

T. HILL.  
SHEET PILING.

APPLICATION FILED DEC. 24, 1906. RENEWED SEPT. 28, 1915.

1,176,294.

Patented Mar. 21, 1916.

Fig. 1

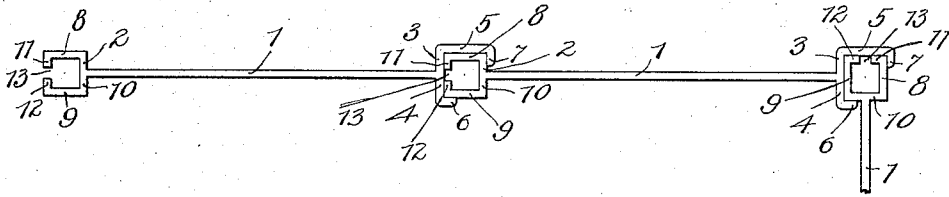


Fig. 2

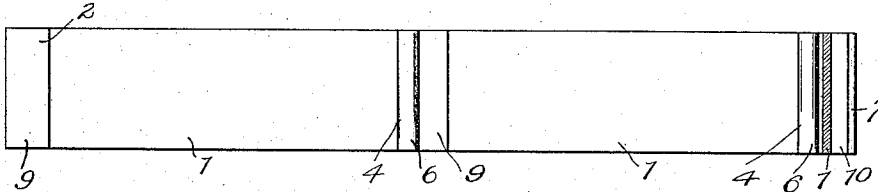
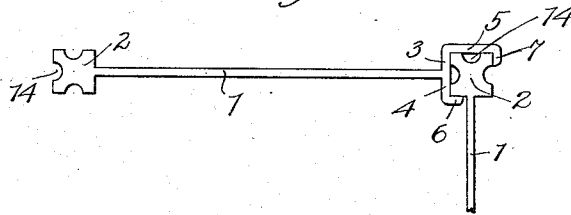


Fig. 3



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## SHEET-PILING.

1,176,294.

Specification of Letters Patent.

Patented Mar. 21, 1916.

Original application filed April 24, 1905, Serial No. 257,168. Divided and this application filed December 24, 1906, Serial No. 349,259. Renewed September 28, 1915. Serial No. 53,157.

*To all whom it may concern:*

Be it known that I, TRUMAN HILL, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Sheet-Piling; of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to sheet piling, and its object is to provide rolled sections of simple construction which when joined together are adapted to form a rigid wall of various angles.

This application is a division of my application Ser. No. 257,168, filed April 24, 1905.

My invention will be best understood by reference to the accompanying drawing in which—

Figure 1 shows a top view of sections which are joined together to form a wall of different angles; Fig. 2 is a front elevation of Fig. 1, and Fig. 3 shows a modified form of one end of the section.

Each section consists of a web portion 1 terminating at one end in a head 2 and at the other end in a socket member 3. The socket member consists of the transverse wall 4 perpendicular to the web 1; of the longitudinal wall 5 parallel to the web 1 and of the extensions 6 and 7 from the walls 4 and 5 respectively. The corners or bends between these extensions and the walls 4 and 5 are preferably disposed in a plane substantially at an angle of forty-five degrees with the plane of the web. The head is composed of the longitudinal walls 8 and 9 extending from the transverse wall 10 and terminating at their ends in the extensions 11 and 12 respectively. The walls 8, 9 and 10 and the extensions 11 and 12 forming the ball member as shown inclose a recess or groove adapted to receive filler material when the sections are driven. These extensions may be separated to leave the opening 13. As illustrated in Fig. 3, the head may also be slotted and provided in its outer face with one or more grooves 14 for receiving filler material when the sections are assembled. The construction shown is one which permits the arrangement of the sections to be built up to form a straight wall of interlocking sections, or the members may be as-

sembled and interlocked at right angles with respect to each other.

