No. 785,246. PATENTED MAR. 21, 1905.

# H. WITTEKIND.

## WOODEN SHEET PILING.

APPLICATION FILED MAY 31, 1904.

2 SHEETS—SHEET 1.

Fig. 2.

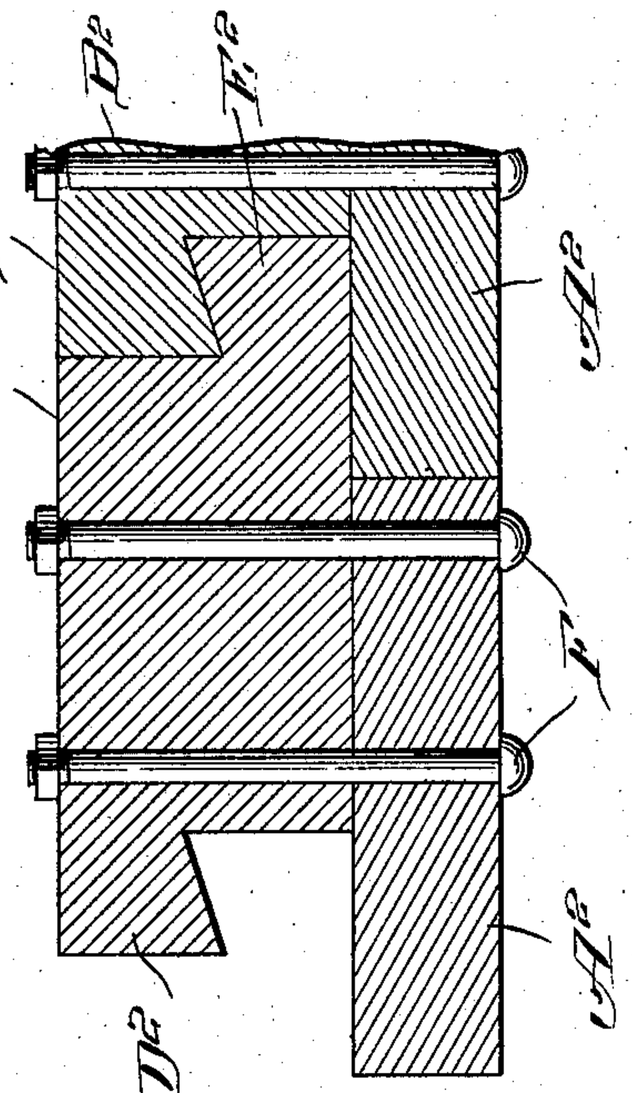



Fig. 4.

