

No. 805,533.

PATENTED NOV. 28, 1905.

W. G. FARGO.
METAL SHEET PILING.
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Fig. 1.

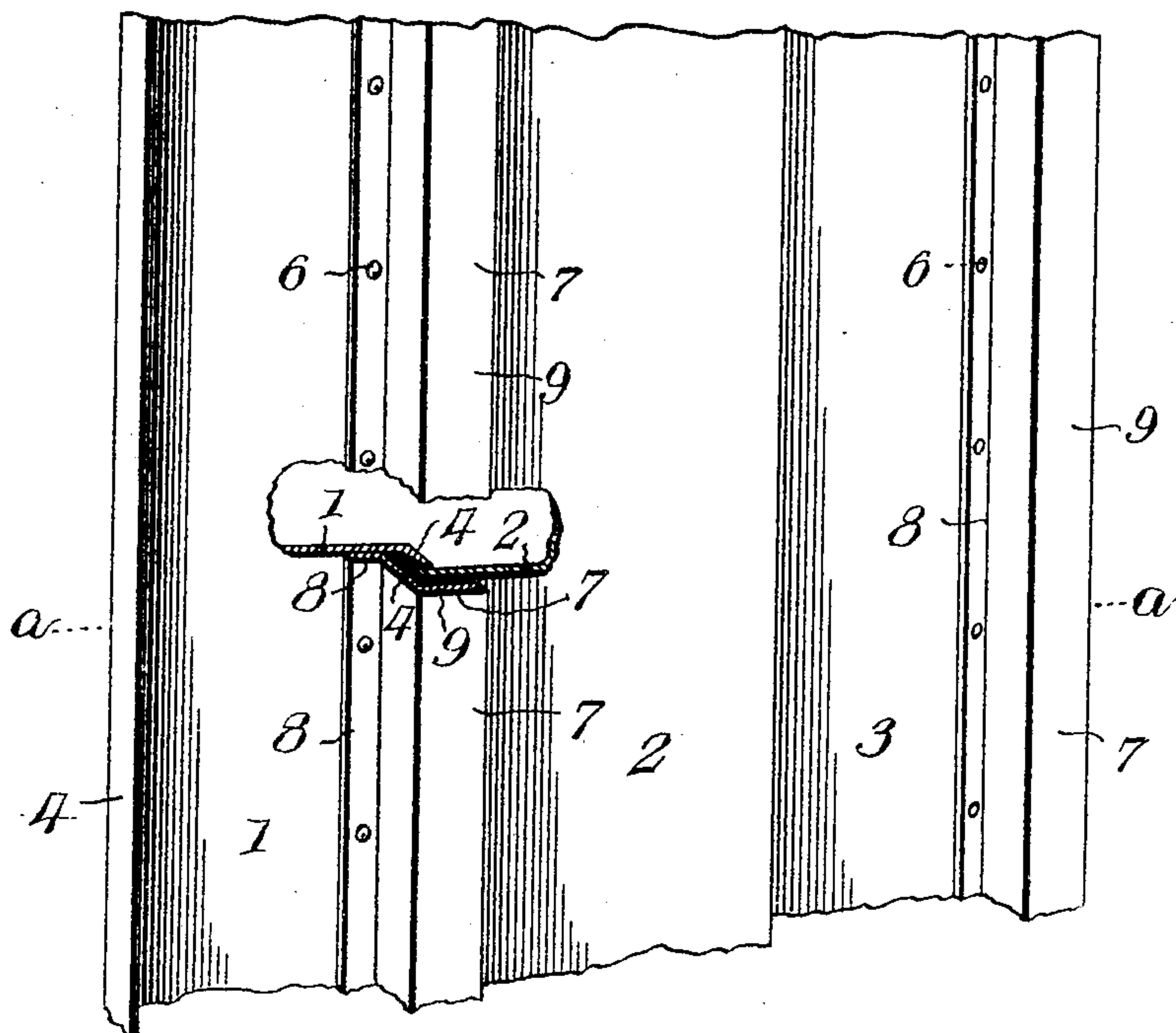


Fig. 2.

