R. B. WOODWORTH.

DRIVING CAP FOR SHEET PILING.

APPLICATION FILED DEC. 20, 1909.

956,015. **Patented Apr. 26, 1910.**

2 SHEETS—SHEET 1.

Fig. 1

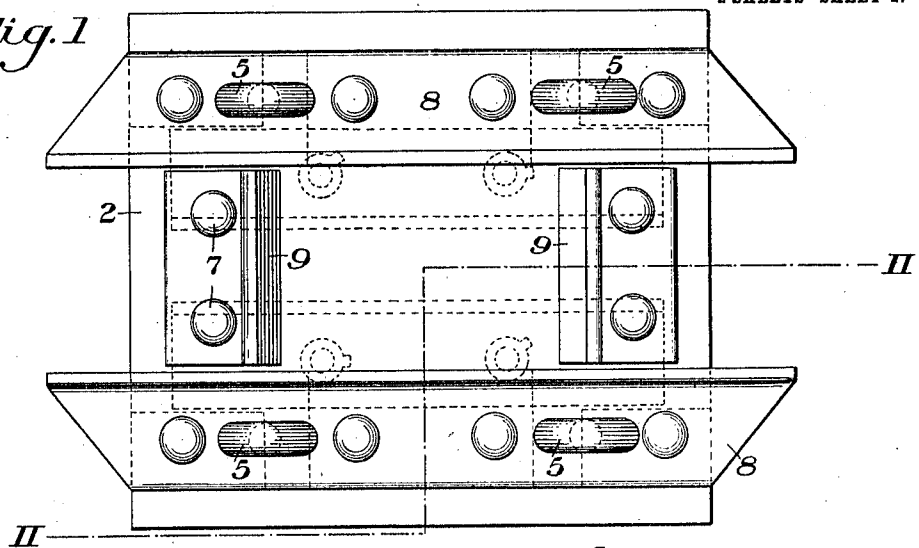


Fig. 2

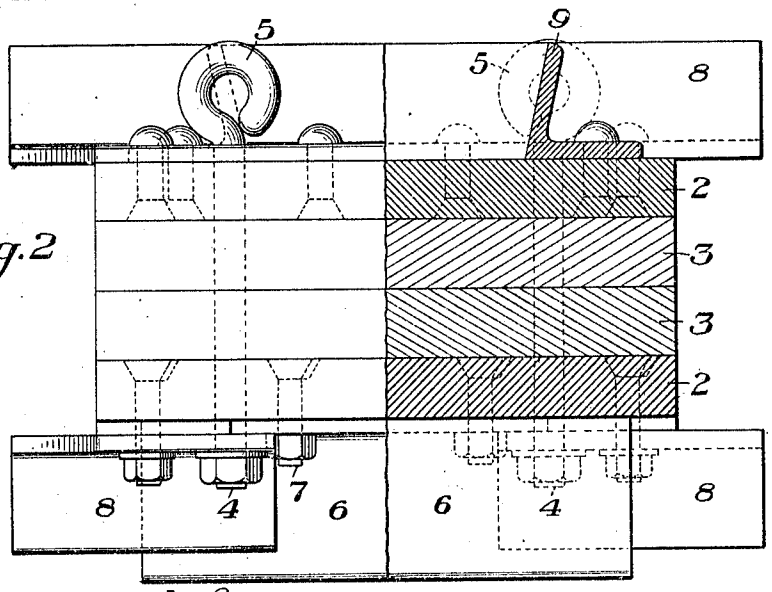
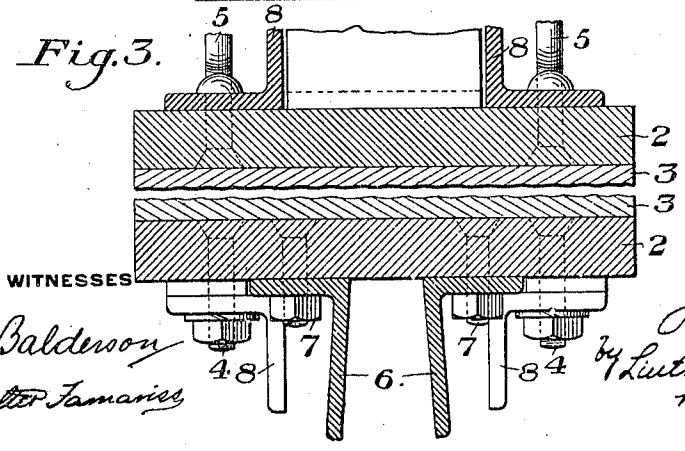


Fig. 3.



