

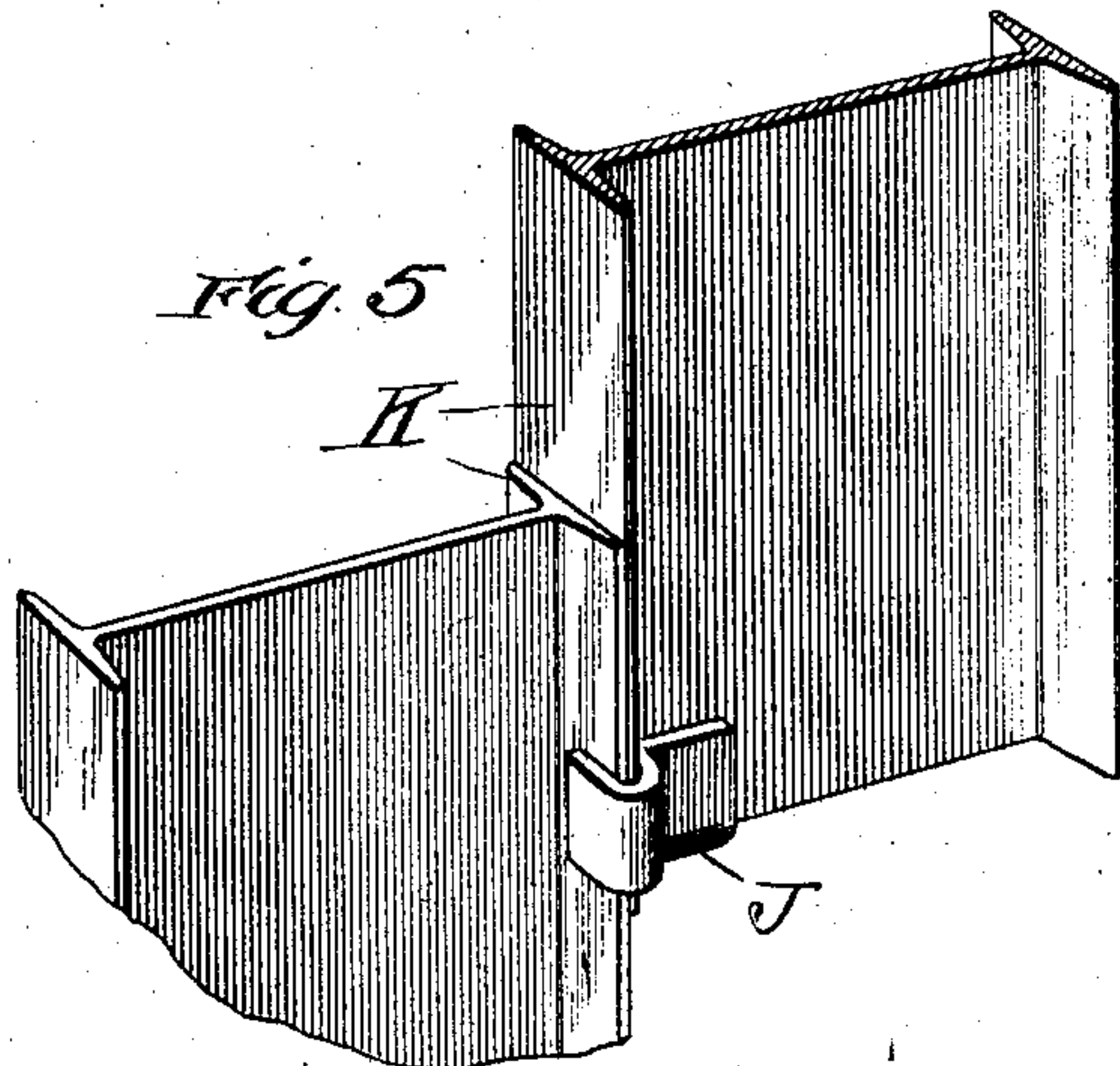
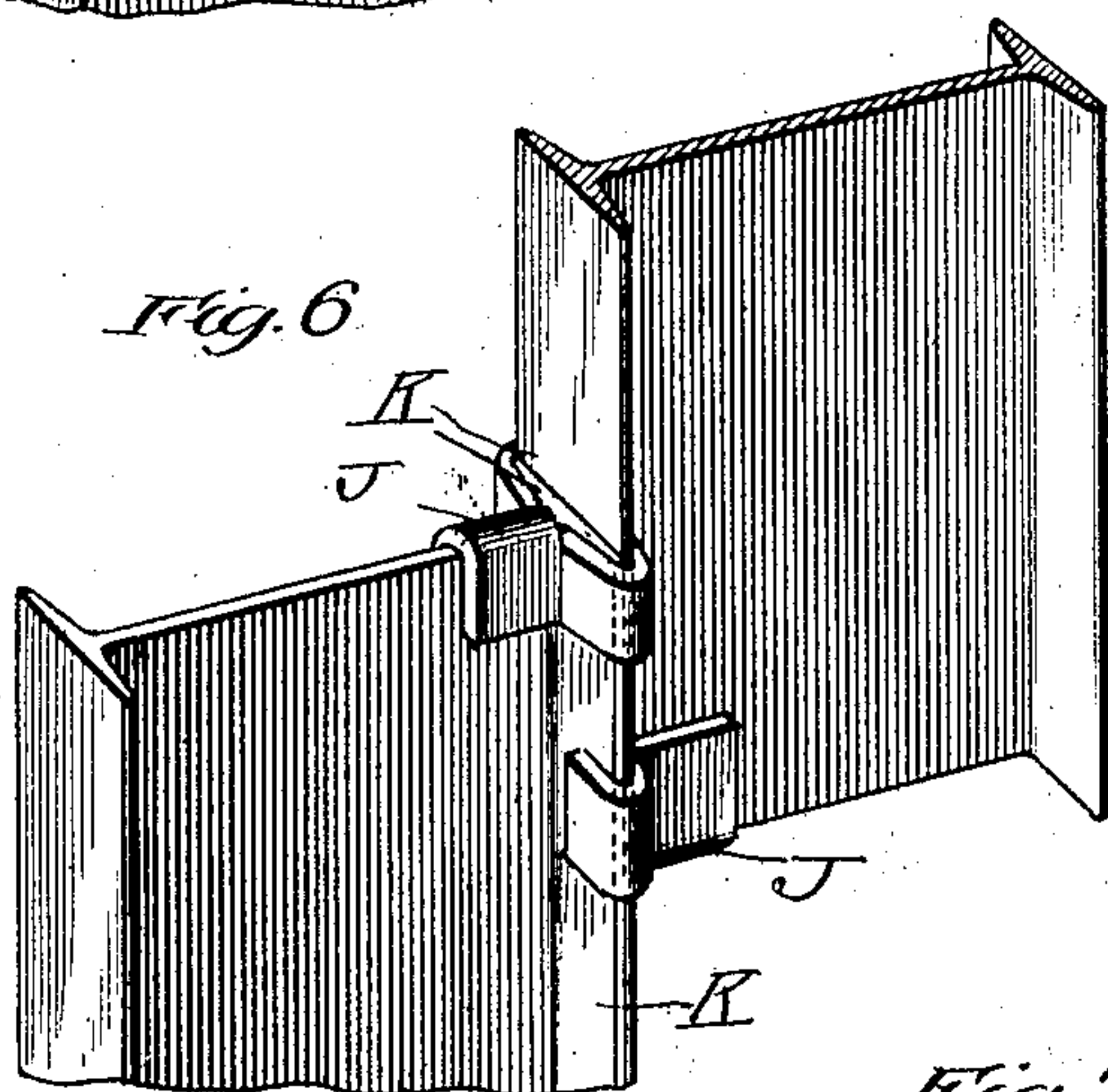