I do not, therefore, wish to be limited to the exact construction shown, and I claim as new and desire to secure by Letters Patent:

1. A metal sheet piling section comprising a web portion, a socket member at one end of the web portion having hooked ends, whose bends lie in a plane at an angle to the web portion, and a substantially square head at the other end of the web portion having ends disposed in a plane at an angle to the web portion, said ends being adapted to be engaged by the hooked ends of a socket member of an adjacent section, whereby adjacent sections may be interlocked to lie in a single plane or be interlocked to lie in planes at an angle to each other.

2. A metal sheet piling section comprising a straight web portion, a socket member at one end of the web portion having hooked ends whose bends terminate in a plane having an angle of forty-five degrees with the plane of the web portion, a head at the other end of the web portion having ends disposed in a plane at an angle to the plane of the socket member hooked ends, and adapted to be engaged by the hooked end of an adjacent section to allow said sections to be interlocked to lie in parallel planes or to be interlocked to lie in planes at an angle to each other.

3. A metal sheet piling section comprising a straight web, a socket member at one end of the web having hooked ends whose tips lie in a plane substantially at an angle of 45° to the plane of the web and a head at the other end of the web symmetrically arranged with reference to the web, said head being adapted to fit the socket of an adjacent section in two positions to allow adjacent sections to be arranged in alinement or substantially at right angles, there being a recess formed in the head within the walls of the socket for the reception of filling material.

4. A metal sheet piling section comprising a web, a socket at one end of the web having hooked ends whose tips lie in a plane substantially at an angle of 45° to the plane of the web, and an angular head at the other end of the web symmetrically arranged with reference thereto, said head being adapted

to fit the socket permitting adjacent sections to be arranged in alinement or substantially at right angles, the head being recessed for the reception of filler material within the socket.

5 5. A steel sheet piling section comprising a web, a substantially square socket member at one end of the web, having hooked ends whose tips lie in a plane substantially at an angle of 45° to the plane of the web and a substantially square head at the other end of the web adapted to fit the socket, permitting adjacent sections to be arranged in alinement or at right angles, the head being recessed whereby a space is formed within the socket of interlocking sections for the reception of filler material.

6. For use in a sheet piling structure, an integral section or element composed of a straight web, a head on one edge of the web and a socket member on the other edge, the socket member consisting of a transverse wall perpendicular to the web, of a longitudinal wall extending from one end of the transverse wall parallel to the web, and of extensions from the end of the longitudinal wall and from the opposite end of the transverse wall, said extensions being arranged respectively substantially parallel to the transverse wall and to the web, the head member being of such a size as to fit freely within the socket of an adjacent element.

7. For use in a sheet piling structure, an integral section or element consisting of a web, a head on one edge of the web and a socket member on the other edge to receive the head of an adjacent element, the socket member consisting of two flanges extending from opposite sides of one web edge and bent to form an angular socket, and the head consisting of two flanges extending from opposite sides of the other web edge and bent into an angular form corresponding in outline to the socket and adapted to fit within the socket.

8. A sheet piling element consisting of a web, a continuous head member on one edge of the web, and a continuous socket member on the other edge to receive the head member of an adjacent element, the socket member consisting of two flanges extending from opposite sides of one web edge and bent to form an angular socket, and the head consisting of two flanges extending from opposite sides of the other web edge and bent into angular form corresponding in outline to the socket and adapted to fit within the socket, one member being recessed in its wall in contact with the other member to receive filler material when the elements are driven.

9. A sheet piling element consisting of a web, a head on one edge of the web and a socket member on the other edge, said member consisting of two flanges extending

from opposite sides of one web edge and bent to form an angular socket, and said head consisting of two flanges extending from opposite sides of the other web edge and bent into angular form corresponding in outline to the socket and adapted to fit snugly within the socket of an adjacent section, said head being recessed to admit filler material between it and the socket wall.

