

No. 776,132.

PATENTED NOV. 29, 1904.

L. R. GIFFORD & R. V. SAGE.

METALLIC SHEET PILING.

APPLICATION FILED DEC. 3, 1903.

NO MODEL.

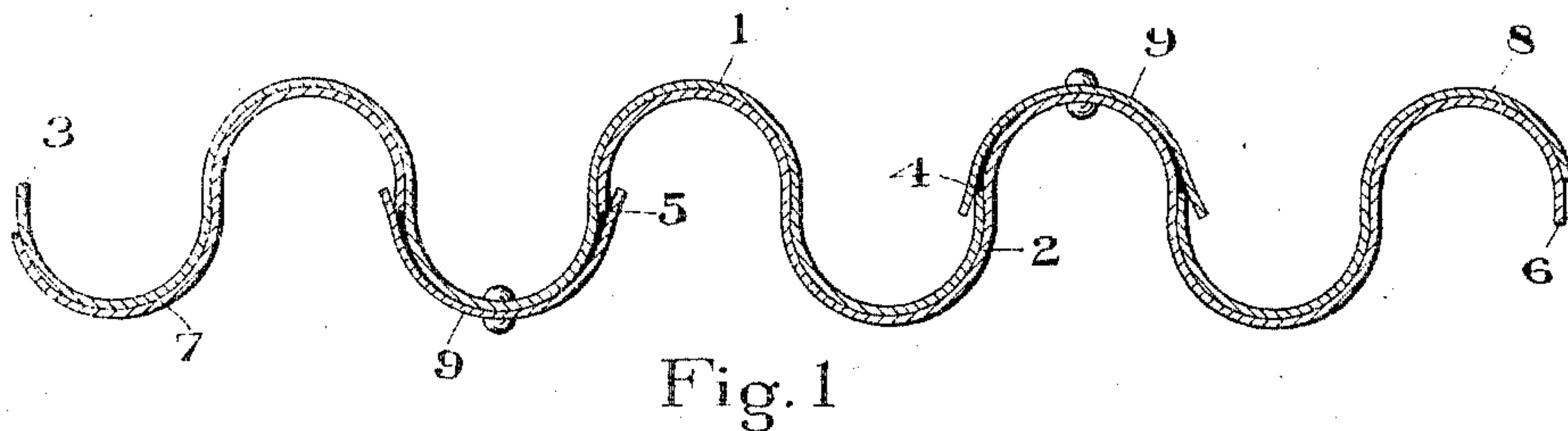


Fig. 1

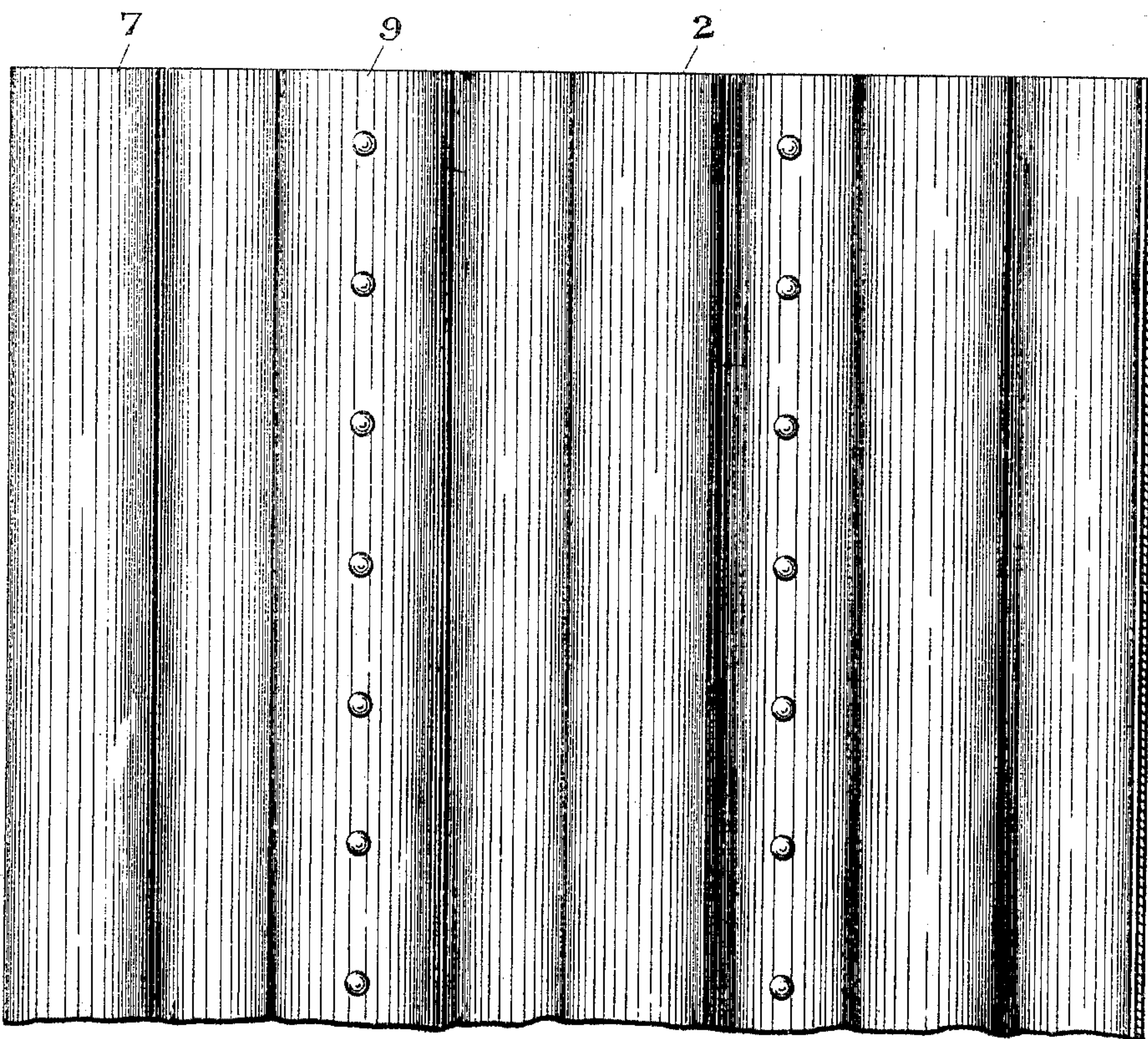


Fig. 2

WITNESSES,

*J. P. Wemlinger*  
*Thone Edelin*

INVENTORS.