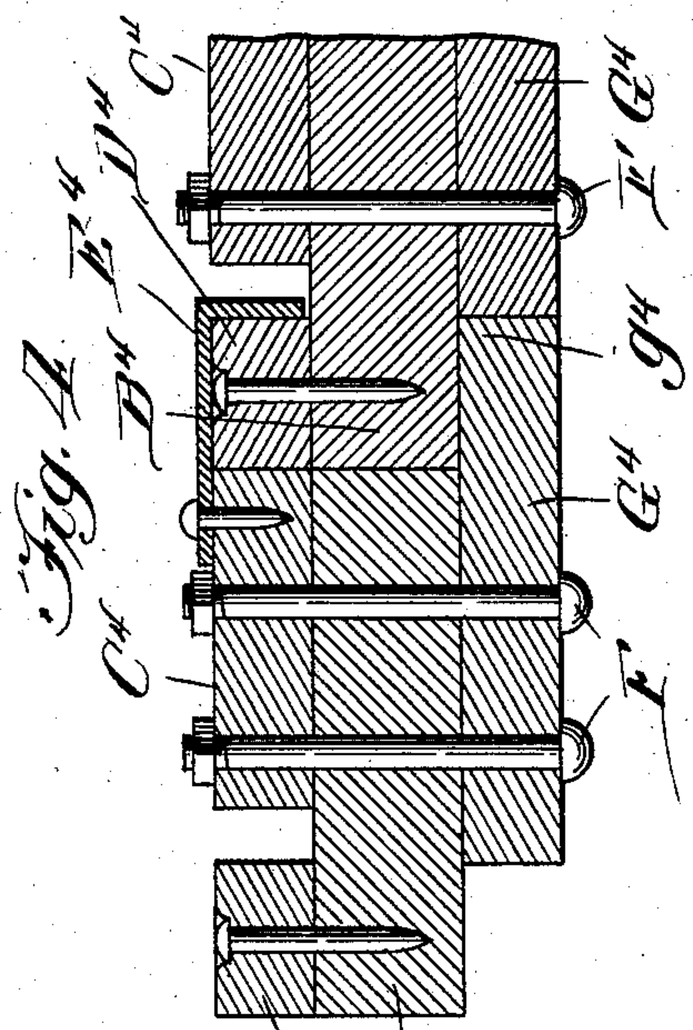



Fig. 1.

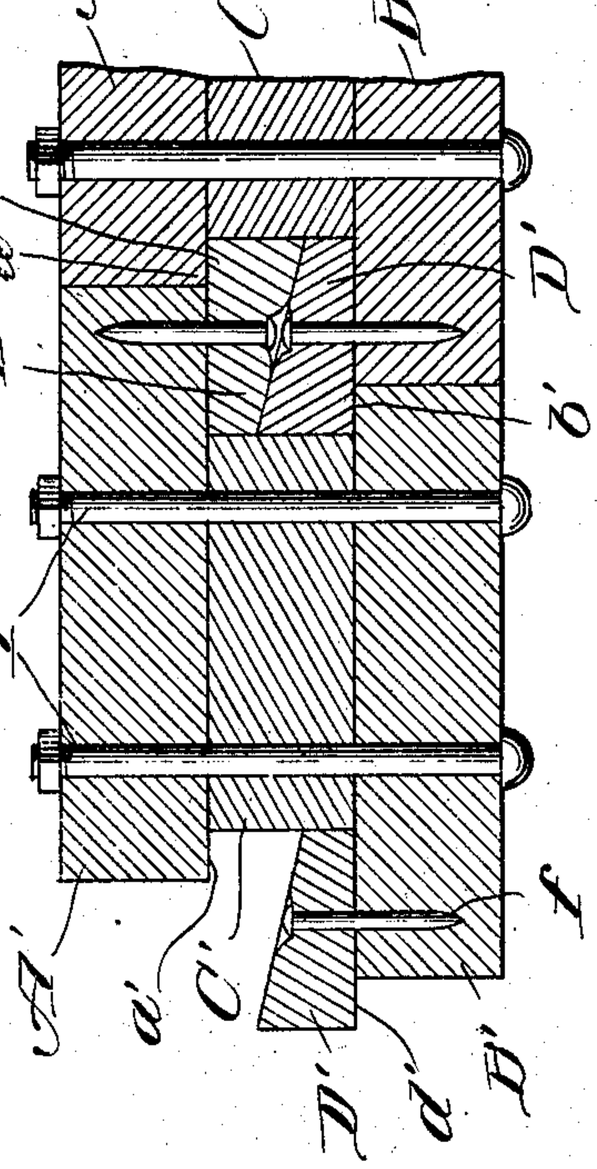
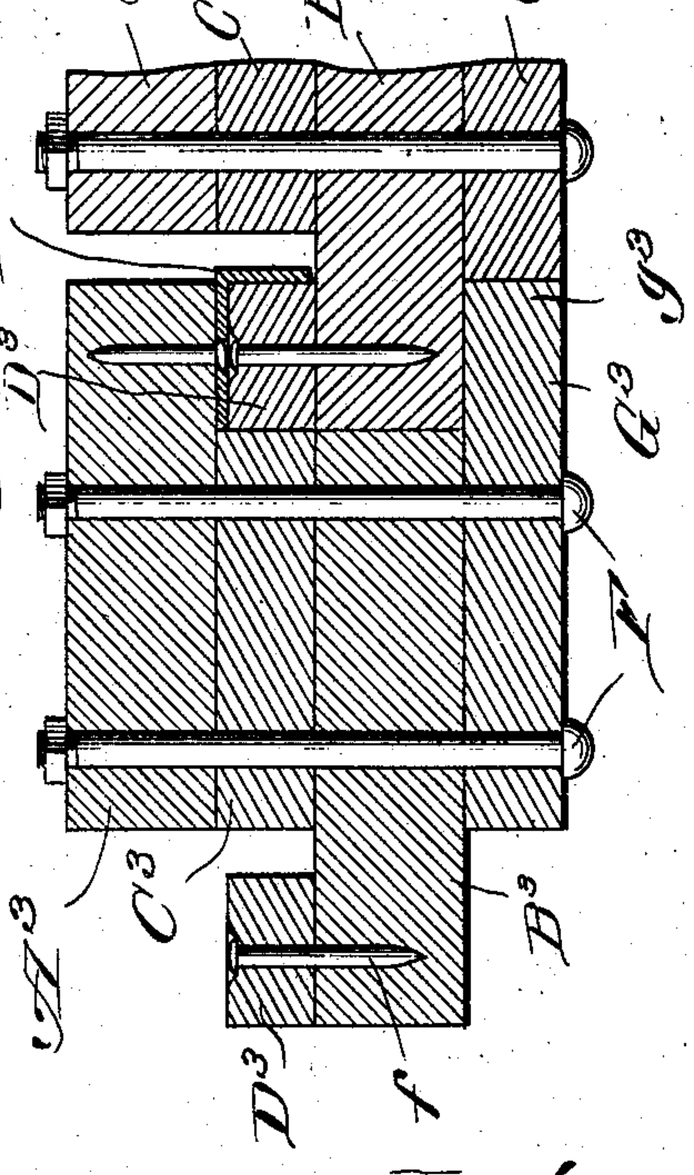



