

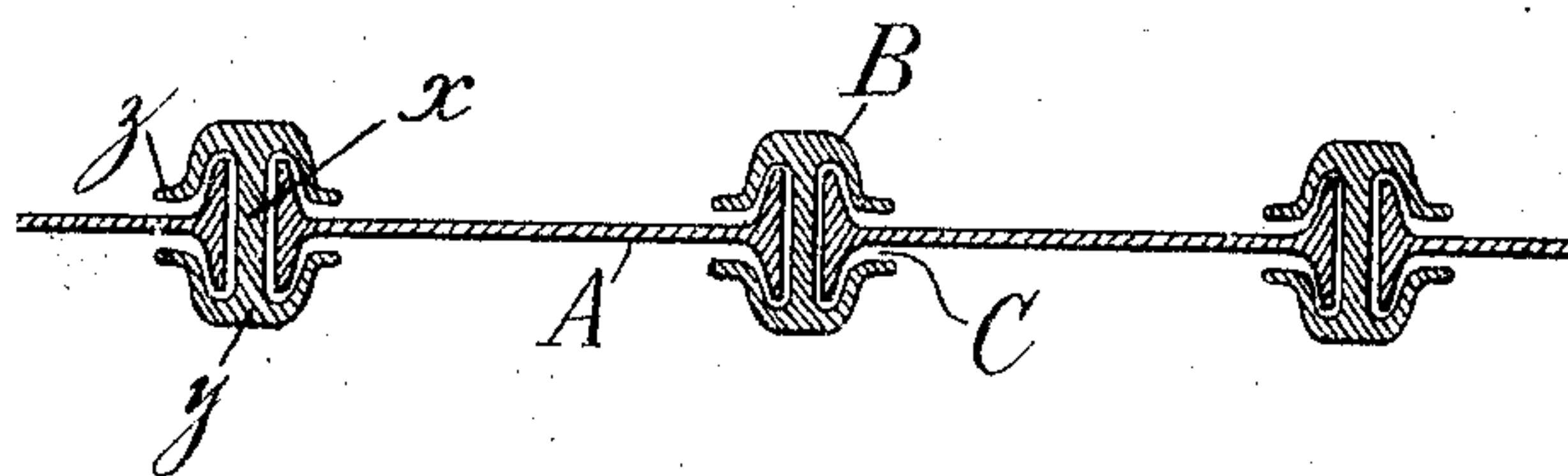
J. J. HAROLD.  
METAL PILING.

APPLICATION FILED NOV. 6, 1903.

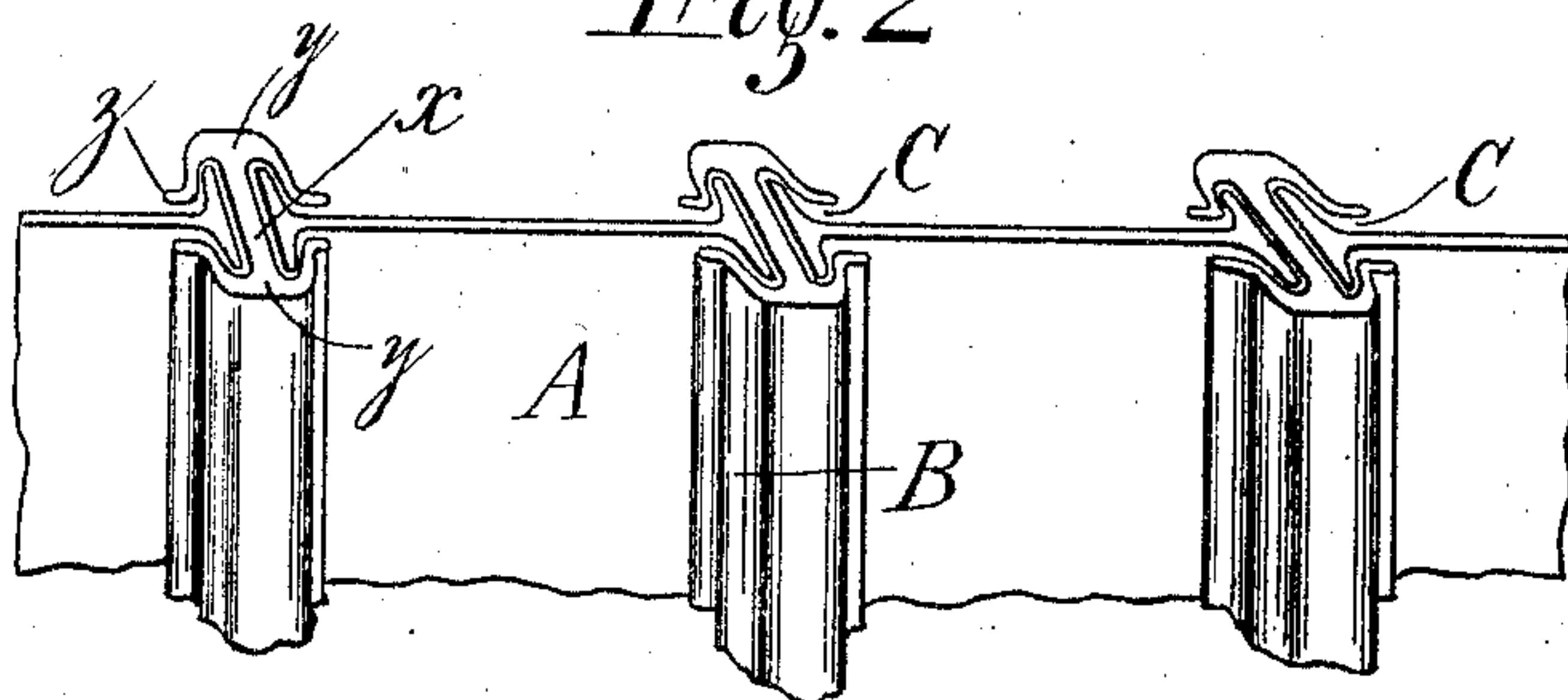
901,241.

