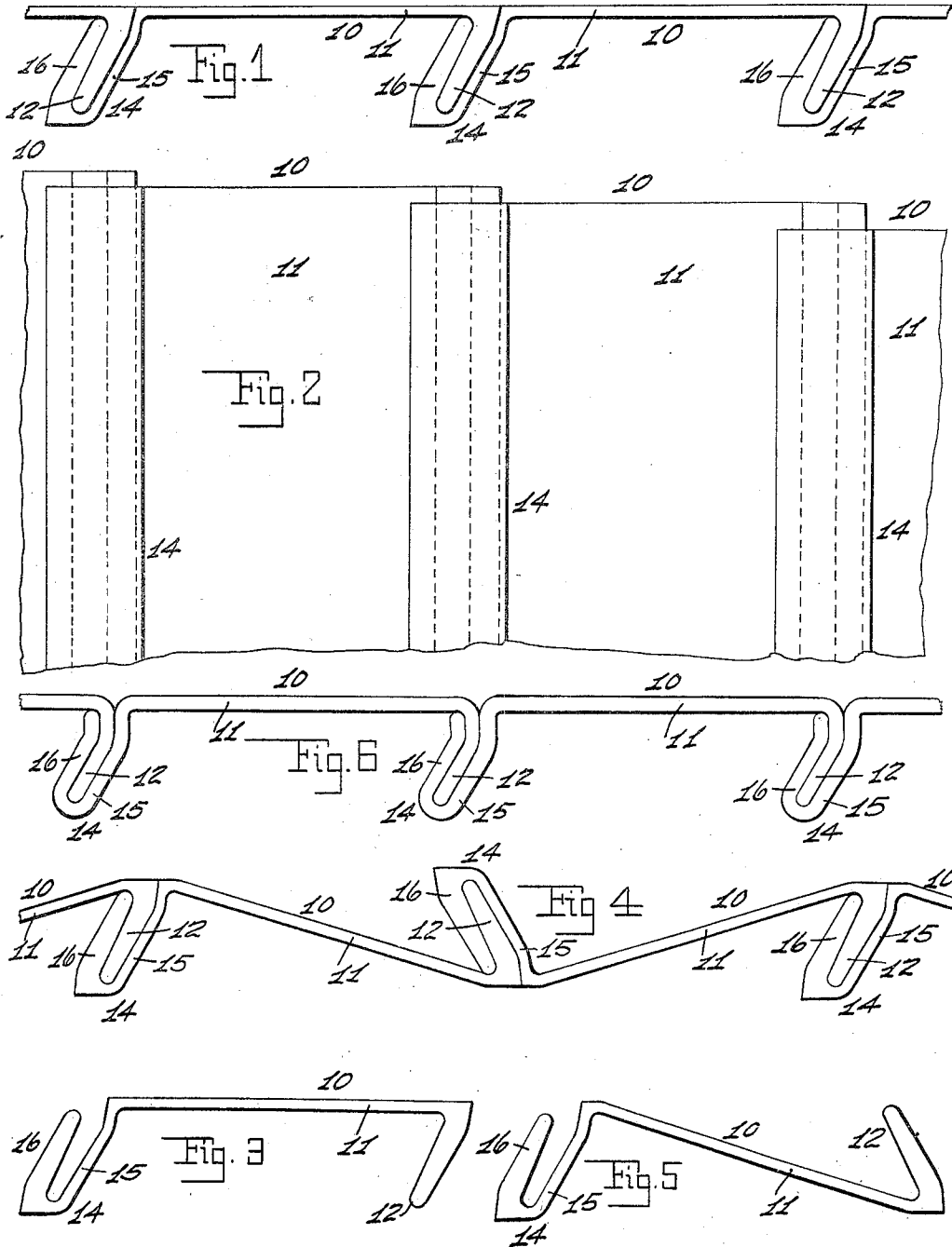


No. 818,327.

PATENTED APR. 17, 1906.