Fig. 3.

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# H. WITTEKIND.

## WOODEN SHEET PILING.

APPLICATION FILED MAY 31, 1904.

2 SHEETS—SHEET 2.

Fig. 6.

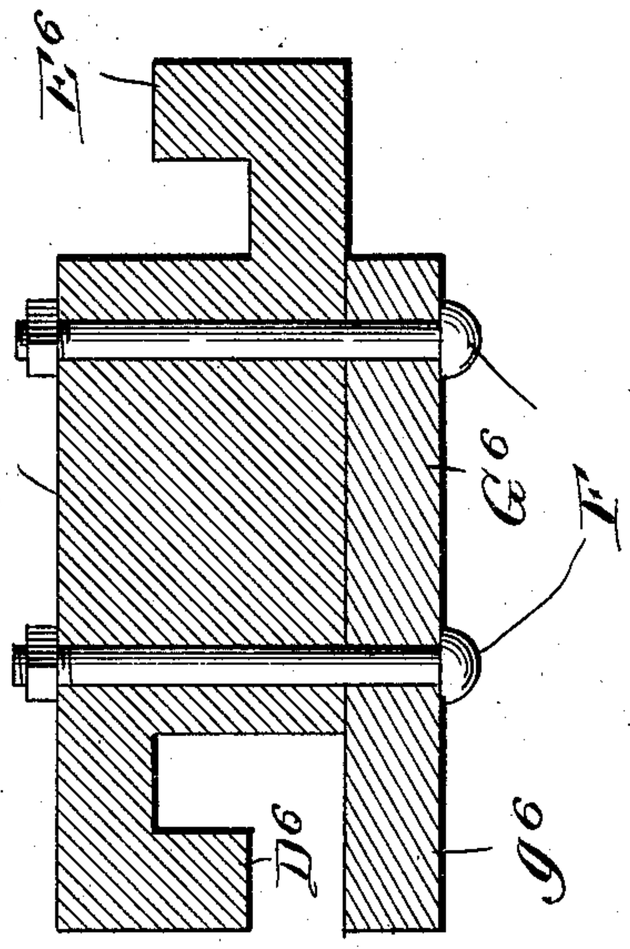



Fig. 8.

