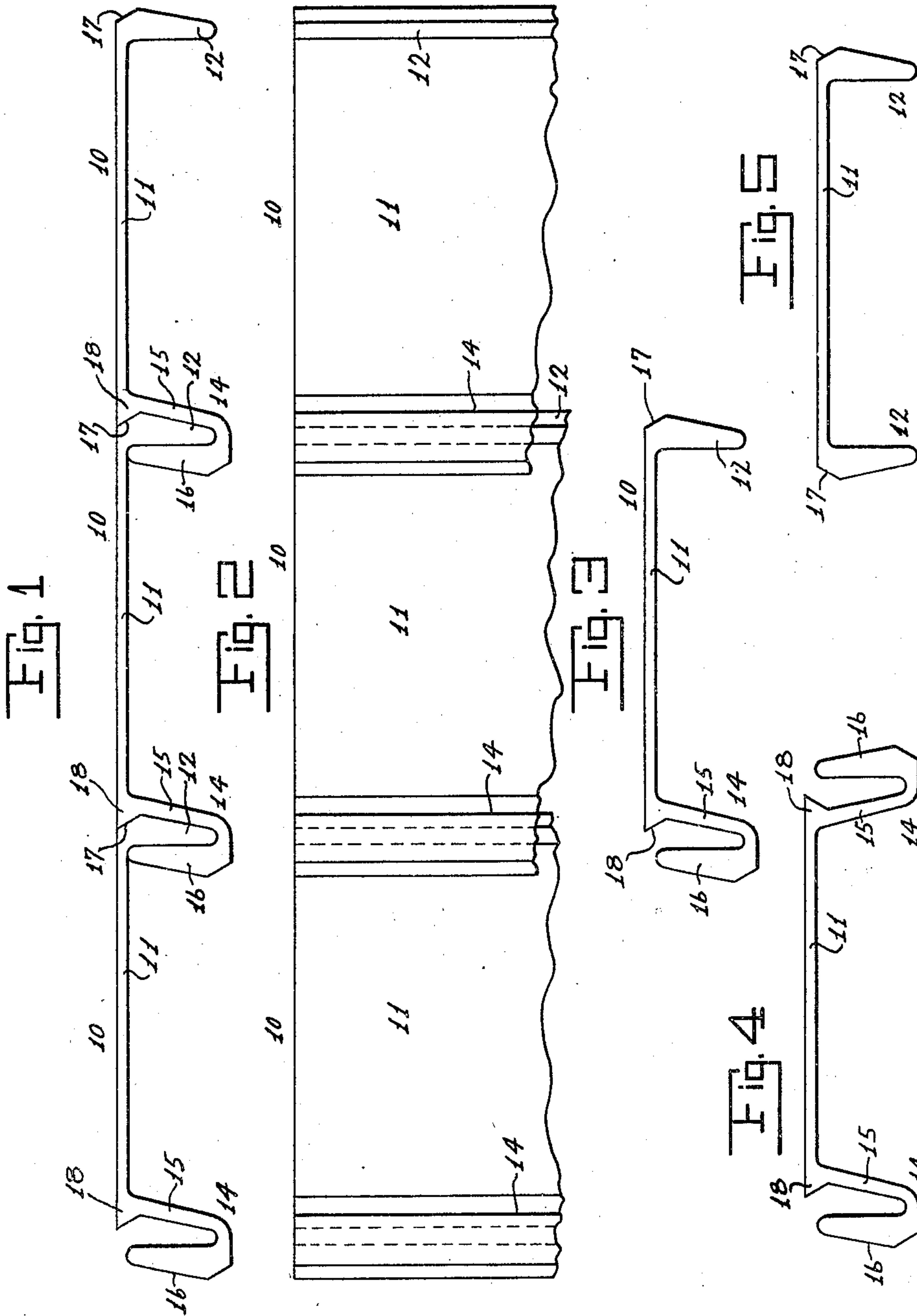


No. 836,792.

PATENTED NOV. 27, 1906.

J. R. WILLIAMS.
METAL SHEET PILING.
APPLICATION FILED APR. 14, 1906.



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JOHN R. WILLIAMS, OF EAST ORANGE, NEW JERSEY.