J. R. WILLIAMS.
METAL SHEET PILING.
APPLICATION FILED JAN. 15, 1906.



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METAL SHEET-PILING.

No. 818,327.

Specification of Letters Patent.

Patented April 17, 1906

Application filed January 15, 1906. Serial No. 296,015.

To all whom it may concern:

Be it known that I, JOHN R. WILLIAMS, a citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Metal Sheet-Piling, of which the following is a specification.

The invention relates to improvements in metal sheet-piling; and it consists in the novel features hereinafter described and claimed.

The object of the invention is to produce a metal sheet-piling of superior character and comprised of sections of novel form and construction, adapting them for all the uses to which metal sheet-piling may be put.

Among the specific objects attained by my invention in its preferred embodiment it may be mentioned generally that the units or sections of my piling are strong, durable, and easily rolled, that the sections are formed integrally with means whereby the sections may be locked together, thus dispensing with separate locking-flanges and the like riveted to the sections, that the sections are all alike in form and construction, and that a wall of piling formed of the interlocked sections presents on one side a uniform surface.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a top edge view of a metal sheet-piling comprising sections embodying my invention. Fig. 2 is a face view, partly broken away, of same. Fig. 3 is a detached top edge view of one of the sections of the piling. Fig. 4 is a top edge view of a modified form of piling embodying my invention. Fig. 5 is a detached top edge view of one of the sections of the piling shown in Fig. 4, and Fig. 6 is a top edge view of a further modified form of piling embodying some of the features of my invention.

In the drawings, referring to Figs. 1, 2, and 3, the individual sections of the piling are designated by the numeral 10, and these sections all correspond with one another and each is composed of a rolled beam comprising a web 11, having at one edge an inwardly-inclined flange 12 and at the other edge a loop 14, which is closed at its outer end and open at its inner end adjacent to said web and formed of the members 15 16, the former being of about the thickness of the web 11 and the

member 16 corresponding with the flange 12, but extending in a direction oppositely thereto, the flange 12 being projected at an angle to or in a direction from the line of the web 11 and the flange 16 being projected toward said line. The loop 14 inclines correspondingly with the flange 12 and extends beyond the adjacent edge of the web 11, whereby the open mouth of said loop becomes disposed adjacent to but beyond said edge of the web.

The manner of uniting the sections 10 is illustrated in Fig. 1, in which it will be seen that the loop 14 of one section engages the flange 12 of the next adjacent section and that the webs 11 of all the sections are in a straight line with one another, presenting a uniform surface along one side of the piling, which is a very desirable feature in some classes of work. The flanges 12 and loops 14 are correspondingly inclined, so that when the sections 10 are united said flanges and loops may cooperate as hooks to resist any strains tending to separate the sections.

The formation of the flanges 12 and loops 14 is such that when the flanges are in the loops the sections become locked together, and as may be seen the sections 10 are each in the form of a rivetless single integral piece of metal.

The modification represented in Fig. 4 consists in inclining the web 11 and extending the flange 12 from one side of said web and the loop 14 from the opposite side thereof, thereby forming, in effect, a corrugated single wall-piling, one section of which is shown in Fig. 5.

In Fig. 6 I show the sections 10 as made from plate in lieu of being of the rolled-beam order illustrated in Fig. 1. The sections shown in Fig. 6 imitate as nearly as may be in plate the sections represented in Fig. 1, the inclined flange 12 and loop 14 of each section being extended from the same side of the web 11 and the webs of all the sections being in a straight line. The rolled-beam sections shown in Figs. 1 to 5, inclusive, are preferable to the plate-sections represented in Fig. 6, by reason of their greater strength and the fact that the flange 12 and member 16 thereof are thicker than the web 11 and afford adequate resisting members and also suitable end surfaces to receive the force necessary for driving the sections.

