

L. R. GIFFORD & R. V. SAGE.
METALLIC SHEET PILING CONSTRUCTION.

APPLICATION FILED DEC. 3, 1903.

NO MODEL.

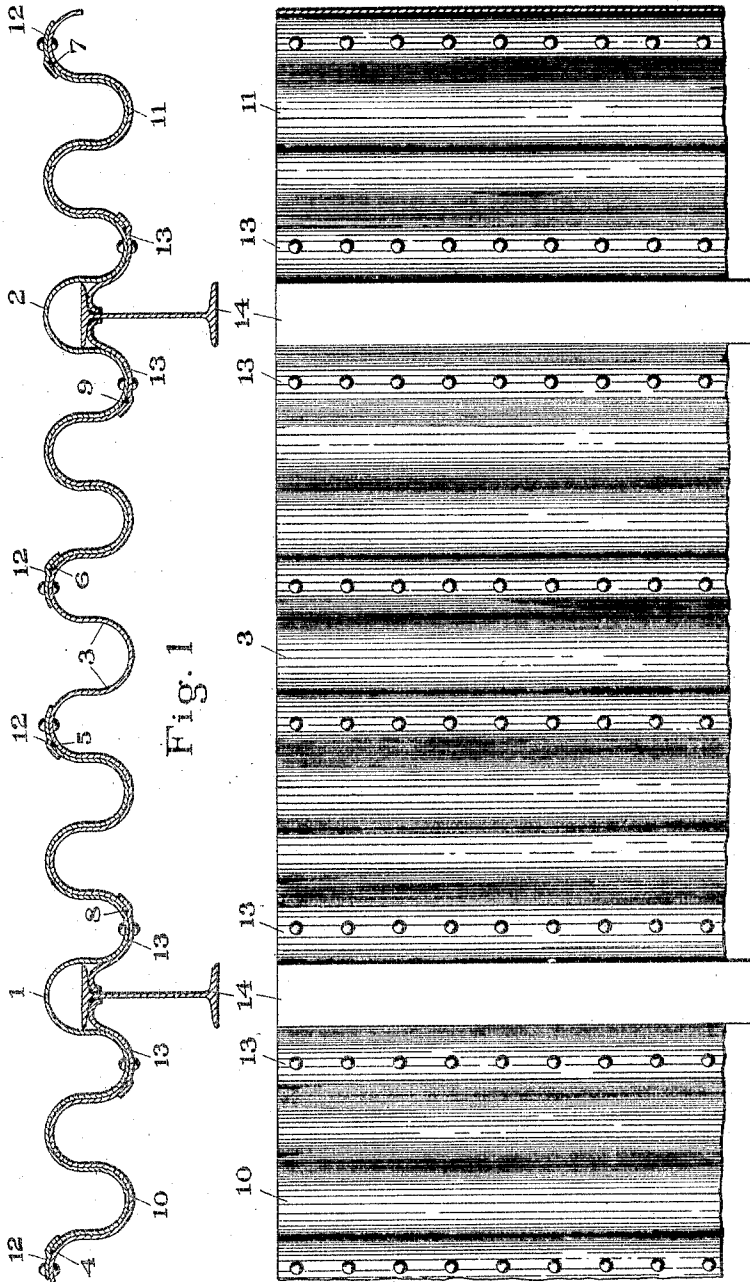


Fig. 1

Fig. 2

WITNESSES,

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UNITED STATES PATENT OFFICE.

LESTER R. GIFFORD AND RALPH V. SAGE, OF WESTMONT, PENNSYLVANIA.

METALLIC-SHEET-PILING CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 776,131, dated November 29, 1904.

Application filed December 3, 1903. Serial No. 133,613. (No model.)

To all whom it may concern:

Be it known that we, LESTER R. GIFFORD and RALPH V. SAGE, citizens of the United States, residing in the borough of Westmont, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Metallic-Sheet-Piling Construction; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to sheet-piling which is particularly adapted for docks, bulkheads, wharves, retaining-walls, and like structures where one side of the sheet-piling is subjected to a pressure greater than that acting on the other side, and therefore must possess considerable stiffness.

Our improved sheet-piling aims to fulfil the necessary requirements and possesses several distinct advantages over the forms of sheet-piling used heretofore.

Our invention provides a sheet-piling formed of rolled corrugated sections arranged with overlapping and locking edges, which can be driven easily and is economical in use, is made up of a comparatively small number of pieces, can be suited to the condition of the ground, and will present a pleasing appearance, besides which by reason of its configuration will not obstruct logs, ice, or floating debris.

The corrugated sections of the sheet-piling are made comparatively light, and the requisite stiffness is provided by means of auxiliary members which can be driven below the level of the corrugated sections.

Referring to the annexed sheet of drawings, which form part of this specification, Figure 1 is a sectional plan of our improved sheet-piling, showing two alternate pieces thereof arranged with the stiffening members and an intermediate piece overlapping and locked to the said alternate pieces. Fig. 2 is an elevation of a portion of the sheet-piling.