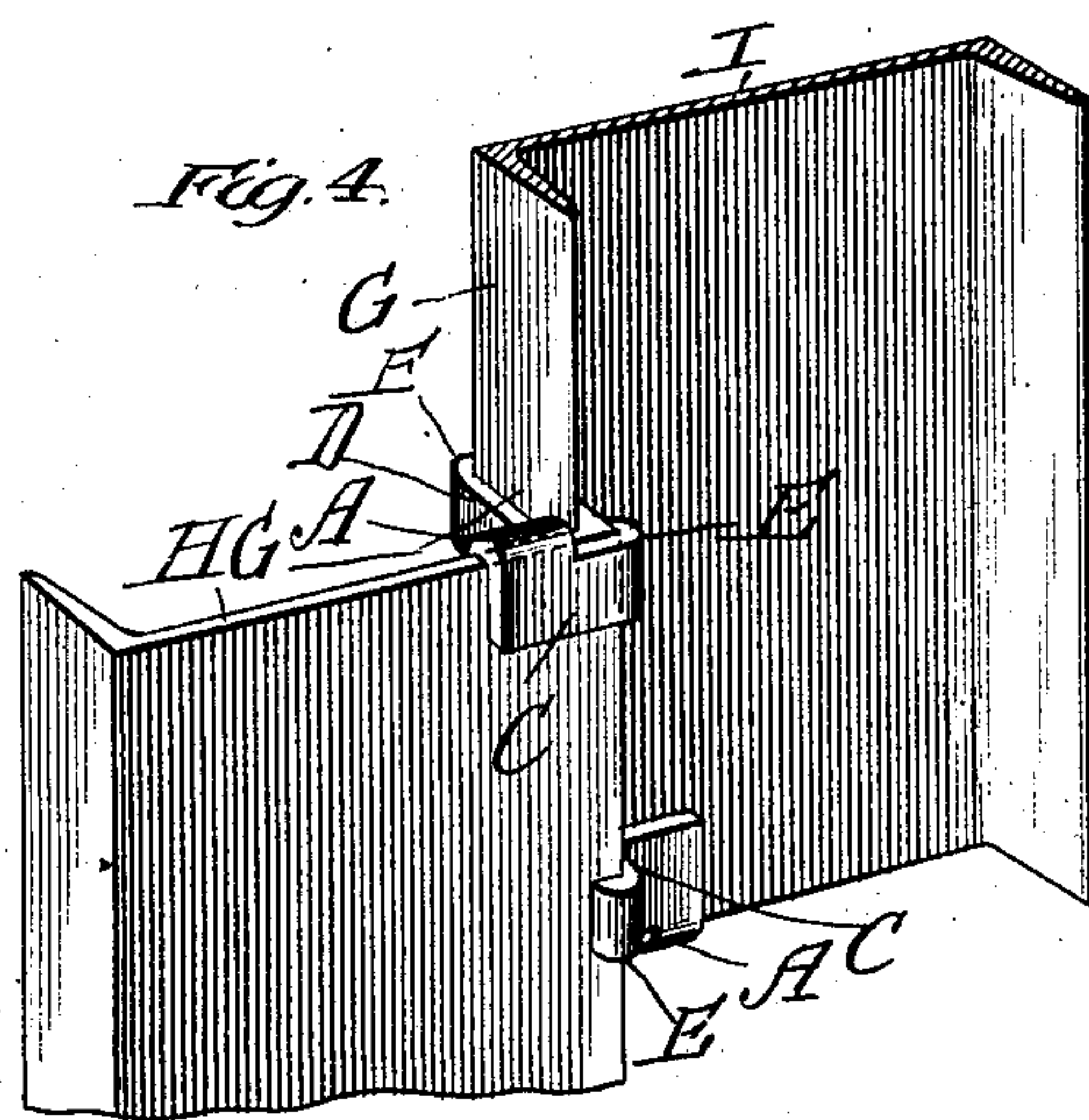
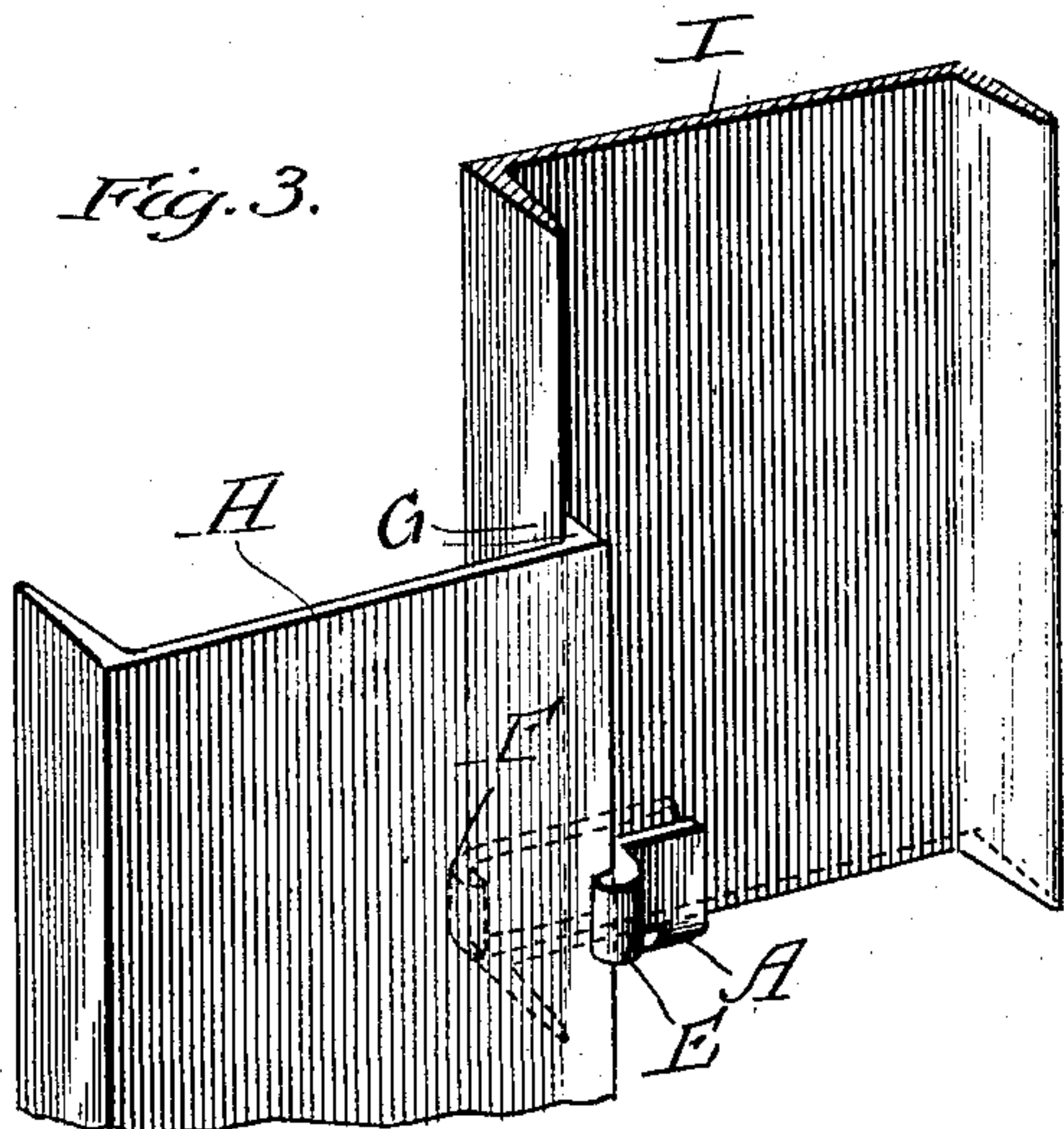
