

Dec. 9, 1930.

C. BEAUJEAN

1,784,777

SHEET PILING

Filed Oct. 4, 1928

2 Sheets-Sheet 1

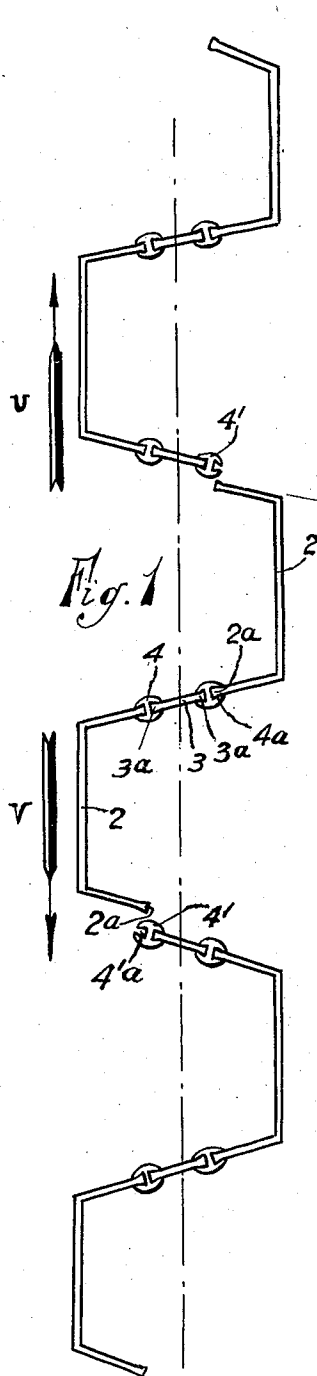


Fig. 1

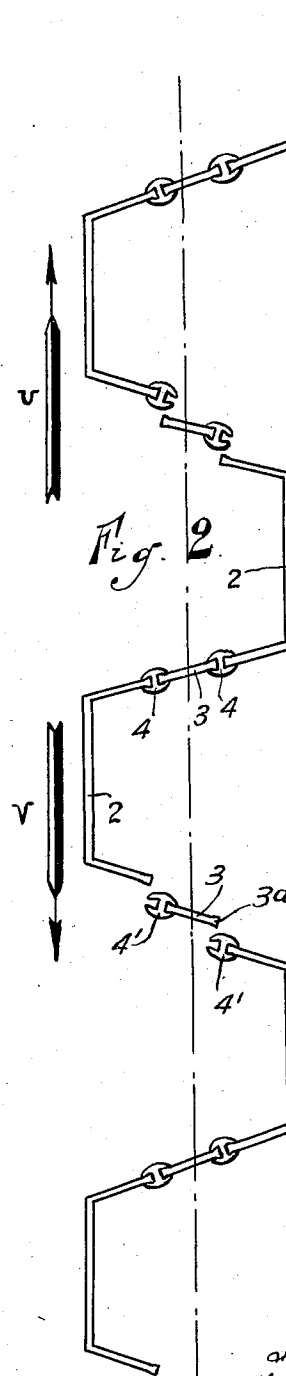


Fig. 2

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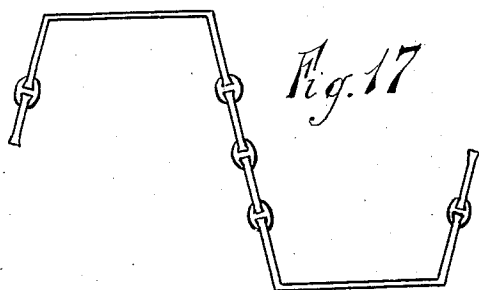
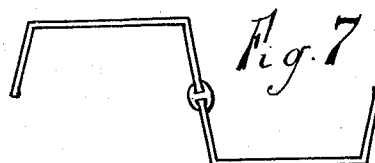
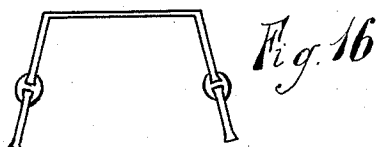
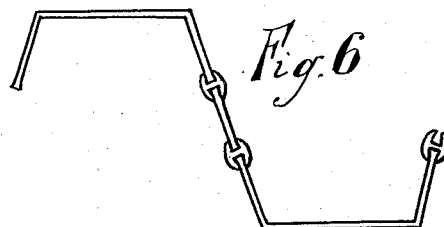
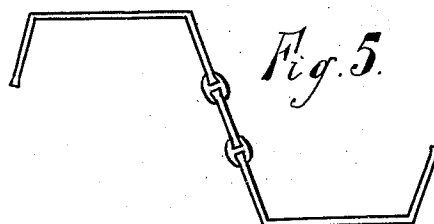
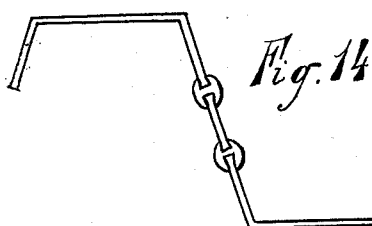
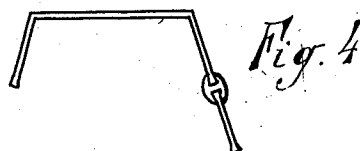
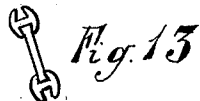
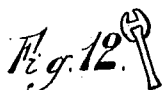
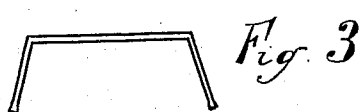
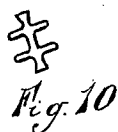
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UNITED STATES PATENT OFFICE

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SHEET PILING

Application filed October 4, 1928, Serial No. 310,403, and in France February 29, 1928.