In the drawings, 1 and 2 represent two alternate pieces of the sheet-piling provided with stiffeners, and 3 represents an intermediate piece which overlaps and locks to the

pieces 1 and 2, the said pieces extending, respectively, between points 4 and 5, 6 and 7, and 8 and 9.

10 and 11 represent portions of pieces similar to 3, which also overlap and lock to the pieces 1 and 2, respectively.

12 represents splicing and locking pieces secured to the intermediate parts 3, 10, and 11, each formed of a curved strip having an offset flange which projects over and secures the edge of the adjacent portion of the sheet-piling.

13 represents splicing and locking pieces secured to the alternate parts 1 and 2, and each formed of a bent strip, the outline of which is a reverse or ogce curve and provided along one edge thereof with an offset flange arranged to project over and secure the edge of the adjacent portion of the sheet-piling, the other edge being arranged to guide and secure a stiffening member, all as clearly shown in Fig. 1.

The stiffening members 14 are shown as I-beams; but it will be readily understood that any form of suitable flanged stiffener can be substituted.

It should be noted that there can be no tendency of the beams 14 to draw away from the sheet-piling, as this would only cause the inner ends of the splices 13 to jam against the flanges and webs of the said beams, thereby only increasing their hold on them. It should also be noted that no special shape or section is required for bends or corners, as it is only necessary to bend the ordinary section in order to obtain the required change of alignment.

We do not limit ourselves to the exact construction and arrangement of parts shown and described or to the use of all these parts together, but wish to reserve the right to any substitution or modification thereof within the scope of our invention as pointed out in the claims.

What we claim, and desire to secure by Letters Patent, is—

1. A metal sheet-piling comprising a plurality of rolled corrugated sections provided with stiffening members, consisting of girders of I or other section secured thereto.

2. A metal sheet-piling comprising a plurality of rolled corrugated sections adapted to overlap and lock near their adjoining edges and provided with stiffening members.

5 3. A metal sheet-piling comprising a plurality of rolled corrugated sections adapted to overlap and lock near their adjoining edges, means carried by the respective sections for guiding and holding the locking edges, and
10 stiffening members cooperating with the sections aforesaid.

4. A metal sheet-piling comprising a plurality of rolled corrugated sections adapted to overlap and lock near their adjoining edges
15 and provided with stiffening members, means carried by the respective sections for guiding and holding the locking edges and the said stiffening members.

5. A metal sheet-piling comprising alternate rolled corrugated sections provided with
20 stiffening members and intermediate rolled corrugated sections adapted to overlap and lock to the said alternate sections.

6. A metal sheet-piling comprising alternate rolled corrugated sections provided with
25 stiffening members, intermediate rolled corrugated sections adapted to overlap and lock to the said alternate sections, means carried thereby for guiding and holding the locking
30 edges and the said stiffening members.

7. A metal sheet-piling comprising alternate rolled corrugated sections adapted to overlap and lock to intermediate rolled corrugated sections, stiffening members removably
35 secured to said alternate sections, splices secured thereto for guiding and holding the locking edges of the intermediate sections and the said stiffening members, and splices riveted to the said intermediate sections for guiding
40 ing and holding the locking edges of the said alternate sections.

8. In metal sheet-piling, a splicing and locking piece having curved sectional outlines secured to a section thereof and provided along
45 its fixed edge with an offset flange arranged to project over and lock the edge of an adjoining section, the other edge of the said piece being arranged to guide and secure a

stiffening member cooperating with the said sheet-piling. 50

9. In metal sheet-piling, a rolled corrugated section, a flanged stiffening member, and means for securing the said member to the said section.

10. In metal sheet-piling, splicing and locking pieces of ogee-curve sectional outline secured to a section thereof and provided along their fixed edges with offset flanges arranged to project over and lock the edge of an adjoining section the other edges of the said
55 pieces being arranged to guide and secure a stiffening member cooperating with the said sheet-piling. 60

11. A metal sheet-piling comprising a plurality of rolled corrugated sections provided with splicing and locking pieces of ogee-curve sectional outline secured to adjoining corrugations thereof, offset flanges formed along the fixed edges of the said pieces adapted to project over and lock the edges of adjoining sections, flanged stiffening members secured to the said corrugated sections by the free edges
65 of the splicing and locking pieces aforesaid. 70

12. A metal sheet-piling comprising alternate rolled corrugated sections provided with splicing and locking pieces of ogee-curve sectional outline secured to adjoining corrugations thereof, offset flanges formed along the fixed edges of the said pieces adapted to overlap and lock the edges of adjoining sections, flanged beams secured to the said corrugated sections by the free edges of the said splicing and locking pieces, intermediate rolled corrugated sections adapted to overlap and lock to the said alternate sections, and splicing and
75 locking strips secured thereto and provided with offset flanges arranged to project over the locking edges of the alternate sections aforesaid. 80

In testimony whereof we hereto affix our signatures in the presence of two witnesses. 90

LESTER R. GIFFORD.
RALPH V. SAGE.

Witnesses:

J. R. WENLINGER,
R. M. GREENE.