I call attention to the fact that the flanges 12 and loops 14 are so shaped that said flanges

cannot be pushed from the loops which receive them by pressure applied against the face of the sections in a direction tending to separate the sections, and the preferred shape for said flanges and loops is that shown in the drawings, in which it may be seen that the outer portions of said loops and flanges are set an angle to or inclined from the inner portions thereof.

While I prefer that each beam or section of the piling have at the side of one edge a loop 14 and at the side of the other edge a flange 12, so that all the sections may correspond with one another, it is obvious that with less convenience my invention may be realized by having each alternate section formed with the loops 14 at the side of both edges and the intermediate sections formed with the flanges 12 at the side of both edges to enter and pass into locking relation with said loops. In this modified arrangement there would be no change in the character of the loops and flanges; but the sections would be of two classes, one carrying the flanges at the side of each edge and the other the loops at the side of each edge.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal comprising a web, a flange projected from the side of one edge thereof and a loop projected from the side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flanges and loops on said sections being of a formation adapting them to interlock one upon the other, whereby they resist any pressure applied against the face of the sections tending to separate the same; substantially as set forth.

2. A metal sheet-piling composed of interlocked sections each comprising integrally a web, a flange projected from the side of one edge thereof and a loop projected from the side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, said flange being inclined inwardly from its edge of the section and said loop being correspondingly inclined outwardly from its edge of the section; substantially as set forth.

3. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal comprising a web, a flange projected from the side of one edge thereof and a loop projected from the same side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flanges and loops on said sections being of a formation adapting them to interlock one upon the other, whereby they resist any pres-

sure applied against the face of the sections tending to separate the same; substantially as set forth.

4. A metal sheet-piling composed of interlocked sections each comprising integrally a web, a flange projected from the side of one edge thereof, and a loop projected from the same side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, said flange being inclined inwardly from its edge of the section and said loop being correspondingly inclined outwardly from its edge of the section; substantially as set forth.

5. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal comprising a web, a flange projected from the side of one edge thereof and a loop projected from the side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flanges and loops on said sections being of a formation adapting them to interlock one upon the other, whereby they resist any pressure applied against the face of the sections tending to separate the same, and said flange and the outer member of said loop of each section being thicker than the web of the section; substantially as set forth.

6. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal comprising a web, a flange projected from the side of one edge thereof and a loop projected from the same side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flanges and loops on said sections being of a formation adapting them to interlock one upon the other, whereby they resist any pressure applied against the face of the sections tending to separate the same, and said flange and the outer member of said loop of each section being thicker than the web of the section; substantially as set forth.

7. A metal sheet-piling composed of interlocking sections each comprising integrally a web, a flange projected from the side of one edge thereof, and a loop projected from the side of the other edge thereof, said loop being closed at its outer end and open at its inner end, and the outer portions of said flange and loop being set at an angle to the inner portions thereof; substantially as set forth.

8. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal and said sections respectively having at their adjoining edges a loop and a flange projected from the side of the edge of the sections and adapted to interlock one within the other, whereby they resist any pressure applied against the face of the sections tending to separate the same, said loop

being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web; substantially as set forth.

5 9. A metal sheet-piling composed of integral interlocking beam-sections at whose adjoining edges said sections are respectively formed with a loop and a flange projected from the side of the sections and adapted to engage each other, said loop being inclined
10 outwardly and closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flange being correspondingly inclined inwardly; substantially as set forth.

15 10. A metal sheet-piling composed of integral interlocking beam-sections at whose ad-

joining edges said sections are respectively formed with a loop and a flange projected from the side of the sections and adapted to engage each other, said loop being closed at
20 its outer end and open at its inner end adjacent to the adjoining edge of the web, and the outer portions of said loop and flange being set at an angle to the inner portions thereof; substantially as set forth. 25

Signed at New York city, in the county of New York, and State of New York, this 13th day of January, A. D. 1906.

JOHN R. WILLIAMS.

Witnesses:

CHAS. C. GILL,
ARTHUR MARION.