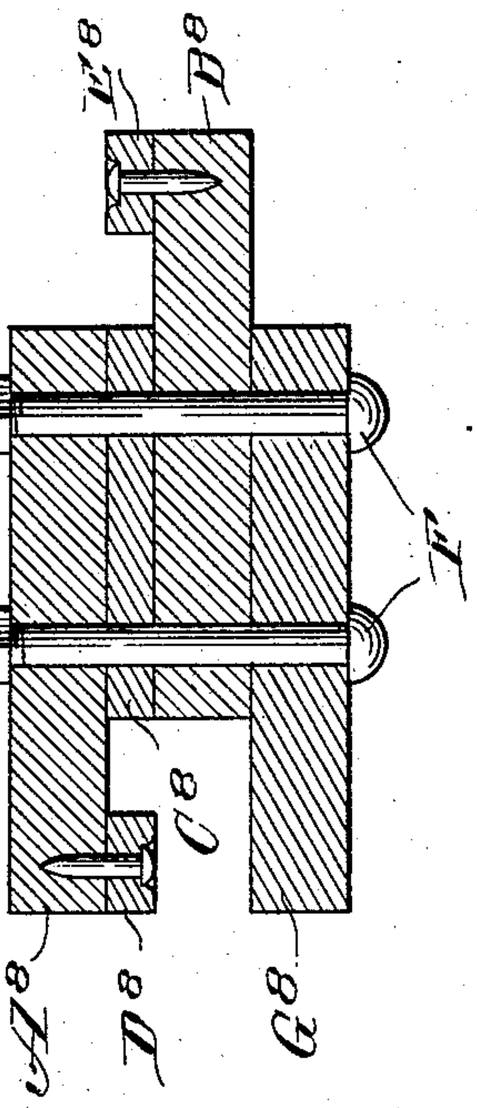



Fig. 5

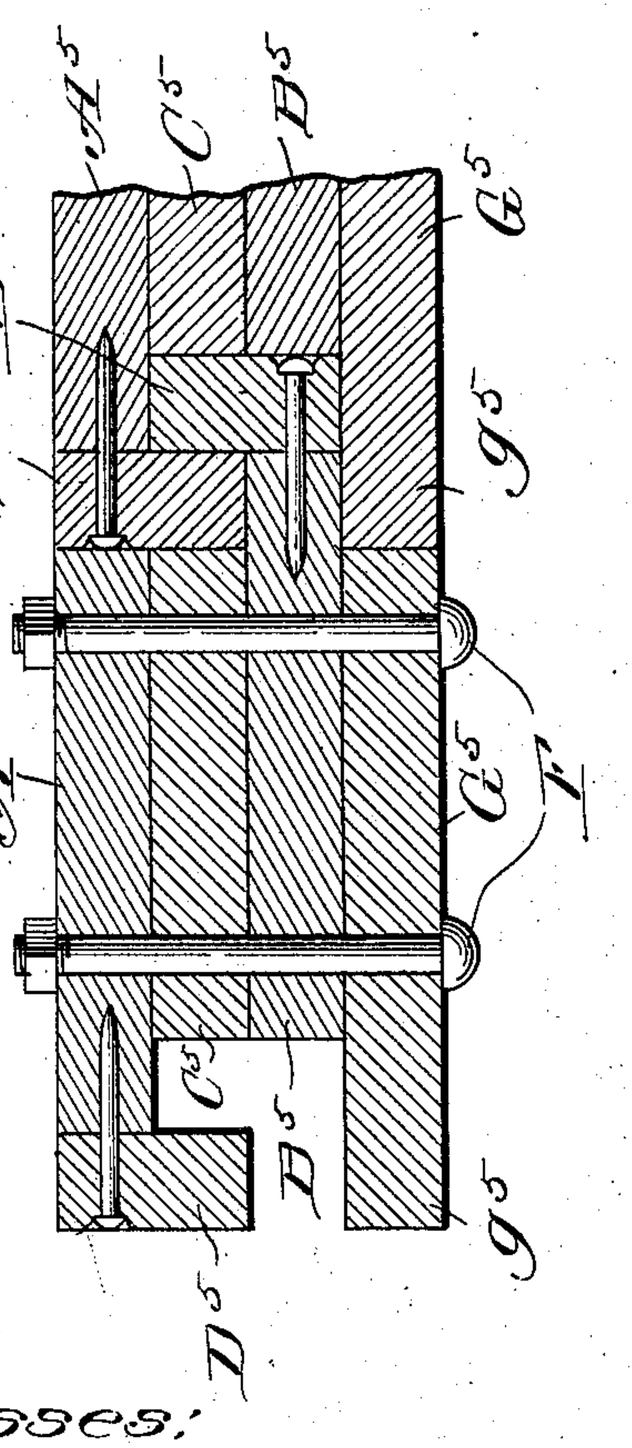
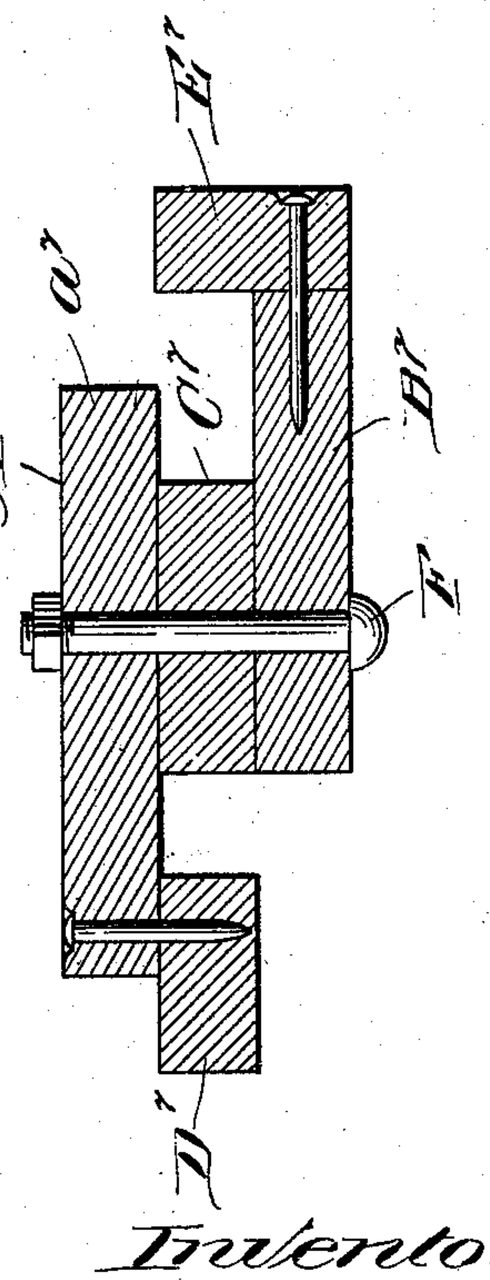



Fig. 7.

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No. 785,246. Patented March 21, 1905.

# UNITED STATES PATENT OFFICE.

HENRY WITTEKIND, OF CHICAGO, ILLINOIS.

## WOODEN SHEET-PILING.

SPECIFICATION forming part of Letters Patent No. 785,246, dated March 21, 1905.

Application filed May 31, 1904. Serial No. 210,399.

*To all whom it may concern:*

Be it known that I, HENRY WITTEKIND, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Wooden Sheet-Piling; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to sheet-piling for use in constructing caissons, coffer-dams, foundations of buildings, wharfs, and similar structures, and more particularly to wooden sheet-piling.

The primary object of my invention is to provide a strong and serviceable sheet-piling consisting in interlocking sections adapted to be separately driven, the sections being composed of pieces of timber rigidly united together and having vertical grooves in their edges in which are received tongues or tenons on the adjoining sections.

A further object of my invention is to provide a wooden sheet-piling which will be simple in construction, inexpensive in manufacture, and efficient in use.