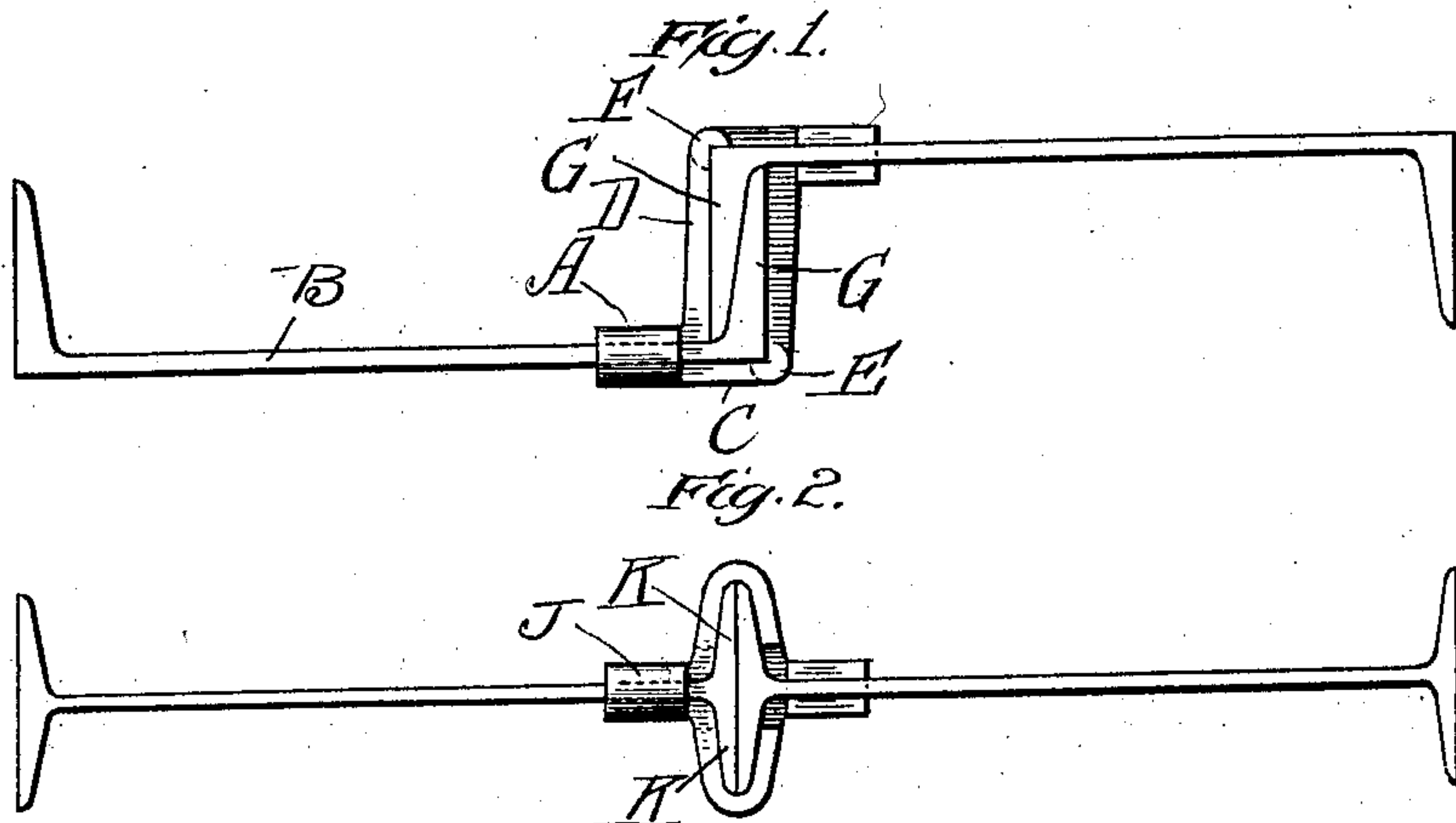
No. 877,588.