Lengths of sheet piling are known which are formed by joining together elements of simple curvature arranged alternately on either side of the axis of the sheet piling.

5 This arrangement makes it possible to give the sheet piling thus formed a fairly high moment of inertia which is nevertheless limited by the dimensions of the cylinders of the rolling mills employed for rolling the elements of simple curvature.

10 The present invention relates to a sheet piling formed by the juxtaposition of Z-piles which are each formed by the rigid union, before hammering, with two U-shaped members arranged alternately on opposite sides of the axis of the sheet pile, and of flat forms arranged between the opposing wings of each of the two U-members and in the extension thereof, the assemblage being
15 formed by H-members having hollows of trapezoidal form, said piling being also provided at one of its free wings with an H-member or an arrangement of flat and H-members similar to the arrangement interposed in
20 the medial arm of the Z-piling.

25 The accompanying drawings illustrate by way of example and in a non-limiting manner various embodiments of the invention. The latter extends to the various original features which the arrangements shown comprise.

Figs. 1 and 2 are diagrammatic plan views of sheet piling in process of construction.

30 Figs. 3 to 17 show in end view various elements adapted for use in constructing the sheet piling.

35 The lengths of sheet piling (Figs. 1 and 2) are formed by joining together elements of simple curvature arranged alternately on either side of the axis of the sheet piling, the axis to which these elements turn the concave side.

40 In the case shown in Figs. 1 and 2, additional sections 3 and 4 are interposed between two adjacent elements 2. The additional section 3 which presents in section a relatively great length forms a lengthening section, while the additional sections 4 are assembling sections.

50 In order to avoid any twisting in the as-

sembled arrangements the additional sections are positioned in alignment with the flanges formed by the ends of the elements of simple curvature.

The invention is not limited solely to 55 lengths of sheet piling constructed in the manner shown in Figs. 1 and 2; but also extends to all sheet piling comprising additional sections interposed between the elements of simple curvature placed alternately 60 on either side of the axis of the sheet piling. These various lengths of sheet piling may be constructed according to the invention in different ways by employing for their formation members rigidly connected together in a 65 suitable number and arrangement before being driven in.

In the case shown in Fig. 1 the length of sheet piling is formed by means of members assembled together so as to form an arrangement such as the one shown in Fig. 15.

The invention provides however for the group of assembled members driven in, in the first place, to be such as the one shown in Fig. 5.

75 The joints between the various members are obtained by the engagement of male and female parts. By first of all driving in a group such as the one shown in Fig. 5, comprising two male ends, it is possible to proceed to the construction of the length of sheet piling by extending at the same time in the two opposite directions indicated by the arrows U and V (Figs. 1 and 2), while arranging 80 always for each group of members driven in to be guided at one of its ends by a female part engaged upon a male part of a group of members previously driven in.

85 The same result is moreover obtained in the case shown in Fig. 2. However in this figure the groups of members employed for the formation of the sheet piling is different.

90 The lengthening sections 3 in fact, no longer form part of groups of members rigidly assembled before being driven in; the group of members driven in first of all, and comprising two male ends, is however identical to the one shown in Fig. 1 and in Fig. 5. The other groups of members driven in are of two types; one of them consists of length- 100

ening sections provided at one end with an assembling section as shown in Fig. 12, and the other consists of groups of members similar to the one shown in Fig. 6.

5 The lengthening sections, instead of being formed by simple flats as shown in Fig. 9, may be of any section, such for example as the one shown in Fig. 10 or as the one shown in Fig. 11.

10 It goes without saying, that instead of rigidly connecting members comprising, for instance, an assembling section and a lengthening section or even an element of simple curvature, provision may be made for these members to be manufactured in such a way as to be integral with each other.

As shown in the drawings, the assembling sections which operate by the engagement of male and female parts are such that these male and female parts are formed by solid portions symmetrical relatively to a central common plane along which the connected parts are arranged in alignment with each other.

25 The invention provides moreover for the solid portions which engage to come into contact along planes symmetrical relatively to the above mentioned common central plane and positioned in such a way that their contact pressure increases when the two connected elements are subjected to a pull which tends to separate them.

The various methods of connecting the members so as to form groups of members rigidly assembled together before being driven in, as shown in Figs. 4 to 8 and 12 to 17, are sufficiently explained by the drawings.

It is however necessary to point out that the invention is no way limited to the arrangements shown, but that it covers any arrangements of these members or of like members.

What I claim is:

1. Sheet piling formed by the juxtaposition of Z-shaped members each formed by rigidly connecting before hammering two U-members arranged alternately at each side of the axis of the sheet piling and the two opposing arms of which are in the extension of each other, flat members arranged between said opposing arms and in alignment therewith, H-shaped members having trapezoidal cavities or hollowed out portions connecting said arms and the flat members, and an H-member with trapezoidal hollows arranged at the end of one of the two free arms; and flat members and H-members similar to those above described assembled rigidly before hammering, arranged in alignment between the arms of the consecutive Z-members and connecting these.

2. Sheet piling formed by the juxtaposition of Z-shaped members each formed by rigidly connecting before hammering two U-members arranged alternately at each side of

the axis of the sheet piling and the two opposing arms of which are in the extension of each other, flat members and H-members having trapezoidal hollows arranged between said arms and in alignment therewith, and a similar arrangement at the end of one of the free arms.

In testimony whereof I have affixed my signature.

CAMILLE BEAUJEAN.