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PATENTED NOV. 29, 1904.

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

SHEET PILING.

APPLICATION FILED DEC. 3, 1903.

NO MODEL.

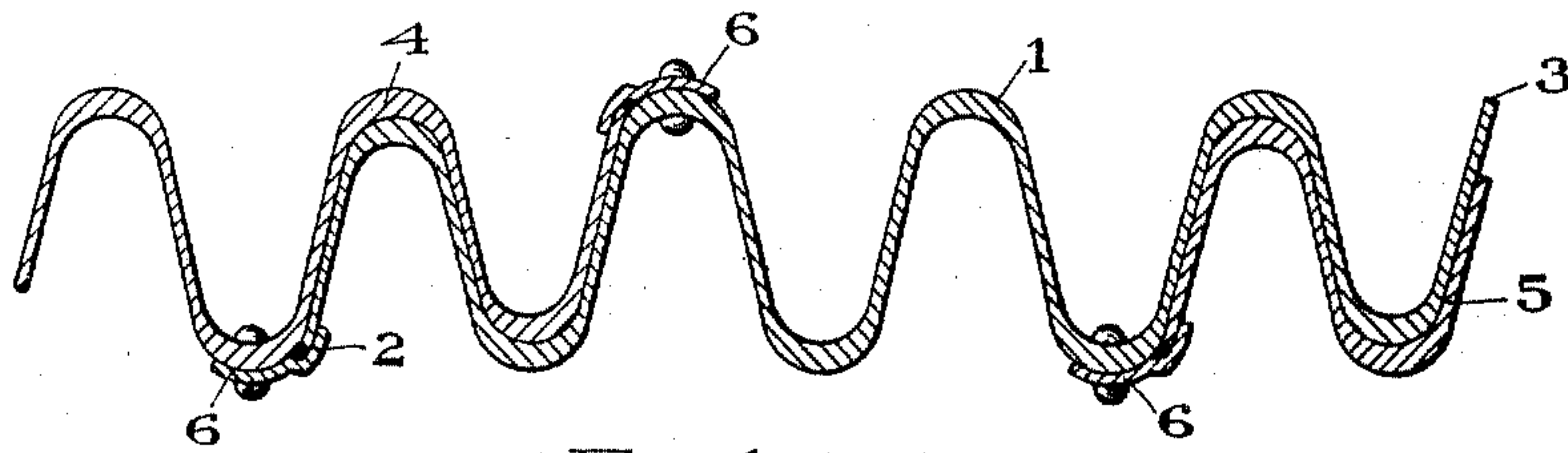


Fig. 1