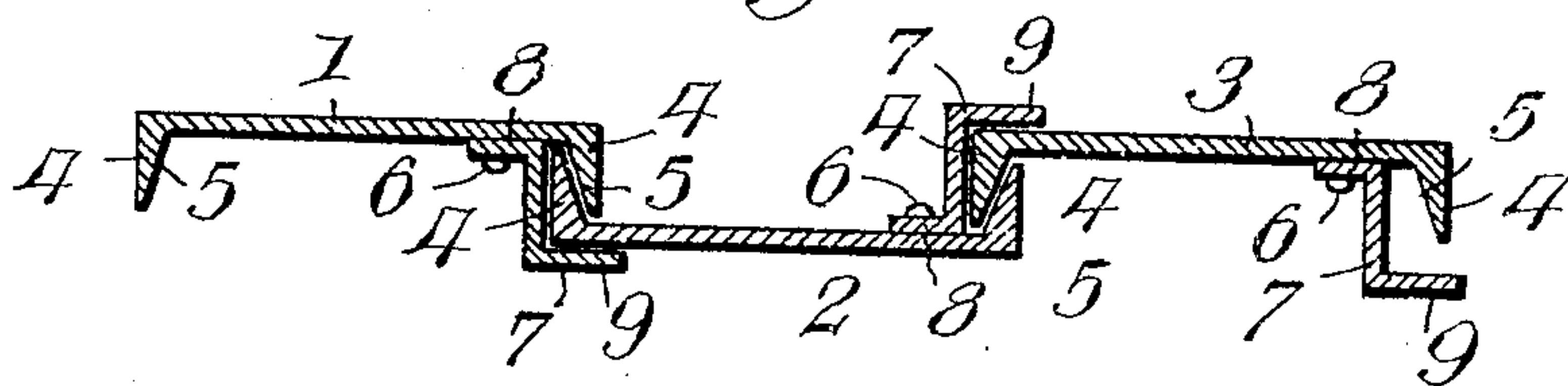
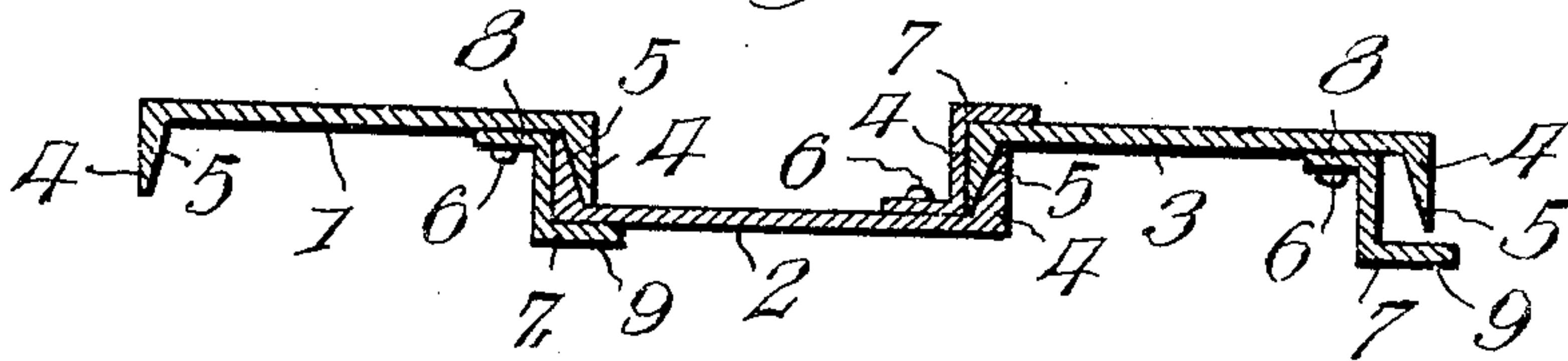


Fig. 3.



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METAL SHEET-PILING.

No. 805,533.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM G. FARGO, a citizen of the United States, residing in the city of Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Metal Sheet-Piling, of which the following is a specification.

This invention relates to metal sheet-piling, and has reference more particularly to piling for use in constructing caissons, coffer-dams, foundations, bridges, &c.

One object of my invention is to improve upon the constructions disclosed in Patents No. 707,837, August 26, 1902; No. 734,843, July 28, 1903, and No. 739,072, September 15, 1903, all issued to one Luther P. Friestedt.

In the form of piling disclosed in the aforesaid patents the outer or unconnected longitudinal edge of each channel-beam buckles or bends under the action of the pile-driver, and therefore it is the prime object of the present invention to provide certain new and useful improvements in this character of piling whereby the outer longitudinal edge of each channel-beam is effectually braced against buckling under the action of the pile-driver.

Heretofore when a channel-beam has been buckled during the driving thereof it has been necessary to withdraw the beam, and if the buckling of the beam has been sufficiently material to bind the beam being driven upon the previously-driven beam it is then necessary to withdraw both of the beams, thereby resulting in material delay in the completion of the structure. Having appreciated these defects in building structures, as set forth in the Friestedt patent, I propose to effectually overcome the same by a peculiar combination and arrangement of channel-beams and Z-bar braces, whereby the outer or free longitudinal edge of each channel-beam is always provided with a stiffening Z-bar for the purpose of preventing buckling of the beam when being driven.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the present invention.