Patented Oct. 13, 1908.

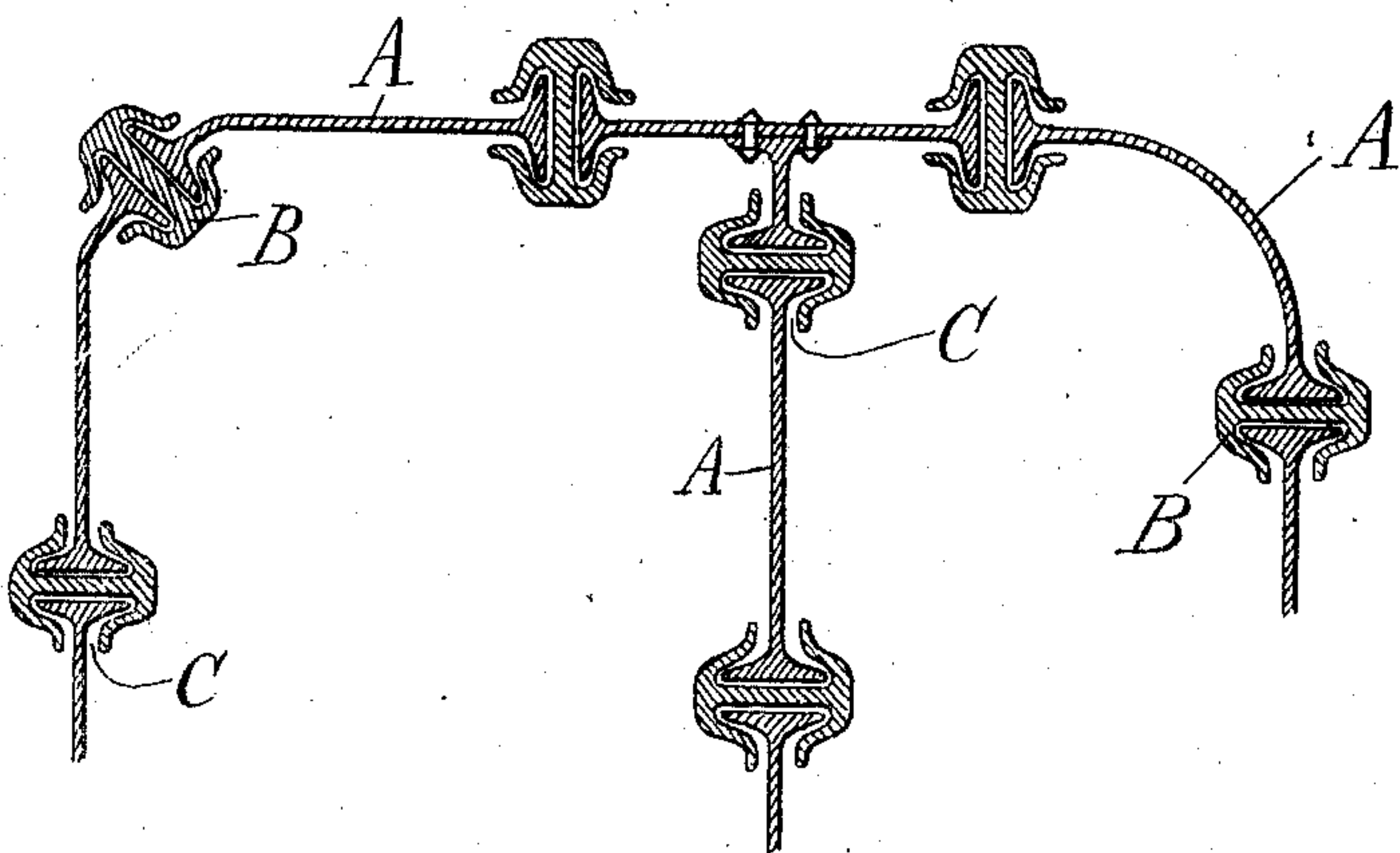
*Fig. 1*



*Fig. 2*



*Fig. 3*



Witnesses  
*Smith & Hovey*  
*Joan Honigsberg*

Inventor  
By *his Attorney* *James J. Harold*  
*Shoups & Hies*



# UNITED STATES PATENT OFFICE.

JAMES J. HAROLD, OF JERSEY CITY, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO  
EDWARD A. BERN, OF CHICAGO, ILLINOIS.