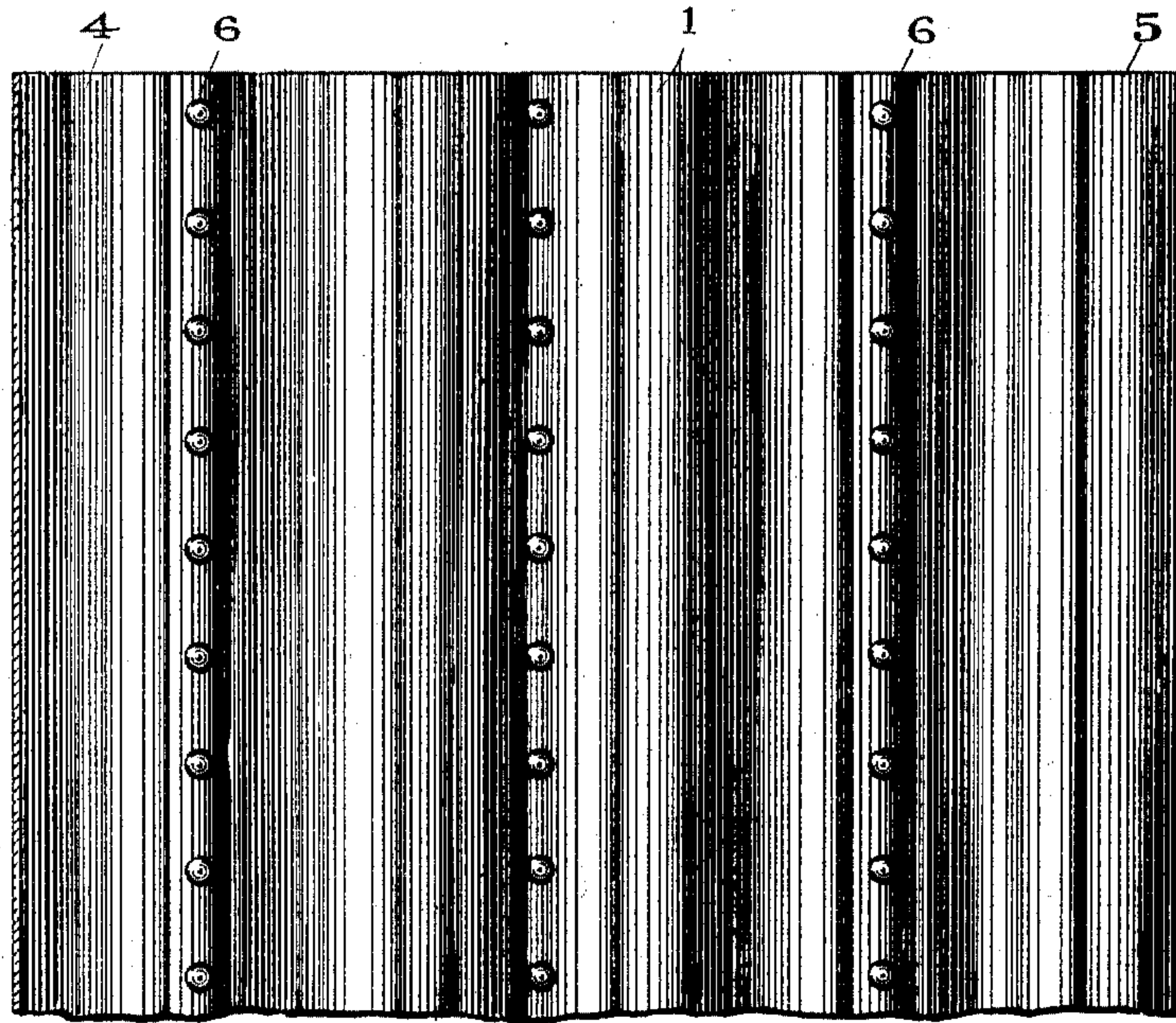


Fig. 2

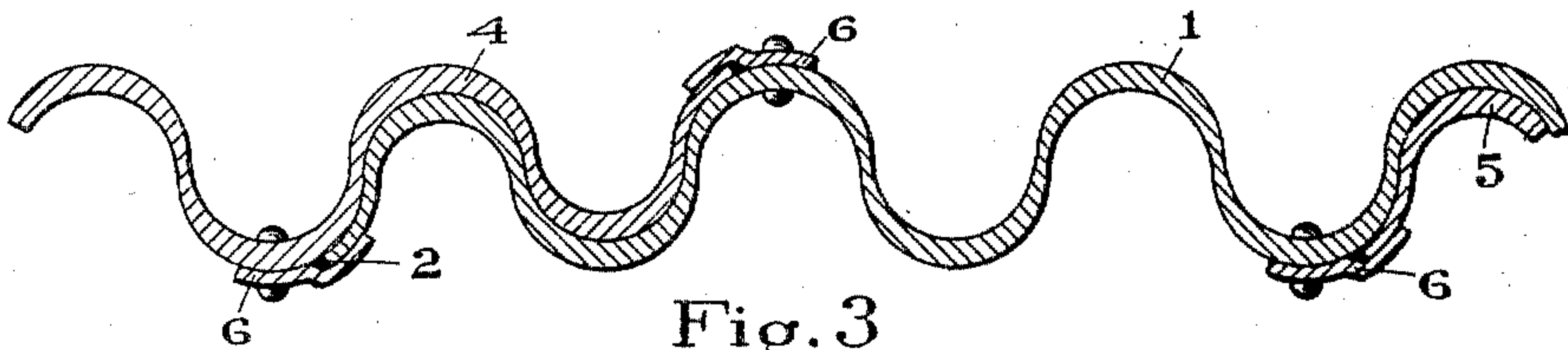


Fig. 3

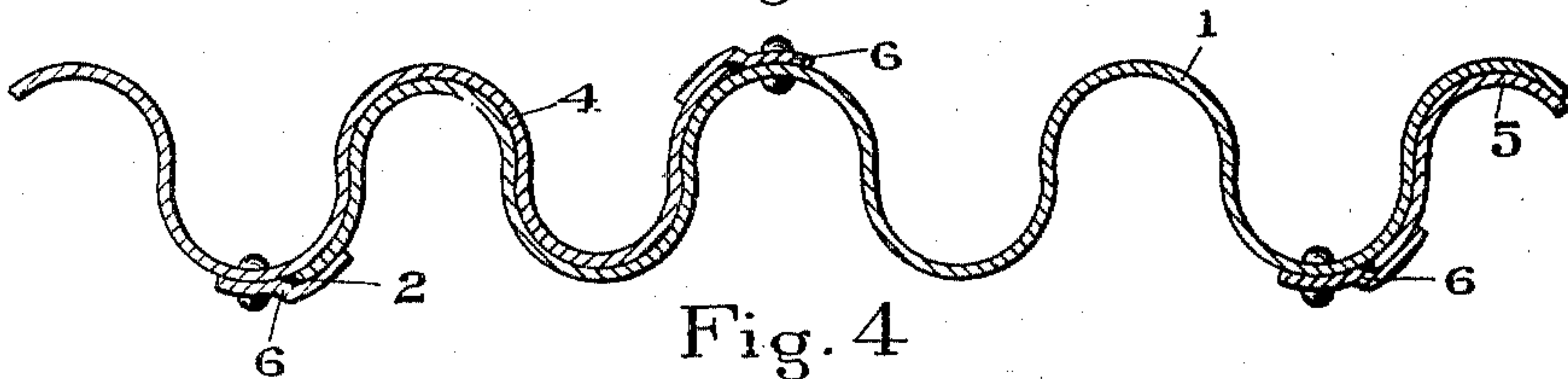


Fig. 4

WITNESSES,

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UNITED STATES PATENT OFFICE.