WITNESSES

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DRIVING CAP FOR SHEET PILING.

APPLICATION FILED DEC. 29, 1909.

956,015.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 2.

Fig. 4.

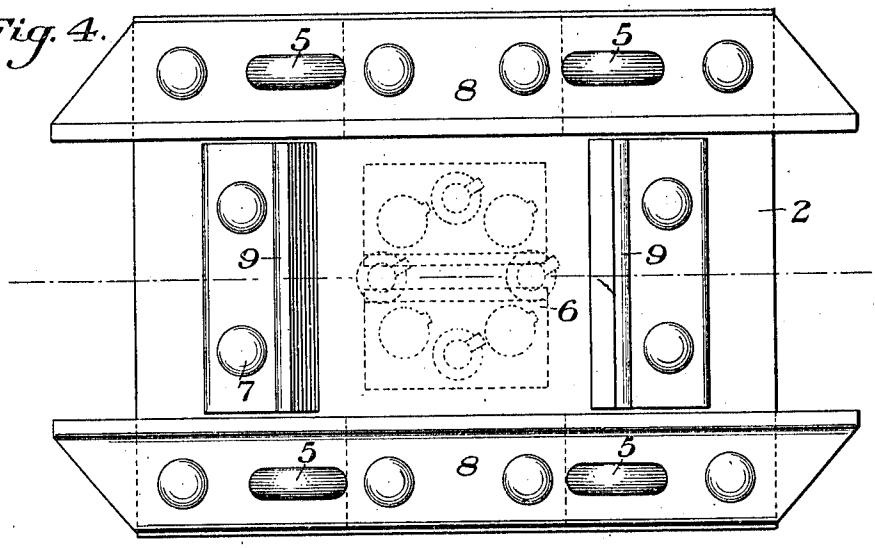


Fig. 5.

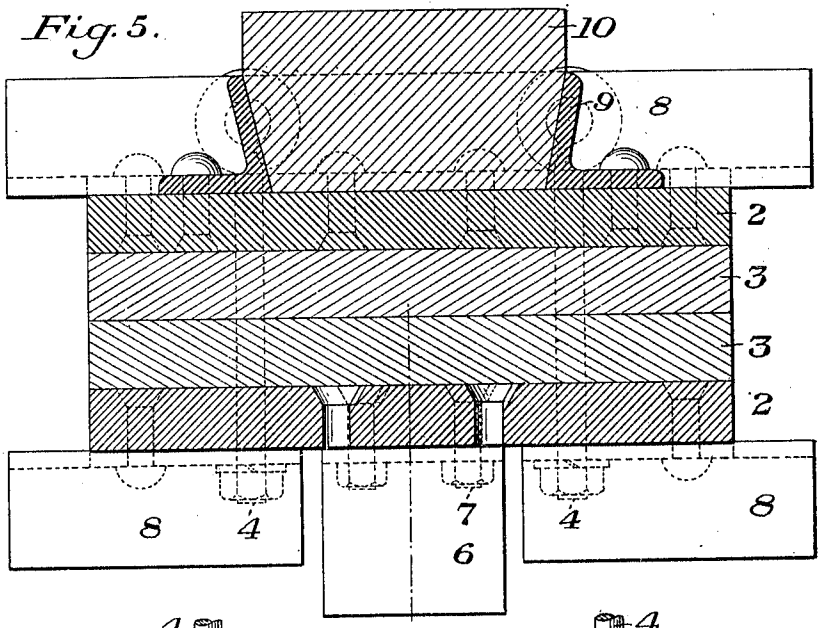
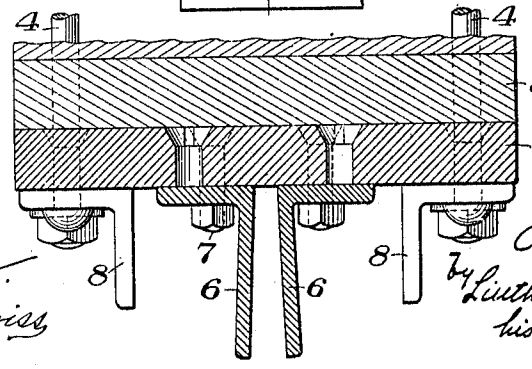


Fig. 6.