PATENTED JAN. 28, 1908.

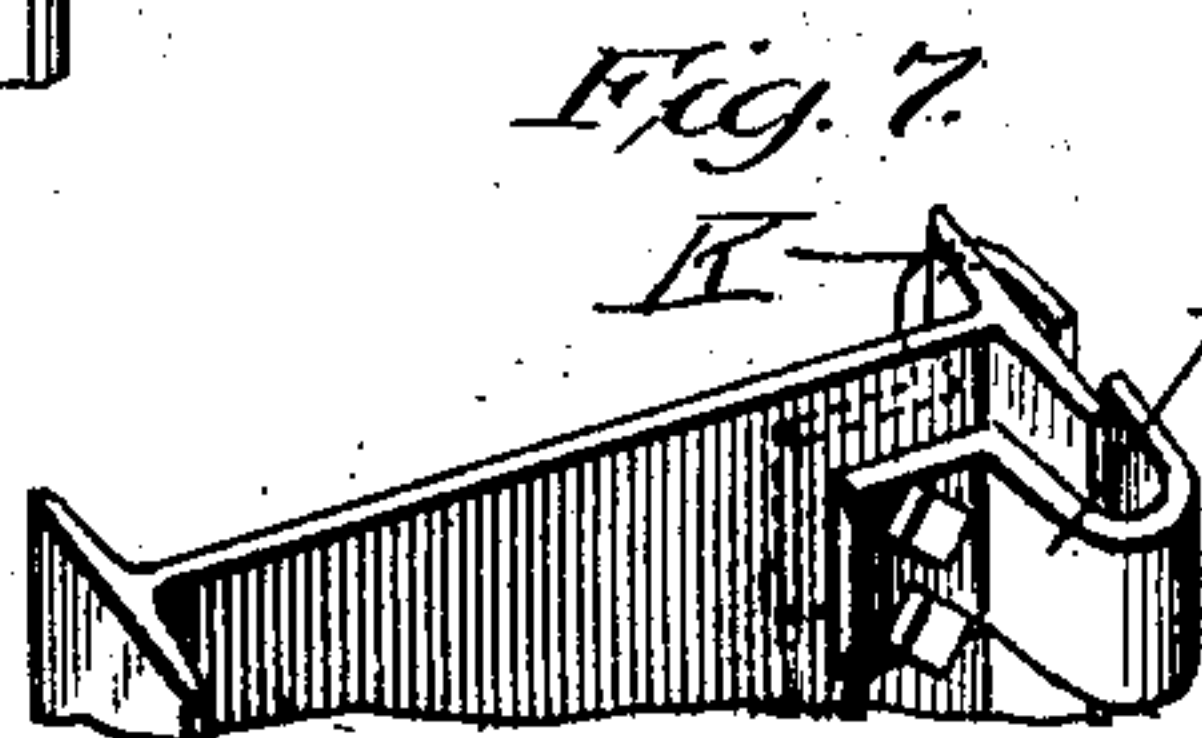
G. E. NYE.  
INTERLOCKING SHEET PILING.

APPLICATION FILED NOV. 16, 1907.

2 SHEETS—SHEET 1.



Witnesses  
Ray White  
Harry R. White



Inventor:  
George E. Nye;  
By *Rudolph H. [Signature]*

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2 SHEETS—SHEET 2.

Fig. 8.

