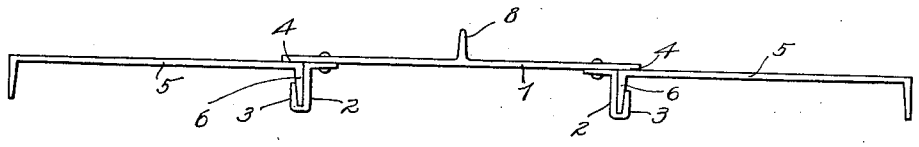


Fig. 3

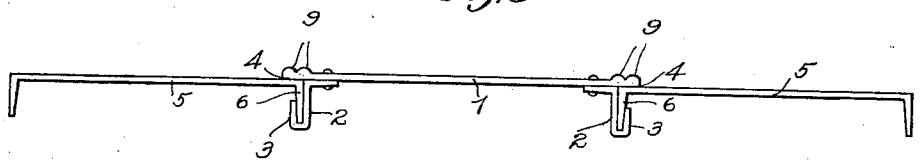


Fig. 4.

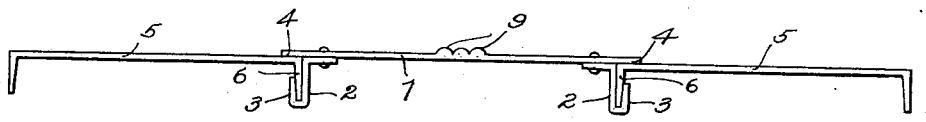
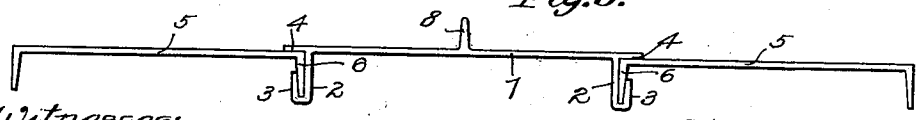


Fig. 5.



Witnesses:
Leonard W. Nvander
Charles J. Schmidt.

Inventor
William A. Kreidler
By Charles A. Brown
Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM A. KREIDLER, OF LAKE BLUFF, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO LACKAWANNA STEEL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

SHEET-PILING.

1,007,454. Specification of Letters Patent. Patented Oct. 31, 1911.

Application filed June 4, 1906, Serial No. 320,044. Renewed February 17, 1909. Serial No. 478,507.

To all whom it may concern:

Be it known that I, WILLIAM A. KREIDLER, citizen of the United States, residing at Lake Bluff, in the county of Lake and State of Illinois, have invented a certain new and useful Improvement in Sheet-Piling, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to sheet piling, its object being to provide strengthening and stiffening means for the sections thereof.

In my copending application Serial No. 269,927, filed July 17, 1905, I show various forms of sections, each of which has a flat body plate or web, but for some classes of work this plain plate or web would not be sufficiently stiff and rigid and the beam section might therefore warp or twist out of shape. According to my present invention the web or plate is stiffened and strengthened by ribs, corrugations or flanges which may be of any shape, depth or thickness, thus making it possible to make sheet piling sections of a weight and strength exactly adapted to the work required, the built up wall being composed of these special sections and alternate sections which may be the ordinary channel beams.

My invention will be better understood by reference to the accompanying drawing, in which—

Figure 1 is a top view of a wall, the web of the special section being provided at its ends with flanges. Fig. 2 shows a modified arrangement in which the web of the special section is provided along its center with a flange or rib. Fig. 3 shows another modification in which the web of the special section has corrugations along the outer vertical edges. Fig. 4 shows another modification in which the web is provided with corrugations along its center area, and Fig. 5 shows an arrangement like Fig. 2, the special section, however, being rolled integral.

The special section I have shown comprises primarily the web or plate 1, at the ends of which extend lateral flanges 2 terminating in hooks 3, which hooks are turned outwardly. The flanges are set in a distance from the ends of the web or body part 1 to leave extensions or shelves 4. Alternate sections may be in the form of channel beams 5 whose flanges 6 engage within the hooked flanges and the extensions or shelves of the special sections. The hooked flanges may primarily be in the form of Z-bars which have one arm turned over to form the hook, the other arm being riveted to the web 1, as shown. These hook flanges may also be on the same side of the web or may be at opposite sides and the section instead of being composed of three members may be rolled integral, as shown in Fig. 5.

Unless some provision is made the sections thus far described might, under some circumstances, warp or twist out of shape. As shown in Fig. 1, I provide stiffening and strengthening means in the form of the flanges or ribs 7 at the vertical edges of the web or plate 1. In Fig. 2 the stiffening means is in the form of a rib or flange 8 which may extend along the center line of the plate, as shown, or a plurality of such ribs or flanges might be employed. In Fig. 3, corrugations or ridges 9 of any number are provided at the edges of the plate to strengthen and stiffen the wall. In Fig. 4, these corrugations or ridges are shown extending along the central area of the web. Fig. 5 shows the arrangement in Fig. 2, the special section being, however, shown as integral. Various other arrangements and modifications are apparent to one skilled in the art without departing from the spirit of my invention, and I do not therefore, wish to be limited to the arrangements I have shown, the main feature being the provision of strengthening ribs, ridges or flanges to strengthen and stiffen the sections and the built up wall.

I claim as new and desire to secure by Letters Patent:

1. A sheet piling structure comprising channel beams of usual construction and interlocking elements arranged alternately with the beams, said elements each having a web, interlocking flanges extending from one side of the web adjacent to the edges but slightly within said edges, said flanges being adapted to engage with the channel flanges on the adjacent channel beams, and stiffening ribs or ridges extending from the side of the web opposite to the flange side.

2. A sheet piling beam section comprising a body part in the form of a plate or web, interlocking flanges extending from one side of the body part and set inwardly a

distance from the outer edges of the body part and adapted to engage flanges of adjoining beam sections, and stiffening ribs or ridges on the other side of the body part.

3. A sheet piling integral beam section comprising a body part in the form of a plate or web, hooked flanges extending from one side of the body part and set inwardly a distance from the edges thereof to form therewith pockets for receiving flanges of adjacent sections, and a stiffening rib or ridge on the other side of said body part.

4. An integral beam section comprising a plate or web provided with interlocking flanges on one side, said interlocking flanges being inward from the outer edges of the body part and adapted to engage flanges of adjoining beam sections, and stiffening ribs or ridges on the other side of said body part.

5. A sheet piling beam section comprising a web, Z-bars riveted to the web on the same side and near each edge to form interlocking flanges, and stiffening ribs or ridges extending from the other side of the web.

6. A sheet piling section comprising a web, two, Z-bars riveted to the web on the same side and arranged one near each edge to form interlocking flanges and stiffening ribs or ridges extending from the other side of the web, said ribs or ridges being integral with the web.

7. A sheet piling structure comprising channel beams of usual construction and in combination therewith interlocking elements arranged alternately with the beams, said elements each consisting of a web, interlocking hooked flanges extending from one side of said web near the respective edges thereof and stiffening ribs or ridges on the web, intermediate of the flanges.

8. A sheet piling structure comprising channel beams of usual construction and interlocking elements arranged alternately with the beams, said elements consisting each of a web, interlocking hooked flanges extending from one side of the web near the edges thereof and stiffening ribs or ridges extending from the other side of the web and intermediate of the flanges.

In witness whereof, I hereunto subscribe my name this 2nd day of June, A. D. 1906.

WILLIAM A. KREIDLER.

Witnesses:
CHARLES J. SCHMIDT,
GEORGE E. HIGHAM.