METAL SHEET-PILING.

No. 836,792.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed April 14, 1906. Serial No. 311,652.

To all whom it may concern:

Be it known that I, JOHN R. WILLIAMS, 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 their structure may be applied.

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 they 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-section; and Fig. 5 is a like view of a piling-section which will alternate with the section shown in Fig. 4 when the latter is made use of, the embodiment of the invention shown in Figs. 4 and 5 necessitating the employment of two sets of sections differing in outline, while in the preferred embodiment of the invention shown in Fig. 1 the piling-sections are all alike.

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 the side of one edge a flange 12 and at the side of 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 outwardly from the edge of the web 11 and the flange 16 being projected inwardly or in a direction toward the line of said web. The loop 14 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, and, as clearly shown in the drawings, the reversed flanges 12 16 substantially correspond with each other in thickness and both are thicker than the web 11.

One special object of the present invention is, aside from the general features of advantage due to the construction presented, to secure a highly efficient locking relation of the adjoining edges of the integral sections 10 to each other, whereby said sections when assembled cannot be pushed apart by pressure applied against the face of the sections in a direction tending to separate them or to push the loops 14 from off the flanges 12 or to push the flanges 12 in a direction from the loops 14, and in carrying out this feature of my invention I form an inwardly inclined or extending surface 17 at the outer edge of the web end of the flange 12 and an outwardly correspondingly inclined or extending heel 18 at the outer edge of the web end of the member 15 of the loop 14, said heel 18 projecting outwardly in line with the web 11 in a direction to partly close the mouth of the loop 14.

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 receives and closely engages the flange 12 of the next adjoining section and that the webs 11 of all of the sections are in 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 loops are adapted to the flanges 12, and when the sections of the piling are united said flanges snugly fill said loops, the inclined surfaces 17 on the flanges 12 matching and bearing against the projecting heels 18 at the mouths of the loops 14. The surfaces 17 and heels 18 cooperate in the production of an efficient and durable lock to prevent the separation of the integral sections by pressure applied against either face of the same.

While I prefer that each unit or section of the piling have at the side of one edge a flange 12 and at the side of the other edge a loop 14, 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 loops 14 at the side of both edges, as shown in Fig. 4, and the intermediate sections with flanges 12 at the side of both edges, as shown in Fig. 5, to enter and pass into locking relation with said loops. In this modified arrangement presented in Figs. 4 and 5 there is no change in the character of the locking loops and flanges; but the sections are in 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 in one integral piece of metal and 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, said flange and loop respectively having at their inner ends an inwardly-extended surface 17 and an outwardly correspondingly extended heel 18, whereby locking-surfaces are provided to resist pressure applied against the face of the sections tending to separate them, and 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.

2. A metal sheet-piling composed of interlocked sections each in one integral piece of metal and 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, said flange having at the outer edge of its web end an inwardly-extended surface 17, and the inner member of said loop having an outwardly correspondingly extended heel 18 at the outer edge of its web end, whereby locking-surfaces are provided to resist pressure ap-

plied against the face of the sections tending to separate them, and 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.

3. A metal sheet-piling composed of interlocked sections each in one integral piece of metal and 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, said flange having at the outer edge of its web end an inwardly-extended surface 17, and the inner member of said loop having an outwardly correspondingly extended heel 18 at the outer edge of its web end, whereby locking-surfaces are provided to resist pressure applied against the face of the sections tending to separate them, and said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flange and the outer member of said loop being thicker than the web of the sections; substantially as set forth.

4. A metal sheet-piling composed of interlocked sections each 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 flange having at the outer edge of its web end an inwardly-extended surface 17, and the inner member of said loop having an outwardly correspondingly extended heel 18 at the outer edge of its web end, whereby when the sections are assembled locking-surfaces are provided to resist pressure applied against the face of the sections tending to separate them; substantially as set forth.

Signed at New York city, in the county of New York and State of New York this 12th day of April, A. D. 1906.

JOHN R. WILLIAMS.

Witnesses:

CHAS. C. GILL,
ARTHUR MARION.