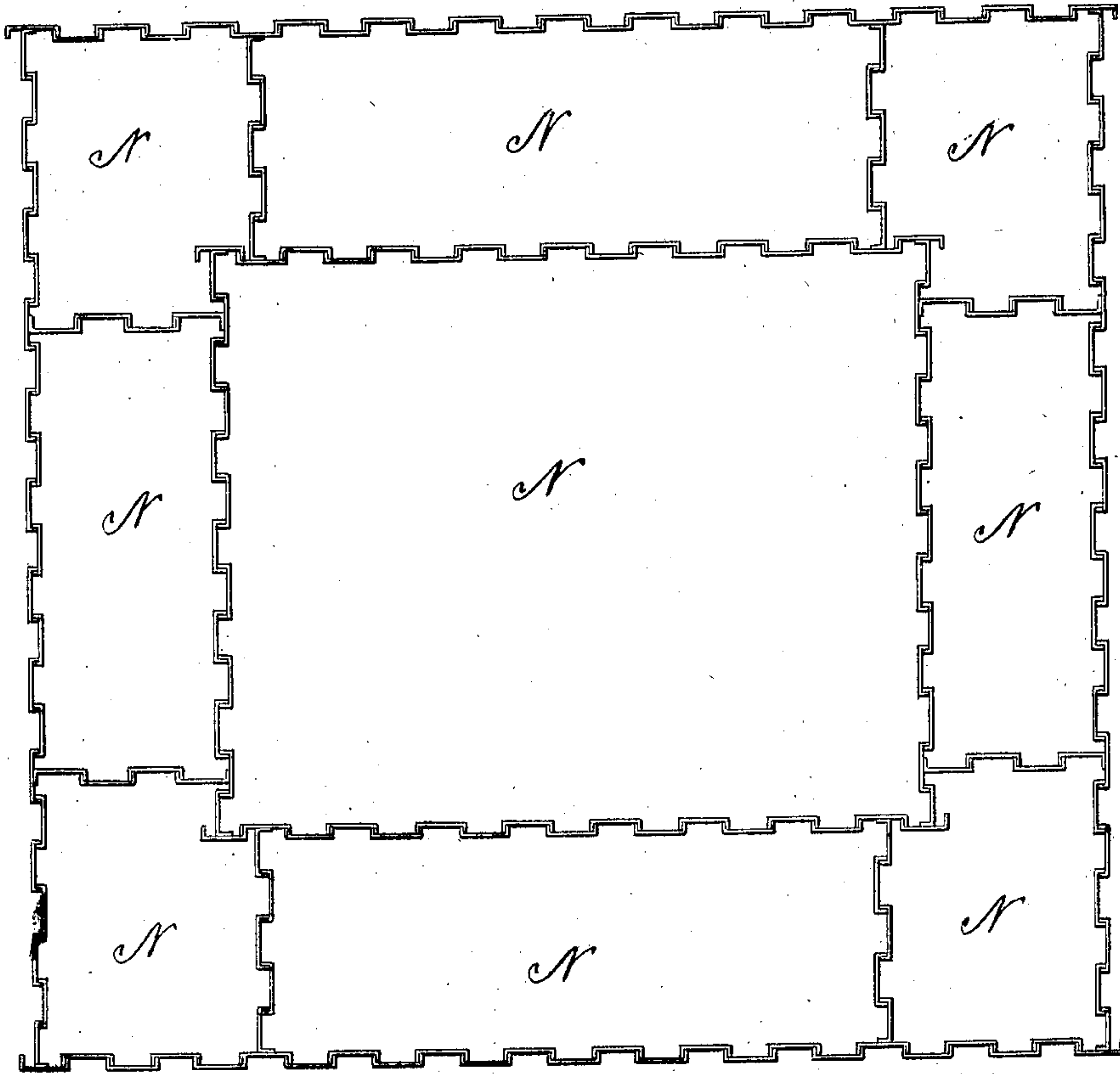


Fig. 9.