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

SHEET-PILING.

SPECIFICATION forming part of Letters Patent No. 776,147, dated November 29, 1904.

Application filed December 3, 1903. Serial No. 183,620. (No model.)

To all whom it may concern:

Be it known that we, RALPH V. SAGE and LESTER R. GIFFORD, 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 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 with lock-joints 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 our 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.

Another object is to provide sheet-piling sections which can be rolled very easily and which will require very little work after rolling except a small amount of riveting.

A further 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 suited to the condition of the ground, and where used for facing will present a pleasing appearance, besides which, by reason of its configuration, logs, ice, and other floating debris will not be obstructed.

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 one form of our corrugated sheet-piling, showing a complete piece thereof joined with portions of two adjoining pieces. Fig. 2 is an elevation of a

portion thereof. Fig. 3 is a sectional plan of another form of our corrugated sheet-piling. Fig. 4 is a sectional plan of the simplest form of our sheet-piling. Figs. 1 and 3 illustrate how the metal can be distributed more economically, so that the section will be heavier where required and stronger than the section illustrated in Fig. 4 for the same amount of metal, as will be readily understood by those conversant with the strength of materials.

In all the drawings, 1 represents one piece of our sheet-piling extending between points 2 and 3, as shown in Fig. 1, (the point 3 not being shown in Figs. 3 and 4 on account of the scale of these illustrations,) and having somewhat more than two corrugations overlapping at each end with the adjoining piece.

4 represents a portion of the piece adjoining 1 at the left, and 5 represents a portion of the piece adjoining 1 at the right, both 4 and 5 being in all respects duplicates of piece 1.

6 represents splices or joint strips riveted to the main portion of each piece to guide and prevent any displacement of the edges thereof while being driven and when in use, also to assist in making the joints water-tight. Each piece is provided with two such splices or joint-strips.

The splices or joint-strips are, as shown on the drawings, composed of narrow plates formed in the general shape of a depressed Z or, in other words, with an offset flange, the amount of said offset being substantially equal to the thickness of the contiguous piece, which is secured by means of said splice or joint-strip. These splices or joint-strips are also preferably curved in cross-section to conform substantially to the outlines of the pieces to which they are attached and those which they secure.

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

It will be noted that no special shape or section is required for corners or angles, as it is only necessary to bend the ordinary section in order to obtain the required change in alinement.

We do not wish to be limited to any particu-

lar section shown, but reserve the right to any modification thereof within the scope of our claims.

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

1. A metal sheet-piling comprising a plurality of rolled corrugated sections arranged to overlap at their margins, each edge of each section being secured and locked to the body of the adjoining section.

2. A metal sheet-piling comprising a plurality of rolled corrugated sections arranged to overlap at their margins and means carried by each section for guiding and locking each of the edges of the overlapping portions.

3. A metal sheet-piling comprising a plurality of rolled corrugated sections thickened at the top and bottom of the corrugations and arranged to overlap at their margins, the edge of each section being secured and locked to the body of the adjoining section.

4. A metal sheet-piling comprising a plurality of rolled corrugated sections thickened at the top and bottom of the corrugations, arranged to overlap at their margins and provided with means for guiding and locking the edges of the overlapping portions.

5. In metal sheet-piling, a rolled section having corrugations provided with an integral thickening at the top and bottom of said corrugations.

6. In metal sheet-piling, a rolled section having V-shaped corrugations.

7. In metal sheet-piling, a splicing and lock-

ing strip of curved cross-section secured to the sheet-piling and provided with an offset flange, the extent of said offset being substantially equal to the thickness of the adjoining section which it is adapted to lock.

8. In metal sheet-piling, a rolled corrugated section provided with splicing and locking strips, each having a flange offset to a distance substantially equal to the thickness of and adapted to project over and lock the edge of an adjoining section.

9. In metal sheet-piling, rolled corrugated sections arranged to overlap across one or more corrugations, splicing and locking strips secured to each of said sections, each strip having an offset flange adapted to project over and lock the edges of the overlapping portions.

10. In metal sheet-piling, rolled corrugated sections arranged to overlap for one or more corrugations, splicing and locking pieces each composed of a narrow strip of curved cross-section secured to the said corrugated sections and provided with an offset flange which projects over the edge of the overlapping portion of the adjoining section.

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

RALPH V. SAGE.
LESTER R. GIFFORD.

Witnesses:

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