## METAL PILING.

No. 901,241.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed November 6, 1903. Serial No. 180,093.

*To all whom it may concern:*

Be it known that I, JAMES JOSEPH HAROLD, citizen of the United States of America, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Metal Piling, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in metal piling as used in subway, foundation and irrigation work, dams, mine shafts, caissons, sea walls, locks, coffer dams, retaining walls and similar structures and comprises the usual form of I-beams interlocked by coupling rods the details of which will be hereinafter set forth.

It is an improvement in the constructions shown and described in my prior application for United States Letters Patent, Serial Number 178,278, filed October 23d, 1903, wherein the structure comprises the usual form of I-beams interlocked by coupling plates and lug strips.

My present invention relates more specifically to improvements in interlocking the I-beams. In my former application the I-beams were interlocked by coupling plates comprising sheet metal having lug strips. I now join the I-beams by single rods formed with grooves, said grooves being formed by joining the concave surfaces of two U-shaped parts by a web or partition adapted to receive the flanges of the I-beams. These improvements permit of much quicker construction, involving less expense and parts than formerly.

Referring to the accompanying drawings, Figure 1 is an end view of a straight run of my piling. Fig. 2 is a perspective view of the same. Fig. 3 is an end view showing the formation of a partition or wall and curved and angular corners.

A are the I-beams and B are the coupling rods. Each coupling rod is formed with a web or partition  $x$  joining the concave surfaces of the channels  $y$  having extended lips  $z$ . The grooves of the coupling rods B engage the flanges of the I-beams A and the spaces C are calked or packed in the usual manner.

Modifications may be made in the form and construction of my coupling rod without departing from the scope of my invention and I do not limit myself to the exact

construction shown and described. For instance the web or partition of the rod may be made of sheet metal and the openings which receive the flange ends of the I-beams may be formed by attaching lug strips to the partition or web in the usual manner.

Having set forth my invention, what I claim as new and desire to secure by Letters Patent, is—

1. In sheet piling a coupling for rolled shapes having a web or connecting member and oppositely arranged hook-engaging members.

2. In combination I beams and a coupling bar or beam having a web portion between the I beams and hooks engaging the flanges of such beams.

3. Sheet metal piling comprising shapes having flanges extending at an angle thereto and a continuous interlocking rolled shape extending between the flanged shapes and having oppositely extending hooked flanges arranged to engage the adjacent flanged portions of the other shapes substantially throughout their length and lock them together substantially as described.

4. Sheet metal piling comprising shapes having flanges extending at an angle thereto and an interlocking shape extending between the flanged shapes and having base flanges and hook-shaped outer flanges arranged to engage the flanges of the other and lock them together substantially as described.

5. Sheet metal piling comprising shapes having flanges extending at an angle thereto and an interlocking shape of general I beam form extending between the flanged shapes with the outer flanges bent in to engage the flanges of the outer shapes and lock them together substantially as described.

6. Sheet metal piling comprising two shapes having flanges extending at an angle thereto and a flanged interlocking shape extending between and engaging them substantially as described.

7. Sheet metal piling comprising two shapes having flanges extending at an angle thereto and an interlocking rolled shape extending between them and having oppositely extending flanges engaging the inner and outer part of the two shapes substantially as described.

8. A coupling rod comprising a web or partition connecting the concave surfaces of



two flanged channels substantially as set forth.

9. Metal piling comprising I beams interlocked by coupling rods, said coupling rods provided with channels along the opposite sides, said channels engaging the flanges of said I beams substantially as described.

10. Sheet metal piling comprising flanged shapes and an interlocking shape extending between the flanged shapes and having hooked flanges engaging the flanges of said shapes substantially as described.

11. Sheet metal piling comprising I beams, and an interlocking shape extending between the I beams and having hooked flanges engaging the I beam flanges substantially as described.

12. The herein described sheet piling consisting of sheet members of standard rolled cross-section and coupling members of standard rolled cross-section having their flanges adapted to fit the flanges of the sheet members.

13. The herein described sheet piling consisting of I-beam sheet members, I-beam coupling members, the flanges of the coupling members being adapted to fit the flanges of the sheet members, whereby a locking

may be effected without use of bolts, rivets or special rolled and shaped sheet members, and individual longitudinal movement given the sheets and coupling.

14. The herein described sheet piling consisting of sheet members each composed of a web portion with flanged sides, a coupling member having a web and flanged sides, said web of the coupling member lying at right angles to the web of the sheet member and adjacent to its ends, said flange of the coupling member adapted to fit and embrace the flanges of the sheet member.

15. In metal piling the combination with piles of I beam section, of locking members formed of I beams having their flanges bent over inwardly to form channels adapted to receive the flanges of the piles of I beam section.

16. The rolled I beam section having flanges bent over to form channels.

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

JAMES J. HAROLD.

Witnesses:

WAYNE KRATZER,  
SMITH D. NIVER.