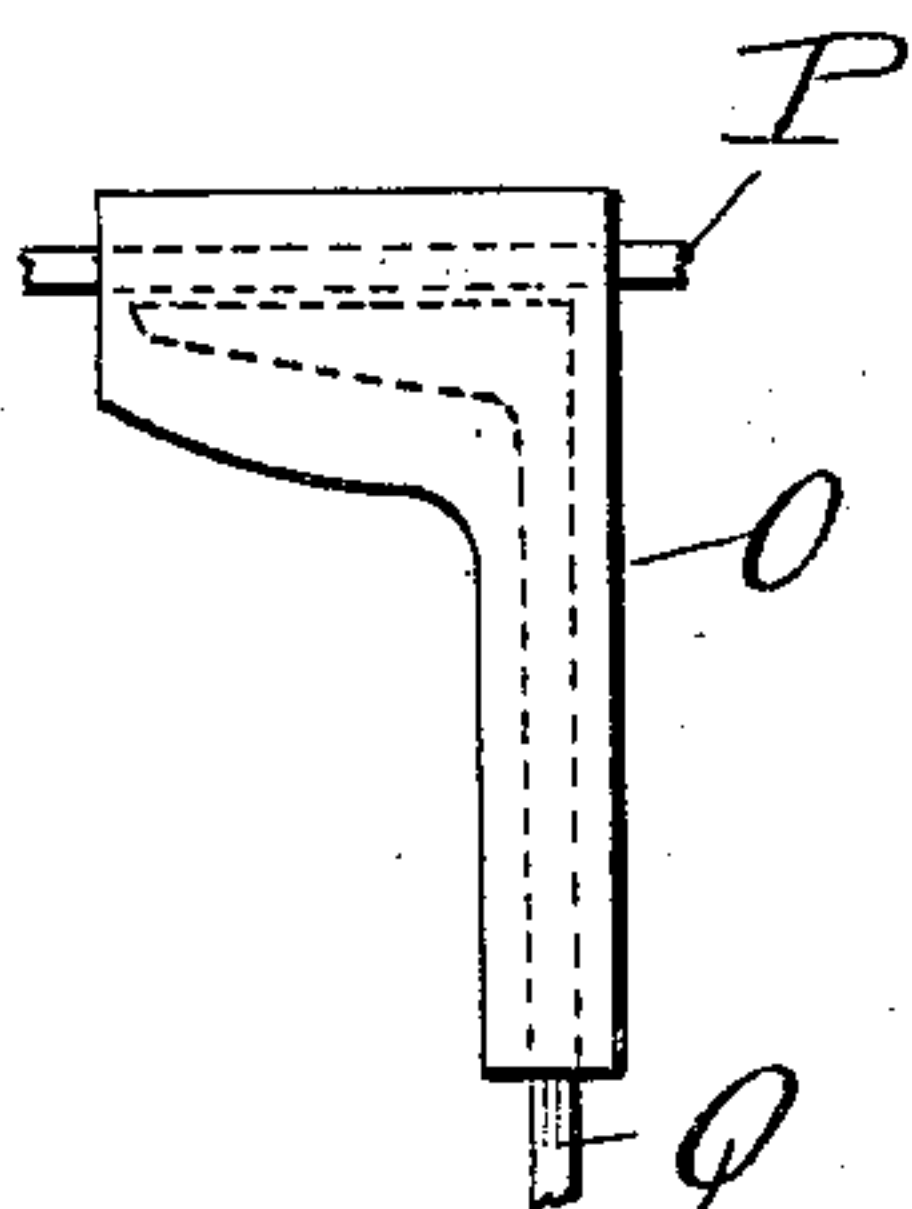


Fig. 10.

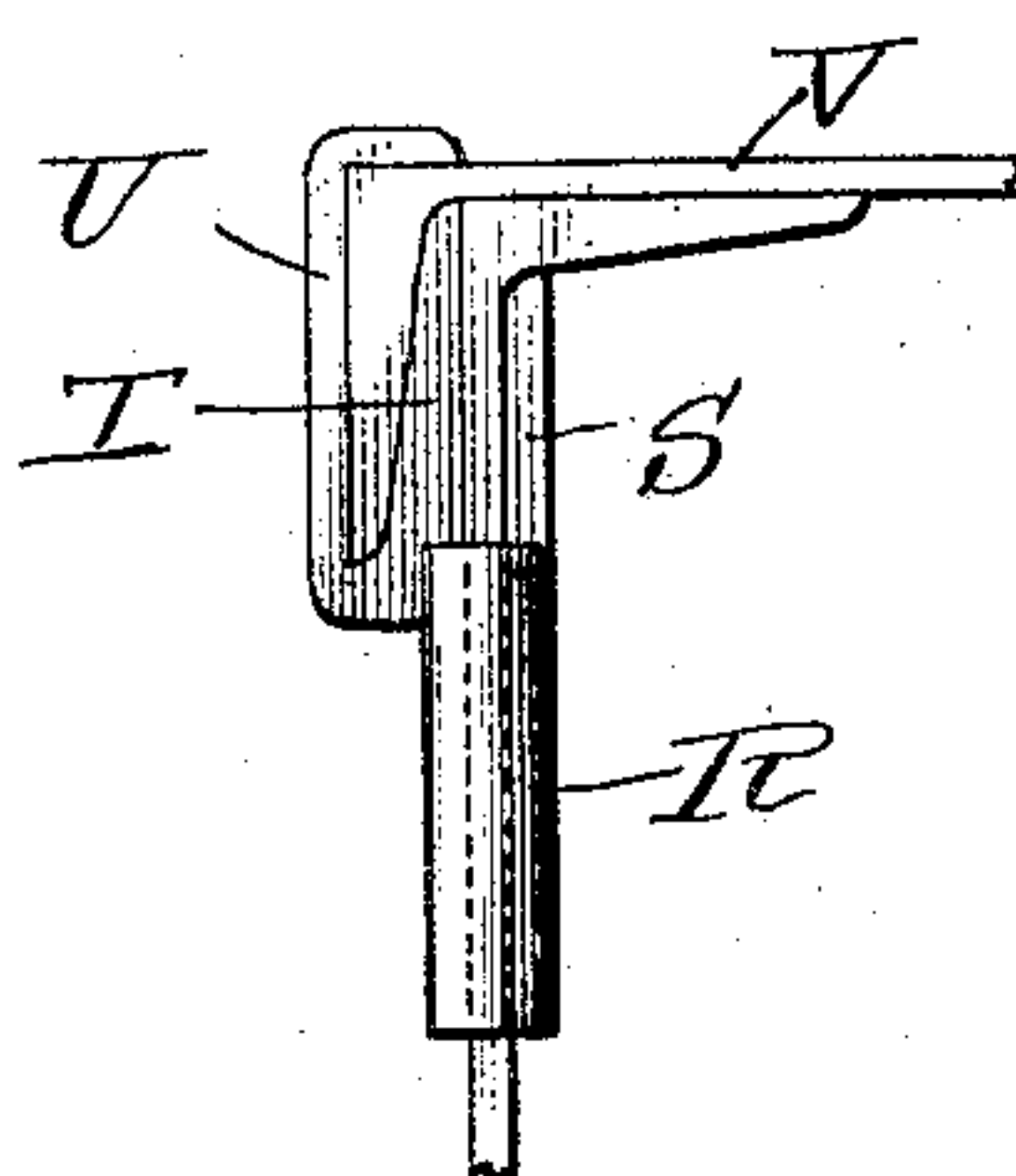
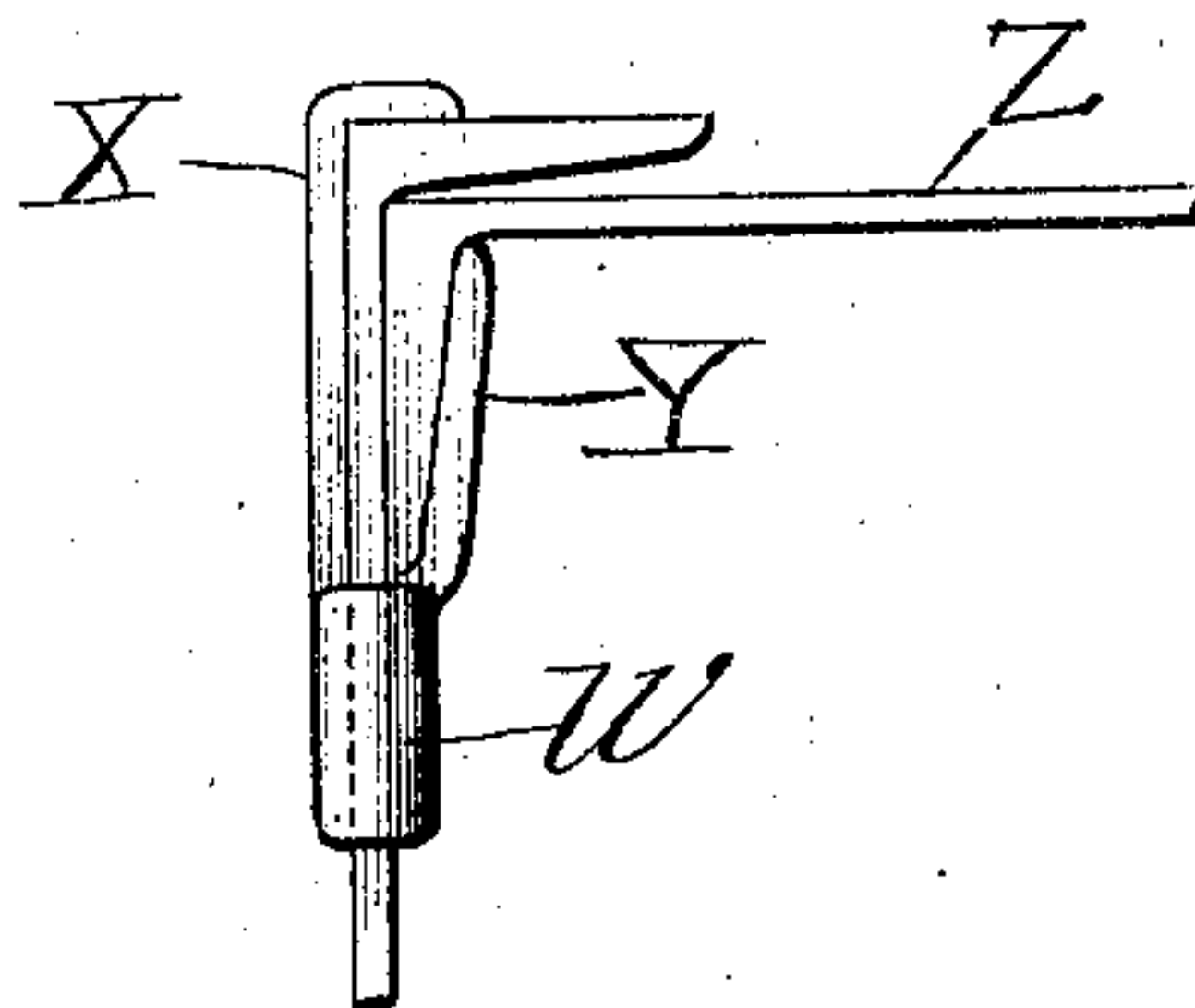