My invention, generally described, consists in a plurality of interlocked vertical sections, each section composed of a plurality of pieces of timber securely fastened together, a flaring tongue projecting from one edge of the section and a corresponding groove formed in the other edge of the section.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated as embodied in several convenient and practical forms, and in which—

Figure 1 is a cross-sectional view showing one section and a portion of an adjacent interlocked section. Figs. 2, 3, 4, and 5 are similar to Fig. 1, showing modified embodiments of my invention; and Figs. 6, 7, and 8, sectional views of individual sections of wooden sheet-piling embodying different specific forms of my invention.

Referring to Fig. 1, reference characters A′ and B′ designate pieces of timber spaced apart by an interposed piece of timber C′. The three pieces of timber are rigidly secured together by suitable fastening devices—such, for instance, as bolts F. The width of the piece of timber C′ is less than the width of the timbers A′ and B′, so that the side edges of each of the latter timbers project beyond the side edges of the intermediate timber. Secured to the portion of the timber B′ which projects beyond one side of the intermediate timber C′ is a dovetail strip D′, while a similar dovetail strip E′ is rigidly secured to the portion of the timber A′ which projects beyond the opposite side edge of the intermediate timber. Any suitable fastening devices may be employed for securing the dovetail strips to the timbers A′ and B′—such, for instance, as spikes *f*. As the dovetail strips flare outwardly, a dovetail groove is formed between the portion *a′* of the timber A′, which projects beyond the intermediate timber and the dovetail strip D′, while a corresponding dovetail groove is formed between the portion *b′* of the timber B′, which projects beyond the intermediate timber and the dovetail strip E′. The portions *d′* and *e′* of the dovetail strips D′ and E′, which project beyond the corresponding timbers B′ and A′, correspond to the dovetail grooves, so that the sections may be interlocked, as shown in Fig, 1, and thereby securely united together both by the engagement of the dovetail strips with the corresponding dovetail grooves and by the contact between the abutting edges of the timbers A′ and B′ in the adjacent sections.

In constructing sheet-piling of sections such as above described the sections are successively driven. Each section before being driven is interlocked at its lower end with the top end of the previously-driven section.

In Fig. 2 I have illustrated a modified embodiment of my invention in which only two pieces of timber $A^2$ and $B^2$ are employed, the dovetail projections $D^2$ and $E^2$ being formed integrally with the timber $B^2$ and the timber $A^2$ overlapping the timber $B^2$, so as to form a dovetail groove between the same and the projection $D^2$, in which is received the dovetail projection $E^2$ of the adjacent section.

In Fig. 3 is illustrated a modification in which each section is composed of four planks secured together by bolts F or other suitable fastening devices. The plank $B^3$ projects to one side of the section and has secured thereto a strip $D^3$, spaced a short distance away from the edge of the intermediate plank $C^3$. The plank $A^3$ projects to the opposite side of the section from the strip $D^3$ and has secured thereto an angle-beam $E^3$, which, together with the projecting portion $g^3$ of the plank $G^3$, forms a channel or groove conforming in cross-section to the tenon or tongue formed by the projecting portion of the plank $B^3$ and the strip $D^3$, secured thereto.

In Fig. 4 each section of the piling is formed of three planks secured together by suitable fastening devices—such, for instance, as bolts F. The intermediate plank $B^4$ projects to one side of the section and has secured thereto a strip $D^4$. An L-beam $E^4$ is secured to the timber $C^4$ and projects inwardly around the edge of the section opposite to the strip $D^4$, thereby forming, in conjunction with the projecting portion $g^4$ of the timber $G^4$, a channel or groove adapted to receive the tongue consisting in the strip $D^4$ and adjacent portion of the timber $B^4$ on the adjacent interlocking section.

The modification shown in Fig. 5 consists in a section composed of four planks rigidly secured together by bolts, one plank, $A^5$, of which projects to one side of the section and has secured thereto a strip $D^5$, spaced apart from the ends of the intermediate planks $C^5$ and $B^5$ and from the projecting portion $g^5$ of the plank $G^5$ a distance to form an L-shaped channel corresponding in cross-section to the L-shaped tongue projecting from the opposite side edge of the section formed by the strip $E^5$ and the projecting portion of the intermediate plank $B^5$, to which such strip is rigidly secured.