*Lester R. Gifford*  
*and Ralph V. Sage*  
*by Geo. E. Shacknag*  
*their* ATTORNEY.



# UNITED STATES PATENT OFFICE.

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

## METALLIC SHEET-PILING.

SPECIFICATION forming part of Letters Patent No. 776,132, dated November 29, 1904.

Application filed December 3, 1903. Serial No. 183,619. (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; 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 improvements in sheet-piling constructed of corrugated metal plates overlapped and locked together and designed for the protection of earth excavations for walls of coffer-dams, wharves, and piers, for sinking shafts in quicksand or soft earth, for building foundations, and any other use to which sheet-piling can be applied.

The main object of this invention is to provide a sheet-piling made up of rolled sections cheaper than those used hitherto while possessing a like amount of strength with less metal, which can be rolled very easily, and which will require very little work after rolling except a small amount of riveting.

Another object of our invention is to provide sheet-piling which can be driven easily and is economical in use, is made up of a comparatively small number of pieces and can be used over and over, can be adapted to the condition of the ground, and is pleasing in appearance, besides which by reason of its configuration does not present any obstruction to logs, ice, and other floating debris.

For the purpose of explanation and ease of reference herein one "corrugation" is that portion included between consecutive points of intersection of a longitudinal center line drawn across the corrugations as viewed in cross-section.

Referring to the annexed sheet of drawings, which form part of this specification, Figure 1 is a sectional plan of our corrugated sheet-piling, showing two complete pieces thereof joined and locked together and with adjoining pieces. Fig. 2 is an elevation of a portion thereof.

As shown in Fig. 1, our improved sheet-piling is constructed of contiguous corrugated plates overlapping and arranged with broken joints, the edges of the adjacent plates being secured and locked by splicing-strips. Thus the sheet-piling is practically of uniform thickness throughout, and this is a very important feature of this invention, as the structure is thus of equal strength in every part thereof. In order that the splices or joint-strips shall come on the exterior or convex surfaces of the corrugations, we prefer, as shown in the drawings, that each section shall have an uneven number of corrugations, thus bringing about the result desired, as may be readily understood, although we do not necessarily limit ourselves to this particular arrangement.

In the drawings, 1 and 2 represent two pieces of our sheet-piling extending between points 3 and 4 and 5 and 6, respectively.

7 represents a portion of the piece overlapping and joined to 1, and 8 represents a portion of the piece overlapping and joined to 2, both pieces 7 and 8 being in all respects duplicates of pieces 1 and 2.

9 denotes splices or joint-strips of semicircular outline, one of which is secured along one of the corrugations of each piece of the sheet-piling in order to guide and prevent any displacement of the edges of the adjacent pieces while being driven and when in use, also to assist in making the joints water-tight.

The splices or joint-strips 9 are made of substantially semicircular outline, with their longitudinal edges slightly outturned, as shown in Fig. 1 of the drawings, this arrangement of the outturned edges being for the purpose of affording some slight latitude in the fitting of the parts and permitting the easy introduction of one section into its position contiguous with its mate, as will be readily understood. The edges of the splices or joint-strips 9 are, however, not outturned to such an extent as to keep them out of contact with the edges of the contiguous pieces, but are just outturned sufficiently to afford easy entrances for the pieces in the act of placing and driving them in position.



The individual pieces are each driven separately in the usual manner, which is too well known to need description.

We do not wish to be limited to the exact shape, construction, and details shown, but wish to reserve the right to use such substitutions or modifications thereof as are embraced within the scope of our invention as pointed out in the claims.

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

1. A metal sheet-piling comprising contiguous corrugated plates overlapping and arranged with broken joints, splicing-pieces secured over said joints, the arrangement being  
15 such that substantially two layers of material are present at each point in the width thereof.

2. A metal sheet-piling comprising a plurality of rolled corrugated plates provided  
20 with splices or joint-pieces and adapted to overlap and lock across the entire width between the said splices or joint-pieces.

3. In metal sheet-piling, a rolled corrugated section provided along one of its corrugations  
25 with means secured thereto for guiding and locking the edges of the adjoining sections.

4. In metal sheet-piling, a splicing and locking strip formed of a piece of substantially semicircular outline having outturned edges.

5. In metal sheet-piling, a rolled corrugated section of uniform thickness provided along  
30 one of its corrugations with a splicing and locking strip formed of a piece of substantially semicircular outline having outturned edges.

6. A metal sheet-piling comprising a plurality of rolled corrugated plates each having  
35 an uneven number of corrugations, a splicing and locking strip formed of a piece of substantially semicircular outline having outturned edges secured along the central corrugation of each plate and located alternately on  
40 each side of the sheet-piling, said plates overlapping and locking across the entire width between the said strips.

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

LESTER R. GIFFORD.  
RALPH V. SAGE.

Witnesses:

J. R. WEMLINGER,  
R. M. GREENE.