In the accompanying drawings, Figure 1 is

a perspective view of a series of channel-beams interlocked along their longitudinal sides in a manner characteristic of my invention. Fig. 2 is a transverse sectional view on the line *a a* of Fig. 1, illustrating the channel-beams and the Z-bars loosely assembled. Fig. 3 is a view similar to Fig. 2, illustrating the channel and Z bars tightly assembled.

Referring now more particularly to the accompanying drawings, the reference characters 1, 2, and 3 designate a series of sheet-metal channel-beams each provided with side walls 4 along their longitudinal edges, which latter are arranged at a direct right angle to the body portion thereof and whose inner faces may or may not be beveled or tapered, as indicated by the reference character 5 in the drawings.

Arranged along one longitudinal edge of the sheet-metal channel-beams 1, 2, and 3 and secured throughout the length thereof in spaced relation with the inner face of the side walls 5 thereof, through the instrumentality of bolts, rivets, or the like 6, is an angular stiffening-bar, preferably in the nature of a Z-bar 7, the angular feet portions 8 of each Z-bar being pierced by the aforesaid rivets, bolts, or the like 6, with the outer free angular portions 9 thereof directed parallel with the body of the channel-beams and slightly over the walls thereof and in spaced relation to the latter. It will be observed that there is but one of these Z-bars arranged upon each channel-beam and that by reason of their disposition with relation to the latter, as has been set forth, an interlocking groove, way, or the like is formed for the reception of one side edge or wall of the adjacent channel-beams. The interlocking side of the channel-beam 2, whose wall fits within the groove, channel, way, or the like of the channel-beam 1, may or may not have the inner face of its said side wall beveled so long as it is formed correspondingly with the inner face of the corresponding wall. It will now be understood that there is but one Z-bar for each channel-beam and that one Z-bar is disposed upon the inner face of each channel-beam with its outer or free angular portion 9 arranged to fit tightly upon the outer face of the adjacent channel-beam, and it will be noted that the free angular portions 9 of each Z-bar are directed in the same plane.

In building a structure of the class described it will be noted that each channel-beam has one longitudinal edge provided with a stiffen-

ing Z-bar, while its opposite longitudinal edge is free from such a Z-bar and designed to be slipped downwardly between one of the flanges and the Z-bar of the previously-driven beam, 5 whereby the outer or free longitudinal edge of the beam being driven is braced by its Z-bar, so as to prevent buckling of the beam under the blows of the hammer of the pile-driver. With the present structure there is 10 no possibility of the beams becoming buckled when being driven, and therefore there is no necessity of any of the beams being withdrawn after having been partially driven. Consequently the present structure may be 15 rapidly erected without the usual delays incident to withdrawing buckled beams and replacing the same by new beams.

Since I employ a single Z-bar upon the inner face and along one side only of each 20 channel-bar, I reduce the cost and simplify a construction, employing a Z-bar at each side of each channel-bar or of each alternate channel-bar, resulting in advantageous characteristics, in that there is not occasioned a buckling 25 of the channel-beams under the action of the hammer in process of driving the free edge of channels, the end channel always being stiffened by a Z-bar, and also, since I employ a Z-bar arranged throughout the length of 30 the channel-beam upon one side only thereof, in preference to an angle-plate or ordinary angle-bar, I am enabled to positively interlock adjacent alining longitudinal sections of the channel-beams together.

35 It will now be understood that the Z-bars are located first on the right and then to the

left and that each Z-bar has its free angular portion extended in the same direction over the adjacent wall of the next channel-beam for engagement with the back or outer face 40 of the latter. This arrangement results in a positive interlocking of the adjacent edges of the channel-beams through the instrumentality of a single Z-bar upon each channel-beam in direct contradistinction to two Z-bars 45 upon each channel-beam or upon each alternate channel-beam and as against the attempt to secure such interlocking with the use of an angle-iron or angle-plate without other connections. 50

Having thus described the invention, what is claimed is—

In a metal sheet-piling, the combination of a series of channel-beams disposed edge for edge with their channel-faces alternating at 55 the inner and outer sides of the piling and their flanges successively interengaged, each beam having a single Z-bar secured to its channel-face and projecting across one of the flanges of the beam and overlapping the adja- 60 cent beam, the Z-bars of the piling being successively disposed adjacent those edges only which are unconnected with the previously-erected piling during the driving of the beams, the other corresponding edges of 65 the beams being free from Z-bars.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM G. FARGO.

Witnesses:

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