In Fig. 6 the section is composed of two pieces of timber, one of which, $A^6$, has formed integrally therewith L-shaped tongues $D^6$ and $E^6$. A plank $G^6$ is rigidly secured to the timber $A^6$ and projects a distance corresponding to the tongue $D^6$, forming in conjunction therewith an L-shaped groove conforming to the L-shaped tongue $E^6$.

In Fig. 7 the section is composed of three planks bolted together, one of which, $A^7$, projects to one side of the section and has secured thereto a strip $D^7$, the inner edge of which is spaced apart from the adjacent edge of the intermediate plank $C^7$. The plank $B^7$ extends to the opposite side of the section from the strip $D^7$ and has secured rigidly thereto a strip $E^7$, which, together with the adjacent edge of the intermediate plank $C^7$ and the projecting portion $a^7$ of the plank $A^7$, forms a channel corresponding in cross-section to the tongue projecting from the opposite side of the section and formed by the strip $D^7$ and the adjacent portion of the plank $A^7$.

The embodiment of the invention shown in Fig. 8 consists in a section composed of four planks rigidly secured together by bolts F. The plank $A^8$ projects to one side of the section and has rigidly secured to the inner face thereof a strip $D^8$, spaced apart from the corresponding edge of the intermediate planks $C^8$ and $B^8$ and from the projecting portion of the plank $G^8$ to form an L-shaped channel conforming in cross-section to the tongue projecting from the opposite side edge of the section and composed of the strip $E^8$, rigidly secured to the projecting portion of the plank $B^8$.

Each of the embodiments of my invention above described consists in a section composed of a plurality of planks, the pieces of timber rigidly bolted together and having at one edge a channel or groove conforming in cross-section to a tongue or tenon projecting from the opposite side edge of the section. It will be further noted that in each of the various sections the projecting tongue is of greater thickness at its outer edge than adjacent the section, so that when it is interlocked with the groove in the adjoining section of a sheet-piling a secure union is effected.

From the foregoing description it will be observed that I have invented an improved wooden sheet-piling consisting in a plurality of interlocked sections capable of being individually successively driven and when driven forming a piling simple and economical in construction and strong and durable in use.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A wooden sheet-piling comprising a plurality of interlocked vertical sections each section consisting in a plurality of pieces of timber rigidly secured together and having a tenon projecting laterally from one edge of greater thickness at its outer edge than adjacent the section and a groove in its opposite edge corresponding in cross-section to the cross-section of said tenon.

2. In a wooden sheet-piling, a section comprising a plurality of vertical pieces of timber rigidly secured together having a tenon projecting laterally and of greater thickness at its edge than adjacent the section and a groove in the other edge of the section corresponding to the cross-section of said tenon.

3. In a section for wooden sheet-piling, the combination with a plurality of vertical planks one of which projects laterally to one side of the section, means for rigidly securing said planks together, a vertical strip secured to said laterally-projecting portion of one of said planks and forming therewith a tenon, the opposite side edge of the section having a groove of a cross-section corresponding to said tenon.

4. In a section for wooden sheet-piling, the

combination with a plurality of vertical planks one of which projects laterally to one side of the section and another of which projects laterally to the opposite side of the section, means for rigidly securing said planks together, a vertical strip secured to each of said laterally-projecting portions of the planks and forming therewith tenons, the side edges of the section having grooves corresponding in cross-section to said tenons.

5. In a section for sheet-piling, the combination with three vertical planks the intermediate one of which being of less width than the outer planks, means for rigidly securing said planks together, a vertical strip secured to the inner surface of the portion of one of said outer planks which projects to one side of the section, a second vertical strip secured to the inner surface of the portion of the other outer plank which projects to the opposite side of the section, the strip on one plank forming with the projecting portion of the other plank a groove corresponding in cross-section to the tenon formed by the other strip and the projecting portion of the plank to which it is secured.

In testimony whereof I sign this specification in the presence of two witnesses.

HENRY WITTEKIND.

Witnesses:

GEO. L. WILKINSON,

CLARA C. CUNNINGHAM.