10. An integral sheet piling element composed of a straight web, a continuous head along one edge of the web and a continuous socket member along the other edge, said socket member being adapted to receive the head of an adjacent section, the socket member consisting of a transverse wall, perpendicular to the web, of a longitudinal wall extending from one end of the transverse wall parallel to the web and of short extensions from the end of the longitudinal wall and from the opposite end of the transverse wall, said extensions being arranged respectively substantially parallel to the web and to the transverse wall, the head consisting of a transverse wall extending across the edge of the web opposite to the socket and parallel to the web, of longitudinal walls extending from the ends of the transverse wall and being substantially parallel to the web and of short extensions on the ends of the longitudinal walls turned toward each other and substantially perpendicular to the web.

11. A section for steel sheet piling consisting of a flat web, an angular socket member at one edge of the web and an angular head member at the other edge of the web, said head member being similar in cross-section to the socket of the socket member, substantially filling said socket and adapted to engage in the socket member of an adjacent section when a plurality of sections are in position in a wall, the adjacent sections so assembled being locked against rotation one on the other when arranged either in the same plane or perpendicular to each other.

12. A steel sheet piling section consisting of a web, an angular socket member on one edge of the web and an angular head member on the other edge of the web, said head member being substantially of the same form in cross-section as the socket of the socket member and being adapted to fit snugly within the socket member of an adjacent section when in position in a wall, so that the adjacent sections so assembled shall be locked against rotation when arranged either in the same plane or perpendicular to each other.

13. A steel sheet piling section consisting of a straight flat web, a socket member on one edge of the web and a head member on the other edge, said members being both substantially square in cross-section and the head member being adapted to fit snugly within the socket member of an adjacent

section when a plurality of sections are in position in a wall so that the adjacent sections may be arranged in the same plane or substantially at right angles to each other and securely locked against angular displacement in either position.

14. A steel sheet piling section consisting of a straight flat web, a socket member on one edge of the web and a head member on the other edge, said members being angular and of similar form in cross-section, and the head being adapted to fit within the socket of an adjacent section, and the socket being provided with a longitudinal slot for permitting the head of an adjacent section to be inserted, said slot extending from a point in the wall of the socket in alinement with the web of the section to such a point in the side wall of the socket as will permit the insertion of the head of an adjacent section in two positions, that the webs of the adjacent sections may be arranged in the same plane or substantially at right angles to each other.

15. A steel sheet piling section consisting of a straight flat web, a socket member on one edge of the web and a head member on the other edge of the web, said socket member and said head member both being substantially square in cross section and the head being of such a size as to fit snugly within the socket of an adjacent section, said socket being provided with a longitudinal slot for permitting the head of an adjacent section to be inserted, said slot extending from a point in the wall of the socket in alinement with the web of the section to such a point in the side wall of the socket as will permit the insertion of the head of an adjacent section in two positions so that the webs of the adjacent section may lie in the

same plane or substantially at right angles to each other.

16. A steel sheet piling section consisting of a straight flat web, a socket member formed of two flanges of unequal length on one edge of the web and a head member on the other edge, said head and web being angular and of similar shape in cross section and the head being adapted to fit within the socket of an adjacent section, the ends of said flanges being so spaced that there is an open slot between them extending from a point in alinement with the web of the socket adjacent to the end of the longer flange to such a point adjacent to the end of the shorter flange in the side wall of the socket as will permit the insertion of the head of an adjacent section in said socket in two positions, that is with the webs of the two sections in the same plane or at a right angle to each other.

17. A steel sheet piling section, consisting of a straight flat web, a socket member on one edge of the web and a head member on the other edge, said head being substantially square in cross section and the socket being of such a size as to receive within it snugly a similar head on another section, said socket being adapted to engage with two sides of said head member throughout their entire extent, and with only portions of the other two sides.

In witness whereof, I hereunto subscribe my name this 21st day of December, A. D. 1906.

TRUMAN HILL.

Witnesses:

LEONARD W. NOVANDER,  
ARTHUR H. BOETTCHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."