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UNITED STATES PATENT OFFICE.

ROBERT B. WOODWORTH, OF PITTSBURG, PENNSYLVANIA.

DRIVING-CAP FOR SHEET-PILING.

956,015. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed December 29, 1909. Serial No. 535,457.

To all whom it may concern:

Be it known that I, ROBERT B. WOODWORTH, of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Improvement in Driving-Caps for Sheet-Piling, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to driving caps used on the top end of sheet piling units in driving the piling, and it particularly relates to driving caps of the type shown in my prior Patent No. 914,098, dated March 2, 1909, used in driving metal sheet piling.

In driving caps for sheet piling as constructed heretofore, the caps have been formed of cast metal which are easily broken unless made of excessive weight and which when so made are hard to handle on account of their great weight. In other driving caps, wrought metal plates having recessed marginal edges have been used, which are expensive on account of the large amount of machine work necessary in constructing the caps.

The object of my invention is to provide a driving cap of improved construction, formed of rolled commercial shapes and provided with improved means for guiding and maintaining the driving caps in place in the leads of a pile driver when in use, and a driving cap which is easily and cheaply constructed of wrought metal with a minimum amount of machine work, is of light weight and great strength and which can be easily and quickly handled when being used.

Referring to the drawings, Figure 1 is a top plan of a driving cap constructed and arranged in accordance with my invention. Fig. 2 is a side elevation partly in section on the line II—II of Fig. 1. Fig. 3 is a sectional end elevation of the driving cap shown in Figs. 1 and 2. Fig. 4 is a top plan showing a modified form of construction. Fig. 5 is a longitudinal sectional elevation of the same and Fig. 6 is a transverse sectional elevation showing a portion of the driving cap shown in Figs. 4 and 5.

In the drawings, referring to Figs. 1, 2 and 3, 2—2 represent rectangular rolled metal plates which are sawed or sheared to size and 3—3 are rectangular blocks of wood or other resilient material which are placed between the metal plates 2 to form a cushion, the resilient material and the plates being secured together by means of eye bolts 4. The blocks of wood or other resilient materials 3—3 may be omitted when desired, and, when found desirable or necessary, but one of the plates 2 may be used. The bolts 4 are provided on one end with the eyes 5, which are used for securing a sling to the cap in order to handle the cap when being placed and replaced on the end of the piles to be driven.

On the under surface of the lower plate 2 are two rolled metal angles 6 which are detachably connected to the plate 2 by means of the bolts 7 and which are arranged to embrace the sides of the metal piles and hold the driving cap in position on the end of the piles.

On the outer surfaces of the plates 2 are rolled metal angles 8—8 which are arranged on opposite sides of the outer surface of each of the plates 2 and which project beyond the ends of these plates, the side walls of the recess formed by the plates 2 and angles 8 being formed by the projecting ends of these angles. Also secured on the top surface of the top plate 2 are angles 9 which, with the vertical flanges of the angles 8 form a recess or depression in which a wooden or other resilient buffer block is placed so as to contact with and take the successive blows of the pile driver hammer or ram. For the sake of clearness this wooden block is not shown in Figs. 1, 2 and 3, the block however being like that shown in Fig. 5.

In the modification shown in Figs. 4, 5 and 6, the arrangement of plates 2, resilient blocks 3 and projecting angles 8 is the same as in the preceding figures. The buffer block 10 shown in Fig. 5 is held in place by means of the vertical legs of the angles 8 and 9 in the same manner as in Figs. 1, 2 and 3. The lower face of the lower plate 2 is provided with angles 6 for the same purpose as in Figs. 1, 2 and 3, and the plates 2 and blocks 3 are secured together in the same manner in Figs. 4, 5 and 6 as in the preceding figures.