Fig. 11.



Witnesses  
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# UNITED STATES PATENT OFFICE.

GEORGE E. NYE, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL INTERLOCKING STEEL SHEETING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## INTERLOCKING SHEET-PILING.

No. 877,588.

Specification of Letters Patent.

Patented Jan. 28, 1908.

Application filed November 16, 1907. Serial No. 402,460.

*To all whom it may concern:*

Be it known that I, GEORGE E. NYE, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Interlocking Sheet-Piling; and I do hereby 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 appertains to make and use the same.

This invention relates to a novel construction in interlocking sheet piling, the object being to provide piling which is simple, relatively cheap and efficient, and consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings illustrating this invention: Figure —1— is a plan view of channel bar constructed in accordance with my invention. Fig. —2— is a plan view of I-beam piling constructed in accordance with my invention. Fig. —3— is a fragmentary detail perspective view of channel bar piling showing a driven unit and a partially driven unit equipped with bottom lock. Fig. —4— is a view similar to Fig. —3— showing the top lock disposed on the driven unit. Figs. —5— and —6— are views similar to Figs. —3— and —4— respectively showing I-beam units in place of the channel bars. Fig. —7— is a fragmentary detail perspective view showing a modified form of construction. Fig. —8— is a plan view of a cofferdam constructed of sheet piling in accordance with my invention. Figs. —9— and —10— and —11— are fragmentary plan views respectively of channel bars driven transversely to each other and equipped with interlocking means constructed in accordance with my invention.

My present invention comprehends the use of interlocking means such as are illustrated and described in Letters Patent No. 860053 granted to me on July 16, 1907, and more particularly the interlocking means shown and described in my application for Letters Patent, Serial No. 384973, filed July 22, 1907, and relates more particularly to the relative positions and arrangement of said interlocking means whereby new and useful results are attained, the essence of the present invention being partially disclosed but not claimed in the said patent and the aforesaid application.

The invention consists essentially in providing interlocking devices for structural iron units, such as channel bars and I-beams, whereby the latter may be readily converted to sheet piling, and which said interlocking devices are equipped with means whereby they are held against lateral movement in one direction on the unit carrying the same and engage the next adjacent unit to hold the latter against lateral movement relatively to the first named unit, the last named unit in turn serving to hold the locking device of the first unit against lateral movement relatively thereto in which primarily it was free to move, the said means for holding said locking device against lateral movement on its unit being disposed in the path of the means carried by the locking device of the other unit to engage the first named so that the locking devices of adjacent units may not pass each other in the driving.