In driving sheet piling it is frequently necessary to drive a line of the piling which extends at an angle to the wall formed by the driven piling units, as for example, the end wall of a rectangular inclosure which extends at right angles to the side walls. When such change occurs in the direction in which the piling is driven, it is ordinarily necessary to shift the position of the pile

driver, the leads of the pile driver being placed in the same position relative to the new line of piling as occupied by it relative to the line of driven piling.

When it is desired to change the direction of driving the piling wall, the angles 6, 6, which are detachably secured on the plates 2 by means of the bolts 7, are removed and are replaced so as to extend at right angles to the position shown in the drawings in Figs. 1, 2 and 3, or, in the construction shown in Figs. 4, 5 and 6, to extend at right angles to the position shown in these figures, or at an angle other than a right angle. The bottom plate 2 is provided with a plurality of openings for this purpose in which the bolts 7 are inserted in holding the angle 6 in the various adjusted positions.

The advantages of my invention will be appreciated by those skilled in the art. Instead of machining a recess in the opposite edges of the plates, the plates may be sheared or sawed to size and when the angles forming the guides are assembled in place, the projecting ends of these angles form the side walls of guiding recesses for the leads of the pile driver.

By this construction the cost of the apparatus is largely reduced. The materials forming the driving caps being standard rolled commercial shapes are easily and quickly obtainable, and are cheaply and quickly built up to form the driving cap. The use of rolled steel plates and rolled shapes in forming the driving cap combine to form a cap of great strength with a minimum amount of weight, while the use of the resilient blocks between the metal plates of the cap increases the efficiency and life of the apparatus.

Changes may be made in the construction and arrangement of the parts without departing from my invention.

I claim:

1. A driving cap for sheet piling comprising a rolled metal plate, clamping means secured thereto and adapted to engage with the end of the piles and means secured to and projecting beyond the ends of said plate to form guiding recesses in the driving cap; substantially as described.

2. A driving cap for sheet piling comprising rolled metal plates, a layer of resilient material secured between said plates, clamping means secured to the plates adapted to engage with the end of the piles and means secured to the outer faces of said plates, said means projecting beyond the ends of the plates to form the side walls of guiding recesses on said driving cap; substantially as described.

3. A driving cap for sheet piling comprising a rolled metal plate, clamping means secured thereto and adapted to engage with the end of the piles and rolled metal angles secured to and projecting beyond the ends of said plate to form guiding recesses in the driving cap; substantially as described.

4. A driving cap for sheet piling comprising rolled metal plates, a layer of resilient material secured between said plates, clamping means secured to the plates adapted to engage with the end of the piles and rolled metal angles secured to the outer faces of said plates, said rolled metal angles projecting beyond the ends of the plates to form the side walls of guiding recesses on said driving cap: substantially as described.

5. A driving cap for sheet piling comprising a rectangular rolled metal plate, clamping angles adjustably secured thereto and arranged to engage with the end of the piles and rolled metal guiding angles secured to and projecting beyond the ends of the plate to form guiding recesses on the ends of said driving cap; substantially as described.

6. A driving cap for sheet piling comprising a rolled metal plate, clamping means secured thereto and adapted to engage with the end of the piles, means secured to and projecting beyond the ends of said plate to form guiding recesses in the driving cap, and a resilient block secured to the upper surface of said cap; substantially as described.

7. A driving cap for sheet piling comprising rolled metal plates, a layer of resilient material secured between said plates, clamping means secured to the plates adapted to engage with the end of the piles, means secured to the outer faces of said plates, said means projecting beyond the ends of the plates to form the side walls of guiding recesses on said driving cap, and a resilient block secured to the upper face of said block; substantially as described.

8. A driving cap for sheet piling comprising a rectangular rolled metal plate, clamping angles adjustably secured thereto and arranged to engage with the end of the piles, rolled metal guiding angles secured to and projecting beyond the ends of the plate to form guiding recesses on the ends of said driving cap, and a resilient buffer block secured on the upper surface of said driving cap; substantially as described.

In testimony whereof, I have hereunto set my hand.

ROBERT B. WOODWORTH.

Witnesses:

GERTRUDE SCHOTTE,

GEO. W. RITCHEY.