My said interlocking devices shown in said patent and application above referred to and herein shown are essentially novel in this particular, viz: that when mounted in place on the units they cannot pass each other, this being more particularly true of the locking devices shown and described in my application of July 22, 1907, though it would be true also of the I-beam lock shown in said Patent No. 860053.

The present invention, therefore, comprehends broadly the equipment of opposing flanged edges of adjacent units with oppositely disposed interlocking devices, each of said devices being provided with means engaging an edge flange of the unit carrying the same and an edge flange of the opposing unit whereby both the locks and the units are held against relative lateral movement in all directions, said engaging means of opposing locking devices being disposed in each others paths.

The invention is embodied in the locking devices illustrated, that shown in Fig. —1— comprising the part A engaging the web portion of the channel bar unit B, (said part A being preferably U-shaped to receive and be driven upon the said web) and being equipped with oppositely and relatively transversely disposed flanges C and D provided at their free ends with projections E and F respectively. The flange C lies in contact with the outer face of the web of the channel and the projection E thereof engages the outer face of



the flange G of said channel bar thereby holding the said device against movement inwardly. The flange D is so disposed as to provide a recess between the same and the inner face of the flange in which the flange G of the next adjacent channel bar is received, the projection F engaging the outer face of the web of said adjacent channel bar, the latter being thus held against lateral movement in all directions relatively to the first named channel bar and serving at the same time to prevent lateral movement (outwardly) of the said locking device.

The manner in which channel bars are successively driven is illustrated in Figs.—3— and —4—the channel bar H being first driven devoid of interlocking devices and the channel bar I equipped with bottom interlocking device (which I will hereafter term "lock") is then driven partially down, that is until said bottom lock shall be disposed a sufficient distance below the upper end of channel bar H to permit the top lock to be mounted on the latter. This being done the channel bar I is driven the requisite depth.

The I-beam lock shown in Fig.—2—consists also of the U-shaped part J provided at one end with two flaring opposed hooks which on their outer faces engage the inner faces of the flanges K of said I-beam and at their free ends engage the edge portions of the opposing flanges of the next adjacent I-beam. Said lock is thus itself held and serves to hold said adjacent I-beams against relative lateral movement in all directions.

In Figs.—5—and—6—I have illustrated the manner of successively driving I-beams which accords in every way with the manner of driving successive channel bars and, therefore, requires no special description. I desire to state, however, that the top lock for the first pile is preferably slipped over the lower end of the second before placing the bottom lock on the latter.

While I prefer to employ locks having the U-shaped portion receiving the web of the channel bar or I-beam, I desire it to be understood that the invention comprehends broadly the employment of removable locking devices. Thus the construction shown in Fig.—7—in which the I-beam lock is made in two parts L bolted upon opposite sides of the web of the unit, falls within the scope of my invention.

My said invention is adaptable for practically every purpose for which sheet piling is used such as the construction of cofferdams, retaining walls, etc., a cofferdam constructed of sheet piling being shown in Fig.—8—. The said cofferdam consists of the central well M and outer pockets N which are maintained filled with earth to anchor the walls of the center pocket and render the well M watertight. In order to accomplish this, certain of the channel bars (which are preferably

used) must be driven so that the webs thereof extend at right angles to each other and joined together at top and bottom. To this end certain special locks are required, such locks being shown in Figs.—9—,—10— and—11—.

In Fig.—9—the lock O is L-shaped, one leg thereof having a recess receiving the web P of one channel bar, said recess being enlarged between its ends to receive the flange of an adjacent transversely disposed channel bar Q, the web of the latter being received in a recess transversely disposed to the first named recess and communicating with the same between its ends.

In Fig.—10—the lock shown comprises the U-shaped portion R receiving the web of one channel bar, the said member being equipped with projections S and T, the former abutting against the flange of the channel bar on which the lock is mounted and the latter lying in contact with the outer face of the web thereof, there being an L-shaped projection U outwardly of said projection T between which and the latter the flange of the transversely disposed channel bar V is received.

In Fig.—11—the lock shown consists of the U-shaped member W having an L-shaped projection X engaging the outer faces of the web and one flange respectively, and an oppositely disposed projection Y between which and the said web and flange of the channel bar carrying the lock the edge portion of a transversely disposed channel bar is received.

By means of all of the types of locks above described and comprehended in my invention, practically every desired shape of sheet piling structure may be formed without the use of bolts or rivets unless the user of bolts or rivets shall elect to employ bolts to secure the locks.

The recess of the U-shaped portion of every lock is of a width such as will necessitate driving the same upon the web of the channel bar or I-beam.

I claim as my invention:

1. Sheet piling comprising units each having a web and edge flanges, and adapted to be driven edge to edge to form a continuous wall, adjacent units being equipped on opposing edge portions and respectively opposite ends with interlocking devices, said interlocking devices engaging the web of the unit carrying the same and projections thereon engaging the edge flanges of the carrying and opposing unit, said last named projections of each interlocking device being disposed in the path of the projections of the other.

2. Sheet piling comprising units each having a web and edge flanges, and adapted to be driven edge to edge to form a continuous wall, adjacent units being equipped on



opposing edge portions and respectively opposite ends with interlocking devices, said interlocking devices engaging the web of the unit carrying the same and projections thereon engaging the edge flanges of the carrying and opposing unit, the engagement of said projections with the edge flanges of the carrying unit holding said interlocking device against lateral movement in one direction, and the engagement thereof with the edge flanges of opposing units holding said interlocking device against lateral move-

ment in the other direction, said interlocking devices holding adjacent units against relative lateral movement and said projections of opposing interlocking devices being disposed in each others paths. 15

In testimony whereof, I have signed my name in the presence of two subscribing witnesses.

GEORGE E. NYF

Witnesses:

RUDOLPH WM. LOTZ,  
A. F. PHILIPSON.